Adjustment DE-A regarding NOx 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, 2012 a & 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 “artificial” current emissions = virtual current emissions assuming no changes in emission factors 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 EM[1]

[1] “artificial” current emissions = virtual current emissions assuming no changes in emission factors

$$EM_{adjustment} = AD_{current} * EF_{current} - AD_{current} * EF_{original}$$

$$= AD_{current} * (EF_{current} - EF_{original})$$

$$= EM_{current} - EM_{curent\ “artificial”}$$

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 than, 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 compliling 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 (2021).

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 technocological 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 tehrefore 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 6.12 (Knörr et al., 2020a) [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	**-296.1**	**-300.7**	**-300.4**	**-305.2**	**-294.9**	**-274.9**	**-250.9**	**-221.1**	**-179.6**	**-144.8**

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

NFR Code	Fuel	Year	Activity Data current in [TJ]	Activity Data adjusted in [TJ]	Activity Data difference in [%]	Implied Emission Factor current in [kg/TJ]	Implied Emission Factor adjusted in [kg/TJ]	Implied Emission Factor difference in [%]	NO_x Emissions current in [kg]	NO_x Emissions adjusted in [kg]	NO_x Emissions adjustment in [kg]	NO_x Emissions difference 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		629.380	629.380	0%	429,45	160,51	-63%	227.341.096	84.970.461	142.370.635	-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	diesel oil		48.844	48.844	0%	623,00	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	168,43	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%	240.313.791	88.138.959	152.174.832	-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	diesel oil		47.365	47.365	0%	592,65	448,99	-24%	28.071.221	21.266.323	6.804.898	-24%
1.A.3.b iii	diesel oil		563.891	563.891	0%	410,38	244,97	-40%	231.410.271	138.136.342	93.273.929	-40%
1.A.3.b iv	gasoline		19.289	19.289	0%	110,79	171,60	54%	2.137.002	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	120,17	-75%	55.106.382	13.741.354	41.365.028	-75%
1.A.3.b iii	diesel oil		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%	480,60	114,93	-76%	57.083.533	13.650.488	43.433.045	-76%
1.A.3.b iii	diesel oil		51.716	51.716	0%	509,54	360,06	-29%	26.350.969	18.620.843	7.730.126	-29%
1.A.3.b iii	diesel oil		600.139	600.139	0%	353,06	207,93	-41%	211.887.531	124.788.469	87.099.062	-41%
1.A.3.b iv	gasoline		18.229	18.229	0%	104,34	175,38	68%	1.902.088	3.197.038	-1.294.951	68%
1.A.3.b TOTAL		**2013**	**2.132.683**	**2.132.683**	**0%**			**0%**	**616.079.063**	**310.854.371**	**305.224.692**	**-50%**
1.A.3.b i	gasoline		752.526	752.526	0%	76,03	73,09	-4%	57.215.533	54.998.921	2.216.612	-4%
1.A.3.b i	diesel oil		626.045	626.045	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	diesel oil		49.143	49.143	0%	468,37	339,99	-27%	23.017.115	16.708.234	6.308.881	-27%
1.A.3.b iii	diesel oil		572.754	572.754	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%	100,59	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	107,96	-77%	63.505.443	14.607.490	48.897.953	-77%
1.A.3.b iii	diesel oil		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%	157.189.675	110.520.703	46.668.973	-30%
1.A.3.b iv	gasoline		18.459	18.459	0%	99,32	180,65	82%	1.833.382	3.334.472	-1.501.090	82%
1.A.3.b TOTAL		**2015**	**2.161.976**	**2.161.976**	**0%**			**0%**	**575.931.265**	**301.077.596**	**274.853.670**	**-48%**
1.A.3.b i	gasoline		715.272	715.272	0%	70,93	70,65	0%	50.736.967	50.535.049	201.918	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%	180,27	171,06	-5%	1.068.292	1.013.678	54.614	-5%
1.A.3.b ii	diesel oil		144.068	144.068	0%	456,12	105,62	-77%	65.712.732	15.216.007	50.496.726	-77%
1.A.3.b iii	diesel oil		54.157	54.157	0%	424,73	308,24	-27%	23.002.109	16.693.117	6.308.992	-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%	1.806.897	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%	390,65	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		153.284	153.284	0%	424,66	103,89	-76%	65.093.930	15.925.216	49.168.714	-76%
1.A.3.b iii	diesel oil		53.382	53.382	0%	370,80	286,71	-23%	19.793.901	15.304.828	4.489.073	-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**	**304.469.986**	**221.079.424**	**-42%**
1.A.3.b i	gasoline		699.027	699.027	0%	64,42	68,36	6%	45.032.996	47.786.817	-2.753.820	6%
1.A.3.b i	diesel oil		666.074	666.074	0%	371,66	163,30	-56%	247.556.063	108.768.604	138.787.459	-56%
1.A.3.b ii	gasoline		6.315	6.315	0%	158,22	160,11	1%	999.199	1.011.138	-11.939	1%
1.A.3.b ii	diesel oil		154.259	154.259	0%	384,71	102,69	-73%	59.344.525	15.840.310	43.504.215	-73%
1.A.3.b iii	diesel oil		51.634	51.634	0%	309,75	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%	100.173.337	100.710.869	-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%**	**470.758.206**	**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		663.841	663.841	0%	345,01	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	101,90	-71%	55.303.335	16.221.445	39.081.890	-71%
1.A.3.b iii	diesel oil		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 2010

NFR Code	Fuel		Activity Data current	Activity Data adjusted	Activity Data difference	Implied Emission Factor current	Implied Emission Factor adjusted	Implied Emission Factor difference	NO_x Emissions current	NO_x Emissions adjusted	NO_x Emissions adjustment	NO_x Emissions difference
			in [TJ]		in [%]	in [kg/TJ]		in [%]		in [kg]		in [%]
1.A.3.b i - Passenger Cars	Gasoline	pre-Euro	13.686	13.686	0%	584,75	514,26	-12%	7.966.060	6.996.917	-969.143	-12%
		Euro 1	76.561	76.561	0%	338,50	237,71	-30%	25.915.925	18.199.262	-7.716.663	-30%
		Euro 2	96.425	96.425	0%	172,06	135,03	-22%	16.590.020	13.020.026	-3.569.995	-22%
		Euro 3	133.139	133.139	0%	58,51	70,18	20%	7.790.304	9.343.433	1.553.129	20%
		Euro 4	444.991	444.991	0%	42,27	42,19	0%	18.811.389	18.773.529	-37.859	0%
		Euro 5	31.234	31.234	0%	18,61	42,19	127%	581.142	1.317.737	736.596	127%
		Euro 6	0	0	0%	26,08	42,19	62%	2	3	1	62%
		Gasoline total	**795.957**	**795.957**	**0%**	**97,55**	**84,99**	**-13%**	**77.644.842**	**67.650.986**	**-9.993.935**	**-13%**
	Diesel Oil	pre-Euro	1.916	1.916	0%	318,13	264,96	-16%	593.760	507.256	-86.505	-16%
		Euro 1	10.338	10.338	0%	296,62	265,17	-11%	3.066.428	2.741.307	-325.121	-11%
		Euro 2	50.068	50.068	0%	406,90	219,19	-46%	20.372.795	10.974.210	-9.398.584	-46%
		Euro 3	134.025	134.025	0%	542,04	178,54	-67%	72.646.173	23.929.216	-48.716.957	-67%
		Euro 4	279.154	279.154	0%	384,37	140,58	-63%	107.299.160	39.243.811	-68.055.349	-63%
		Euro 5	53.547	53.547	0%	434,70	140,58	-68%	23.276.735	7.527.706	-15.749.029	-68%
		Euro 6	334	334	0%	257,62	140,58	-45%	86.044	46.953	-39.091	-45%
		Diesel oil total	**529.380**	**529.380**	**0%**	**429,45**	**160,51**	**-63%**	**227.341.096**	**84.970.461**	**-142.370.635**	**-63%**
		PCs Total	**1.325.337**	**1.325.337**	**0%**	**230,12**	**115,16**	**-50%**	**304.985.938**	**152.621.367**	**-152.364.570**	**-50%**
1.A.3.b ii - Light Duty Vehicles (LDVs)	Gasoline	pre-Euro	1.249	1.249	0%	627,09	645,95	3%	783.320	806.871	23.551	3%
		Euro 1	357	357	0%	861,05	297,39	-65%	306.969	106.020	-200.950	-65%
		Euro 2	1.393	1.393	0%	264,75	184,41	-30%	368.848	256.917	-111.931	-30%
		Euro 3	856	856	0%	82,47	90,63	10%	70.631	77.625	6.994	10%
		Euro 4	2.420	2.420	0%	36,32	44,90	24%	87.907	108.679	20.772	24%
		Euro 5	49	49	0%	15,34	44,90	193%	758	2.218	1.460	193%
		Euro 6	0	0	0%			0%	0	0	0	0%
		Gasoline total	**6.325**	**6.325**	**0%**	**255,87**	**214,75**	**-16%**	**1.618.432**	**1.358.328**	**-260.104**	**-16%**
	Diesel Oil	pre-Euro	4.876	4.876	0%	425,99	306,79	-28%	2.077.142	1.495.903	-581.239	-28%
		Euro 1	5.989	5.989	0%	395,59	215,24	-46%	2.369.098	1.289.030	-1.080.068	-46%
		Euro 2	13.126	13.126	0%	336,76	193,10	-43%	4.420.380	2.534.731	-1.885.629	-43%
		Euro 3	33.249	33.249	0%	531,01	150,58	-72%	17.655.883	5.006.760	-12.649.123	-72%
		Euro 4	54.581	54.581	0%	491,42	88,69	-82%	26.821.836	4.840.722	-21.981.114	-82%
		Euro 5	1.629	1.629	0%	427,50	88,69	-79%	696.206	144.434	-551.772	-79%
		Euro 6	0	0	0%	161,73	88,69	-42%	7	4	-3	-42%
		Diesel oil total	**113.450**	**113.450**	**0%**	**476,34**	**134,96**	**-72%**	**54.040.533**	**15.311.584**	**-38.728.949**	**-72%**
		LDVs Total	**119.775**	**119.775**	**0%**	**464,70**	**139,18**	**-70%**	**55.658.966**	**16.669.913**	**-38.989.053**	**-70%**
1.A.3.b iii - Heavy Duty Vehicle: Buses	Diesel Oil	pre-Euro	3.382	3.382	0%	1086,25	1020,78	-6%	3.674.067	3.452.644	-221.423	-6%
		Euro I	2.826	2.826	0%	749,41	752,14	0%	2.117.871	2.125.595	7.723	0%
		Euro II	10.152	10.152	0%	801,86	643,47	-20%	8.140.119	6.532.213	-1.607.906	-20%
		Euro III	15.898	15.898	0%	633,22	457,25	-28%	10.066.776	7.269.209	-2.797.567	-28%
		Euro IV	5.461	5.461	0%	448,63	351,85	-22%	2.450.016	1.921.527	-528.489	-22%
		Euro V	10.325	10.325	0%	337,28	182,33	-46%	3.482.417	1.882.544	-1.599.873	-46%
		Euro VI	0	0	0%			0%	0	0	0	0%
		Buses Total	**48.044**	**48.044**	**0%**	**623,00**	**482,55**	**-23%**	**29.931.266**	**23.183.732**	**-6.747.534**	**-23%**
1.A.3.b iii - Heavy Duty Vehicle: Trucks & Lorries	Diesel Oil	pre-Euro	10.185	10.185	0%	1040,16	787,37	-26%	10.510.623	7.754.138	-2.756.485	-26%
		Euro I	5.677	5.677	0%	758,59	575,55	-23%	4.281.393	3.287.681	-993.712	-23%
		Euro II	38.558	38.558	0%	817,62	524,79	-36%	31.525.526	20.234.619	-11.290.907	-36%
		Euro III	158.933	158.933	0%	636,28	374,48	-41%	101.126.192	59.517.271	-41.608.921	-41%
		Euro IV	69.535	69.535	0%	390,94	290,02	-26%	27.183.867	20.166.635	-7.017.232	-26%
		Euro V	283.934	283.934	0%	276,62	151,85	-45%	78.540.643	43.115.897	-35.424.746	-45%
		Euro VI	0	0	0%			0%	0	0	0	0%
		Trucks Total	**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 - Motorised Two-Wheelers (M2Ws)	Gasoline	pre-Euro	7.973	7.973	0%	122,00	149,16	22%	972.721	1.189.303	216.582	22%
		Euro 1	5.231	5.231	0%	123,77	165,74	34%	647.479	867.039	219.560	34%
		Euro 2	3.587	3.587	0%	141,16	194,21	38%	506.352	696.661	190.309	38%
		Euro 3	2.920	2.920	0%	39,11	194,21	397%	114.198	567.032	452.834	397%
		Euro 4	0	0	0%			0%	0	0	0	0%
		Euro 5	0	0	0%			0%	0	0	0	0%
		M2Ws Total	**19.712**	**19.712**	**0%**	**113,68**	**168,43**	**48%**	**2.240.749**	**3.320.034**	**1.079.285**	**48%**
1.A.3.b - Road Transport		**Total**	**2.079.600**	**2.079.600**	**0%**	**310,62**	**168,23**	**-46%**	**645.965.162**	**349.851.206**	**-296.113.956**	**-46%**

