# **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<sub>x</sub> (IIASA, 1999)<sup>1)</sup>. The over-all 2010 national emission ceiling (NEC) for NO<sub>x</sub> was set to 1,081 kt. When negotiating the EU NEC Directive two years later, Germany agreed to reduce its NO<sub>x</sub> 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)<sup>2)</sup>, <sup>3)</sup> was agreed. This procedure is applicable also for existing NECs (EB, 2012b)<sup>4)</sup>.

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) <sup>5)</sup>. 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<sub>x</sub> emissions for four selected countries (Germany, France, Netherlands and Belgium) and found higher NO<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub>. 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 <u>evolution of the different so-called Euro norms</u>) 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 (<u>Germany: stronger dieselisation</u> 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<sup>1</sup>

<sup>1</sup> "artificial" current emissions = virtual current emissions assuming no changes in emission factors



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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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)<sup>7)</sup>.

#### 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<sub>\*</sub> 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

		~		ctivity Date	-			n Factor		NO, Em		
NFR Code	Fuel	Year	current		difference			difference	current	adjusted	adjustment	
A3.bi	gasoline		796.957	(TJ) 795.957	in [5] 0%	in (kg 97.55	84.99	in [%] -13%	77.644.842	in [kg] 67.650.906	9 993 935	in [%] -17
A3.bi	diesel oil		529,300	629.300	0%	429,45	160,61	-63%	227.341.096		142.370.635	-63
A3.bii	gasoline		6.325	6.325	0%	255,87	214,75	-16%	1.618.432	1,358,328	260,104	-16
A3.58	diesel oil		113,450	113,450	0%	476.34	134,96	-72%	54.040.533	15.311.584	38,728,949	-72
A3bii	diesel oil		48.044	48.044	0%	623,00	482,55	-23%	29.931.266	23.183.732	6.747.534	-23
A3.bii	diesel oil		566.741	566.741	0%	445,67	271,83	-395	253.148.243		99.092.083	-39
A3.biv	çasoline		19.712	19.712	0%	113,68	168,43	48%	2.240.749	3.320.034	-1.079.285	48
A 3.6 TOT		2010	2.079.608	2.079.608	0%			0%	645.965.162		296.113.956	-45
A3.51	gasoline		794,688	754.688	0%	92,09	81,61	-11%	73.185.851	64.851.951	8.333.900	-11
A.3.bi	diesel oil		553.564	553.564	0%	434,12	159,22	-63%	240.313.791	88.138.959		-63
A3.58	gasoline		6.118	6,118	0%	229,35	198,67	-13%	1.403.081 55.844.518	1.214.776	188.305	-13
A3bi	diesel oil		115.967	115.967 47,365	0% 0%	481,55	448,99	-24%	28.071.221	21.266.323	41.126.376 6.804.898	-24
(A368 (A368	diesel oil diesel oil		563.891	563.891	0%	692,65 410,38	244,97	-415	231,410,271	138.135.342		-41
A3.biv	gasoline		19.289	19.289	0%	110,79	171,60	54%	2.137.002	3.299.162	-1.162.160	54
A 3.b TOT		2011	2.100.883	2.100.883	0%	110,10		05	632.365.736		300.740.081	-4
A3.bi	casoline		750.957	750.957	0%	85.73	78.00	-9%	64.379.994	58.577.229	5.882.765	-1
A3.b1	diesel oil		555.245	555.245	0%	435,96	158,66	-64%	242.062.902	88.096.699	153.966.203	-64
A3.bii	gasoline		5.657	5.657	0%	218,93	193,15	-12%	1.238.520	1.092.662	145.059	-12
A3.58	diesel oil		114.350	114.390	0%	481,91	120,17	-75%	55.106.382	13.741.354	41.365.028	-75
A3.bii	diesel oil		50.902	50.902	0%	533,22	384,33	-28%	27.141.913	19.553.208	7.578.704	-28
A3.5H	diesel oil		589.585	589.595	0%	381,33	224,00	-41%	224.829.180			-41
A.3.biv	gasoline		18.268	18.268	0%	107,43	173,28	61%	1.962.546	3.165.439	-1.282.893	61
A 3.6 TOT		2012	2.084.964	2.084.954	0%			0%	616.721.438			
A3bi	gasoline		749.114	749.114	0%	80,35	74,85	-7%	60.190.007	56.071.797	4.118.211	-1
A3.bi	diesel oil		589.131	589.131	0%	437,14	158,71	-64%	257.533.728	93.499.010		-64
A358	gasoline diesel oil		5.578	5.578 118.777	0%	202,80	184,07	-9% -76%	1.131.209	1.026.727	104.482	
A3bi	diesel oil diesel oil		118.777 61.716	51,716	0%	480,60 609,64	114,93	-76%	57.083.533 26.350.969	13.650.400 18.620.843	43.433.045 7.730.126	-71
