

Adjustment DE-A regarding NO_x from Road Vehicles

PREFACE

When deriving proposals for national emission ceilings for negotiations of the 1999 Gothenburg Protocol, sector-specific emission estimates for the year 2010 were calculated at IIASA using a set of scenarios which assumed various technological abatement measures, policy incentives, and legislation available / in place or planned at that time. As a result, the 2010 emission by road transport in Germany was estimated at NO_x, (IIASA, 1999) ¹⁾. The over-all 2010 national emission ceiling (NEC) for NO_x, was set to 1,081 kt. When negotiating the EU NEC Directive two years later, Germany agreed to reduce its NO_x, emissions further, resulting in a NEC of 1,051 kt.

In its 2016 NEC emissions reporting, Germany provided a national total for NO_x, emissions of 1,337 kt for 2010. However, this total includes emissions from agricultural soils and other source categories not accounted for when setting the NEC. In addition, some assumptions made in 1999, including on emission factors from road traffic, turned out to be wrong in reality. Like in many other European countries, non-compliance with the 2010 NEC as set in 1999 was partly not caused by failed national mitigation policies, but by changes beyond the control of, and unforeseen by, the individual Party or Member State.

In order to differentiate such changes from policy failures in the responsibility of the individual Parties to the Gothenburg Protocol, a procedure (Inventory Adjustment) allowing the adjustment of emissions resulting from new emission categories, changes in estimation methodologies, emission factors etc. provided within the EMEP/EEA Guidebook, or other effects beyond national control with respect to complying to emission reduction obligations (EB, 2012a & c) ^{2), 3)} was agreed. This procedure is applicable also for existing NECs (EB, 2012b) ⁴⁾.

With respect to road transport, such an unforeseeable effect was the partial failure of several so-called “Euro norms” set on the EU level to reduce emissions from road vehicles. In this report, Germany presents an estimate of the NO_x, emissions resulting from the partial failure of the mitigation policy reflected by the Euro norms, and lays out the calculations leading to these estimates.

REASONS FOR MISSING THE GOTHENBURG CEILINGS

The TREMOD methodology applied for estimating emissions from road transportation in Germany has changed over time. These changes include updates of emission factors (EF) for various pollutants and other changes such as an extension of vehicle classification (and thus inclusion of emission factors associated with these new vehicle sub-categories) to improve the estimation's accuracy.

The main changes occurred for the emission factors and for the Heavy Duty Vehicles (HDV) fleet structure. This last point led to changes in emissions because of the reallocation of activities (consumption/traffic) between the sub-categories of vehicles.

For the formalism of the adjustments, it is difficult to flag whether the modifications for road transport are due to “methodological changes” or due to “changes of emission factor”. Therefore, only the term “change of methodology” will be used (even if at the NFR reporting level this may seem like a simple change in EFs).

So far as road transport is concerned, the inability to attain the emission ceiling is most likely to have been affected by a combination of technological changes within the fleet (which of course made their way into the several versions of TREMOD) combined with greater than originally expected dieselisation of the fleet.

ANALYSING THE PROBLEM: THE EUROPEAN PERSPECTIVE BASED ON COPERT

Already in 2011, these effects were demonstrated by Ntziachristos and Papageorgiou (2011) ⁵⁾. Here, the impacts of changing model versions and activity data in the context of meeting the EU NEC Directive ceiling commitments were examined for four European countries including Germany. Unfortunately, this comparison study was carried out within a COPERT environment. Therefore, the results gained cannot be transferred to the German TREMOD environment on a one-to-one level but nonetheless allow a highly illustrative insight in the reasons for not meeting the set ceiling. The study modeled fuel consumption and NO_x, emissions for four selected countries (Germany, France, Netherlands and Belgium) and found higher NO_x, emissions were estimated for the road transport sector than originally modelled by the RAINS model of IIASA (which underpinned the setting of 2010 ceilings). For Germany, this study shows that with the same activity data set (LIFE+

EC4MACS data from Amann et al. (2010)), NO_x, emissions estimated with COPERT II vs. COPERT 4 (v8.0) increase from 410 kt to 518 kt due to methodological changes, a difference of 282 kt. An additional consideration of changes in AD would lead to 620 kt of NO_x. However, as changes in AD are no valid adjustment reason, the latter value is for information only.

This was mainly due to: * NO_x, emission factors updated in COPERT 4 that did not follow the reductions as set by the emission standards for diesel passenger cars; * important part of diesel fuel consumption in the total fuel consumption of the road traffic.

The results of this study showed that it is the combination of different parameters which might affect the ability (to different extents) of a Party to attain the emission ceilings. In other words, the exceeding of NO_x, ceilings for road transport is due to:

Changes in methodology and emission factors

As these technologically driven changes (as reflected in the evolution of the different so-called Euro norms) lie outside the country's responsibility, current methodology and EFs have to be adjusted in a way to allow the comparison of the actual inventory and the Gothenburg ceilings.

Changes in the activity data

As the development of mileage driven and fuels used within a country (Germany: stronger dieselisation then originally expected) is of the country's responsibility, this effect has to be excluded from any adjustment estimation.

IN-COUNTRY ANALYSIS: THE TREMOD PERSPECTIVE

INITIAL ASSUMPTION

In order to estimate the effect of NO_x, emissions resulting from the failure of the so-called Euro norms, the following procedure has been agreed by expert review teams in the last two years:

proposed amount of adjustable emissions = current AD x current EF - current AD x original EF = current AD x (current EF - original EF) = current EM - "artificial" current EM¹

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$$EM_{\text{adjustment}} = AD_{\text{current}} * EF_{\text{current}} - AD_{\text{current}} * EF_{\text{original}} = AD_{\text{current}} * (EF_{\text{current}} - EF_{\text{original}}) = EM_{\text{current}} - EM_{\text{current-artificial}}$$

with * **EM_{adjustment}**, = amount of emissions to be subtracted from National Totals * **AD_{current}**, = AD from latest TREMOD version as used for current submission * **EF_{current}**, = EF from latest TREMOD version as used for current submission * **EF_{original}**, = EF from TREMOD version used at the time NEC ceilings were set (here: TREMOD 3.1) * **EM_{current}**, = EM estimated from AD and EF from latest TREMOD version = EM reported for NFR 1.A.3.b with latest submission * **EM_{current-artificial}**, = EM estimated from AD from latest TREMOD version and EF from TREMOD version used at the time NEC ceilings were set (here: TREMOD 3.1)

APPLYING THE ORIGINAL METHODOLOGY

FRAMEWORK INFORMATION

The methodology used for estimating Germany's exhaust emissions from road transport when determining emissions ceilings of the Gothenburg Protocol (1999), was the second version of the EMEP/CORINAIR guidebook corresponding to COPERT II software. This method proposed NO_x, emission factors for

- passenger cars (PC): up to Euro 1
- light commercial vehicles (LCV2): up to Euro 1
- heavy duty vehicles (HDV): pre-EURO I only (conventional)

Back then, without better knowledge, the emission factors for the most recent standards were derived by directly applying the expected reductions in emission standards.

However, as Germany does not use COPERT for compiling its road transport emissions inventory but a national model called TREMOD, the following comparison has to be carried out between the oldest version of TREMOD still available and the version as applied for the current inventory submission (2020).

Unfortunately, the oldest TREMOD version available for such comparison is TREMOD 3.1 from 2002 ⁶⁾, including the following set of NO_x emission factors:

- passenger cars (PC): up to Euro 4
- light commercial vehicles (LCV): up to Euro 4
- heavy duty vehicles (HDV) only up to EURO V

However, as this version includes the technological development since 1999 (when the ceilings were set based on COPERT II), the results from this analysis and the adjustment proposal based upon these results are likely to slightly underestimate the effect of technological changes since 1999 and must therefore be considered conservative.

THE COMPARISON

Application of the original NO_x methodology to the current road transport background activity data

The *basic activity data* (such as over-all fuel sold and traffic mileages by vehicle type, by fuel or by Euro regulation) implemented in TREMOD 3.1 differ significantly from those of the current TREMOD version especially for the more recent years as of 2005. In addition, *specific activity data* (such as fuel consumptions per vehicle type, per fuel or per Euro regulation) strongly depend on the TREMOD version.

Within this report, Germany re-estimates the NO_x emission within the TREMOD 3.1 model. To isolate the requested information, the original TREMOD 3.1 activity data was combined with emission factors from both TREMOD 3.1 and the currently used TREMOD 6.02 (Knörr et al., 2019a) ⁷⁾.

Description of the updated methodology used

The updated methodology, used in 2019 (for NFR submission 2021) and implemented in version 6.12 of the TREMOD software, considers emission factors of

- passenger cars (PC) up to Euro 6d
- light commercial vehicles (LCV) up to Euro 6d
- heavy duty vehicles (HDV) up to EURO VI

and

- motorized two-wheelers (M2W) up to Euro 4

Comparison of emission estimates made using the original and updated methodologies

The values of NO_x emissions presented in the table below are estimated with:

- TREMOD 3.1 model equations as initial methodology

and ,

- TREMOD 6.12 equations as methodology applied for NEC submission 2021.

The activity data applied to initial (here: oldest available) and most recent methodology, are those of the latest inventory provided with NEC submission 2021.

Table 1: Resulting adjustment proposal 2020

for year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
proposed adjustment										

The following screenshots show the TREMOD 3.1 / TREMOD 6.12 implementation comparisons per vehicle type/fuel/Euro regulation.

Activity Data

- * **current:** from TREMOD 6.12, as reported with the latest inventory submission
- * **adjusted:** has to be similar to **current** AD!
- * **difference:** as only recent AD are to be used for adjustment estimations, this value must be zero!

Implied Emission Factor

- * **current:** representing the ratio of current emissions and current AD
- * **adjusted:** representing the ratio of adjusted emissions and current AD
- * **difference:** shows percentual difference

NO_x, Emissions

- * **current:** from TREMOD 6.12, as reported with the latest inventory submission
- * **adjusted:** estimated based on TREMOD 3.1 methodology and TREMOD 6.12 AD
- * **adjustment:** adjusted emissions minus current emissions
- * **difference:** percentual difference between current and adjusted emissions