Adjustment details for 2011

NFR Code	Fuel		Activity Data current	Activity Data adjusted	Activity Data difference	Implied Emission Factor current	Implied Emission Factor adjusted	Implied Emission Factor difference	NO_x Emissions current	NO_x Emissions adjusted	NO_x Emissions adjustment	NO_x Emissions difference
			in [TJ]		in [%]	in [kg/TJ]		in [%]		in [kg]		in [%]
1.A.3.b i - Passenger Cars	Gasoline	pre-Euro	13.053	13.053	0%	592,06	534,69	-10%	7.728.236	6.979.435	-748.801	-10%
		Euro 1	61.979	61.979	0%	347,86	240,16	-31%	21.560.430	14.884.951	-6.675.479	-31%
		Euro 2	87.083	87.083	0%	179,38	136,58	-24%	15.620.983	11.893.792	-3.727.191	-24%
		Euro 3	124.330	124.330	0%	61,64	71,52	16%	7.663.891	8.891.671	1.227.780	16%
		Euro 4	442.185	442.185	0%	43,84	43,68	0%	19.384.914	19.316.439	-68.476	0%
		Euro 5	66.057	66.057	0%	18,58	43,68	135%	1.227.381	2.885.636	1.658.255	135%
		Euro 6	1	1	0%	26,00	43,68	68%	17	28	11	68%
		Gasoline total	**794.688**	**794.688**	**0%**	**92,09**	**81,61**	**-11%**	**73.185.851**	**64.851.951**	**-8.333.900**	**-11%**
	Diesel Oil	pre-Euro	1.711	1.711	0%	310,90	264,96	-15%	531.803	453.197	-78.606	-15%
		Euro 1	8.426	8.426	0%	297,32	265,65	-11%	2.505.115	2.238.997	-266.119	-11%
		Euro 2	42.514	42.514	0%	407,93	219,27	-46%	17.304.549	9.321.916	-7.982.634	-46%
		Euro 3	121.429	121.429	0%	555,36	178,55	-68%	67.437.053	21.681.366	-45.755.687	-68%
		Euro 4	264.943	264.943	0%	388,08	143,46	-63%	102.817.801	38.009.755	-64.808.046	-63%
		Euro 5	113.847	113.847	0%	435,12	143,46	-67%	49.536.968	16.332.974	-33.203.994	-67%
		Euro 6	695	695	0%	259,59	143,46	-45%	180.502	99.754	-80.748	-45%
		Diesel oil total	**553.564**	**553.564**	**0%**	**434,12**	**159,22**	**-63%**	**240.313.791**	**88.138.959**	**-152.174.832**	**-63%**
		PCs Total	**1.348.252**	**1.348.252**	**0%**	**232,52**	**113,47**	**-51%**	**313.499.642**	**152.990.910**	**-160.508.732**	**-51%**
1.A.3.b ii - Light Duty Vehicles (LDVs)	Gasoline	pre-Euro	1.084	1.084	0%	629,25	645,95	3%	682.274	700.373	18.099	3%
		Euro 1	283	283	0%	859,74	304,47	-65%	243.289	86.158	-157.132	-65%
		Euro 2	1.164	1.164	0%	266,66	191,68	-28%	310.529	223.189	-87.340	-28%
		Euro 3	783	783	0%	85,97	95,39	11%	67.320	74.702	7.381	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	188%	3.882	11.190	7.308	188%
		Euro 6	0	0	0%	15,33	46,51	203%	1	3	2	203%
		Gasoline total	**6.118**	**6.118**	**0%**	**229,35**	**198,57**	**-13%**	**1.403.081**	**1.214.776**	**-188.305**	**-13%**
	Diesel Oil	pre-Euro	3.995	3.995	0%	425,09	306,79	-28%	1.698.280	1.225.682	-472.598	-28%
		Euro 1	4.787	4.787	0%	395,71	215,24	-46%	1.894.350	1.030.425	-863.925	-46%
		Euro 2	10.818	10.818	0%	336,90	193,29	-43%	3.644.592	2.091.063	-1.553.538	-43%
		Euro 3	28.876	28.876	0%	541,53	150,54	-72%	15.637.249	4.346.870	-11.290.379	-72%
		Euro 4	60.832	60.832	0%	493,82	89,26	-82%	30.039.914	5.429.811	-24.610.104	-82%
		Euro 5	6.609	6.609	0%	448,06	89,26	-80%	2.930.198	584.364	-2.335.835	-80%
		Euro 6	0	0	0%	156,21	89,26	-43%	14	8	-6	-43%
		Diesel oil total	**115.967**	**115.967**	**0%**	**481,55**	**126,92**	**-74%**	**55.844.518**	**14.718.142**	**-41.126.376**	**-74%**
		LDVs Total	**122.085**	**122.085**	**0%**	**468,92**	**130,51**	**-72%**	**57.247.599**	**15.932.918**	**-41.314.681**	**-72%**
1.A.3.b iii - Heavy Duty Vehicle: Buses	Diesel Oil	pre-Euro	2.620	2.620	0%	1082,69	1019,78	-6%	2.836.109	2.671.331	-164.778	-6%
		Euro I	2.258	2.258	0%	752,91	751,40	0%	1.699.787	1.696.297	-3.410	0%
		Euro II	9.074	9.074	0%	804,17	643,36	-20%	7.297.125	5.837.959	-1.459.166	-20%
		Euro III	14.887	14.887	0%	633,16	457,38	-28%	9.425.890	6.809.064	-2.616.827	-28%
		Euro IV	5.131	5.131	0%	448,88	351,81	-22%	2.303.338	1.805.274	-498.064	-22%
		Euro V	13.396	13.396	0%	336,60	182,62	-46%	4.509.062	2.446.399	-2.062.653	-46%
		Euro VI	0	0	0%			0%	0	0	0	0%
		Buses Total	**47.365**	**47.365**	**0%**	**592,65**	**448,99**	**-24%**	**28.071.221**	**21.266.323**	**-6.804.898**	**-24%**
1.A.3.b iii - Heavy Duty Vehicle: Trucks & Lorries	Diesel Oil	pre-Euro	8.044	8.044	0%	1038,67	763,88	-26%	8.355.423	6.144.933	-2.210.491	-26%
		Euro I	4.384	4.384	0%	750,16	574,04	-23%	3.288.422	2.516.377	-772.044	-23%
		Euro II	29.277	29.277	0%	817,97	520,31	-36%	23.947.723	15.233.223	-8.714.499	-36%
		Euro III	121.581	121.581	0%	635,56	372,69	-41%	77.271.520	45.312.437	-31.959.084	-41%
		Euro IV	58.430	58.430	0%	393,26	289,48	-26%	22.977.784	16.909.685	-6.068.019	-26%
		Euro V	342.175	342.175	0%	279,30	152,03	-46%	95.569.479	52.019.687	-43.549.793	-46%
		Euro VI	0	0	0%			0%	0	0	0	0%
		Trucks Total	**563.891**	**563.891**	**0%**	**418,38**	**244,97**	**-40%**	**231.410.271**	**138.136.342**	**-93.273.929**	**-40%**
1.A.3.b iv - Motorised Two-Wheelers (M2Ws)	Gasoline	pre-Euro	7.389	7.389	0%	122,96	150,24	22%	908.598	1.110.176	201.598	22%
		Euro 1	4.885	4.885	0%	124,72	168,26	35%	599.299	808.547	209.248	35%
		Euro 2	3.544	3.544	0%	137,85	194,58	41%	488.552	689.603	201.051	41%
		Euro 3	3.550	3.550	0%	39,59	194,58	392%	140.553	690.834	550.280	392%
		Euro 4	0	0	0%			0%	0	0	0	0%
		Euro 5	0	0	0%			0%	0	0	0	0%
		M2Ws Total	**19.289**	**19.289**	**0%**	**110,79**	**171,04**	**54%**	**2.137.002**	**3.299.162**	**1.162.160**	**54%**
1.A.3.b - Road Transport		**Total**	**2.100.883**	**2.100.883**	**0%**	**301,00**	**157,85**	**-48%**	**632.365.736**	**331.625.655**	**-300.740.081**	**-48%**