A3.68 A3.68	diesel oil		600.139	600.139	0%	353,06	207,93	-41%	211.887.531		87.099.052	-41
A3.biv	gasoline		18.229	18.229	0%	104,34	175.38	68%	1.902.088	3.197.038	-1.294.951	61
A3.b TOT		2013	2.132.683	2.132.683	0%	104,04	110,00	05	616.079.063	310.854.371	305.224.692	.5
A3.b1	gasoline		752.525	752.526	0%	76.03	73.09	-45	57.215.533	54.998.921	2.216.612	
A3.bi	diesel oil		626.045	626.045	0%	435,87	159,12	-63%	272.876.061	99.613.892		-63
A.3.6 ii	gasoline		5.845	5.845	0%	190.34	176,49	-7%	1.112.584	1.031.612	80.972	-1
A.3.5 II	diesel oil		128.578	128.578	0%	475,56	110,96	-77%	61.146.575	14.267.237	46.879.338	-71
A3.bii	diesel oil		49.143	49.143	0%	468,37	339,99	-27%	23.017.115	16.708.234	6.308.001	-27
Азьн	diesel oil		672,754	\$72,754	0%	314.05	196,05	-38%	179.874.133	112.285.582	67.588.551	-38
A3.biv	gasoline		18.673	18.673	0%	100,59	179,24	78%	1.878.294	3.345.794	-1.468.499	78
A.3.b TOT	AL	2014	2.153.563	2.153.563	0%			0%	597.120.297	302.252.271	294.868.025	-4
A3.bi	gassine		715.158	715.158	0%	74,38	71,73	-4%	53.190.787	51.300.983	1.889.905	4
A3.61	diesel oil		645.565	645.595	0%	426,19	159,80	-63%	275.130.233			-63
A3.bii	çasoline		5.793	5.793	0%	187,12	172,80	-8%	1.083.927	1.000.999	82.928	4
A.3.6 ii	diesel oil		135.306	135.306	0%	469,35	107,96	-77%	63.505.443	14.607.490	48.897.953	-77
A3.511	diesel oil		52,287	52.287	0%	451,96	327,99	-29%	23.997.817	17.149.448	6.848.370	-25
A3.bii	diesel oil		589.411	589.411	0%	266,69	187,51	-30%	167.109.675	110.620.703 3.334.472	46.668.973	-30 82
A3.bW	gasoline	2045	18.459	18,459	0%	99.32	100,65	0%			274.853.670	
A3.6 TOT A3.61	gasoline	2015	2.161.976 715.272	2.161.976 715.272	0%	70,93	70.65	0%	50.736.967	50.535.049	201.918	- 4
A3.bi	gasowie diesel pil		675.119	675.119	0%	410.36	160,76	-61%			168,506,430	-61
A3.64	gasoline		5.926	5.926	0%	190.27	171.06	-5%	1.068.292	1.013.678	54.614	-
A3bi	diesel oil		144.068	144.058	0%	456,12	105,62	-77%	65.712.732	15.216.007	50.496.726	-71
A3bii	diesel oil		54.157	54.157	0%	424.73	308,24	-27%	23.002.109	16.693.117	6.308.992	-21
A3.bii	diesel oil		594,013	594.013	0%	226,31	100,97	-21%	134.431.899	107.495.262	26.935.637	-21
A3.biv	gasoline		18.785	18.785	0%	96,14	181,66	89%	1.005.097	3.412.476	-1.606.579	
A.3.b TOT		2016	2.207.339	2.207.339	0%			0%	553.799.558			- 4
A3.bi	gasoline		724.571	724.571	0%	67,66	69,88	3%	49.025.874	50.634.714	-1.607.840	1
A3.61	diesel oil		696.592	696.692	0%	390,66	161,95	-59%	272.128.091			-55
A3bi	gasoline		6.186	6.186	0%	171,15	167,18	-2%	1.058.799	1.034.211	24.588	4
A3.68	diesel oil		153.284	153.284	0%	424,66	103,89	-76%	65.093.930	15.925.216	49.168.714	-71
A3bii	diesel oil		53.382	53.382	0%	370,80	286,71	-23%	19.793.901	15.304.828	4.489.073	-23
A3.68 A3.6W	diesel oil		598.263	558.263	0%	195,02	175,92	-10% 98%	116.671.141	105.245.508	11.424.633	-10
A 3.6 N A 3.6 TOT	gasoline	2017	19.100	19,160	0%	92,83	183,39	38%			-1./35.114 221.079.424	- 4
A3.6101	gasoline	2011	699.027	699.027	0%	64.42	61.36	6%		47,786,817	-2.753.820	- 1
A3bi	diesel oil		666.074	666.074	0%	371.66	163.30	-55%			138,787,459	-54
A3.51	gasoline		6.315			158.22	160,11					
A3.bii	diesel oil		154.258	154.259		384,71	102,69				43.504.215	
A3.6H	diesel oil		51,634	51,634		309,75	263,53		15.993.526			
Азьіі	diesel oil		585.186			171,18	172,10		100.173.337			
A3.biv	gasoline		18.497	18,497		89,66	184,61		1.658.558	3.414.767		
A.3.b TOT		2018	2.180.993						470.758.206			
A.3.bi	gasoline		704.691	704.691		62,30	68,45					
A3.61	diesel oil		663.841	663.841	0%	345.01	165,07		229 566 088	109.582.982	119.983.106	
A3.bii	gasoline		6.683	6.683	0%	146,08	153,25		976.219	1.024.150	-47.931	
A3.51	diesel oil		159,183	159,183		347,42	101,90	-71%			39.081.890	
A3.bii	diesel oil		52.939	52.939	0%	274,41	247,81	-10%		13.118.578		
A3.bii	diesel oil		595.913	595.913	0%	153,35	169,17			100.809.376		
	gaspline		18.750	18,750	0%	85,05	186,83	117%	1.613.450	3.502.941	-1.889.491	117
A 3.5 iv A 3.5 TOT			2,202,000		0%				437.268.744			3