Adjustment overview for years 2010 to 2019

NER Code	Fuel	Year	Activity Data			Implied Emission Factor			NO _x Emissions			
			current	adjusted	difference	current	adjusted	difference	current	adjusted	adjustment	difference
			in [TJ]		in [%]	in [kg/TJ]		in [%]	in [kg]			in [%]
1.A.3.b.i	gasoline		795.957	795.957	0%	97.55	84.99	-13%	77.644.842	67.650.906	9.993.935	-13%
1.A.3.b.i	diesel oil		529.380	529.380	0%	429.45	180.51	-63%	227.341.056	84.370.461	142.970.635	-63%
1.A.3.b.ii	gasoline		6.325	6.325	0%	255.87	214.75	-16%	1.618.432	1.358.328	260.104	-16%
1.A.3.b.ii	diesel oil		113.450	113.450	0%	476.34	134.96	-72%	54.040.533	15.311.584	38.728.949	-72%
1.A.3.b.iii	gasoline		48.844	48.844	0%	823.00	482.55	-23%	29.931.266	23.183.732	6.747.534	-23%
1.A.3.b.iii	diesel oil		566.741	566.741	0%	446.67	271.83	-39%	253.148.243	154.056.160	99.092.083	-39%
1.A.3.b.iv	gasoline		19.712	19.712	0%	113.68	188.43	48%	2.240.749	3.320.034	-1.079.285	48%
1.A.3.b TOTAL		2010	2.079.608	2.079.608	0%			0%	645.965.162	349.851.206	296.113.956	-46%
1.A.3.b.i	gasoline		794.688	794.688	0%	92.09	81.61	-11%	73.185.851	64.851.951	8.333.900	-11%
1.A.3.b.i	diesel oil		553.564	553.564	0%	434.12	159.22	-63%	248.313.791	88.138.969	160.174.832	-63%
1.A.3.b.ii	gasoline		6.118	6.118	0%	229.35	198.57	-13%	1.403.081	1.214.776	188.305	-13%
1.A.3.b.ii	diesel oil		115.967	115.967	0%	481.55	126.92	-74%	55.844.518	14.718.142	41.126.376	-74%
1.A.3.b.iii	gasoline		47.365	47.365	0%	592.65	448.99	-24%	28.071.221	21.286.323	6.884.898	-24%
1.A.3.b.iii	diesel oil		563.891	563.891	0%	419.38	244.97	-40%	231.410.271	138.136.342	93.273.929	-40%
1.A.3.b.iv	gasoline		19.289	19.289	0%	119.79	171.60	54%	2.137.602	3.299.162	-1.162.160	54%
1.A.3.b TOTAL		2011	2.100.883	2.100.883	0%			0%	632.365.736	331.625.655	300.740.081	-48%
1.A.3.b.i	gasoline		750.957	750.957	0%	85.73	78.00	-9%	64.379.994	58.577.229	5.802.765	-9%
1.A.3.b.i	diesel oil		555.245	555.245	0%	435.96	158.66	-64%	242.062.902	88.096.699	153.966.203	-64%
1.A.3.b.ii	gasoline		5.657	5.657	0%	218.93	193.15	-12%	1.238.520	1.092.662	145.859	-12%
1.A.3.b.ii	diesel oil		114.350	114.350	0%	481.91	128.17	-75%	55.106.382	13.741.354	41.365.028	-75%
1.A.3.b.iii	gasoline		50.902	50.902	0%	533.22	384.33	-28%	27.141.913	19.563.208	7.578.704	-28%
1.A.3.b.iii	diesel oil		589.585	589.585	0%	381.33	224.00	-41%	224.829.180	132.064.753	92.764.428	-41%
1.A.3.b.iv	gasoline		18.268	18.268	0%	107.43	173.28	61%	1.962.546	3.165.439	-1.202.893	61%
1.A.3.b TOTAL		2012	2.084.964	2.084.964	0%			0%	616.721.438	316.301.343	300.420.094	-49%
1.A.3.b.i	gasoline		749.114	749.114	0%	80.35	74.85	-7%	60.190.007	56.071.797	4.118.211	-7%
1.A.3.b.i	diesel oil		589.131	589.131	0%	437.14	158.71	-64%	257.533.728	93.499.010	164.034.718	-64%
1.A.3.b.ii	gasoline		5.578	5.578	0%	202.80	184.07	-9%	1.131.209	1.026.727	104.482	-9%
1.A.3.b.ii	diesel oil		118.777	118.777	0%	489.60	114.93	-76%	57.003.633	13.690.488	43.313.045	-76%
1.A.3.b.iii	gasoline		51.716	51.716	0%	509.54	369.06	-29%	26.350.969	18.420.843	7.930.126	-29%
1.A.3.b.iii	diesel oil		600.139	600.139	0%	353.06	207.93	-41%	211.807.531	124.788.469	87.019.062	-41%
1.A.3.b.iv	gasoline		18.229	18.229	0%	194.34	175.38	88%	1.902.668	3.197.038	-1.294.361	88%
1.A.3.b TOTAL		2013	2.132.883	2.132.883	0%			0%	616.078.063	316.854.371	300.223.692	-50%
1.A.3.b.i	gasoline		752.526	752.526	0%	75.03	73.09	-4%	57.215.533	54.988.921	2.216.612	-4%
1.A.3.b.i	diesel oil		626.845	626.845	0%	435.87	159.12	-63%	272.876.061	99.613.892	173.262.169	-63%
1.A.3.b.ii	gasoline		5.845	5.845	0%	190.34	176.49	-7%	1.112.584	1.031.612	80.972	-7%
1.A.3.b.ii	diesel oil		128.578	128.578	0%	475.56	110.96	-77%	61.146.575	14.267.237	46.879.338	-77%
1.A.3.b.iii	gasoline		45.143	45.143	0%	468.37	339.99	-27%	23.017.116	16.708.234	6.308.881	-27%
1.A.3.b.iii	diesel oil		672.754	672.754	0%	314.05	196.05	-38%	179.874.133	112.285.582	67.588.551	-38%
1.A.3.b.iv	gasoline		18.673	18.673	0%	109.59	179.24	78%	1.878.294	3.346.794	-1.468.499	78%
1.A.3.b TOTAL		2014	2.153.563	2.153.563	0%			0%	597.120.297	302.252.271	294.868.025	-49%
1.A.3.b.i	gasoline		715.156	715.156	0%	74.38	71.73	-4%	53.190.787	51.300.983	1.889.805	-4%
1.A.3.b.i	diesel oil		645.565	645.565	0%	426.19	159.80	-63%	275.130.233	103.163.501	171.966.732	-63%
1.A.3.b.ii	gasoline		5.793	5.793	0%	187.12	172.80	-8%	1.083.927	1.000.999	82.928	-8%
1.A.3.b.ii	diesel oil		135.306	135.306	0%	469.35	187.96	-77%	63.505.443	14.607.490	48.897.953	-77%
1.A.3.b.iii	gasoline		52.287	52.287	0%	458.96	327.99	-29%	23.997.817	17.149.448	6.848.370	-29%
1.A.3.b.iii	diesel oil		589.411	589.411	0%	266.69	187.51	-30%	157.189.676	116.529.703	40.659.973	-30%
1.A.3.b.iv	gasoline		18.459	18.459	0%	99.32	180.65	82%	1.833.362	3.334.472	-1.501.090	82%
1.A.3.b TOTAL		2015	2.161.576	2.161.576	0%			0%	575.931.265	301.877.596	274.053.670	-48%
1.A.3.b.i	gasoline		715.272	715.272	0%	79.93	76.65	-4%	50.736.567	50.535.049	201.518	0%
1.A.3.b.i	diesel oil		675.119	675.119	0%	410.36	160.76	-61%	277.041.660	108.535.230	168.506.430	-61%
1.A.3.b.ii	gasoline		5.926	5.926	0%	189.27	171.06	-9%	1.068.292	1.013.678	54.614	-5%
1.A.3.b.ii	diesel oil		144.068	144.068	0%	458.12	185.62	-77%	65.712.732	15.216.007	50.496.726	-77%
1.A.3.b.iii	gasoline		54.157	54.157	0%	424.73	308.24	-27%	23.002.109	16.893.117	6.108.992	-27%
1.A.3.b.iii	diesel oil		594.013	594.013	0%	226.31	180.97	-20%	134.431.899	107.496.262	26.935.637	-20%
1.A.3.b.iv	gasoline		18.785	18.785	0%	96.14	181.66	89%	1.805.897	3.412.476	-1.606.579	89%
1.A.3.b TOTAL		2016	2.207.339	2.207.339	0%			0%	553.799.558	302.901.820	250.897.738	-45%
1.A.3.b.i	gasoline		724.571	724.571	0%	67.66	69.88	3%	49.026.874	50.634.714	-1.607.840	3%
1.A.3.b.i	diesel oil		696.592	696.592	0%	399.65	161.95	-59%	272.126.091	112.810.721	159.315.370	-59%
1.A.3.b.ii	gasoline		6.186	6.186	0%	171.15	167.18	-2%	1.058.799	1.034.211	24.588	-2%
1.A.3.b.ii	diesel oil		153.294	153.294	0%	424.66	183.89	-76%	66.093.930	15.925.216	50.168.714	-76%
1.A.3.b.iii	gasoline		53.382	53.382	0%	378.80	286.71	-23%	19.793.561	15.304.828	4.488.733	-23%
1.A.3.b.iii	diesel oil		598.263	598.263	0%	195.02	175.92	-10%	116.671.141	105.246.508	11.424.633	-10%
1.A.3.b.iv	gasoline		19.160	19.160	0%	92.83	183.39	98%	1.778.674	3.513.787	-1.735.114	98%
1.A.3.b TOTAL		2017	2.251.437	2.251.437	0%			0%	525.549.410	304.469.906	221.079.424	-42%
1.A.3.b.i	gasoline		699.027	699.027	0%	64.42	68.36	6%	45.032.556	47.786.817	-2.753.820	6%
1.A.3.b.i	diesel oil		666.074	666.074	0%	371.66	163.30	-56%	247.595.063	108.768.604	138.826.459	-56%
1.A.3.b.ii	gasoline		6.315	6.315	0%	158.22	168.11	1%	999.199	1.011.138	-11.939	1%
1.A.3.b.ii	diesel oil		154.259	154.259	0%	384.71	182.69	-73%	69.344.525	15.840.310	53.504.215	-73%
1.A.3.b.iii	gasoline		51.634	51.634	0%	399.75	263.53	-15%	15.993.526	13.607.106	2.386.420	-15%
1.A.3.b.iii	diesel oil		585.186	585.186	0%	171.18	172.10	1%	188.173.337	188.710.869	-537.532	1%
1.A.3.b.iv	gasoline		18.497	18.497	0%	89.66	184.61	106%	1.658.568	3.414.767	-1.756.209	106%
1.A.3.b TOTAL		2018	2.180.993	2.180.993	0%			0%	478.758.206	291.139.612	179.618.593	-38%
1.A.3.b.i	gasoline		704.691	704.691	0%	62.30	68.45	10%	43.901.941	48.238.025	-4.336.084	10%
1.A.3.b.i	diesel oil		683.841	683.841	0%	345.81	165.07	-52%	229.566.088	109.582.982	119.983.106	-52%
1.A.3.b.ii	gasoline		6.683	6.683	0%	146.08	153.25	5%	976.219	1.024.150	-47.931	5%
1.A.3.b.ii	diesel oil		159.183	159.183	0%	347.42	181.90	-71%	55.303.335	16.221.445	39.081.890	-71%
1.A.3.b.iii	gasoline		52.939	52.939	0%	274.41	247.81	-10%	14.527.012	13.118.578	1.408.434	-10%
1.A.3.b.iii	diesel oil		595.913	595.913	0%	153.35	169.17	10%	91.380.700	100.809.376	-9.428.676	10%
1.A.3.b.iv	gasoline		18.750	18.750	0%	86.05	186.83	117%	1.613.450	3.502.941	-1.889.491	117%
1.A.3.b TOTAL		2019	2.202.000	2.202.000	0%			0%	437.268.744	292.497.497	144.771.248	-33%