Adjustment details for 2012

NFR Code	Fuel		Activity Data current in [TJ]	Activity Data adjusted in [TJ]	Activity Data difference in [%]	Implied Emission Factor current in [kg/TJ]	Implied Emission Factor adjusted in [kg/TJ]	Implied Emission Factor difference in [%]	NO_x Emissions current in [kg]	NO_x Emissions adjusted in [kg]	NO_x Emissions adjustment in [kg]	NO_x Emissions difference in [%]
1.A.3.b i - Passenger Cars	Gasoline	pre-Euro	11.561	11.561	0%	607,72	535,39	-12%	7.026.041	6.189.786	-836.256	-12%
		Euro 1	47.487	47.487	0%	348,56	241,02	-31%	16.571.746	11.426.129	-5.145.617	-31%
		Euro 2	72.761	72.761	0%	184,27	137,92	-25%	13.407.749	10.035.380	-3.372.369	-25%
		Euro 3	108.443	108.443	0%	63,89	72,62	14%	6.927.903	7.875.172	947.269	14%
		Euro 4	408.541	408.541	0%	45,39	45,13	-1%	18.541.881	18.436.716	-105.145	-1%
		Euro 5	101.961	101.961	0%	18,61	45,13	143%	1.897.356	4.601.311	2.703.954	143%
		Euro 6	282	282	0%	26,00	45,13	74%	7.338	12.736	5.398	74%
		Gasoline total	**750.957**	**750.957**	**0%**	**85,73**	**78,00**	**-9%**	**64.379.994**	**58.577.229**	**-5.802.765**	**-9%**
	Diesel Oil	pre-Euro	1.487	1.487	0%	311,98	264,95	-15%	463.903	393.972	-69.931	-15%
		Euro 1	6.650	6.650	0%	297,79	266,44	-11%	1.980.304	1.771.787	-208.517	-11%
		Euro 2	33.957	33.957	0%	408,62	219,27	-46%	13.807.432	7.445.646	-6.361.787	-46%
		Euro 3	103.539	103.539	0%	564,02	178,63	-68%	58.398.037	18.494.837	-39.903.200	-68%
		Euro 4	234.943	234.943	0%	390,41	146,46	-62%	91.724.198	34.408.997	-57.315.201	-62%
		Euro 5	173.112	173.112	0%	434,89	146,46	-66%	75.284.364	25.353.375	-49.930.990	-66%
		Euro 6	1.557	1.557	0%	259,84	146,46	-44%	404.664	228.086	-176.578	-44%
		Diesel oil total	**555.245**	**555.245**	**0%**	**435,96**	**158,66**	**-64%**	**242.062.902**	**88.096.699**	**-153.966.203**	**-64%**
		PCs Total	**1.306.202**	**1.306.202**	**0%**	**234,61**	**112,29**	**-52%**	**306.442.896**	**146.673.927**	**-159.768.968**	**-52%**
1.A.3.b ii - Light Duty Vehicles (LDVs)	Gasoline	pre-Euro	962	962	0%	632,00	645,95	2%	607.739	621.150	13.411	2%
		Euro 1	232	232	0%	863,24	303,22	-65%	199.865	70.205	-129.661	-65%
		Euro 2	989	989	0%	271,16	195,74	-28%	268.194	193.598	-74.596	-28%
		Euro 3	835	835	0%	89,38	98,33	10%	74.623	82.092	7.469	10%
		Euro 4	2.030	2.030	0%	38,49	47,58	24%	78.155	96.601	18.446	24%
		Euro 5	610	610	0%	16,30	47,58	192%	9.941	29.011	19.069	192%
		Euro 6	0	0	0%	15,37	47,58	210%	2	5	4	210%
		Gasoline total	**5.657**	**5.657**	**0%**	**218,93**	**193,15**	**-12%**	**1.238.520**	**1.092.662**	**-145.859**	**-12%**
	Diesel Oil	pre-Euro	3.281	3.281	0%	424,45	306,79	-28%	1.358.754	982.093	-376.661	-28%
		Euro 1	3.656	3.656	0%	395,34	215,24	-46%	1.445.560	787.034	-658.526	-46%
		Euro 2	8.479	8.479	0%	338,40	193,39	-43%	2.852.325	1.639.772	-1.212.553	-43%
		Euro 3	23.785	23.785	0%	558,53	150,44	-73%	13.050.281	3.566.082	-9.484.199	-73%
		Euro 4	59.485	59.485	0%	494,22	89,85	-82%	29.358.878	5.337.395	-24.021.483	-82%
		Euro 5	15.984	15.984	0%	442,70	89,85	-80%	7.040.461	1.428.906	-5.611.555	-80%
		Euro 6	1	1	0%	151,94	89,85	-41%	122	72	-50	-41%
		Diesel oil total	**114.350**	**114.350**	**0%**	**481,91**	**120,17**	**-75%**	**55.106.382**	**13.741.354**	**-41.365.028**	**-75%**
		LDVs Total	**120.008**	**120.008**	**0%**	**469,51**	**123,61**	**-74%**	**56.344.903**	**14.834.016**	**-41.510.887**	**-74%**
1.A.3.b iii - Heavy Duty Vehicle: Buses	Diesel Oil	pre-Euro	1.326	1.326	0%	1063,46	1019,46	-4%	1.410.646	1.352.283	-58.392	-4%
		Euro I	1.248	1.248	0%	727,34	751,15	3%	907.476	937.184	29.708	3%
		Euro II	7.768	7.768	0%	783,45	643,34	-18%	6.085.891	4.997.478	-1.088.413	-18%
		Euro III	14.483	14.483	0%	629,94	457,51	-27%	9.073.197	6.589.744	-2.483.453	-27%
		Euro IV	5.331	5.331	0%	458,10	351,65	-23%	2.442.179	1.875.777	-566.402	-23%
		Euro V	20.752	20.752	0%	347,84	182,99	-47%	7.218.563	3.797.467	-3.421.096	-47%
		Euro VI	73	73	0%	54,52	182,99	236%	3.961	13.295	9.334	236%
		Buses Total	**50.982**	**50.982**	**0%**	**533,22**	**384,33**	**-28%**	**27.141.913**	**19.563.208**	**-7.578.704**	**-28%**
1.A.3.b iii - Heavy Duty Vehicle: Trucks & Lorries	Diesel Oil	pre-Euro	6.922	6.922	0%	1036,95	758,82	-27%	7.177.543	5.252.345	-1.925.198	-27%
		Euro I	3.630	3.630	0%	749,70	570,57	-24%	2.721.326	2.071.111	-650.215	-24%
		Euro II	23.577	23.577	0%	818,27	516,43	-37%	19.292.253	12.175.855	-7.116.398	-37%
		Euro III	96.726	96.726	0%	634,65	370,21	-42%	61.387.137	35.808.665	-25.578.472	-42%
		Euro IV	50.550	50.550	0%	395,50	288,44	-27%	19.992.600	14.580.877	-5.411.723	-27%
		Euro V	405.081	405.081	0%	281,24	152,32	-46%	114.149.955	61.825.677	-52.324.278	-46%
		Euro VI	2.380	2.380	0%			0%	108.467	350.323	241.856	223%
		Trucks Total	**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 - Motorised Two-Wheelers (M2Ws)	Gasoline	pre-Euro	6.780	6.780	0%	122,76	151,03	23%	822.538	1.011.920	189.381	23%
		Euro 1	4.306	4.306	0%	124,61	171,39	38%	536.615	738.050	201.435	38%
		Euro 2	3.267	3.267	0%	136,22	194,95	43%	445.087	636.853	191.846	43%
		Euro 3	3.994	3.994	0%	39,66	194,95	392%	158.386	778.616	620.230	392%
		Euro 4	0	0	0%			0%	0	0	0	0%
		Euro 5	0	0	0%			0%	0	0	0	0%
		M2Ws Total	**18.268**	**18.268**	**0%**	**107,43**	**173,28**	**61%**	**1.962.546**	**3.165.439**	**1.202.893**	**61%**
1.A.3.b - Road Transport		**Total**	**2.084.964**	**2.084.964**	**0%**	**295,79**	**151,71**	**-49%**	**616.721.438**	**316.301.343**	**-300.420.094**	**-49%**