#### adjustment\_de-a

Adjustment details for 2010

			1	<b>Activity Dat</b>		Impli	ed Emission	Factor		NO <sub>3</sub> Emi	ssions	
NFR Code	Fuel		current in []	adjusted Lij	difference in [N]	current is p	botsujbe. [LT/g:	difference in [5]	current	adjusted in [kg]	adjustment	difference in [5]
		рьбаз	13.686	13.686	2%	584.75	614,25	-12%	7.995.090	6.996.917	-959.143	-12%
		Ears 1	26.661	76,661	0%	338.50	207,71	-30%	25.915.925	18,199,262	3 716 663	-30%
		Ewe 2	96.425	96.425	4%	172,05	135.03	-22%	15.590.020	13.020.026	3 569 995	-22%
		Ears 3	133,139	133,139	PN	58.51	70.18	20%	7,790,384	9.343.433	1,553,129	205
	Gasaline	Ears 4	444.991	444.991	PN I	42.27	42.19	0%	18.811.389	18,773,529	-37,858	05
		Ears 5	31,234	31,234	ES .	18.61	42.19	127%	581,142	1,317,737	736.595	1275
		Euro 6	0	0	15	25.08	42.19	62%	2	3	1	625
14301.		Gasoline total	795.957	795.957	85	97,55	64,99	.135	77.646.042	67.650.906	.9.993.935	.131
Passenger		pr-Euro	1.915	1.915	15	318.13	264,95	-15%	683.790	687,356	-46.505	-165
Cars		Ears 1	10.338	10.338	25	296.62	295,17	-11%	3 066 428	2,741,307	-325 121	-119
		Ewe 2	50.068	50.068	25	406.90	219,19	-45%	20.372,795	10.974.210	-9 398 584	-465
		Ears 3	134.025	134,025	PN	542.04	178.54	-67%	72,646,173	23.929.276	-48,718,957	-575
	Diesel Oil	Euro 4	279.154	279.154	ES .	384.37	140.58	-47%	107,299,100	20.243.811	-46,055,349	-675
		Euro S	\$3.547	53.547	IS IS	434.70	140,58	-60%	23.276.735	T.527.706	-15.745.829	-405
		Euro 6	334	304	15 IS	267,62	140,58	-45%	85.044	46.963	-15.745.025	-455
		Direct oil tatal	529,380	529,300	15	49.6	160,58	-42%	227.341.096	40.303 M.970.461	10.376.635	-675
		PCs Total	1.125.117	1.105.107	15	238.12		-50%	201.001.005	152.621.367	.152.364.578	.501
							115,16					
		heEne	1,249	1,249	2%	627,09	645.95	3%	783.320	806.871	23.551	35
		Ewe 1	367	367	PN-	861,95	297,39	-85%	305.969	106.020	-200.950	-855
		Eare 2	1.383	1.385	PN	264,75	184,41	-30%	368.848	256.917	-111.531	-305
	Gasaline	Eare 3	895	855	PN PN	82,47	90,63	10%	70.631	77.625	6.994	105
		Ears 4	2.420	2.420	PS	36,32	44,90	24%	87.987	188.679	20.772	245
		Ears 5	49	49	PS	15,34	44,90	193%	750	2.210	1.468	1935
		Ears 6	0		P5			0%		0		01
Light Duty		Gasoline total	6.325	6.325	65.	255,87	254,75	-16%	1.618.432	1.358.328	-260.104	-161
Vehicles		ha Ena	4,876	4,876	P%	425.99	306,79	-29%	2.077.142	1,485,983	-681.239	-285
(LOVA)		Ewe 1	5.989	5.989	9%	395,59	215,24	-45%	2.369.098	1.299.000	-1.080.069	-465