Adjustment details for 2000

MFR Code	Fuel	Activity Data			Implied Emission Factor			M5, Emissions					
		current	adjusted	difference in %	current	adjusted	difference in %	current	adjusted	difference in %			
1.A.3.3.a - Passenger Cars	Gasoline	pre-Euro	13,686	13,686	0%	588.76	514.25	-12%	7,965,060	6,986,917	-858,143	-10%	
		Euro 1	76,561	76,561	0%	136.56	237.71	-30%	35,915,905	10,189,282	-7,716,663	-60%	
		Euro 2	96,425	96,425	0%	172.19	135.03	-22%	16,590,020	10,020,026	-3,588,996	-22%	
		Euro 3	133,139	133,139	0%	58.51	70.18	-20%	7,790,384	9,343,433	1,553,128	20%	
		Euro 4	444,991	444,991	0%	42.27	42.19	0%	18,911,389	10,773,529	-37,855	-0%	
		Euro 5	31,234	31,234	0%	18.61	42.19	121%	581,142	1,617,737	736,595	121%	
	Gasoline total	795,957	795,957	0%	77,448.62	84,599	10%	1,130,336	3,890,335	1,550,335	135%		
	Diesel Oil	Euro 1	1,916	1,916	0%	314.13	264.56	-15%	583,160	587,254	4,095	0%	
		Euro 2	10,508	10,508	0%	296.82	295.17	-1%	3,068,428	2,741,387	-326,121	-11%	
		Euro 3	134,025	134,025	0%	542.94	176.84	-67%	72,646,173	23,529,276	-48,716,957	-66%	
		Euro 4	279,154	279,154	0%	384.37	140.58	-63%	107,299,180	30,243,811	-88,055,348	-83%	
		Euro 5	53,547	53,547	0%	434.70	140.58	-68%	23,276,735	7,527,706	-15,749,028	-68%	
		Euro 6	334	334	0%	257.62	140.58	-45%	85,044	45,953	-39,091	-45%	
	1.A.3.3.b - Light Duty Vehicles (LDVs)	Gasoline	Diesel oil total	509,380	509,380	0%	49.85	140.58	-65%	237,341,096	84,970,681	-142,136,635	-62%
Pkcs Total			1,345,317	1,345,317	0%	238.92	155.14	-56%	364,958,398	152,347,367	-152,347,316	-56%	
pre-Euro			1,327	1,329	0%	67.59	645.95	-7%	783,320	686,617	-21,617	-3%	
Euro 1			387	387	0%	80.18	297.39	-6%	368,989	186,026	-208,968	-6%	
Euro 2			1,783	1,783	0%	254.75	184.41	-30%	368,048	256,917	-111,131	-30%	
Euro 3			886	886	0%	82.47	80.63	-10%	70,631	77,625	6,994	10%	
Euro 4			2,420	2,420	0%	36.32	44.50	-24%	87,987	180,679	26,772	24%	
Euro 5			49	49	0%	15.34	44.50	193%	750	2,218	1,468	193%	
Euro 6			0	0	0%	0	0	0%	0	0	0	0%	
Gasoline total			6,345	6,345	0%	255.87	254.25	-1%	1,618,632	1,398,328	-268,194	-16%	
1.A.3.3.c - Heavy Duty Vehicles (HDVs)	Diesel Oil	pre-Euro	4,876	4,876	0%	425.99	389.79	-9%	2,077,142	1,495,983	-881,288	-28%	
		Euro 1	5,989	5,989	0%	358.99	276.24	-40%	2,369,098	1,289,630	-1,089,468	-46%	
		Euro 2	13,130	13,130	0%	338.78	153.18	-54%	4,423,380	2,513,721	-1,909,659	-43%	
		Euro 3	33,249	33,249	0%	531.91	150.58	-72%	17,655,083	5,086,790	-12,568,123	-72%	
		Euro 4	54,581	54,581	0%	491.42	88.69	-82%	36,821,835	4,840,722	-21,901,114	-62%	
		Euro 5	1,629	1,629	0%	427.50	88.69	-79%	696,296	144,434	-651,772	-79%	
LDVs total	113,650	113,650	0%	416.34	134.96	-72%	54,040,533	15,591,584	-38,728,489	-72%			
1.A.3.3.d - Heavy Duty Vehicles - Buses	Diesel Oil	LDVs total	119,175	119,175	0%	464.76	136.18	-70%	55,658,966	16,669,953	-38,989,053	-70%	
		pre-Euro	3,382	3,382	0%	1986.25	1828.76	-6%	3,674,087	3,452,644	-221,423	-6%	
		Euro 1	2,826	2,826	0%	749.41	752.14	0%	2,117,871	2,125,596	7,723	0%	
		Euro 2	10,182	10,182	0%	801.86	640.47	-20%	8,140,119	6,535,231	-1,604,888	-20%	
		Euro 3	15,690	15,690	0%	633.22	437.25	-30%	10,066,776	7,269,289	-2,797,567	-30%	
		Euro 4	54,581	54,581	0%	443.63	351.65	-22%	2,460,915	1,951,527	-508,408	-22%	
	Buses Total	Euro 5	10,305	10,305	0%	337.28	182.33	-46%	3,482,417	1,882,544	-1,599,873	-46%	
		Euro 6	0	0	0%	0	0	0%	0	0	0	0%	
		Gasoline total	40,044	40,044	0%	623.80	482.35	-23%	29,931,266	25,183,572	-4,747,534	-23%	
		pre-Euro	10,185	10,185	0%	1046.15	787.37	-26%	10,510,623	7,754,138	-2,756,486	-26%	
		Euro 1	5,677	5,677	0%	759.59	524.75	-23%	4,421,383	3,287,691	-993,792	-23%	
		Euro 2	30,860	30,860	0%	718.22	578.78	-30%	31,255,520	20,224,619	-11,029,907	-30%	
	1.A.3.3.e - Heavy Duty Vehicle - Trucks & Lorries	Diesel Oil	Euro 3	102,023	102,023	0%	636.28	374.48	-41%	181,526,182	10,571,232	-170,954,950	-41%
			Euro 4	69,635	69,635	0%	368.94	181.62	-51%	37,143,887	20,149,622	-7,470,232	-51%
Euro 5			283,934	283,934	0%	278.42	151.65	-45%	79,540,643	42,115,887	-36,424,746	-45%	
Euro 6			0	0	0%	0	0	0%	0	0	0	0%	
Trucks Total			566,741	566,741	0%	484.67	271.83	-39%	293,148,243	154,096,160	-99,052,083	-39%	
pre-Euro			7,973	7,973	0%	122.90	149.16	22%	372,721	1,189,383	216,582	22%	
1.A.3.3.f - Motorized Two-Wheelers (M2Ws)	Gasoline	Euro 1	5,231	5,231	0%	123.77	185.74	34%	647,479	887,039	219,568	34%	
		Euro 2	3,587	3,587	0%	141.16	194.21	30%	586,262	686,661	196,399	30%	
		Euro 3	2,000	2,000	0%	39.11	194.21	387%	116,190	587,032	470,834	387%	
		Euro 4	0	0	0%	0	0	0%	0	0	0	0%	
		Euro 5	0	0	0%	0	0	0%	0	0	0	0%	
		M2Ws Total	79,752	79,752	0%	113.88	168.43	48%	2,240,149	3,340,634	1,079,485	48%	
1.A.3.3 - Road Transport	Total	2,079,688	2,079,688	0%	219.62	168.23	-46%	645,965,142	369,851,296	-296,113,956	-46%		

Adjustment details for 2011

Table 1.1.3.a.1 - Light-Duty Vehicle Fleet											
NFR Code	Fuel	Activity Data			Implied Emission Factor			M3 Emissions			difference in %
		current in [t]	adjusted in [t]	difference in %	current in [g/t]	adjusted in [g/t]	difference in %	current in [kg]	adjusted in [kg]	adjustment in [kg]	
1.A.3.a.1 - Gasoline	pre-Euro	13,063	13,063	0%	590.96	534.69	-9%	7,728,235	6,979,435	-748,801	-9%
	Euro 1	61,579	61,579	0%	347.86	240.16	-31%	21,540,430	14,884,561	-6,655,870	-31%
	Euro 2	87,083	87,083	0%	178.38	136.58	-24%	15,820,983	11,893,792	-3,927,191	-24%
	Euro 3	124,330	124,330	0%	61.64	71.52	16%	7,683,891	8,881,671	1,227,780	16%
	Euro 4	442,185	442,185	0%	43.04	43.68	0%	19,384,934	19,376,439	-8,495	-0%
	Euro 5	65,057	65,057	0%	18.58	43.68	135%	1,227,381	2,885,636	1,658,255	135%
	Euro 6	1	1	0%	25.05	43.68	68%	0	17	20	11
Gasoline total		754,048	754,048	0%	92.09	81.65	-11%	73,465,851	64,851,951	-8,333,900	-11%
1.A.3.a.1 - Diesel Oil	pre-Euro	1,711	1,711	0%	314.93	284.56	-10%	531,683	488,551	-43,132	-8%
	Euro 1	9,426	9,426	0%	297.32	196.55	-34%	2,845,115	2,239,987	-605,119	-21%
	Euro 2	42,514	42,514	0%	407.83	239.27	-40%	17,384,449	9,321,596	-7,962,853	-46%
	Euro 3	121,429	121,429	0%	555.36	176.55	-68%	67,437,053	21,181,366	-46,255,687	-68%
	Euro 4	284,943	284,943	0%	308.08	143.48	-43%	162,817,881	30,089,755	-132,728,126	-43%
	Euro 5	113,047	113,047	0%	435.12	143.48	-67%	49,535,965	16,332,974	-33,202,994	-67%
	Euro 6	635	635	0%	233.59	143.45	-40%	180,582	89,754	-90,828	-48%
Diesel Oil total		553,546	553,546	0%	434.52	159.63	-63%	248,313,791	88,138,595	-152,174,833	-63%
Pdx total		1,348,252	1,348,252	0%	232.52	115.47	-51%	311,699,442	152,996,546	-158,696,737	-51%
1.A.3.a.1 - Gasoline	pre-Euro	1,084	1,084	0%	582.24	580.56	0%	682,234	780,373	98,139	14%
	Euro 1	283	283	0%	88.74	194.47	22%	84,339	86,148	1,810	2%
	Euro 2	1,184	1,184	0%	206.66	191.66	-7%	370,529	223,189	-147,340	-39%
	Euro 3	783	783	0%	85.97	85.39	-1%	67,320	74,732	7,391	11%
	Euro 4	2,562	2,562	0%	37.38	46.51	24%	95,786	119,162	23,376	24%
	Euro 5	241	241	0%	16.13	46.51	189%	3,082	11,180	7,308	189%
	Euro 6	0	0	0%	16.13	46.51	289%	1	3	2	283%
Gasoline total		6,110	6,110	0%	229.35	186.57	-18%	5,481,081	1,274,716	-4,186,365	-76%
1.A.3.a.1 - Light-Duty Vehicles (LDVs)	pre-Euro	3,985	3,985	0%	425.99	375.19	-10%	5,698,280	1,226,862	-4,471,418	-78%
	Euro 1	4,781	4,781	0%	395.71	235.24	-40%	1,894,350	1,030,425	-863,925	-45%
	Euro 2	10,916	10,916	0%	338.36	183.29	-46%	3,644,452	2,091,164	-1,553,288	-42%
	Euro 3	28,076	28,076	0%	543.53	150.54	-72%	15,027,249	4,346,670	-11,290,579	-72%
	Euro 4	60,832	60,832	0%	401.82	89.26	-62%	30,025,914	5,429,811	-24,604,104	-62%
	Euro 5	6,609	6,609	0%	144.95	89.26	-38%	2,300,198	684,364	-2,336,835	-38%
	Euro 6	0	0	0%	155.21	89.26	-42%	16	8	-6	-42%
LDVs total		115,967	115,967	0%	485.55	126.92	-74%	55,848,558	15,768,142	-41,176,316	-74%
LDVs total		122,085	122,085	0%	486.92	130.55	-72%	17,247,399	15,932,958	-1,314,441	-8%
1.A.3.a.1 - Diesel Oil	pre-Euro	2,620	2,620	0%	1062.63	1015.76	-4%	2,836,189	2,671,331	-164,758	-6%
	Euro 1	2,250	2,250	0%	752.91	571.48	-24%	1,693,787	1,096,287	-3,418	-0%
	Euro 2	9,074	9,074	0%	804.17	583.29	-26%	7,287,125	5,037,587	-1,449,538	-20%
	Euro 3	16,187	16,187	0%	623.46	457.38	-26%	9,425,890	6,689,064	-2,616,827	-28%
	Euro 4	51,531	51,531	0%	448.80	351.91	-22%	23,263,338	15,881,274	-8,064,064	-32%
	Euro 5	13,266	13,266	0%	336.60	182.62	-46%	4,569,052	2,486,396	-2,062,653	-45%
	Euro 6	0	0	0%	0	0	0%	0	0	0	0%
Diesel Oil total		87,465	87,465	0%	592.85	448.99	-24%	28,071,221	21,296,323	-6,804,898	-24%
Diesel Oil total		4,044	4,044	0%	1039.67	783.98	-25%	3,305,423	6,144,933	2,839,510	86%
1.A.3.a.1 - Heavy Duty Vehicles (HDVs)	Euro 1	29,274	29,274	0%	758.16	520.04	-32%	3,208,422	2,516,377	-772,044	-23%
	Euro 2	4,388	4,388	0%	817.97	504.31	-38%	23,947,723	15,233,223	-8,714,499	-36%
	Euro 3	121,581	121,581	0%	631.56	372.68	-41%	17,271,520	45,792,437	28,520,916	165%
	Euro 4	68,430	68,430	0%	393.25	182.62	-53%	22,977,784	35,669,685	12,691,901	55%
	Euro 5	342,175	342,175	0%	279.30	152.63	-45%	95,549,429	62,939,347	-32,610,082	-34%
	Euro 6	0	0	0%	0	0	0%	0	0	0	0%
	Euro 7	4,044	4,044	0%	1039.67	783.98	-25%	3,305,423	6,144,933	2,839,510	86%
HDVs total		563,891	563,891	0%	478.38	244.97	-48%	231,493,271	138,136,342	-93,257,429	-40%
HDVs total		7,389	7,389	0%	122.96	150.24	22%	965,588	1,110,176	201,588	22%
1.A.3.a.1 - Two-Wheelers (M2Vs)	Euro 1	4,085	4,085	0%	124.72	180.26	32%	599,299	880,547	209,248	35%
	Euro 2	3,544	3,544	0%	137.85	194.58	41%	488,552	689,683	201,851	41%
	Euro 3	3,560	3,560	0%	39.55	148.58	382%	140,563	690,634	550,286	382%
	Euro 4	0	0	0%	0	0	0%	0	0	0	0%
	Euro 5	0	0	0%	0	0	0%	0	0	0	0%
	Euro 6	0	0	0%	0	0	0%	0	0	0	0%
	Euro 7	19,819	19,819	0%	118.79	171.64	54%	2,137,082	3,299,152	1,162,069	54%
M2Vs total		19,819	19,819	0%	118.79	171.64	54%	2,137,082	3,299,152	1,162,069	54%
1.A.3.a.1 - Road Transport Total		2,160,883	2,160,883	0%	305.90	157.85	-48%	632,365,736	331,625,635	-300,740,891	-47%