Adjustment details for 2013

NFR Code	Fuel		Activity Data current in [TJ]	Activity Data adjusted in [TJ]	Activity Data difference in [%]	Implied Emission Factor current in [kg/TJ]	Implied Emission Factor adjusted in [kg/TJ]	Implied Emission Factor difference in [%]	NO_x Emissions current in [kg]	NO_x Emissions adjusted in [kg]	NO_x Emissions adjustment in [kg]	NO_x Emissions difference in [%]
1.A.3.b i - Passenger Cars	Gasoline	pre-Euro	11.490	11.490	0%	610,22	519,36	-15%	7.011.541	5.967.452	-1.044.089	-15%
		Euro 1	37.743	37.743	0%	353,78	241,88	-32%	13.352.986	9.129.485	-4.223.501	-32%
		Euro 2	62.680	62.680	0%	189,93	139,33	-27%	11.889.922	8.722.244	-3.167.678	-27%
		Euro 3	97.792	97.792	0%	66,38	73,19	10%	6.491.618	7.156.920	665.303	10%
		Euro 4	397.911	397.911	0%	47,22	46,52	-1%	18.790.345	18.509.937	-280.407	-1%
		Euro 5	138.863	138.863	0%	18,60	46,52	150%	2.583.150	6.459.601	3.876.451	150%
		Euro 6	2.714	2.714	0%	25,99	46,52	79%	70.526	126.237	55.711	79%
		Gasoline total	**749.114**	**749.114**	**0%**	**80,35**	**74,85**	**-7%**	**60.190.087**	**56.071.797**	**-4.118.211**	**-7%**
	Diesel Oil	pre-Euro	1.389	1.389	0%	312,26	264,95	-15%	433.881	368.139	-65.742	-15%
		Euro 1	5.625	5.625	0%	298,42	266,79	-11%	1.678.472	1.500.588	-177.884	-11%
		Euro 2	28.437	28.437	0%	406,64	219,91	-46%	11.563.522	6.253.531	-5.309.991	-46%
		Euro 3	92.795	92.795	0%	574,33	178,67	-69%	53.294.956	16.579.373	-36.715.583	-69%
		Euro 4	222.583	222.583	0%	393,55	149,27	-62%	87.598.471	33.225.566	-54.372.905	-62%
		Euro 5	233.786	233.786	0%	435,42	149,27	-66%	101.787.275	34.894.768	-66.892.507	-66%
		Euro 6	4.536	4.536	0%	259,53	149,27	-42%	1.177.151	677.045	-500.106	-42%
		Diesel oil total	**589.131**	**589.131**	**0%**	**437,14**	**158,71**	**-64%**	**257.533.728**	**93.499.010**	**-164.034.718**	**-64%**
		PCs Total	**1.338.245**	**1.338.245**	**0%**	**237,42**	**111,77**	**-53%**	**317.723.735**	**149.570.806**	**-168.152.928**	**-53%**
1.A.3.b ii - Light Duty Vehicles (LDVs)	Gasoline	pre-Euro	897	897	0%	633,81	645,95	2%	568.320	579.203	10.884	2%
		Euro 1	194	194	0%	863,50	306,27	-65%	167.261	59.326	-107.935	-65%
		Euro 2	836	836	0%	274,42	201,18	-27%	229.520	168.265	-61.255	-27%
		Euro 3	784	784	0%	92,66	101,70	10%	72.691	79.780	7.089	10%
		Euro 4	1.899	1.899	0%	40,70	48,89	20%	77.284	92.833	15.549	20%
		Euro 5	966	966	0%	16,67	48,89	193%	16.107	47.268	31.161	193%
		Euro 6	1	1	0%	17,60	48,89	178%	26	72	46	178%
		Gasoline total	**5.578**	**5.578**	**0%**	**202,80**	**184,07**	**-9%**	**1.131.209**	**1.026.727**	**-104.482**	**-9%**
	Diesel Oil	pre-Euro	2.754	2.754	0%	424,37	306,79	-28%	1.168.757	844.929	-323.828	-28%
		Euro 1	2.948	2.948	0%	395,75	215,25	-46%	1.166.782	634.586	-532.136	-46%
		Euro 2	6.982	6.982	0%	336,02	193,35	-42%	2.346.147	1.350.014	-996.133	-42%
		Euro 3	20.421	20.421	0%	560,12	150,38	-73%	11.437.995	3.070.913	-8.367.082	-73%
		Euro 4	55.887	55.887	0%	497,72	90,46	-82%	27.776.440	5.048.416	-22.728.024	-82%
		Euro 5	29.824	29.824	0%	441,97	90,46	-80%	13.181.325	2.697.964	-10.483.361	-80%
		Euro 6	41	41	0%	151,28	90,46	-40%	6.169	3.689	-2.479	-40%
		Diesel oil total	**118.777**	**118.777**	**0%**	**480,60**	**114,93**	**-76%**	**57.083.533**	**13.650.488**	**-43.433.045**	**-76%**
		LDVs Total	**124.354**	**124.354**	**0%**	**468,14**	**118,03**	**-75%**	**58.214.742**	**14.677.215**	**-43.537.527**	**-75%**
1.A.3.b iii - Heavy Duty Vehicle: Buses	Diesel Oil	pre-Euro	1.172	1.172	0%	1066,08	1019,23	-4%	1.249.028	1.194.143	-54.885	-4%
		Euro I	1.054	1.054	0%	727,68	750,99	3%	766.620	791.181	24.561	3%
		Euro II	6.804	6.804	0%	784,07	643,48	-18%	5.334.908	4.378.271	-956.637	-18%
		Euro III	13.107	13.107	0%	630,43	457,65	-27%	8.262.800	5.998.226	-2.264.575	-27%
		Euro IV	4.946	4.946	0%	460,55	351,71	-24%	2.278.061	1.739.706	-538.354	-24%
		Euro V	24.096	24.096	0%	350,08	183,46	-48%	8.435.503	4.420.743	-4.014.761	-48%
		Euro VI	537	537	0%	44,76	183,46	310%	24.047	98.572	74.525	310%
		Buses Total	**51.716**	**51.716**	**0%**	**509,54**	**360,06**	**-29%**	**26.350.969**	**18.620.843**	**-7.730.126**	**-29%**
1.A.3.b iii - Heavy Duty Vehicle: Trucks & Lorries	Diesel Oil	pre-Euro	5.863	5.863	0%	1035,72	737,35	-29%	6.072.170	4.322.868	-1.749.303	-29%
		Euro I	2.905	2.905	0%	749,27	568,27	-24%	2.176.846	1.650.969	-525.877	-24%
		Euro II	18.444	18.444	0%	818,17	513,46	-37%	15.089.861	9.469.975	-5.619.886	-37%
		Euro III	75.130	75.130	0%	633,53	367,33	-42%	47.597.440	27.597.780	-19.999.660	-42%
		Euro IV	42.781	42.781	0%	396,90	287,27	-27%	16.936.887	12.289.770	-4.647.037	-27%
		Euro V	436.999	436.999	0%	281,70	152,65	-46%	123.181.324	66.786.496	-56.394.827	-46%
		Euro VI	18.020	18.020	0%	50,67	152,65	201%	913.082	2.750.630	1.837.549	201%
		Trucks Total	**600.139**	**600.139**	**0%**	**353,06**	**207,93**	**-41%**	**211.887.531**	**124.788.469**	**-87.099.062**	**-41%**
1.A.3.b iv - Motorised Two-Wheelers (M2Ws)	Gasoline	pre-Euro	6.352	6.352	0%	123,07	151,79	23%	781.736	964.179	182.443	23%
		Euro 1	4.013	4.013	0%	125,11	173,15	38%	502.073	694.880	192.807	38%
		Euro 2	3.302	3.302	0%	132,24	195,58	48%	436.668	645.804	209.136	48%
		Euro 3	4.562	4.562	0%	39,81	195,58	391%	181.610	892.175	710.565	391%
		Euro 4	0	0	0%			0%	0	0	0	0%
		Euro 5	0	0	0%			0%	0	0	0	0%
		M2Ws Total	**18.229**	**18.229**	**0%**	**104,34**	**175,38**	**68%**	**1.902.088**	**3.197.038**	**1.294.951**	**68%**
1.A.3.b - Road Transport		**Total**	**2.132.683**	**2.132.683**	**0%**	**288,88**	**145,76**	**-50%**	**616.079.063**	**310.854.371**	**-305.224.692**	**-50%**

Adjustment details for 2014

NFR Code	Fuel		Activity Data current	Activity Data adjusted	Activity Data difference	Implied Emission Factor current	Implied Emission Factor adjusted	Implied Emission Factor difference	NO_x Emissions current	NO_x Emissions adjusted	NO_x Emissions adjustment	NO_x Emissions difference
			in [TJ]		in [%]	in [kg/TJ]		in [%]		in [kg]		in [%]
1.A.3.b i - Passenger Cars	Gasoline	pre-Euro	11.647	11.647	0%	612,37	544,11	-11%	7.132.588	6.337.464	-795.844	-11%
		Euro 1	30.667	30.667	0%	358,77	243,93	-32%	11.002.246	7.480.541	-3.521.706	-32%
		Euro 2	53.486	53.486	0%	196,58	140,31	-29%	10.514.477	7.504.432	-3.010.044	-29%
		Euro 3	87.374	87.374	0%	69,31	73,93	7%	6.055.588	6.459.797	404.210	7%
		Euro 4	387.759	387.759	0%	49,15	47,80	-3%	19.059.585	18.536.089	-523.557	-3%
		Euro 5	171.278	171.278	0%	18,59	47,80	157%	3.183.292	8.187.581	5.004.289	157%
		Euro 6	10.315	10.315	0%	25,97	47,80	84%	267.858	493.098	225.240	84%
		Gasoline total	752.526	752.526	0%	76,03	73,09	-4%	57.215.533	54.998.921	-2.216.612	-4%
	Diesel Oil	pre-Euro	1.341	1.341	0%	311,73	264,95	-15%	417.967	355.245	-62.722	-15%
		Euro 1	4.892	4.892	0%	298,92	267,20	-11%	1.462.204	1.307.043	-155.161	-11%
		Euro 2	23.934	23.934	0%	406,71	220,45	-46%	9.734.484	5.276.400	-4.458.084	-46%
		Euro 3	82.749	82.749	0%	585,53	178,81	-69%	48.451.830	14.796.245	-33.655.585	-69%
		Euro 4	211.237	211.237	0%	397,27	151,77	-62%	83.917.680	32.059.973	-51.857.708	-62%
		Euro 5	285.811	285.811	0%	436,38	151,77	-65%	124.721.396	43.378.380	-81.343.896	-65%
		Euro 6	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%	435,87	159,12	-63%	272.876.061	99.613.892	-173.262.169	-63%
		PCs Total	1.378.571	1.378.571	0%	239,44	112,15	-53%	330.091.594	154.612.813	-175.478.781	-53%
1.A.3.b ii - Light Duty Vehicles (LDVs)	Gasoline	pre-Euro	896	896	0%	634,74	645,95	2%	568.683	578.724	10.040	2%
		Euro 1	173	173	0%	868,27	309,96	-64%	150.074	53.575	-96.499	-64%
		Euro 2	748	748	0%	284,73	207,11	-27%	212.868	154.839	-58.029	-27%
		Euro 3	771	771	0%	98,62	105,21	7%	75.992	81.070	5.078	7%
		Euro 4	1.867	1.867	0%	43,47	50,15	15%	81.139	93.618	12.479	15%
		Euro 5	1.374	1.374	0%	17,11	50,15	193%	23.517	68.918	45.401	193%
		Euro 6	17	17	0%	18,00	50,15	179%	312	870	557	179%
		Gasoline total	5.845	5.845	0%	190,34	176,49	-7%	1.112.584	1.031.612	-80.972	-7%
	Diesel Oil	pre-Euro	2.537	2.537	0%	420,15	306,79	-27%	1.065.819	778.259	-287.559	-27%
		Euro 1	2.588	2.588	0%	393,82	215,25	-45%	987.136	539.808	-447.328	-45%
		Euro 2	6.087	6.087	0%	330,61	193,25	-42%	1.985.995	1.160.869	-825.126	-42%
		Euro 3	18.220	18.220	0%	571,75	150,58	-74%	10.417.076	2.742.056	-7.675.020	-74%
		Euro 4	52.361	52.361	0%	499,70	91,09	-82%	26.164.486	4.769.746	-21.394.740	-82%
		Euro 5	46.749	46.749	0%	438,44	91,09	-79%	20.496.234	4.258.526	-16.237.709	-79%
		Euro 6	197	197	0%	151,18	91,09	-40%	29.829	17.974	-11.855	-40%
		Diesel oil total	128.578	128.578	0%	475,56	110,96	-77%	61.146.575	14.267.237	-46.879.338	-77%
		LDVs Total	134.423	134.423	0%	463,16	113,81	-75%	62.259.160	15.298.849	-46.960.311	-75%
1.A.3.b iii - Heavy Duty Vehicle: Buses	Diesel Oil	pre-Euro	984	984	0%	1069,48	1019,23	-5%	1.052.364	1.002.921	-49.443	-5%
		Euro I	837	837	0%	728,12	750,98	3%	609.232	628.359	19.127	3%
		Euro II	5.598	5.598	0%	784,95	643,67	-18%	4.394.328	3.603.441	-790.887	-18%
		Euro III	11.221	11.221	0%	631,20	458,38	-27%	7.082.748	5.143.528	-1.939.220	-27%
		Euro IV	4.278	4.278	0%	461,10	351,78	-24%	1.972.610	1.504.978	-467.632	-24%
		Euro V	22.042	22.042	0%	350,55	182,99	-48%	7.726.921	4.055.532	-3.671.389	-48%
		Euro VI	4.182	4.182	0%	42,78	183,99	330%	178.913	769.475	590.563	330%
		Buses Total	49.143	49.143	0%	468,37	339,99	-27%	23.017.115	16.708.234	-6.308.881	-27%
1.A.3.b iii - Heavy Duty Vehicle: Trucks & Lorries	Diesel Oil	pre-Euro	4.782	4.782	0%	1034,34	737,35	-29%	4.945.942	3.525.808	-1.420.134	-29%
		Euro I	2.285	2.285	0%	748,66	561,41	-25%	1.650.606	1.237.759	-412.848	-25%
		Euro II	13.629	13.629	0%	817,90	510,38	-38%	11.146.869	6.955.738	-4.191.131	-38%
		Euro III	54.685	54.685	0%	632,52	364,41	-42%	34.589.677	19.927.835	-14.661.841	-42%
		Euro IV	34.037	34.037	0%	396,37	285,34	-28%	13.491.158	9.711.896	-3.779.262	-28%
		Euro V	389.283	389.283	0%	282,92	153,06	-46%	110.112.792	59.568.043	-50.544.749	-46%
		Euro VI	74.214	74.214	0%	53,06	153,06	189%	3.937.089	11.358.502	7.421.413	189%
		Trucks Total	572.754	572.754	0%	314,05	196,05	-38%	179.874.133	112.285.582	-67.588.551	-38%
1.A.3.b iv - Motorised Two-Wheelers (M2Ws)	Gasoline	pre-Euro	6.185	6.185	0%	122,65	158,04	29%	756.185	974.368	218.182	29%
		Euro 1	3.837	3.837	0%	124,71	174,84	40%	478.514	670.859	192.346	40%
		Euro 2	3.365	3.365	0%	128,94	196,25	52%	433.874	660.378	226.504	52%
		Euro 3	5.305	5.305	0%	39,53	196,25	396%	209.722	1.041.189	831.467	396%
		Euro 4	0	0	0%			0%	0	0	0	0%
		Euro 5	0	0	0%			0%	0	0	0	0%
		M2Ws Total	18.673	18.673	0%	100,59	179,24	78%	1.878.294	3.346.794	1.468.499	78%
1.A.3.b - Road Transport		Total	2.153.563	2.153.563	0%	277,27	140,35	-49%	597.120.297	302.252.271	-294.868.025	-49%