		Ewe 2	13.125	13,125	PN-	336,76	153,10	-45%	4.420.380	2.534.731	-1.885.629	-435
	Diesel Oil	Ears 3	33,249	33.249	<b>PN</b>	531,01	150,58	-72%	17.685.883	5.086.780	-12.648.123	-725
	Creating Con	Ears 4	54.581	54.581	<b>PS</b>	491,42	86,68	-82%	25.021.035	4.840.722	-21.501.114	-825
		Ears 5	1.629	1.629	0%	427,50	80,08	-79%	696.296	164.434	-651.772	-794
		Ears 6	0	0	4%	161,73	80,69	-42%	7	4	-3	-42%
		Diesel oil tatal	113,450	113,450	65	416,34	134,96	-725	\$4,040,533	15.311.584	-38,728,949	321
		LDVs Total	119,775	119,775	65.	464,70	139,18	-70%	55.658.966	16.669.913	-38.989.853	-785
		pr-241	3.382	3.382	9%	1086.25	1029.78	-67%	3.674.087	3,452,644	-221.423	-85
		Evel	2.825	2,825	<b>FN</b>	748.41	752.14	0%	2,117,871	2,125,585	7.723	05
143816		Ears I	10.152	10.152	15	801.86	643.47	-20%	8.140.119	6,532,213	-1.607.906	-205
leavy Duty		Care II	15.090	15.090	15	633.22	457,25	-20%	10.065.775	T 289 299	-2.797.967	-205
Vohicle:	Diesel Oil	Ears N	6.461	5.461	15	448.60	361.85	-22%	2,450,016	1.921.527	-528.409	-225
Buses		Ears V	10.326	10.325	15	337,28	182,30	-46%	3.482.417	1.982.544	-1.699.873	-065
		Ewa M	0	Ó				0%		0		DA.
		Buses Total	48.044	48.044	85	623,00	482,95	-275	29.931.266	23,183,732	4.747.534	-271
		pre-Euro	10.185	10.105	15	1040.15	787,37	-20%	10.510.623	7.754.138	-2,758,488	-265
		Eart	5.677	5.677	PS I	758.59	575.55	-23%	4,201,303	3,257,601	-993,792	-235
A3EH.		Earl I	38,588	38,588	IS IS	017.62	524.79	-32%	31.525.525	20,234,619	-11,290,907	-365
leavy Duty		East I	158.903	158,913	15	636.28	374,48	-30%	101.125.192	20.234.619	-11.230.307	-305
Vehicle:	Diesel Oil	Ears N	69.635	69.635	15	398.94	290,02	-41%	27.183.067	20.166.636	-81.608.821	-015
Trucks &		Ears V	283.934	283.934	15	276.62		-40%	78.540.643	43.115.897	-7.017.232	-451
Lorries						210.02	161,85	-47%		43.115.897	-05.222.728	
		Earth Marted	0	0	0%		201 02					
		Trucks Total	566,741	568,741	65	446,67	271,83	-39%	253,148,243	154.056.160	-99.092.083	-381
		pre-Caro	7.973	7.973	PN	122,00	149,16	22%	972.721	1.189.303	216.582	225
A3biv-		Ears 1	5.231	5.231	PS	323,77	185,74	34%	647.479	867.039	219.560	345
Motorised		Ears 2	3.587	3.587	PS	943,95	194,21	30%	506.362	686.661	190.309	305
Two	Gaspline	Ears 3	2.900	2.900	PS	39,91	194,21	397%	116.190	667.002	452.834	3075
Wheelers		Ears 4	0	0	PK			0%		0		01
(M2W4)		Eara 6	0	0	4%			0%	0	0		69
		M2Ws Total	19,712	19,712	85.	113.68	168,43	485.	2.240,749	3.320.034	1.079.285	481