Adjustment details for 2023

NFR Code	Fuel	Activity Data			Implied Emission Factor			NO _x Emissions					
		current	adjusted	difference	current	adjusted	difference	current	adjusted	difference			
		in [t]	in [t]	in [%]	in [g/t]	in [g/t]	in [%]	in [kg]	in [kg]	in [%]			
1.A.3.a.i. Passenger Cars	Gasoline	pre-Cars	11,581	11,581	0%	607.72	635.38	-52%	7,035,041	6,189,785	-845,256	-12%	
		Car 1	47,487	47,487	0%	348.56	341.62	-31%	16,571,746	11,426,129	-5,145,617	-31%	
		Car 2	72,781	72,781	0%	194.27	137.82	-25%	13,487,749	10,035,380	-3,452,369	-26%	
		Car 3	189,443	189,443	0%	63.89	72.62	14%	6,927,963	7,875,172	947,209	14%	
		Car 4	489,541	489,541	0%	45.39	45.13	-1%	18,541,881	18,436,736	-105,145	-1%	
		Car 5	181,961	181,961	0%	18.61	45.13	143%	1,887,355	4,681,311	2,793,956	143%	
	Car 6	282	282	0%	25.05	45.13	74%	7,339	12,736	5,396	74%		
	Gasoline total	750,567	750,567	0%	85.73	78.88	-8%	64,379,964	58,577,229	-5,802,735	-9%		
	Diesel Oil	pre-Cars	1,487	1,487	0%	311.98	284.56	-9%	463,963	383,872	-80,091	-9%	
		Car 1	6,660	6,660	0%	267.79	246.44	-8%	1,980,364	1,771,787	-208,577	-11%	
Car 2		33,967	33,967	0%	406.82	279.27	-40%	13,887,432	7,445,646	-6,441,787	-40%		
Car 3		183,539	183,539	0%	564.82	176.63	-69%	58,389,037	18,434,837	-39,954,200	-69%		
1.A.3.b.i. Heavy Duty Vehicles (HDV)	Gasoline	Car 4	234,943	234,943	0%	398.41	146.46	-62%	91,724,190	34,488,997	-57,235,193	-62%	
		Car 5	173,112	173,112	0%	434.89	146.46	-66%	75,284,364	25,353,375	-49,930,989	-66%	
		Car 6	1,557	1,557	0%	259.84	146.46	-44%	484,664	220,086	-264,578	-44%	
		Diesel oil total	555,245	555,245	0%	455.96	158.66	-64%	242,962,982	88,096,639	-154,866,343	-64%	
		FCs Total	1,306,262	1,306,262	0%	234.61	152.29	-35%	386,442,896	146,673,867	-239,769,029	-35%	
		Diesel Oil	pre-Cars	962	962	0%	632.38	645.95	2%	607,779	621,146	13,417	2%
	Car 1		232	232	0%	803.24	183.22	-65%	199,985	70,295	-129,691	-61%	
	Car 2		989	989	0%	271.16	195.74	-28%	268,134	133,538	-134,596	-28%	
	Car 3		835	835	0%	89.38	98.33	10%	14,623	82,082	7,459	10%	
	1.A.3.b.ii. Heavy Duty Vehicles (HDV)	Gasoline	Car 4	2,030	2,030	0%	38.49	47.58	24%	78,155	96,691	18,536	24%
Car 5			610	610	0%	16.36	47.58	182%	9,941	29,011	19,069	182%	
Car 6			0	0	0%	15.37	47.58	210%	2	6	4	210%	
Gasoline total			5,657	5,657	0%	218.93	193.15	-12%	1,238,520	1,692,662	454,142	37%	
Diesel Oil			pre-Cars	3,281	3,281	0%	424.46	386.79	-9%	1,368,754	1,362,093	-6,661	-0%
			Car 1	3,666	3,666	0%	398.34	276.24	-30%	1,445,960	1,187,634	-258,326	-18%
		Car 2	8,479	8,479	0%	336.40	133.39	-40%	2,852,325	1,639,772	-1,212,553	-43%	
		Car 3	23,785	23,785	0%	558.53	150.44	-73%	13,050,281	3,546,082	-9,504,199	-73%	
Diesel Oil		Car 4	59,485	59,485	0%	494.22	89.85	-82%	29,369,870	5,337,395	-24,032,475	-82%	
		Car 5	15,964	15,964	0%	442.70	89.85	-80%	7,040,461	1,420,906	-5,619,555	-80%	
	Car 6	1	1	0%	15.14	89.85	-81%	122	72	-50	-41%		
	Diesel oil total	114,350	114,350	0%	485.91	120.17	-75%	55,186,382	13,741,354	-41,445,028	-75%		
1.A.3.b.iii. Motorized Buses	Gasoline	LDVs Total	129,088	129,088	0%	485.91	120.17	-75%	55,186,382	13,741,354	-41,445,028	-75%	
		pre-Cars	1,205	1,205	0%	1093.45	1119.45	4%	1,410,640	1,352,283	-58,357	-4%	
		Car 1	1,245	1,245	0%	727.34	731.15	1%	1,017,476	1,017,184	-292	-0%	
		Car 2	7,789	7,789	0%	703.45	643.34	-9%	5,085,091	4,597,478	-487,613	-9%	
		Car 3	14,483	14,483	0%	629.94	457.61	-27%	9,073,137	6,889,744	-2,183,393	-24%	
		Car 4	5,331	5,331	0%	458.10	361.85	-21%	2,642,179	1,675,777	-966,402	-37%	
	Diesel Oil	Car 5	20,752	20,752	0%	347.84	182.99	-47%	7,219,563	3,787,467	-3,432,096	-48%	
		Car 6	73	73	0%	64.52	182.99	286%	3,961	13,295	9,334	236%	
		Buses Total	50,962	50,962	0%	533.22	384.33	-28%	27,141,913	19,945,288	-7,196,625	-27%	
		Trucks Total	589,585	589,585	0%	1095.95	788.02	-21%	7,177,543	5,252,346	-1,925,198	-27%	
1.A.3.b.iv. Heavy Duty Trucks & Lorries	Gasoline	Car 1	3,030	3,030	0%	748.70	576.47	-23%	2,721,320	2,071,181	-650,215	-24%	
		Car 2	23,577	23,577	0%	811.27	590.53	-27%	19,290,263	12,915,855	-7,374,408	-38%	
		Car 3	96,725	96,725	0%	634.65	370.21	-42%	61,387,137	36,880,665	-24,506,472	-40%	
		Car 4	59,550	59,550	0%	366.59	159.44	-37%	19,862,660	14,888,017	-4,974,643	-25%	
		Car 5	485,981	485,981	0%	381.24	152.99	-60%	114,149,055	61,605,577	-52,543,478	-46%	
		Car 6	2,380	2,380	0%	0	0	0%	188,447	360,323	171,876	221%	
	Diesel Oil	Trucks Total	589,585	589,585	0%	381.33	224.69	-41%	224,829,180	132,064,753	-92,764,427	-41%	
		pre-Cars	6,780	6,780	0%	122.76	151.03	23%	822,530	1,011,520	188,991	23%	
		Car 1	4,386	4,386	0%	124.61	171.39	38%	536,615	738,050	201,435	38%	
		Car 2	3,287	3,287	0%	136.22	184.55	45%	445,087	636,853	191,766	43%	
1.A.3.b.v. Two-Wheelers (Mopeds)	Gasoline	Car 3	3,984	3,984	0%	38.66	184.55	382%	18,386	778,616	760,230	382%	
		Car 4	0	0	0%	0	0	0%	0	0	0	0%	
		Car 5	0	0	0%	0	0	0%	0	0	0	0%	
		LDVs Total	18,268	18,268	0%	107.43	173.28	61%	1,982,546	3,165,439	1,182,893	61%	
		1.A.3.b. Road Transport	Total	2,084,964	2,084,964	0%	295.79	151.71	-49%	616,721,438	396,381,343	-220,340,094	-49%

Adjustment details for 2023

Table 1.1.3.a.i. Passenger Cars												
NFR Code	Fuel	Activity Data			Implied Emission Factor			NO _x Emissions				
		current	adjusted	difference	current	adjusted	difference	current	adjusted	difference		
		in [t]	in [t]	in [%]	in [g/t]	in [g/t]	in [%]	in [kg]	in [kg]	in [%]		
1.A.3.a.i. Passenger Cars	Gasoline	pre-Cars	115,880	115,880	0%	618.27	649.35	-5%	7,011,641	6,967,452	-44,189	-0%
		Car 1	37,743	37,743	0%	353.78	341.68	-3%	13,362,966	9,129,436	-4,233,530	-32%
		Car 2	62,680	62,680	0%	188.93	139.33	-27%	11,889,922	8,722,244	-3,167,678	-27%
		Car 3	97,782	97,782	0%	66.38	73.19	10%	6,481,618	7,156,920	675,302	10%
		Car 4	397,911	397,911	0%	47.22	46.52	-1%	18,790,345	18,589,937	-200,407	-1%
		Car 5	138,063	138,063	0%	18.60	46.52	150%	2,583,150	6,439,691	3,856,541	150%
	Car 6	2,714	2,714	0%	25.99	46.52	79%	70,526	126,237	55,711	79%	
	Gasoline total	1,613,116	1,613,116	0%	88.35	74.85	-16%	68,190,887	56,671,737	-11,519,150	-17%	
	Diesel Oil	pre-Cars	1,389	1,389	0%	312.32	284.56	-9%	463,963	383,872	-80,091	-9%
		Car 1	6,660	6,660	0%	268.42	246.79	-11%	1,979,472	1,640,688	-338,784	-17%
Car 2		28,437	28,437	0%	406.84	279.91	-40%	11,563,522	6,253,531	-5,309,991	-46%	
Car 3		182,795	182,795	0%	574.33	176.67	-69%	53,284,956	16,579,373	-36,705,583	-69%	
Car 4		222,583	222,583	0%	393.55	149.27	-62%	87,589,471	33,225,566	-54,363,905	-62%	
Car 5		233,786	233,786	0%	435.42	149.27	-66%	101,787,275	34,884,788	-66,902,487	-66%	
Diesel oil total	589,131	589,131	0%	437.14	158.71	-64%	257,533,128	83,899,619	-173,633,509	-64%		
FCs Total	1,338,245	1,338,245	0%	237.49	151.77	-35%	317,723,135	140,571,356	-177,151,779	-35%		
1.A.3.a.ii. Heavy Duty Vehicles (LDVs)	Gasoline	pre-Cars	981	981	0%	633.81	645.95	2%	608,320	621,146	12,826	2%
		Car 1	194	194	0%	803.24	183.22	-65%	167,281	59,528	-107,753	-65%
		Car 2	836	836	0%	274.42	193.15	-21%	229,520	188,285	-41,235	-18%
		Car 3	784	784	0%	52.66	193.15	36%	72,691	79,780	7,089	10%
		Car 4	1,889	1,889	0%	43.70	48.89	13%	77,284	82,833	5,549	7%
		Car 5	965	965	0%	16.37	48.89	183%	15,187	47,268	32,081	183%
	Car 6	1	1	0%	17.60	48.89	176%	26	72	46	176%	
	Gasoline total	5,578	5,578	0%	262.86	184.67	-30%	1,137,299	1,692,727	555,428	49%	
	Diesel Oil	pre-Cars	2,744	2,744	0%	424.37	386.79	-9%	1,168,757	1,162,093	-6,664	-0%
		Car 1	2,945	2,945	0%	398.34	276.24	-30%	1,166,762	934,596	-232,166	-20%
Car 2		6,982	6,982	0%	336.92	133.39	-40%	2,340,147	1,350,674	-989,473	-42%	
Car 3		20,421	20,421	0%	558.53	150.44	-73%	11,437,995	3,070,913	-8,367,082	-73%	
Car 4		55,887	55,887	0%	497.72	90.45	-82%	27,775,440	5,040,416	-22,735,024	-82%	
Car 5		29,024	29,024	0%	441.97	90.45	-80%	13,181,325	2,687,964	-10,493,361	-80%	
Car 6	41	41	0%	15.126	90.45	-80%	6,160	2,688	-3,472	-57%		
Diesel oil total	118,777	118,777	0%	488.66	124.94	-75%	57,083,513	13,741,354	-43,342,159	-75%		
LDVs Total	124,354	124,354	0%	488.66	124.94	-75%	57,083,513	13,741,354	-43,342,159	-75%		
1.A.3.a.iii. Heavy Duty Vehicles (HDVs)	Diesel Oil	pre-Cars	1,172	1,172	0%	1066.68	1119.23	5%	1,249,029	1,194,143	-54,886	-4%
		Car 1	1,054	1,054	0%	727.38	750.99	3%	766,620	731,181	-35,439	-4%
		Car 2	6,884	6,884	0%	704.97	643.48	-9%	5,334,980	4,779,271	-555,709	-10%
		Car 3	20,421	20,421	0%	632.43	512.87	-19%	15,822,588	12,980,980	-2,841,608	-18%
		Car 4	6,986	6,986	0%	888.55	812.70	-8%	2,279,061	1,730,214	-548,846	-24%
		Car 5	24,096	24,096	0%	358.88	183.44	-49%	8,435,643	4,420,173	-4,015,470	-48%
	Car 6	537	537	0%	44.76	183.44	316%	30,407	86,672	56,265	185%	
	Diesel total	51,776	51,776	0%	509.54	360.06	-29%	26,390,969	19,620,883	-7,770,086	-29%	
	HDVs Total	5,083	5,083	0%	1,070.52	737.35	-31%	6,072,190	4,322,888	-1,749,302	-29%	
	Gasoline	pre-Cars	1,285	1,285	0%	743.27	587.27	-21%	2,170,945	1,650,969	-519,976	-24%
Car 1		18,444	18,444	0%	818.17	533.47	-34%	15,089,981	9,489,975	-5,600,006	-37%	
Car 2		75,130	75,130	0%	633.53	367.33	-42%	47,587,440	27,747,380	-19,839,060	-42%	
Car 3		42,781	42,781	0%	366.90	287.37	-22%	16,936,887	12,280,770	-4,656,117	-27%	
Car 4		236,998	236,998	0%	361.70	121.67	-66%	123,145,324	46,776,746	-76,368,578	-62%	
Car 5		19,020	19,020	0%	93.87	152.65	62%	913,082	2,750,630	1,837,548	201%	
Gasoline total	680,139	680,139	0%	516.36	287.93	-44%	211,857,331	124,180,449	-87,676,882	-41%		
FCs Total	6,362	6,362	0%	123.57	151.79	23%	181,736	964,179	782,443	23%		
1.A.3.b.i. Motorized Two-Wheelers (M2Ws)	Gasoline	pre-Cars	4,013	4,013	0%	125.11	175.15	41%	582,073	694,880	112,807	30%
Car 1		3,382	3,382	0%	132.24	195.68	49%	435,668	645,804	209,136	48%	
Car 2		4,682	4,682	0%	39.81	195.68	381%	181,610	882,175	710,565	381%	
Car 3		0	0	0%	0	0	0%	0	0	0	0%	
Car 4		0	0	0%	0	0	0%	0	0	0	0%	
M2Ws Total	19,229	19,229	0%	164.34	175.18	6%	1,962,685	5,181,678	3,218,993	68%		
1.A.3.b. Road Transport Total		2,132,083	2,132,083	0%	288.88	145.35	-50%	616,079,063	390,854,331	-225,224,732	-37%	