Adjustment details for 2015

NFR Code	Fuel		Activity Data current	Activity Data adjusted	Activity Data difference	Implied Emission Factor current	Implied Emission Factor adjusted	Implied Emission Factor difference	NO_x Emissions current	NO_x Emissions adjusted	NO_x Emissions adjustment	NO_x Emissions difference
			in [TJ]		in [%]	in [kg/TJ]		in [%]		in [kg]		in [%]
1.A.3.b i - Passenger Cars	Gasoline	pre-Euro	11.380	11.380	0%	633,23	544,11	-14%	7.206.112	6.191.942	-1.014.169	-14%
		Euro 1	24.112	24.112	0%	371,34	245,71	-34%	8.953.881	5.924.674	-3.029.228	-34%
		Euro 2	42.925	42.925	0%	207,78	142,09	-32%	8.918.705	6.099.059	-2.819.646	-32%
		Euro 3	72.871	72.871	0%	73,85	74,74	1%	5.381.351	5.446.237	64.887	1%
		Euro 4	353.474	353.474	0%	52,30	49,02	-6%	18.485.637	17.326.221	-1.159.416	-6%
		Euro 5	180.783	180.783	0%	19,11	49,02	157%	3.454.481	8.861.456	5.406.975	157%
		Euro 6	29.612	29.612	0%	26,70	49,02	84%	790.781	1.451.493	660.793	84%
		Gasoline total	715.156	715.156	0%	74,38	71,73	-4%	53.190.787	51.300.983	-1.889.805	-4%
	Diesel Oil	pre-Euro	1.282	1.282	0%	310,32	264,95	-15%	397.917	339.733	-58.184	-15%
		Euro 1	4.219	4.219	0%	299,14	267,84	-10%	1.261.930	1.129.909	-132.021	-10%
		Euro 2	19.689	19.689	0%	407,00	220,36	-46%	8.013.587	4.338.719	-3.674.798	-46%
		Euro 3	71.044	71.044	0%	595,01	179,04	-70%	42.271.648	12.719.982	-29.551.665	-70%
		Euro 4	192.410	192.410	0%	401,42	154,07	-62%	77.237.655	29.644.450	-47.593.206	-62%
		Euro 5	304.346	304.346	0%	434,67	154,07	-65%	132.290.493	46.890.424	-85.400.069	-65%
		Euro 6	52.576	52.576	0%	259,76	154,07	-41%	13.657.082	8.100.304	-5.556.778	-41%
		Diesel oil total	645.565	645.565	0%	426,19	159,80	-63%	275.130.233	103.163.501	-171.966.732	-63%
		PCs Total	1.360.721	1.360.721	0%	241,28	113,52	-53%	328.321.020	154.464.484	-173.856.536	-53%
1.A.3.b ii - Light Duty Vehicles (LDVs)	Gasoline	pre-Euro	879	879	0%	654,37	645,95	-1%	575.380	567.977	-7.404	-1%
		Euro 1	150	150	0%	895,63	311,93	-65%	134.523	46.851	-87.672	-65%
		Euro 2	629	629	0%	298,27	212,94	-29%	187.533	133.879	-53.654	-29%
		Euro 3	701	701	0%	105,50	108,62	3%	73.969	76.155	2.186	3%
		Euro 4	1.720	1.720	0%	47,06	51,30	9%	80.958	88.248	7.290	9%
		Euro 5	1.620	1.620	0%	18,41	51,30	179%	29.812	83.086	53.274	179%
		Euro 6	94	94	0%	18,71	51,30	174%	1.762	4.884	3.052	174%
		Gasoline total	5.793	5.793	0%	187,12	172,80	-8%	1.083.927	1.000.999	-82.928	-8%
	Diesel Oil	pre-Euro	2.323	2.323	0%	416,01	306,79	-26%	966.185	712.531	-253.654	-26%
		Euro 1	2.106	2.106	0%	391,47	215,25	-45%	824.270	453.227	-371.043	-45%
		Euro 2	5.025	5.025	0%	324,81	193,29	-40%	1.632.286	971.286	-660.928	-40%
		Euro 3	15.781	15.781	0%	588,35	150,67	-74%	9.112.414	2.365.713	-6.746.701	-74%
		Euro 4	47.480	47.480	0%	501,73	91,74	-82%	23.782.396	4.348.298	-19.434.098	-82%
		Euro 5	62.116	62.116	0%	436,13	91,74	-79%	27.090.214	5.698.205	-21.392.009	-79%
		Euro 6	635	635	0%	154,01	91,74	-40%	97.759	58.230	-39.528	-40%
		Diesel oil total	135.306	135.306	0%	469,35	107,96	-77%	63.505.443	14.607.490	-48.897.953	-77%
		LDVs Total	141.098	141.098	0%	457,76	110,62	-76%	64.589.370	15.608.490	-48.980.881	-76%
1.A.3.b iii - Heavy Duty Vehicle: Buses	Diesel Oil	pre-Euro	979	979	0%	1070,34	1019,23	-5%	1.048.312	998.255	-50.058	-5%
		Euro I	747	747	0%	730,26	751,91	3%	545.471	561.636	16.165	3%
		Euro II	5.211	5.211	0%	787,43	644,46	-18%	4.103.687	3.358.684	-745.003	-18%
		Euro III	11.282	11.282	0%	633,00	458,67	-28%	7.141.732	5.174.909	-1.966.822	-28%
		Euro IV	4.586	4.586	0%	469,70	351,99	-25%	2.154.086	1.614.177	-539.829	-25%
		Euro V	24.257	24.257	0%	359,77	184,59	-49%	8.727.069	4.477.641	-4.249.427	-49%
		Euro VI	5.224	5.224	0%	53,13	184,59	247%	277.542	964.225	686.684	247%
		Buses Total	52.287	52.287	0%	458,96	327,89	-29%	23.997.817	17.149.448	-6.848.370	-29%
1.A.3.b iii - Heavy Duty Vehicle: Trucks & Lorries	Diesel Oil	pre-Euro	4.319	4.319	0%	1034,69	737,35	-29%	4.468.571	3.184.428	-1.284.143	-29%
		Euro I	1.853	1.853	0%	748,71	553,48	-26%	1.387.291	1.025.551	-361.740	-26%
		Euro II	11.092	11.092	0%	817,98	507,98	-38%	9.072.840	5.633.460	-3.439.381	-38%
		Euro III	43.481	43.481	0%	631,55	361,64	-43%	27.460.779	15.724.631	-11.736.147	-43%
		Euro IV	29.233	29.233	0%	396,88	283,72	-28%	11.572.868	8.294.100	-3.278.769	-28%
		Euro V	329.726	329.726	0%	284,17	153,49	-46%	93.413.973	50.456.496	-42.957.477	-46%
		Euro VI	170.787	170.787	0%	57,49	153,49	167%	9.813.354	26.282.037	16.388.684	167%
		Trucks Total	589.411	589.411	0%	266,69	187,51	-30%	157.189.675	110.520.703	-46.668.973	-30%
1.A.3.b iv - Motorised Two-Wheelers (M2Ws)	Gasoline	pre-Euro	5.744	5.744	0%	125,41	157,28	25%	720.441	903.470	183.028	25%
		Euro 1	3.517	3.517	0%	127,40	176,22	38%	448.086	619.819	171.733	38%
		Euro 2	3.382	3.382	0%	127,35	196,93	55%	430.680	665.985	235.306	55%
		Euro 3	5.011	5.011	0%	40,29	196,93	389%	234.126	1.144.415	910.289	389%
		Euro 4	4	4	0%	16,96		-100%	69	804	736	1061%
		Euro 5	0	0	0%			0%	0	0	0	0%
		M2Ws Total	18.459	18.459	0%	99,32	180,65	82%	1.833.382	3.334.472	1.501.090	82%
1.A.3.b - Road Transport		Total	2.161.976	2.161.976	0%	266,39	139,26	-48%	575.931.265	301.077.596	-274.853.670	-48%