Adjustment details for 2024

NFR Code	Fuel	Activity Data			Implied Emission Factor			NO _x Emissions					
		current	adjusted	difference	current	adjusted	difference	current	adjusted	adjustment	difference		
		in [t]	in [t]	in [%]	in [g/t]	in [g/t]	in [%]	in [kg]	in [kg]	in [kg]	in [kg]		
1.A.3.b.i. - Passenger Cars	Gasoline	pre-Cars	11,647	11,647	0%	812.37	844.11	-11%	7,132,688	6,337,484	-795,844	-11%	
		Car 1	30,667	30,667	0%	368.77	243.93	-32%	11,082,246	7,480,541	-3,621,706	-32%	
		Car 2	53,486	53,486	0%	198.58	140.31	-29%	10,514,477	7,584,432	-3,018,844	-29%	
		Car 3	87,374	87,374	0%	65.31	73.93	7%	6,955,585	6,459,757	-494,828	7%	
		Car 4	387,759	387,759	0%	45.16	47.80	-3%	19,093,585	19,536,099	423,515	-3%	
		Car 5	171,270	171,270	0%	18.59	47.80	151%	3,183,252	0,187,581	-5,004,393	151%	
	Car 6	10,315	10,315	0%	25.97	47.80	84%	267,855	433,096	225,248	84%		
	Gasoline total	752,526	752,526	0%	36.80	73.89	-4%	57,215,533	54,998,921	-2,216,612	-4%		
	Diesel Oil	pre-Cars	1,341	1,341	0%	311.73	284.66	-5%	417,967	365,246	-52,722	-5%	
		Car 1	4,992	4,992	0%	298.92	267.29	-11%	1,482,264	1,387,643	-94,621	-11%	
Car 2		23,934	23,934	0%	408.71	220.45	-46%	9,734,484	5,276,480	-4,458,004	-46%		
Car 3		82,749	82,749	0%	585.53	176.81	-69%	48,451,830	14,796,245	-33,655,585	-69%		
1.A.3.b.ii. - Light Duty Vehicles (LDVs)	Gasoline	pre-Cars	1,217	1,217	0%	207.27	151.77	-26%	83,917,680	32,059,973	-51,857,706	-62%	
		Car 1	285,011	285,011	0%	436.38	151.77	-65%	124,721,396	43,370,380	-81,343,096	-65%	
		Car 2	16,081	16,081	0%	259.34	151.77	-41%	4,170,580	2,440,686	-1,729,814	-41%	
		Diesel oil total	626,045	626,045	0%	415.87	159.12	-62%	272,876,061	99,613,892	-173,262,169	-62%	
		Flx Total	1,338,571	1,338,571	0%	238.44	176.15	-53%	588,891,594	154,612,813	-434,278,781	-53%	
		Diesel Oil	pre-Cars	986	986	0%	632.14	645.95	2%	160,583	176,124	15,541	2%
	Car 1		173	173	0%	968.27	389.96	-64%	150,074	53,575	-96,499	-64%	
	Car 2		748	748	0%	204.73	287.11	21%	212,888	154,839	-58,029	-21%	
	Car 3		771	771	0%	98.62	185.21	7%	75,992	81,070	5,078	7%	
	1.A.3.b.iii. - Heavy Duty Vehicles (HDVs)	Gasoline	Car 4	1,087	1,087	0%	43.47	50.15	15%	81,139	83,618	2,479	15%
Car 5			1,374	1,374	0%	17.11	50.15	183%	23,517	68,918	45,401	183%	
Car 6			17	17	0%	18.06	50.15	179%	212	670	657	179%	
Gasoline total			5,845	5,845	0%	198.34	176.49	-2%	1,112,584	1,031,852	-88,732	-2%	
Diesel Oil			pre-Cars	2,537	2,537	0%	428.16	386.79	-21%	1,985,919	776,259	-1,209,659	-21%
			Car 1	2,589	2,589	0%	393.82	276.25	-40%	987,136	539,898	-447,328	-40%
		Car 2	6,087	6,087	0%	338.91	133.25	-42%	1,385,995	1,180,889	-205,126	-42%	
		Car 3	18,220	18,220	0%	571.75	150.58	-74%	10,417,076	2,742,056	-7,675,020	-74%	
1.A.3.b.iv. - Heavy Duty Vehicles (HDVs) - Trucks & Lorries		Diesel Oil	Car 4	52,361	52,361	0%	498.70	91.69	-82%	26,164,486	4,703,746	-21,460,740	-82%
			Car 5	46,749	46,749	0%	438.64	91.69	-79%	20,696,234	4,258,626	-16,437,608	-79%
	Car 6		187	187	0%	151.18	91.69	-40%	29,829	17,974	-11,855	-40%	
	Diesel oil total		128,578	128,578	0%	415.56	169.94	-77%	61,146,575	14,267,237	-46,879,338	-77%	
	LDVs Total		134,423	134,423	0%	463.16	153.81	-75%	62,259,160	15,299,049	-46,960,111	-75%	
	Diesel Oil		pre-Cars	984	984	0%	1099.48	1919.23	-5%	1,062,384	1,062,921	48,433	-5%
		Car 1	837	837	0%	728.12	170.99	-2%	929,232	628,359	-300,873	-2%	
		Car 2	5,586	5,586	0%	704.30	643.67	-9%	4,284,320	3,683,441	-598,887	-9%	
		Car 3	11,221	11,221	0%	621.20	458.38	-21%	7,082,740	5,143,520	-1,939,220	-21%	
	1.A.3.b.v. - Heavy Duty Vehicles (HDVs) - Trucks & Lorries	Diesel Oil	Car 4	4,270	4,270	0%	461.10	361.79	-24%	1,972,610	1,584,978	-387,632	-24%
Car 5			22,042	22,042	0%	368.55	183.99	-49%	7,726,921	4,065,632	-3,661,289	-49%	
Car 6			4,182	4,182	0%	42.78	183.99	330%	178,913	789,476	610,563	330%	
Buses Total			49,143	49,143	0%	468.37	339.99	-27%	23,017,115	16,788,234	-6,228,881	-27%	
Trucks & Lorries			pre-Cars	4,182	4,182	0%	1034.34	737.35	-29%	4,945,942	3,525,898	-1,420,134	-29%
			Car 1	2,285	2,285	0%	748.66	561.41	-25%	1,600,085	1,237,759	-362,326	-25%
		Car 2	13,623	13,623	0%	817.30	510.38	-38%	11,445,865	6,565,736	-4,880,129	-38%	
		Car 3	54,685	54,685	0%	632.52	364.41	-42%	36,589,677	19,927,835	-16,661,841	-42%	
1.A.3.b.vi. - Motorised Two-Wheelers (MOWs)		Gasoline	Car 4	34,037	34,037	0%	396.37	285.34	-30%	13,481,158	9,711,896	-3,769,262	-30%
			Car 5	389,263	389,263	0%	282.92	153.65	-46%	110,112,782	59,688,643	-50,424,139	-46%
	Car 6		34,214	34,214	0%	63.96	153.65	189%	3,937,089	11,368,582	7,431,413	189%	
	Trucks Total		572,754	572,754	0%	314.85	196.65	-38%	179,874,133	112,285,562	-67,588,571	-38%	
	MOWs		pre-Cars	6,185	6,185	0%	122.85	158.64	29%	795,185	974,388	218,152	29%
			Car 1	3,037	3,037	0%	134.71	174.84	40%	478,514	670,859	192,345	40%
		Car 2	3,365	3,365	0%	128.94	186.25	52%	433,874	680,370	246,504	52%	
		Car 3	5,385	5,385	0%	38.53	186.25	386%	299,722	1,041,189	821,467	386%	
	Car 4	0	0	0%	0	0	0%	0	0	0	0%		
	Car 5	0	0	0%	0	0	0%	0	0	0	0%		
MOWs Total	18,673	18,673	0%	108.59	179.24	78%	1,878,294	3,386,734	1,508,439	78%			
1.A.3.b. - Road Transport	Total	2,153,563	2,153,563	0%	277.27	140.35	-49%	597,120,297	362,252,271	-234,868,025	-49%		