Adjustment details for 2016

NFR Code	Fuel		Activity Data current	Activity Data adjusted	Activity Data difference	Implied Emission Factor current	Implied Emission Factor adjusted	Implied Emission Factor difference	NO_x Emissions current	NO_x Emissions adjusted	NO_x Emissions adjustment	NO_x Emissions difference
			in [TJ]		in [%]	in [kg/TJ]		in [%]		in [kg]		in [%]
1.A.3.b i - Passenger Cars	Gasoline	pre-Euro	11.782	11.782	0%	634,76	544,11	-14%	7.478.914	6.410.957	-1.067.957	-14%
		Euro 1	20.270	20.270	0%	372,26	241,68	-35%	7.545.483	4.898.888	-2.646.596	-35%
		Euro 2	36.062	36.062	0%	212,73	143,11	-33%	7.671.591	5.160.897	-2.510.693	-33%
		Euro 3	63.039	63.039	0%	76,17	75,50	-1%	4.801.492	4.759.259	-42.233	-1%
		Euro 4	334.413	334.413	0%	53,74	50,17	-7%	17.969.984	16.777.445	-1.192.468	-7%
		Euro 5	183.374	183.374	0%	19,09	50,17	163%	3.500.746	9.199.834	5.699.088	163%
		Euro 6	66.332	66.332	0%	26,67	50,17	88%	1.768.917	3.327.850	1.558.933	88%
		Gasoline total	715.272	715.272	0%	70,93	70,65	0%	50.736.967	50.535.049	-201.918	0%
	Diesel Oil	pre-Euro	1.280	1.280	0%	308,76	264,95	-14%	395.262	339.173	-56.089	-14%
		Euro 1	3.749	3.749	0%	299,38	269,66	-10%	1.122.449	1.011.025	-111.425	-10%
		Euro 2	16.584	16.584	0%	407,19	221,40	-46%	6.720.132	3.653.964	-3.066.168	-46%
		Euro 3	61.398	61.398	0%	602,50	179,24	-70%	36.991.999	11.085.049	-25.906.950	-70%
		Euro 4	175.840	175.840	0%	405,78	156,24	-61%	71.352.220	27.474.006	-43.878.214	-61%
		Euro 5	299.654	299.654	0%	433,94	156,24	-64%	130.032.044	46.819.229	-83.212.815	-64%
		Euro 6	116.684	116.684	0%	260,75	156,24	-40%	30.427.555	18.232.785	-12.194.770	-40%
		Diesel oil total	675.119	675.119	0%	410,36	160,76	-61%	277.041.660	108.535.230	-168.506.430	-61%
		PCs Total	1.390.391	1.390.391	0%	235,75	114,41	-51%	327.778.627	159.070.280	-168.708.347	-51%
1.A.3.b ii - Light Duty Vehicles (LDVs)	Gasoline	pre-Euro	910	910	0%	652,79	645,95	-1%	593.788	587.563	-6.225	-1%
		Euro 1	136	136	0%	900,31	312,76	-65%	122.126	42.425	-79.700	-65%
		Euro 2	540	540	0%	300,39	217,84	-27%	162.311	117.707	-44.604	-27%
		Euro 3	650	650	0%	108,43	111,97	3%	70.432	72.731	2.299	3%
		Euro 4	1.684	1.684	0%	49,06	52,36	7%	78.714	84.003	5.289	7%
		Euro 5	1.724	1.724	0%	19,82	52,36	164%	34.157	90.258	56.100	164%
		Euro 6	363	363	0%	18,66	52,36	181%	6.764	18.992	12.228	181%
		Gasoline total	5.906	5.906	0%	180,27	171,06	-5%	1.068.292	1.013.678	-54.614	-5%
	Diesel Oil	pre-Euro	2.169	2.169	0%	414,87	306,79	-26%	899.848	665.433	-234.415	-26%
		Euro 1	1.790	1.790	0%	391,09	215,25	-45%	700.169	385.371	-314.798	-45%
		Euro 2	4.223	4.223	0%	323,43	193,31	-40%	1.365.994	816.452	-549.542	-40%
		Euro 3	13.582	13.582	0%	588,91	150,77	-74%	8.004.323	2.049.233	-5.955.090	-74%
		Euro 4	43.141	43.141	0%	504,48	92,40	-82%	21.763.909	3.986.141	-17.777.768	-82%
		Euro 5	74.231	74.231	0%	434,10	92,40	-79%	32.223.283	6.858.780	-25.364.503	-79%
		Euro 6	4.921	4.921	0%	153,49	92,40	-40%	755.285	454.676	-300.609	-40%
		Diesel oil total	144.068	144.068	0%	456,12	105,62	-77%	65.712.732	15.216.007	-50.496.726	-77%
		LDVs Total	149.994	149.994	0%	445,21	108,20	-76%	66.781.025	16.229.684	-50.551.340	-76%
1.A.3.b iii - Heavy Duty Vehicle: Buses	Diesel Oil	pre-Euro	891	891	0%	1070,81	1019,23	-5%	954.197	908.234	-45.963	-5%
		Euro I	583	583	0%	731,38	752,57	3%	433.675	446.236	12.560	3%
		Euro II	4.375	4.375	0%	788,25	645,03	-18%	3.448.614	2.822.021	-626.594	-18%
		Euro III	10.333	10.333	0%	632,87	458,91	-27%	6.539.364	4.741.827	-1.797.536	-27%
		Euro IV	4.449	4.449	0%	475,90	352,28	-26%	2.117.218	1.566.881	-550.338	-26%
		Euro V	24.390	24.390	0%	366,38	185,22	-49%	8.935.974	4.517.517	-4.418.457	-49%
		Euro VI	9.126	9.126	0%	62,79	185,22	195%	573.066	1.690.401	1.117.336	195%
		Buses Total	54.157	54.157	0%	424,73	308,24	-27%	23.002.109	16.693.117	-6.308.992	-27%
1.A.3.b iii - Heavy Duty Vehicle: Trucks & Lorries	Diesel Oil	pre-Euro	3.933	3.933	0%	1034,01	737,35	-29%	4.067.249	2.900.319	-1.166.930	-29%
		Euro I	1.555	1.555	0%	748,16	507,92	-32%	1.163.482	789.813	-373.569	-32%
		Euro II	8.876	8.876	0%	817,75	505,52	-38%	7.258.046	4.486.828	-2.771.218	-38%
		Euro III	34.167	34.167	0%	630,81	358,56	-43%	21.553.288	12.251.155	-9.302.133	-43%
		Euro IV	24.287	24.287	0%	396,94	281,86	-29%	9.640.394	6.845.501	-2.794.893	-29%
		Euro V	269.736	269.736	0%	287,22	153,92	-46%	74.600.233	39.978.610	-34.621.623	-46%
		Euro VI	261.460	261.460	0%	61,77	153,92	149%	16.149.288	40.244.036	24.094.748	149%
		Trucks Total	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 - Motorised Two-Wheelers (M2Ws)	Gasoline	pre-Euro	5.543	5.543	0%	125,59	155,76	24%	696.072	863.289	167.218	24%
		Euro 1	3.360	3.360	0%	127,11	177,29	39%	427.113	595.706	168.592	39%
		Euro 2	3.375	3.375	0%	125,04	197,68	58%	421.951	667.078	245.127	58%
		Euro 3	6.443	6.443	0%	40,30	197,68	391%	259.627	1.273.571	1.013.943	391%
		Euro 4	65	65	0%	17,47	197,68	1031%	1.134	12.832	11.698	1031%
		Euro 5	0	0	0%			0%	0	0	0	0%
		M2Ws Total	18.785	18.785	0%	95,14	181,66	89%	1.805.897	3.412.476	1.606.579	89%
1.A.3.b - Road Transport		Total	2.287.339	2.287.339	0%	250,89	137,22	-45%	553.799.558	302.901.820	-250.897.738	-45%

Adjustment details for 2017

NFR Code	Fuel		Activity Data current	Activity Data adjusted	Activity Data difference	Implied Emission Factor current	Implied Emission Factor adjusted	Implied Emission Factor difference	NO_x Emissions current	NO_x Emissions adjusted	NO_x Emissions adjustment	NO_x Emissions difference
			in [TJ]		in [%]	in [kg/TJ]		in [%]		in [kg]		in [%]
1.A.3.b i - Passenger Cars	Gasoline	pre-Euro	12.282	12.282	0%	635,73	544,11	-14%	7.814.287	6.688.187	-1.126.100	-14%
		Euro 1	17.449	17.449	0%	372,99	241,68	-35%	6.508.311	4.217.044	-2.291.267	-35%
		Euro 2	30.435	30.435	0%	217,43	141,75	-35%	6.617.570	4.314.140	-2.303.430	-35%
		Euro 3	54.271	54.271	0%	78,40	76,27	-3%	4.254.938	4.139.376	-115.562	-3%
		Euro 4	315.086	315.086	0%	54,98	51,26	-7%	17.316.320	16.151.861	-1.164.460	-7%
		Euro 5	180.248	180.248	0%	19,17	51,26	167%	3.455.302	9.239.815	5.784.513	167%
		Euro 6	114.791	114.791	0%	26,66	51,26	92%	3.060.226	5.884.372	2.824.146	92%
		Gasoline total	724.571	724.571	0%	67,66	69,88	3%	49.026.874	50.634.714	1.607.840	3%
	Diesel Oil	pre-Euro	1.310	1.310	0%	306,09	264,95	-13%	400.903	347.020	-53.883	-13%
		Euro 1	3.350	3.350	0%	299,17	271,67	-9%	1.002.298	910.182	-92.116	-9%
		Euro 2	13.788	13.788	0%	407,17	222,40	-45%	5.614.130	3.066.393	-2.547.736	-45%
		Euro 3	52.128	52.128	0%	608,05	179,65	-70%	31.696.478	9.364.708	-22.331.769	-70%
		Euro 4	157.847	157.847	0%	418,10	158,34	-61%	64.733.465	24.993.323	-39.740.142	-61%
		Euro 5	283.480	283.480	0%	423,99	158,34	-63%	120.157.656	44.873.190	-75.284.465	-63%
		Euro 6	184.760	184.760	0%	262,61	158,34	-40%	48.521.163	29.255.905	-19.265.258	-40%
		Diesel oil total	696.592	696.592	0%	390,65	161,95	-59%	272.126.091	112.810.721	-159.315.370	-59%
		PCs Total	1.421.162	1.421.162	0%	225,98	115,01	-49%	321.152.965	163.445.435	-157.707.530	-49%
1.A.3.b ii - Light Duty Vehicles (LDVs)	Gasoline	pre-Euro	940	940	0%	651,61	645,95	-1%	612.240	606.918	-5.322	-1%
		Euro 1	124	124	0%	906,23	312,76	-65%	112.083	38.682	-73.401	-65%
		Euro 2	465	465	0%	302,12	221,62	-27%	140.344	102.950	-37.394	-27%
		Euro 3	596	596	0%	110,57	115,36	4%	65.955	68.812	2.857	4%
		Euro 4	1.476	1.476	0%	50,72	53,38	5%	74.877	78.816	3.938	5%
		Euro 5	1.660	1.660	0%	21,73	53,38	146%	36.248	89.034	52.786	146%
		Euro 6	918	918	0%	18,58	53,38	187%	17.062	49.080	31.948	187%
		Gasoline total	6.186	6.186	0%	171,15	167,18	-2%	1.058.799	1.034.211	-24.588	-2%
	Diesel Oil	pre-Euro	2.057	2.057	0%	413,41	306,79	-26%	850.499	631.163	-219.336	-26%
		Euro 1	1.538	1.538	0%	390,47	215,25	-45%	600.716	331.158	-269.558	-45%
		Euro 2	3.580	3.580	0%	321,26	193,04	-40%	1.143.793	687.293	-456.501	-40%
		Euro 3	11.684	11.684	0%	595,08	150,79	-75%	6.940.879	1.758.747	-5.182.132	-75%
		Euro 4	39.050	39.050	0%	506,78	93,09	-82%	19.789.647	3.635.035	-16.154.612	-82%
		Euro 5	75.789	75.789	0%	432,66	93,09	-78%	32.790.956	7.054.945	-25.736.011	-78%
		Euro 6	19.626	19.626	0%	151,71	93,09	-39%	2.977.439	1.826.875	-1.150.564	-39%
		Diesel oil total	153.284	153.284	0%	424,66	103,89	-76%	65.093.930	15.925.216	-49.168.714	-76%
		LDVs Total	159.470	159.470	0%	414,83	106,35	-74%	66.152.729	16.959.427	-49.193.302	-74%
1.A.3.b iii - Heavy Duty Vehicle: Buses	Diesel Oil	pre-Euro	736	736	0%	1073,33	1019,23	-5%	790.259	750.425	-39.834	-5%
		Euro I	411	411	0%	731,97	752,57	3%	300.684	309.092	8.459	3%
		Euro II	3.325	3.325	0%	787,91	645,79	-18%	2.620.067	2.147.460	-472.606	-18%
		Euro III	8.678	8.678	0%	631,33	459,12	-27%	5.478.480	3.984.085	-1.494.396	-27%
		Euro IV	3.823	3.823	0%	474,07	352,49	-26%	1.812.380	1.347.680	-464.700	-26%
		Euro V	21.813	21.813	0%	363,92	185,84	-49%	7.937.976	4.053.686	-3.884.291	-49%
		Euro VI	14.596	14.596	0%	58,52	185,84	218%	854.215	2.712.590	1.858.375	218%
		Buses Total	53.382	53.382	0%	370,80	286,71	-23%	19.793.981	15.304.828	-4.489.073	-23%
1.A.3.b iii - Heavy Duty Vehicle: Trucks & Lorries	Diesel Oil	pre-Euro	3.606	3.606	0%	1034,40	737,35	-29%	3.730.272	2.659.016	-1.071.256	-29%
		Euro I	1.311	1.311	0%	748,03	468,38	-37%	980.842	614.151	-366.690	-37%
		Euro II	7.087	7.087	0%	817,66	503,45	-38%	5.794.876	3.568.026	-2.226.851	-38%
		Euro III	26.886	26.886	0%	630,17	355,72	-44%	16.942.661	9.563.841	-7.378.821	-44%
		Euro IV	20.082	20.082	0%	397,77	279,34	-30%	7.988.414	5.607.466	-2.368.948	-30%
		Euro V	204.305	204.305	0%	290,16	154,35	-47%	59.280.709	31.535.367	-27.745.342	-47%
		Euro VI	335.065	335.065	0%	65,62	154,35	135%	21.985.366	51.718.641	29.733.275	135%
		Trucks Total	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 - Motorised Two-Wheelers (M2Ws)	Gasoline	pre-Euro	5.336	5.336	0%	125,91	157,15	25%	671.888	838.789	166.881	25%
		Euro 1	3.257	3.257	0%	126,39	177,88	41%	411.617	579.244	167.627	41%
		Euro 2	3.396	3.396	0%	122,55	198,33	62%	416.200	673.548	257.348	62%
		Euro 3	6.741	6.741	0%	40,22	198,33	393%	271.107	1.336.956	1.065.849	393%
		Euro 4	430	430	0%	18,29	198,33	985%	7.862	85.270	77.408	985%
		Euro 5	0	0	0%	0,00		0%	0	0	0	0%
		M2Ws Total	19.160	19.160	0%	92,83	183,39	98%	1.778.674	3.513.787	1.735.114	98%
1.A.3.b - Road Transport		Total	2.251.437	2.251.437	0%	233,43	135,23	-42%	525.549.410	304.469.986	-221.079.424	-42%

Adjustment details for 2018

NFR Code	Fuel		Activity Data current	Activity Data adjusted	Activity Data difference	Implied Emission Factor current	Implied Emission Factor adjusted	Implied Emission Factor difference	NO_x Emissions current	NO_x Emissions adjusted	NO_x Emissions adjustment	NO_x Emissions difference
			in [TJ]		in [%]	in [kg/TJ]		in [%]		in [kg]		in [%]
1.A.3.b i - Passenger Cars	Gasoline	pre-Euro	12.219	12.219	0%	637,59	544,11	-15%	7.790.965	6.648.731	-1.142.234	-15%
		Euro 1	14.352	14.352	0%	374,24	241,68	-35%	5.371.161	3.468.643	-1.902.518	-35%
		Euro 2	24.285	24.285	0%	221,07	111,09	-50%	5.360.977	2.698.163	-2.662.814	-50%
		Euro 3	43.642	43.642	0%	80,15	76,96	-4%	3.497.781	3.358.617	-139.164	-4%
		Euro 4	278.738	278.738	0%	55,98	52,30	-7%	15.603.498	14.578.755	-1.024.743	-7%
		Euro 5	166.830	166.830	0%	19,35	52,30	170%	3.228.202	8.725.668	5.497.466	170%
		Euro 6	159.041	159.041	0%	0,00	52,30	0%	4.190.422	8.318.250	4.127.828	99%
		Gasoline total	699.027	699.027	0%	64,42	68,36	6%	45.032.996	47.786.817	2.753.820	6%
	Diesel Oil	pre-Euro	1.383	1.383	0%	303,55	264,95	-13%	395.466	345.173	-50.293	-13%
		Euro 1	2.849	2.849	0%	299,17	272,05	-9%	852.432	775.155	-77.277	-9%
		Euro 2	10.784	10.784	0%	407,20	222,87	-45%	4.391.393	2.483.536	-1.907.858	-45%
		Euro 3	40.786	40.786	0%	612,49	180,15	-71%	24.932.029	7.333.241	-17.598.788	-71%
		Euro 4	130.534	130.534	0%	414,71	160,48	-61%	54.133.837	20.937.329	-33.196.508	-61%
		Euro 5	251.212	251.212	0%	416,25	160,48	-61%	104.566.766	40.293.731	-64.273.036	-61%
		Euro 6	228.685	228.685	0%	254,87	160,48	-37%	58.284.140	36.680.440	-21.603.700	-37%
		Diesel oil total	666.074	666.074	0%	371,66	163,38	-56%	247.556.063	108.768.604	-138.787.459	-56%
		PCs Total	1.365.101	1.365.101	0%	214,34	114,68	-46%	292.589.060	156.555.421	-136.033.639	-46%
1.A.3.b ii - Light Duty Vehicles (LDVs)	Gasoline	pre-Euro	917	917	0%	650,53	645,95	-1%	596.859	592.652	-4.207	-1%
		Euro 1	108	108	0%	911,58	312,76	-66%	98.528	33.805	-64.723	-66%
		Euro 2	377	377	0%	303,64	224,45	-26%	114.682	84.713	-29.889	-26%
		Euro 3	511	511	0%	111,92	118,84	6%	57.202	60.739	3.537	6%
		Euro 4	1.275	1.275	0%	52,02	54,36	4%	66.298	69.278	2.980	4%
		Euro 5	1.483	1.483	0%	23,70	54,36	129%	35.160	80.626	45.466	129%
		Euro 6	1.643	1.643	0%	18,59	54,36	192%	30.550	89.325	58.775	192%
		Gasoline total	6.315	6.315	0%	158,22	160,11	1%	999.199	1.011.138	11.939	1%
	Diesel Oil	pre-Euro	1.872	1.872	0%	411,97	306,79	-26%	771.337	574.412	-196.925	-26%
		Euro 1	1.265	1.265	0%	389,84	215,25	-45%	493.129	272.286	-220.842	-45%
		Euro 2	2.842	2.842	0%	318,56	193,80	-39%	905.309	550.769	-354.540	-39%
		Euro 3	9.383	9.383	0%	599,10	150,74	-75%	5.609.152	1.411.299	-4.197.853	-75%
		Euro 4	33.232	33.232	0%	509,42	93,81	-82%	16.929.105	3.117.457	-13.811.648	-82%
		Euro 5	66.283	66.283	0%	432,92	93,81	-78%	28.694.880	6.217.860	-22.477.020	-78%
		Euro 6	39.482	39.482	0%	150,79	93,81	-38%	5.941.615	3.696.228	-2.245.387	-38%
		Diesel oil total	154.259	154.259	0%	384,71	102,69	-73%	59.344.525	15.840.310	-43.504.215	-73%
		LDVs Total	160.574	160.574	0%	375,80	104,94	-72%	60.343.725	16.851.449	-43.492.276	-72%
1.A.3.b iii - Heavy Duty Vehicle: Buses	Diesel Oil	pre-Euro	547	547	0%	1078,16	1019,23	-5%	589.357	557.147	-32.210	-5%
		Euro I	237	237	0%	732,78	752,57	3%	173.678	178.368	4.690	3%
		Euro II	2.270	2.270	0%	787,83	646,33	-18%	1.788.686	1.467.437	-321.249	-18%
		Euro III	6.757	6.757	0%	630,89	459,32	-27%	4.262.724	3.103.492	-1.159.232	-27%
		Euro IV	3.043	3.043	0%	473,16	352,73	-25%	1.439.790	1.073.333	-366.457	-25%
		Euro V	18.109	18.109	0%	362,42	186,37	-49%	6.563.265	3.375.016	-3.188.249	-49%
		Euro VI	20.670	20.670	0%	56,89	186,37	228%	1.176.026	3.852.314	2.676.288	228%
		Buses Total	51.634	51.634	0%	309,75	263,53	-15%	15.993.526	13.607.106	-2.386.420	-15%
1.A.3.b iii - Heavy Duty Vehicle: Trucks & Lorries	Diesel Oil	pre-Euro	3.262	3.262	0%	1034,82	737,35	-29%	3.375.359	2.405.071	-970.288	-29%
		Euro I	1.094	1.094	0%	747,82	468,39	-37%	818.052	512.378	-305.674	-37%
		Euro II	5.544	5.544	0%	817,44	501,68	-39%	4.532.198	2.781.510	-1.750.688	-39%
		Euro III	20.583	20.583	0%	629,54	353,56	-44%	12.957.751	7.277.279	-5.680.472	-44%
		Euro IV	15.912	15.912	0%	398,09	276,23	-31%	6.334.421	4.395.424	-1.938.997	-31%
		Euro V	156.993	156.993	0%	292,40	154,68	-47%	45.904.153	24.283.309	-21.620.843	-47%
		Euro VI	381.799	381.799	0%	68,76	154,68	125%	26.251.402	59.055.898	32.804.496	125%
		Trucks Total	585.186	585.186	0%	171,18	172,10	1%	100.173.337	100.710.869	537.532	1%
1.A.3.b iv - Motorised Two-Wheelers (M2Ws)	Gasoline	pre-Euro	4.940	4.940	0%	126,05	158,61	26%	622.656	783.451	160.795	26%
		Euro 1	2.966	2.966	0%	126,14	177,79	41%	374.114	527.294	153.180	41%
		Euro 2	3.221	3.221	0%	120,33	198,64	65%	387.596	639.833	252.237	65%
		Euro 3	6.241	6.241	0%	40,24	198,64	394%	251.126	1.239.688	988.562	394%
		Euro 4	1.130	1.130	0%	20,41	198,64	873%	23.066	224.502	201.436	873%
		Euro 5	0	0	0%	0,00		0%	0	0	0	0%
		M2Ws Total	18.497	18.497	0%	89,66	184,61	106%	1.658.558	3.414.767	1.756.209	106%
1.A.3.b - Road Transport		Total	2.180.983	2.180.983	0%	215,85	133,49	-38%	470.758.206	291.139.612	-179.618.593	-38%