Adjustment details for 2025

NFR Code	Fuel	Activity Data			Implied Emission Factor			NO _x Emissions					
		current	adjusted	difference	current	adjusted	difference	current	adjusted	adjustment	difference		
		in [t]	in [t]	in [%]	in [g/t]	in [g/t]	in [%]	in [kg]	in [kg]	in [kg]	in [kg]		
1.A.3.b.i. - Passenger Cars	Gasoline	pre-Cars	11,380	11,380	0%	823.23	844.11	-14%	7,266,112	6,191,942	-1,074,169	-14%	
		Car 1	34,112	34,112	0%	371.34	345.71	-34%	8,963,681	5,924,574	-3,039,228	-34%	
		Car 2	42,925	42,925	0%	207.78	142.69	-32%	8,918,785	6,099,659	-2,819,126	-32%	
		Car 3	72,871	72,871	0%	73.86	74.74	1%	5,381,361	5,446,237	-64,877	1%	
		Car 4	363,474	363,474	0%	52.36	49.62	-5%	18,485,637	17,326,221	-1,159,416	-5%	
		Car 5	180,783	180,783	0%	19.11	49.62	151%	3,454,481	0,881,456	5,406,375	151%	
		Car 6	29,612	29,612	0%	25.70	49.62	84%	790,781	1,451,433	-658,752	84%	
		Gasoline total	715,156	715,156	0%	74.38	71.73	-4%	53,196,187	51,380,983	1,815,204	-4%	
	Diesel Oil	pre-Cars	1,382	1,382	0%	310.32	284.66	-5%	367,917	339,733	-28,184	-5%	
		Car 1	4,279	4,279	0%	298.14	267.84	-10%	1,261,930	1,129,989	-132,941	-10%	
		Car 2	19,689	19,689	0%	407.80	220.36	-46%	8,913,587	4,338,719	4,574,868	-46%	
		Car 3	71,044	71,044	0%	595.91	179.64	-70%	42,271,648	12,719,962	29,551,686	-70%	
1.A.3.b.ii - Heavy Duty Vehicles (LDVs)	Gasoline	Car 4	182,410	182,410	0%	401.42	154.67	-62%	77,237,655	29,644,450	47,593,206	-62%	
		Car 5	364,346	364,346	0%	434.67	154.67	-65%	132,290,433	46,090,424	86,199,959	-65%	
		Car 6	62,576	62,576	0%	259.76	154.67	-41%	13,657,082	0,180,384	13,476,698	-41%	
		Diesel oil total	645,565	645,565	0%	426.19	159.88	-63%	275,138,233	163,163,591	111,974,732	-63%	
		Flx Total	1,360,721	1,360,721	0%	245.28	113.52	-53%	548,334,420	154,544,484	393,789,936	-53%	
		Diesel Oil	pre-Cars	979	979	0%	664.37	645.95	-1%	1,375,361	1,617,977	-242,616	-1%
			Car 1	150	150	0%	895.63	911.93	-6%	134,523	46,851	87,672	-6%
			Car 2	629	629	0%	298.27	212.94	-29%	187,533	133,879	-53,654	-29%
	Car 3		781	781	0%	105.50	186.62	3%	73,969	76,155	-2,186	3%	
	1.A.3.b.iii - Heavy Duty Vehicles (MDVs)	Gasoline	Car 4	1,720	1,720	0%	47.06	51.30	9%	80,950	80,240	710	9%
			Car 5	1,620	1,620	0%	18.41	51.30	179%	29,912	83,086	-53,174	179%
			Car 6	94	94	0%	18.71	51.30	174%	1,752	4,884	-3,132	174%
Gasoline total			4,793	4,793	0%	187.52	172.88	-8%	1,683,507	1,680,999	2,508	-8%	
Diesel Oil			pre-Cars	2,323	2,323	0%	418.91	386.79	-26%	986,185	712,531	273,654	-26%
			Car 1	2,186	2,186	0%	391.47	276.25	-40%	924,270	453,227	471,043	-40%
			Car 2	5,025	5,025	0%	324.91	133.25	-40%	1,632,296	971,296	660,920	-40%
			Car 3	15,781	15,781	0%	588.35	150.67	-74%	9,112,414	2,365,713	6,746,701	-74%
Diesel Oil		Car 4	47,480	47,480	0%	501.73	91.74	-82%	23,732,396	4,340,298	19,392,098	-82%	
		Car 5	62,116	62,116	0%	436.13	91.74	-79%	27,090,214	6,080,295	21,009,919	-79%	
		Car 6	635	635	0%	154.91	91.74	-40%	97,760	62,230	35,528	-40%	
		Diesel oil total	135,386	135,386	0%	408.35	181.96	-77%	63,565,643	16,681,490	46,884,153	-77%	
1.A.3.b.iv - Heavy Duty Vehicles (MDVs)	Gasoline	LDVs total	147,098	147,098	0%	476.76	170.62	-67%	64,585,370	15,686,490	48,898,881	-67%	
		pre-Cars	979	979	0%	1,048.372	985.255	-5%	1,344,372	985,255	-359,117	-5%	
		Car 1	747	747	0%	738.26	711.91	-3%	543,477	581,678	-16,199	-3%	
		Car 2	5,211	5,211	0%	707.43	644.46	-10%	4,163,687	3,556,054	-607,633	-10%	
		Car 3	11,282	11,282	0%	633.90	458.67	-30%	7,141,732	5,174,999	-1,966,732	-30%	
		Car 4	6,586	6,586	0%	468.70	361.99	-25%	2,154,086	1,614,177	-539,909	-25%	
		Car 5	34,267	34,267	0%	368.77	184.69	-49%	9,737,060	4,477,641	5,259,419	-49%	
		Car 6	5,224	5,224	0%	63.13	184.69	241%	277,642	964,226	-686,584	241%	
	Diesel Oil	Bees Total	52,887	52,887	0%	458.96	327.99	-29%	23,997,871	11,149,448	12,848,423	-29%	
		pre-Cars	4,379	4,379	0%	1034.89	737.35	-29%	2,488,571	1,314,428	1,174,143	-29%	
		Car 1	1,883	1,883	0%	817.78	554.49	-30%	1,387,291	1,025,051	362,240	-30%	
		Car 2	11,088	11,088	0%	817.78	557.72	-30%	8,072,940	5,622,809	2,450,131	-30%	
1.A.3.b.v - Heavy Duty Vehicles (MDVs)	Gasoline	Car 3	43,481	43,481	0%	615.55	361.64	-42%	27,460,779	12,734,621	14,726,157	-42%	
		Car 4	39,233	39,233	0%	356.86	283.49	-20%	11,572,860	9,284,180	2,288,680	-20%	
		Car 5	308,726	308,726	0%	264.17	153.73	-40%	80,413,973	50,456,436	29,957,537	-40%	
		Car 6	159,787	159,787	0%	67.49	153.49	167%	8,913,364	26,292,037	-17,378,674	167%	
		Trucks Total	589,471	589,471	0%	268.69	181.55	-36%	197,189,675	110,920,783	86,268,893	-36%	
		Diesel Oil	pre-Cars	5,744	5,744	0%	125.41	157.28	25%	720,441	953,470	-233,028	25%
			Car 1	3,517	3,517	0%	107.40	176.22	39%	444,086	670,819	-226,733	39%
			Car 2	3,382	3,382	0%	107.35	196.53	55%	430,680	685,565	-254,885	55%
	Car 3		5,911	5,911	0%	49.29	196.53	292%	234,126	1,144,145	-910,019	292%	
	MDVs Total	Car 4	0	0	0%	16.96	89	480%	89	84	5	6%	
		Car 5	0	0	0%	0	0	0%	0	0	0	0%	
	1.A.3.b. Road Transport	Total	2,161,976	2,161,976	0%	264.39	170.62	-36%	575,921,265	381,677,956	194,243,309	-36%	

Adjustment details for 2026

NFR Code	Fuel	Activity Data			Implied Emission Factor			NO _x Emissions				
		current	adjusted	difference in [%]	current	adjusted	difference in [%]	current	adjusted	difference in [%]		
1.A.3.a.i - Passenger Cars	Gasoline	pre-Cars	11,782	11,782	0%	636.75	644.11	-14%	7,470,914	6,410,967	-1,067,967	-14%
		Car 1	20,270	20,270	0%	372.25	341.68	-35%	7,545,483	4,986,888	-2,648,596	-35%
		Car 2	36,062	36,062	0%	212.73	143.11	-33%	7,671,581	5,180,897	-2,516,693	-33%
		Car 3	83,039	83,039	0%	76.17	75.50	-1%	4,881,482	4,759,259	-42,233	-1%
		Car 4	334,413	334,413	0%	53.74	50.17	-7%	17,969,964	16,777,445	-1,192,489	-7%
		Car 5	183,374	183,374	0%	19.09	50.17	163%	3,580,745	9,189,834	5,609,089	163%
		Car 6	66,332	66,332	0%	26.67	50.17	88%	1,768,917	3,327,855	1,558,938	88%
		Gasoline total	715,272	715,272	0%	78.93	70.65	-9%	58,736,967	50,535,049	-8,201,918	-9%
	Diesel Oil	pre-Cars	1,380	1,380	0%	368.76	254.56	-31%	386,262	339,172	-46,899	-12%
		Car 1	3,749	3,749	0%	298.36	269.64	-9%	1,122,449	1,011,626	-111,425	-10%
		Car 2	16,584	16,584	0%	407.19	221.43	-46%	6,720,132	3,663,964	-3,056,168	-46%
		Car 3	81,398	81,398	0%	802.50	179.24	-78%	36,991,999	11,085,409	-25,906,590	-70%
		Car 4	175,940	175,940	0%	405.76	156.24	-61%	71,362,220	27,474,086	-43,878,214	-61%
		Car 5	299,654	299,654	0%	433.34	156.24	-64%	130,032,044	46,019,229	-83,912,815	-64%
Diesel oil total	625,119	625,119	0%	418.36	160.76	-61%	277,947,660	188,535,230	-89,408,430	-61%		
Flx Total	1,380,391	1,380,391	0%	235.75	154.41	-35%	327,778,627	199,070,280	-128,708,347	-39%		
1.A.3.b.i - Light Duty Vehicles (LDV)	Gasoline	pre-Cars	910	910	0%	602.79	645.95	-7%	593,186	547,543	-45,643	-8%
		Car 1	136	136	0%	908.31	312.78	-66%	122,126	42,425	-79,708	-66%
		Car 2	540	540	0%	308.39	217.84	-29%	162,311	117,797	-44,514	-29%
		Car 3	650	650	0%	108.43	111.57	3%	70,432	72,731	2,299	3%
		Car 4	1,684	1,684	0%	43.06	52.36	7%	78,714	84,003	5,289	7%
		Car 5	1,724	1,724	0%	19.82	52.36	164%	34,157	80,258	46,106	164%
		Car 6	363	363	0%	19.85	52.36	181%	6,764	19,992	13,228	181%
		Gasoline total	5,506	5,506	0%	588.27	171.66	-7%	1,068,292	1,013,478	-54,814	-5%
	Diesel Oil	pre-Cars	2,189	2,189	0%	414.81	386.79	-7%	899,849	885,433	-14,416	-2%
		Car 1	1,780	1,780	0%	391.89	276.25	-29%	780,189	385,371	-394,798	-49%
		Car 2	4,223	4,223	0%	323.43	153.31	-53%	1,365,994	676,452	-689,542	-50%
		Car 3	13,582	13,582	0%	588.91	150.77	-74%	8,064,323	2,940,233	-5,124,090	-74%
		Car 4	43,141	43,141	0%	504.48	32.40	-93%	21,783,989	3,986,141	-17,777,788	-82%
		Car 5	74,231	74,231	0%	434.16	32.40	-93%	32,223,283	6,668,780	-25,554,503	-79%
Diesel oil total	148,068	148,068	0%	456.12	185.62	-77%	65,712,732	15,256,007	-50,456,726	-77%		
Flx Total	148,994	148,994	0%	445.21	188.29	-76%	66,781,025	16,226,684	-50,554,341	-76%		
1.A.3.b.ii - Heavy Duty Vehicles (HDV)	Gasoline	pre-Cars	881	881	0%	1076.81	1919.23	-43%	964,197	988,234	24,037	2%
		Car 1	583	583	0%	731.36	1732.57	-58%	433,675	446,236	12,568	3%
		Car 2	4,375	4,375	0%	708.25	645.03	-9%	3,440,614	2,822,621	-617,993	-18%
		Car 3	10,333	10,333	0%	632.87	458.91	-27%	6,539,364	4,741,827	-1,797,536	-27%
		Car 4	4,449	4,449	0%	475.90	382.29	-20%	2,117,219	1,666,881	-450,338	-20%
		Car 5	34,380	34,380	0%	366.36	185.22	-49%	8,935,974	4,517,517	-4,418,457	-49%
		Car 6	9,126	9,126	0%	62.79	185.22	196%	573,066	1,680,431	1,107,365	196%
		Gasoline total	54,157	54,157	0%	404.73	388.24	-2%	23,082,189	16,885,117	-6,197,072	-27%
	Diesel Oil	pre-Cars	3,933	3,933	0%	1034.81	737.35	-29%	4,087,249	2,980,379	-1,106,870	-29%
		Car 1	1,555	1,555	0%	748.16	587.92	-21%	1,163,482	789,813	-373,669	-33%
		Car 2	8,875	8,875	0%	817.75	585.42	-28%	7,258,047	4,486,626	-2,771,421	-38%
		Car 3	34,167	34,167	0%	638.91	568.06	-11%	21,553,280	12,251,155	-9,302,125	-43%
		Car 4	34,287	34,287	0%	396.94	281.86	-29%	9,640,384	6,885,621	-2,754,763	-29%
		Car 5	269,735	269,735	0%	267.22	153.60	-42%	74,680,233	39,976,610	-34,703,623	-48%
Diesel oil total	594,013	594,013	0%	61.77	153.60	149%	16,149,280	40,204,036	24,054,756	149%		
Flx Total	594,013	594,013	0%	226.31	180.97	-20%	134,431,899	101,486,262	-32,945,637	-24%		
1.A.3.b.iii - Motorized Two-Wheelers (M2W)	Gasoline	pre-Cars	5,543	5,543	0%	125.59	155.78	24%	696,072	883,289	187,218	24%
		Car 1	3,360	3,360	0%	127.11	177.29	39%	427,113	585,796	158,683	39%
		Car 2	3,375	3,375	0%	125.94	187.68	50%	421,961	687,078	265,117	63%
		Car 3	6,443	6,443	0%	48.36	187.68	381%	209,627	1,273,671	1,064,044	508%
		Car 4	65	65	0%	17.47	187.68	1031%	1,134	12,632	11,498	1031%
		Car 5	0	0	0%	0	0	0%	0	0	0	0%
		M2W total	16,185	16,185	0%	96.14	181.68	89%	1,885,897	3,452,476	1,566,579	83%
		1.A.3.b - Road Transport	Total	2,267,339	2,267,339	0%	258.89	137.22	-46%	553,799,598	362,981,620	-190,817,978

Adjustment details for 2027

NFR Code	Fuel	Activity Data				Implied Emission Factor				NO _x Emissions			
		current	adjusted	difference	in [%]	current	adjusted	difference	in [%]	current	adjusted	difference	in [%]
1.A.3.a.i. Passenger Cars	Gasoline	pre-Cars	12,282	12,282	0%	636.73	644.11	-11%	7,914,267	6,480,187	-1,434,080	-18%	
		Car 1	17,449	17,449	0%	372.96	341.68	-35%	6,588,211	4,217,644	-2,370,567	-35%	
		Car 2	30,435	30,435	0%	217.43	141.75	-35%	6,617,570	4,314,140	-2,303,430	-35%	
		Car 3	54,271	54,271	0%	78.48	76.27	-3%	4,254,938	4,139,376	-115,562	-3%	
		Car 4	315,086	315,086	0%	54.96	51.26	-7%	17,316,320	16,511,881	-804,439	-5%	
		Car 5	180,240	180,240	0%	19.17	51.26	167%	3,485,382	9,239,815	5,754,433	167%	
	Gasoline total	724,571	724,571	0%	67.66	60.88	-10%	49,046,874	36,834,734	-12,212,140	-25%		
	Diesel Oil	pre-Cars	1,780	1,780	0%	368.76	254.56	-31%	486,963	347,626	-139,337	-29%	
		Car 1	3,749	3,749	0%	298.36	269.64	-9%	1,082,268	910,182	-172,086	-16%	
		Car 2	13,788	13,788	0%	407.17	222.43	-45%	5,614,130	3,066,393	-2,547,736	-45%	
		Car 3	52,128	52,128	0%	808.95	179.65	-78%	31,696,478	9,364,788	-22,331,690	-71%	
		Car 4	187,947	187,947	0%	418.16	158.34	-61%	64,733,485	24,983,323	-39,750,162	-61%	
		Car 5	283,480	283,480	0%	423.39	158.34	-63%	120,187,695	44,873,190	-75,314,505	-63%	
	Diesel oil total	686,582	686,582	0%	262.61	158.34	-40%	48,521,163	29,255,985	-19,265,178	-40%		
	Flx Total	1,421,152	1,421,152	0%	398.65	161.95	-59%	272,126,081	112,890,721	-159,235,360	-59%		
1.A.3.a.ii. Heavy Duty Vehicles (LDV)	Gasoline	pre-Cars	940	940	0%	611.41	645.95	-7%	612,247	598,978	-13,269	-2%	
		Car 1	124	124	0%	908.23	312.78	-66%	112,083	39,682	-72,401	-64%	
		Car 2	485	485	0%	302.12	221.62	-27%	140,344	102,950	-37,394	-27%	
		Car 3	596	596	0%	118.57	115.36	4%	65,955	68,812	2,857	4%	
		Car 4	1,476	1,476	0%	50.72	53.38	5%	74,877	78,816	3,938	5%	
		Car 5	1,680	1,680	0%	21.73	53.38	146%	36,240	89,034	52,794	146%	
	Gasoline total	6,186	6,186	0%	19.18	53.38	180%	17,052	49,080	31,928	180%		
	Diesel Oil	pre-Cars	2,087	2,087	0%	413.41	386.79	-7%	860,499	631,163	-229,336	-28%	
		Car 1	1,538	1,538	0%	398.47	276.25	-30%	680,795	331,158	-349,638	-50%	
		Car 2	3,580	3,580	0%	321.26	153.04	-53%	1,143,793	687,293	-456,500	-40%	
		Car 3	11,684	11,684	0%	556.30	150.79	-73%	6,940,879	1,758,747	-5,182,132	-75%	
		Car 4	39,050	39,050	0%	508.76	133.69	-82%	19,749,471	3,625,035	-16,124,436	-82%	
		Car 5	75,629	75,629	0%	436.66	83.69	-79%	32,790,966	7,654,945	-25,136,021	-79%	
	Diesel oil total	153,284	153,284	0%	151.71	83.69	-39%	2,977,439	1,826,875	-1,150,564	-39%		
	LDV total	159,470	159,470	0%	424.66	183.89	-74%	65,083,930	55,925,266	-9,158,664	-14%		
1.A.3.a.iii. Heavy Duty Vehicles (Buses)	Diesel Oil	pre-Cars	730	730	0%	1073.33	1191.23	-5%	790,259	750,425	-39,834	-5%	
		Car 1	411	411	0%	731.37	752.57	-3%	380,684	389,062	8,438	3%	
		Car 2	3,325	3,325	0%	787.91	645.49	-18%	2,820,280	2,147,440	-672,840	-24%	
		Car 3	8,670	8,670	0%	842.12	543.40	-35%	5,433,440	3,988,065	-1,445,375	-27%	
		Car 4	3,823	3,823	0%	474.87	562.49	-16%	1,932,080	1,947,647	15,567	1%	
		Car 5	21,913	21,913	0%	363.82	185.64	-49%	7,937,567	4,663,686	-3,273,881	-41%	
	Buses total	53,382	53,382	0%	58.52	185.64	216%	86,215	271,240	185,025	216%		
	Gasoline <td>pre-Cars</td> <td>3,680</td> <td>3,680</td> <td>0%</td> <td>120.43</td> <td>177.35</td> <td>-29%</td> <td>3,730,272</td> <td>2,659,676</td> <td>-1,070,596</td> <td>-29%</td>	pre-Cars	3,680	3,680	0%	120.43	177.35	-29%	3,730,272	2,659,676	-1,070,596	-29%	
		Car 1	1,311	1,311	0%	748.03	408.38	-45%	980,842	614,151	-366,690	-37%	
		Car 2	7,087	7,087	0%	817.96	583.45	-29%	5,794,876	3,588,026	-2,206,850	-38%	
		Car 3	26,886	26,886	0%	638.17	365.72	-42%	19,642,611	9,583,881	-10,058,730	-51%	
		Car 4	29,082	29,082	0%	397.77	279.34	-30%	7,968,416	6,187,646	-1,780,770	-22%	
		Car 5	264,365	264,365	0%	264.36	188.79	-29%	59,989,789	39,365,342	-20,624,447	-34%	
	Gasoline total	335,065	335,065	0%	65.62	114.35	75%	21,985,366	11,748,641	-10,236,725	-47%		
	Trucks total	588,263	588,263	0%	599.82	179.92	-69%	116,631,141	185,268,508	68,637,367	59%		
1.A.3.b.i. Motorized Two-Wheelers (M2W)	Gasoline	pre-Cars	5,336	5,336	0%	125.91	157.19	-25%	671,088	830,789	159,701	25%	
		Car 1	3,257	3,257	0%	126.39	177.86	41%	411,617	579,244	167,627	41%	
		Car 2	3,396	3,396	0%	122.56	180.33	62%	415,280	673,540	258,260	62%	
		Car 3	6,741	6,741	0%	49.22	180.33	363%	271,187	1,336,566	1,065,379	393%	
		Car 4	430	430	0%	19.28	180.33	983%	7,862	85,270	77,408	983%	
M2Ws total	19,160	19,160	0%	92.83	183.39	98%	1,786,674	5,933,387	4,146,713	98%			
1.A.3.b. Road Transport Total		2,291,407	2,291,407	0%	233.43	135.23	-42%	525,549,494	384,840,596	-140,708,898	-27%		

Adjustment details for 2018

ACTIVITY DATA												
NFR Code	Fuel	Activity Data			Implied Emission Factor			NO _x Emissions				
		current	adjusted	difference	current	adjusted	difference	current	adjusted	difference		
		in [t]	in [t]	in [%]	in [g/t]	in [g/t]	in [%]	in [t]	in [t]	in [%]		
1.A.3.a.i - Passenger Cars	Gasoline	pre-Cars	12,219	12,219	0%	637.58	644.11	-65%	7,780,965	6,648,721	-1,132,234	-15%
		Car 1	14,362	14,362	0%	374.34	341.68	-9%	5,371,161	3,448,643	-1,922,518	-36%
		Car 2	34,285	34,285	0%	221.97	111.68	-60%	5,360,977	2,688,163	-2,672,814	-50%
		Car 3	43,642	43,642	0%	88.16	76.96	-4%	3,487,781	3,388,617	-109,164	-4%
		Car 4	278,738	278,738	0%	55.98	52.30	-7%	15,683,488	14,576,755	-1,106,733	-7%
		Car 5	186,830	186,830	0%	19.35	52.30	170%	3,228,282	8,725,668	5,497,386	170%
	Diesel Oil	pre-Cars	193,041	193,041	0%	6.00	52.30	0%	4,190,422	6,718,250	2,527,828	60%
		Car 1	2,949	2,949	0%	303.16	254.96	-16%	45,032,966	47,786,817	2,753,851	6%
		Car 2	10,784	10,784	0%	298.17	272.65	-9%	286,432	775,165	488,733	17%
		Car 3	40,786	40,786	0%	407.20	222.87	-45%	4,981,983	2,483,536	-2,498,447	-50%
		Car 4	130,534	130,534	0%	612.49	180.15	-71%	24,932,029	7,333,241	-17,598,788	-71%
		Car 5	231,212	231,212	0%	414.71	180.40	-56%	54,133,837	20,937,329	-33,196,508	-61%
	Trucks & Lorries	pre-Cars	220,685	220,685	0%	254.87	180.40	-30%	104,586,786	40,293,731	-64,293,055	-61%
		Car 5	220,685	220,685	0%	254.87	180.40	-30%	58,284,140	35,680,446	-22,603,694	-39%
	Diesel oil total		666,074	666,074	0%	375.66	163.38	-56%	247,596,063	188,748,684	-158,767,459	-56%
	FCA Total		1,365,181	1,365,181	0%	214.34	154.68	-28%	262,589,060	156,555,421	-106,033,639	-40%
	1.A.3.b.i - Light Duty Vehicles (LDVs)	Gasoline	pre-Cars	917	917	0%	688.53	645.95	-7%	596,851	582,662	-14,189
Car 1			189	189	0%	911.58	312.78	-66%	98,528	33,895	-64,633	-66%
Car 2			377	377	0%	303.84	224.45	-26%	114,682	84,713	-29,969	-26%
Car 3			511	511	0%	111.92	116.84	5%	57,282	60,739	3,457	6%
Car 4			1,275	1,275	0%	52.02	54.36	4%	65,290	69,278	3,988	4%
Car 5			1,483	1,483	0%	23.70	54.36	129%	35,160	80,626	45,466	129%
Diesel Oil		pre-Cars	6,315	6,315	0%	154.22	160.11	4%	999,199	1,011,138	11,939	1%
		Car 1	1,872	1,872	0%	411.51	386.79	-6%	771,337	574,742	-196,595	-26%
		Car 2	1,285	1,285	0%	389.94	276.25	-29%	483,129	272,296	-210,833	-44%
		Car 3	2,942	2,942	0%	318.18	193.88	-39%	965,389	550,789	-414,599	-43%
		Car 4	9,363	9,363	0%	558.10	150.74	-73%	5,689,152	1,411,299	-4,277,853	-75%
		Car 5	33,232	33,232	0%	508.42	93.81	-82%	15,929,185	3,117,457	-12,811,728	-80%
Trucks & Lorries		pre-Cars	66,283	66,283	0%	432.92	93.81	-78%	28,684,080	6,217,860	-22,466,220	-78%
		Car 5	39,482	39,482	0%	158.79	93.81	-41%	5,941,615	3,686,228	-2,255,387	-38%
Diesel oil total		154,259	154,259	0%	384.71	182.69	-53%	59,344,525	15,880,386	-43,464,139	-73%	
LDVs Total		180,574	180,574	0%	375.86	184.94	-52%	69,343,125	16,851,449	-52,491,676	-76%	
1.A.3.b.ii - Heavy Duty Vehicles (HDVs)	Gasoline	pre-Cars	547	547	0%	1078.15	1919.23	78%	589,267	557,147	-32,120	-5%
		Car 1	737	737	0%	732.72	132.57	-82%	173,678	178,368	4,690	3%
		Car 2	2,270	2,270	0%	787.83	646.33	-18%	1,780,686	1,487,437	-293,249	-16%
		Car 3	6,757	6,757	0%	638.89	459.32	-29%	4,262,734	3,183,482	-1,079,252	-25%
		Car 4	3,043	3,043	0%	473.16	382.73	-19%	1,439,790	1,073,333	-366,457	-25%
		Car 5	18,189	18,189	0%	362.42	186.37	-49%	6,463,265	3,376,016	-3,087,249	-48%
	Diesel Oil	pre-Cars	20,670	20,670	0%	64.89	186.37	289%	1,176,026	3,682,314	2,506,288	213%
		Car 1	91,634	91,634	0%	309.75	283.53	-8%	15,993,546	13,687,186	-2,306,360	-15%
		Car 2	3,262	3,262	0%	1034.82	737.35	-29%	3,375,359	2,485,071	-890,288	-26%
		Car 3	1,094	1,094	0%	747.82	488.39	-35%	918,052	512,378	-405,674	-44%
		Car 4	5,544	5,544	0%	817.44	581.68	-29%	4,532,180	2,781,516	-1,750,664	-39%
		Car 5	20,583	20,583	0%	629.54	563.68	-10%	12,967,751	7,277,279	-5,690,472	-44%
	Trucks & Lorries	pre-Cars	15,912	15,912	0%	358.89	276.23	-23%	6,334,421	4,386,424	-1,947,997	-31%
		Car 5	154,983	154,983	0%	250.40	154.68	-38%	45,964,153	24,283,389	-21,680,764	-47%
	Diesel oil total		381,799	381,799	0%	68.78	154.68	125%	28,251,482	69,665,886	41,414,404	146%
	Trucks Total		585,186	585,186	0%	515.18	172.19	-66%	188,173,537	180,760,889	-7,412,648	-4%
1.A.3.b.iii - Motorised Two-Wheelers (MTWs)	Gasoline	pre-Cars	4,940	4,940	0%	128.95	188.61	46%	622,656	783,451	160,795	26%
		Car 1	2,966	2,966	0%	128.14	177.79	41%	374,114	527,294	153,180	41%
		Car 2	3,221	3,221	0%	128.33	188.64	46%	387,596	639,633	252,037	65%
		Car 3	6,241	6,241	0%	48.24	188.64	288%	25,126	1,239,686	1,214,560	388%
		Car 4	1,130	1,130	0%	58.41	188.64	324%	23,066	224,682	201,616	874%
		Car 5	0	0	0%	0.00	188.64	0%	0	0	0	0%
	Diesel Oil	pre-Cars	18,487	18,487	0%	85.66	188.61	118%	1,658,558	3,454,767	1,796,209	108%
		Car 1	2,880,983	2,880,983	0%	215.85	133.49	-38%	478,758,286	291,129,652	-187,628,634	-39%
		Car 2	1,094	1,094	0%	128.33	188.64	46%	387,596	639,633	252,037	65%
		Car 3	6,241	6,241	0%	48.24	188.64	288%	25,126	1,239,686	1,214,560	388%
		Car 4	1,130	1,130	0%	58.41	188.64	324%	23,066	224,682	201,616	874%
		Car 5	0	0	0%	0.00	188.64	0%	0	0	0	0%
	Diesel oil total		18,487	18,487	0%	85.66	188.61	118%	1,658,558	3,454,767	1,796,209	108%
	120% Total		2,180,983	2,180,983	0%	215.85	133.49	-38%	478,758,286	291,129,652	-187,628,634	-39%