Adjustment details for 2019

NFR Code	Fuel		Activity Data current	Activity Data adjusted	Activity Data difference	Implied Emission Factor current	Implied Emission Factor adjusted	Implied Emission Factor difference	NO_x Emissions current	NO_x Emissions adjusted	NO_x Emissions adjustment	NO_x Emissions difference
			in [TJ]		in [%]	in [kg/TJ]		in [%]		in [kg]		in [%]
1.A.3.b i - Passenger Cars	Gasoline	pre-Euro	13.569	13.569	0%	638,58	544,11	-15%	8.664.521	7.382.698	-1.281.823	-15%
		Euro 1	12.427	12.427	0%	378,32	241,68	-36%	4.701.480	3.003.383	-1.698.096	-36%
		Euro 2	20.086	20.086	0%	225,58	92,50	-59%	4.531.070	1.858.018	-2.673.052	-59%
		Euro 3	36.216	36.216	0%	82,22	78,12	-5%	2.977.840	2.829.166	-148.673	-5%
		Euro 4	255.220	255.220	0%	57,04	53,29	-7%	14.558.285	13.599.621	-958.584	-7%
		Euro 5	160.537	160.537	0%	19,77	53,29	170%	3.173.728	8.554.356	5.380.628	170%
		Euro 6	206.636	206.636	0%	25,63	53,29	108%	5.295.099	11.010.782	5.715.683	108%
		Gasoline total	704.691	704.691	0%	62,30	68,45	10%	43.901.941	48.238.025	4.336.084	10%
	Diesel Oil	pre-Euro	2.736	2.736	0%	333,76	264,95	-21%	913.198	724.923	-188.275	-21%
		Euro 1	2.565	2.565	0%	299,00	272,05	-9%	766.913	697.786	-69.127	-9%
		Euro 2	8.891	8.891	0%	407,19	229,15	-44%	3.620.286	2.037.460	-1.582.826	-44%
		Euro 3	33.019	33.019	0%	615,11	180,42	-71%	20.310.125	5.957.403	-14.352.723	-71%
		Euro 4	111.335	111.335	0%	419,17	162,44	-61%	46.668.685	18.085.228	-28.583.457	-61%
		Euro 5	231.784	231.784	0%	410,37	162,44	-60%	95.117.643	37.650.997	-57.466.645	-60%
		Euro 6	273.511	273.511	0%	227,30	162,44	-29%	62.169.238	44.429.184	-17.740.054	-29%
		Diesel oil total	663.841	663.841	0%	345,81	165,07	-52%	229.566.088	109.582.982	-119.983.106	-52%
		PCs Total	1.368.532	1.368.532	0%	199,83	115,32	-42%	273.468.029	157.821.007	-115.647.022	-42%
1.A.3.b ii - Light Duty Vehicles (LDVs)	Gasoline	pre-Euro	926	926	0%	649,69	645,95	-1%	601.459	597.992	-3.468	-1%
		Euro 1	97	97	0%	915,28	312,76	-66%	88.953	30.396	-58.557	-66%
		Euro 2	316	316	0%	304,63	224,45	-26%	96.158	70.848	-25.310	-26%
		Euro 3	447	447	0%	112,68	121,47	8%	50.355	54.283	3.928	8%
		Euro 4	1.126	1.126	0%	53,00	55,26	4%	59.632	62.199	2.547	4%
		Euro 5	1.351	1.351	0%	25,34	55,26	118%	34.248	74.680	40.432	118%
		Euro 6	2.420	2.420	0%	18,75	55,26	195%	45.393	133.753	88.359	195%
		Gasoline total	6.683	6.683	0%	146,08	153,25	5%	976.219	1.024.150	47.931	5%
	Diesel Oil	pre-Euro	1.764	1.764	0%	410,96	306,79	-25%	725.111	541.316	-183.795	-25%
		Euro 1	1.079	1.079	0%	389,52	215,25	-45%	420.285	232.255	-188.030	-45%
		Euro 2	2.334	2.334	0%	315,98	194,79	-38%	737.602	454.690	-282.912	-38%
		Euro 3	7.649	7.649	0%	601,11	150,70	-75%	4.597.943	1.152.711	-3.445.233	-75%
		Euro 4	28.711	28.711	0%	512,28	94,57	-82%	14.708.308	2.715.154	-11.993.154	-82%
		Euro 5	58.714	58.714	0%	434,30	94,57	-78%	25.499.580	5.552.428	-19.947.152	-78%
		Euro 6	58.931	58.931	0%	146,18	94,57	-35%	8.614.506	5.572.892	-3.041.614	-35%
		Diesel oil total	159.183	159.183	0%	347,42	101,90	-71%	55.303.335	16.221.445	-39.081.890	-71%
		LDVs Total	165.866	165.866	0%	339,31	103,97	-69%	56.279.554	17.245.596	-39.033.958	-69%
1.A.3.b iii - Heavy Duty Vehicle: Buses	Diesel Oil	pre-Euro	489	489	0%	1080,20	1019,23	-6%	506.867	478.258	-28.609	-6%
		Euro I	147	147	0%	736,37	752,57	2%	108.212	110.593	2.381	2%
		Euro II	1.611	1.611	0%	789,47	646,77	-18%	1.271.445	1.041.621	-229.824	-18%
		Euro III	5.789	5.789	0%	631,85	459,55	-27%	3.686.351	2.623.779	-992.572	-27%
		Euro IV	2.747	2.747	0%	473,92	352,84	-26%	1.302.061	969.413	-332.648	-26%
		Euro V	17.120	17.120	0%	362,91	186,84	-49%	6.213.175	3.198.781	-3.014.394	-49%
		Euro VI	25.135	25.135	0%	60,43	186,84	209%	1.518.901	4.696.133	3.177.232	209%
		Buses Total	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 - Heavy Duty Vehicle: Trucks & Lorries	Diesel Oil	pre-Euro	3.140	3.140	0%	1034,96	737,35	-29%	3.250.020	2.315.443	-934.577	-29%
		Euro I	969	969	0%	747,60	468,39	-37%	724.240	453.754	-270.486	-37%
		Euro II	4.568	4.568	0%	817,42	501,04	-39%	3.734.343	2.288.967	-1.445.376	-39%
		Euro III	16.377	16.377	0%	628,94	351,58	-44%	10.300.323	5.756.580	-4.543.743	-44%
		Euro IV	13.127	13.127	0%	398,86	273,43	-31%	5.235.679	3.589.330	-1.646.349	-31%
		Euro V	126.233	126.233	0%	296,13	154,92	-48%	36.960.599	19.481.449	-17.559.150	-48%
		Euro VI	432.498	432.498	0%	72,08	154,92	115%	31.175.496	67.003.853	35.828.357	115%
		Trucks Total	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 - Motorised Two-Wheelers (M2Ws)	Gasoline	pre-Euro	4.813	4.813	0%	125,69	164,78	31%	604.997	792.771	187.774	31%
		Euro 1	2.835	2.835	0%	125,39	177,29	41%	355.456	502.569	147.113	41%
		Euro 2	3.094	3.094	0%	119,33	198,86	67%	369.224	615.317	246.093	67%
		Euro 3	6.082	6.082	0%	40,03	198,86	397%	240.284	1.193.617	953.333	397%
		Euro 4	2.085	2.085	0%	21,69	198,86	817%	43.489	398.667	355.178	817%
		Euro 5	0	0	0%	0,00		0%	0	0	0	0%
		M2Ws Total	18.750	18.750	0%	86,05	186,83	117%	1.613.450	3.502.941	1.889.491	117%
1.A.3.b - Road Transport		Total	2.202.080	2.202.080	0%	198,58	132,83	-33%	437.268.744	292.497.497	-144.771.248	-33%

REVISION OF ADJUSTMENT PROPOSAL COMPARED TO SUBMISSIONS 2014 to 2019

Table 2: annual NO_x adjustment proposals, in kilotonnes

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Adjustment 2014 (accepted) [8], [9]	-105.6	-101.3	-95.7	-91.7						
Adjustment 2015 (accepted) [10], [11]	-100.3	-95.5	-89.9	-85.1						
Adjustment 2016 (accepted) [12], [13]	-151.3	-146.9	-145.1	-142.5	-128.1					
Adjustment 2017 (accepted) [14], [15]	-151.3	-146.8	-145.0	-142.4	-127.2	-100.9				
Adjustment 2018 (accepted) [16]	-172.3	-174.5	-177.4	-180.4	-171.5	-148.9	-123.2			
Adjustment 2019 (accepted) [17]	-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)	**-296.1**	**-300.7**	**-300.4**	**-305.2**	**-294.9**	**-274.9**	**-250.9**	**-221.1**	**-179.6**	**-144.8**
Change against Adjustment 2020	1.7	1.6	0.9	0.9	-0.4	-5.9	-6.6	-6.2	-5.0	

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”. [18]

The even bigger changes between adjustment 2019 and adjustment proposal 2020 result from an additional rather fundamental revision of of the *Handbook Emission Factors for Road Transport* now available in version 4.1 [19] strongly effecting the TREMOD model underlying Germany's emission reporting for road transpprt and hence any adjustments of NO_x emissions. With such major model revision between submissions 2019 and 2020, the 2020 adjustment proposal differed significantly from the adjustment applied for and accepted in 2019. ** In comparison to 2020, the TREMOD model apllied for the 2021 submission has been revised only slightly in terms of NO_x emission factors. Hence, the 2021 adjustment proposal differs onyl slightly from the (accepted) proposal provided with submission 2020.**

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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