Adjustment details for 2019

Detailed Data for 2022													
NFR Code	Fuel	Activity Data			Implied Emission Factor			NO _x Emissions					
		current	adjusted	difference	current	adjusted	difference	current	adjusted	difference			
		in [t]	in [t]	in [%]	in [g/t]	in [g/t]	in [%]	in [t]	in [t]	in [%]			
1.A.3.a.i - Passenger Cars	Gasoline	pre-Cars	13,688	13,688	0%	638.68	644.11	-15%	8,664,621	7,382,686	-1,281,935	-15%	
		Car 1	12,427	12,427	0%	378.32	341.68	-36%	4,781,480	3,083,383	-1,698,096	-36%	
		Car 2	20,086	20,086	0%	225.58	92.59	-59%	4,531,070	1,858,018	-2,672,852	-59%	
		Car 3	38,216	38,216	0%	82.22	76.12	-7%	2,977,840	2,829,186	-148,654	-5%	
		Car 4	295,220	295,220	0%	57.04	53.29	-7%	14,588,285	13,889,621	-698,664	-5%	
		Car 5	180,537	180,537	0%	19.77	53.29	170%	3,173,728	8,584,356	5,410,628	170%	
	Diesel Oil	pre-Cars	285,636	285,636	0%	25.63	53.29	180%	5,285,099	11,010,782	5,725,683	180%	
		Car 1	194,631	194,631	0%	62.36	68.45	10%	43,961,941	48,238,025	4,276,084	10%	
		Car 2	3,745	3,745	0%	313.70	261.96	-17%	913,180	724,903	-188,275	-21%	
		Car 3	2,545	2,545	0%	298.16	272.65	-9%	766,913	687,786	-79,127	-10%	
		Car 4	8,891	8,891	0%	407.19	222.16	-44%	3,620,286	2,037,480	-1,582,806	-44%	
		Car 5	33,079	33,079	0%	615.11	180.42	-71%	20,310,125	5,967,483	-14,342,642	-71%	
	Trucks & Lorries	pre-Cars	111,335	111,335	0%	419.17	182.44	-56%	48,688,685	10,885,228	-37,803,457	-78%	
		Car 5	231,784	231,784	0%	419.17	182.44	-56%	95,117,643	37,650,997	-57,466,646	-60%	
	Diesel oil total		273,511	273,511	0%	227.36	182.44	-20%	62,189,238	44,429,184	-17,760,054	-29%	
	FCA Total		663,841	663,841	0%	345.81	165.67	-52%	229,566,088	189,582,982	-139,983,106	-61%	
	120% Total		1,368,532	1,368,532	0%	699.83	155.32	-78%	273,668,099	157,821,687	-115,846,412	-42%	
1.A.3.b.i - Light Duty Vehicles (LDVs)	Gasoline	pre-Cars	909	909	0%	644.89	645.95	1%	687,449	581,962	-105,487	-15%	
		Car 1	87	87	0%	915.20	312.78	-66%	89,953	30,396	-59,557	-66%	
		Car 2	316	316	0%	304.63	224.45	-26%	96,158	70,848	-25,310	-26%	
		Car 3	447	447	0%	112.68	121.47	8%	59,355	54,283	-5,072	-9%	
		Car 4	1,126	1,126	0%	53.08	55.26	4%	59,682	62,199	2,517	4%	
	Diesel Oil	pre-Cars	1,074	1,074	0%	25.34	55.26	110%	34,280	74,680	40,400	110%	
		Car 1	947	947	0%	18.76	55.26	180%	45,383	133,753	88,380	180%	
		Car 2	2,420	2,420	0%	18.76	55.26	180%	45,383	133,753	88,380	180%	
		Car 3	6,083	6,083	0%	184.28	153.25	-9%	946,299	1,004,150	57,851	6%	
		Car 4	1,164	1,164	0%	418.96	389.19	-7%	725,111	541,376	-183,736	-25%	
	Trucks & Lorries	pre-Cars	1,074	1,074	0%	389.52	276.25	-29%	420,285	232,256	-188,028	-45%	
		Car 1	2,231	2,231	0%	215.98	184.78	-15%	737,662	454,800	-282,862	-38%	
		Car 2	7,540	7,540	0%	601.11	297,943	-50%	4,587,943	1,152,446	-3,435,497	-75%	
		Car 3	20,711	20,711	0%	512.28	84.57	-82%	14,768,300	2,716,154	-11,992,145	-82%	
		Car 4	58,734	58,734	0%	434.30	84.57	-79%	35,499,480	5,552,420	-30,947,059	-82%	
		Car 5	58,931	58,931	0%	156.18	84.57	-30%	6,811,586	5,672,893	-1,138,694	-17%	
	Diesel oil total		159,183	159,183	0%	367.47	191.99	-71%	55,383,335	56,291,485	908,150	1%	
LDVs Total		265,866	265,866	0%	339.31	183.97	-46%	96,279,584	1,245,596	-96,313,988	-97%		
1.A.3.b.ii - Heavy Duty Vehicles (HDVs)	Diesel Oil	pre-Cars	489	489	0%	1080.23	1915.23	-43%	588,887	476,258	-112,629	-19%	
		Car 1	147	147	0%	736.37	752.57	2%	108,212	110,593	2,381	2%	
		Car 2	1,611	1,611	0%	703.47	645.77	-9%	1,277,465	1,041,621	-235,844	-19%	
		Car 3	5,709	5,709	0%	3,265.86	2,623.79	-19%	3,661,981	2,623,797	-1,038,184	-28%	
		Car 4	2,747	2,747	0%	473.92	342.64	-28%	1,362,054	969,413	-392,641	-29%	
		Car 5	17,190	17,190	0%	362.91	186.64	-49%	6,213,175	3,186,131	-3,027,044	-49%	
	Trucks & Lorries	pre-Cars	25,939	25,939	0%	60.43	186.64	289%	5,518,961	4,980,393	-538,568	-10%	
		Car 1	3,140	3,140	0%	929.88	737.35	-20%	3,250,020	2,376,443	-873,577	-29%	
		Car 2	989	989	0%	747.60	488.39	-34%	724,240	453,754	-270,486	-37%	
		Car 3	4,560	4,560	0%	817.42	581.04	-29%	3,734,343	2,288,967	-1,445,376	-39%	
		Car 4	16,377	16,377	0%	628.94	351.48	-44%	19,380,323	5,756,580	-13,623,743	-64%	
		Car 5	13,127	13,127	0%	396.86	273.43	-31%	3,235,679	3,636,330	3,656,330	100%	
	Trucks Total		965,913	965,913	0%	79.28	154.92	115%	96,380,190	67,889,853	-28,490,337	-29%	
	Trucks Total		965,913	965,913	0%	79.28	154.92	115%	96,380,190	67,889,853	-28,490,337	-29%	
	1.A.3.b.iii - Medium Duty Vehicles (MDVs)	Gasoline	pre-Cars	4,913	4,913	0%	125.89	144.79	31%	664,997	752,771	87,774	13%
			Car 1	2,835	2,835	0%	135.65	177.29	41%	355,456	582,589	227,133	41%
			Car 2	3,084	3,084	0%	119.33	180.06	51%	389,224	615,317	226,093	58%
Car 3			6,082	6,082	0%	40.03	180.06	381%	249,284	1,183,617	934,333	376%	
Car 4			2,085	2,085	0%	21.60	180.06	817%	43,489	380,667	337,178	817%	
Trucks & Lorries		pre-Cars	18,150	18,150	0%	86.95	186.83	157%	5,615,690	5,562,941	-52,749	-1%	
		Car 1	2,262,080	2,262,080	0%	158.98	132.83	-13%	437,268,744	292,497,437	-144,771,307	-33%	
MDVs Total		18,150	18,150	0%	86.95	186.83	157%	5,615,690	5,562,941	-52,749	-1%		
120% Total		2,262,080	2,262,080	0%	158.98	132.83	-13%	437,268,744	292,497,437	-144,771,307	-33%		

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Adjustment 2014 (accepted)	-105.6	-101.3	-95.7	-91.7						
Adjustment 2015 (accepted)	-100.3	-95.5	-89.9	-85.1						
Adjustment 2016 (accepted)	-151.3	-146.9	-145.1	-142.5	-128.1					
Adjustment 2017 (accepted)	-151.3	-146.8	-145.0	-142.4	-127.2	-100.9				
Adjustment 2018 (accepted)	-172.3	-174.5	-177.4	-180.4	-171.5	-148.9	-123.2			
Adjustment 2019 (accepted)	-172.3	-174.5	-177.4	-180.3	-171.4	-148.8	-123.3	93.7		
Adjustment 2020 (accepted)	-297.8	-302.3	-301.3	-306.1	-294.5	-269.0	-244.3	-214.9	-174.6	
Adjustment 2021 (proposal)										
Change against Adjustment 2020										

The noticeable differences between the 2017 and 2018 adjustment proposals resulted from an ad-hoc revision of the *Handbook Emission Factors for Road Transport* (HBEFA, version 3.3) in the aftermath of the so-called “Diesel-gate”.⁸⁾

The even bigger changes between adjustment 2019 and adjustment proposal 2020 result from an additional rather fundamental revision of the *Handbook Emission Factors for Road Transport* now available in version 4.1 >⁹⁾ strongly effecting the TREMOD model underlying Germany's emission reporting for road transport and hence any adjustments of NO_x, emissions.

With such major model revision between submissions 2019 and 2020, the current adjustment proposal differs significantly from the adjustment applied for and accepted in 2019.

Adjustment description as provided in IIRs 2014 and 2015:

[image Description%20Adjustment%20DE-A%20-%20NOx%20from%201.A.3.b%20Road%20transport%20-%20IIRs%202014%20%26%202015.pdf](#)

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