			1	<b>Ictivity Dat</b>		Impli	ed Ereission	Factor		NO <sub>2</sub> Emi	ssions	
NFR Code	Fuel		CUITERS	adjusted	difference	CUTIENT	adjusted	difference	Current	adjusted	adjustment	difference
			in (i	u i	in [N]	in ji	(LT/g	in [N]		in [kg]		in [5]
		ребиз	13.053	13.053	2%	592,06	634,68	-10%	7.729.235	6.979.435	-748.801	-10%
		Ewa 1	61,979	61,979	PK	347,86	240,16	-31%	21,660,430	14.884.951	-6.675.479	-01%
		Ewe 2	87.083	87.083	PN	179,38	136,68	-24%	15.620.983	11.883.792	-3.727.191	-245
	Gaustine	Ewe 3	124.330	124.330	PN .	61,64	71,52	16%	7.663.891	8.881.671	1.227.780	165
		Ears 4	442,185	442,185	PN	43,84	43,68	0%	19.384.914	19.316.439	-58.476	05
		Ears 5	65.057	65.057	PS	18,58	43,68	135%	1.227.301	2.885.636	1.058.255	1355
		Ears 6	1	1	- PS	25,00	43,68	60%	17	20	11	605
143.61.		Gasoline total	754.688	754.688	65	52,05	81,61	.115	73,185,051	64.851.951	8.333.908	.111
Passenger Cars		рнбиз	1.711	1,711	8%	318,90	264,95	-19%	631,983	453,197	-78.606	-165
Cars		Ewa 1	8.426	8.426	8%	297.32	295.85	-11%	2,605,115	2.239.997	-265.119	-115
		Ewe 2	42.614	42.614	PN-	407,03	219.27	-45%	17.384.649	9.321.916	-7.992.634	-46%
	Diesel Oil	Ears 3	121.429	121.429	PN	555,36	178,55	-65%	87.437.053	21.681.386	-45.755.687	-68%
		Ears 4	264.943	264.943	PN	368,98	143,46	-63%	102/817/801	38.089.755	-54.808.846	-635
		Ears 5	113.847	113.647	PS	435, 92	143,45	-67%	49.535.965	95.332.974	-33 203 994	-675
		Ears 6	685	685	1%	258,59	143,46	-45%	180.582	99.754	-80.748	-455
		Diesel oil tatal	553,564	553,564	65	434,12	159,32	.635	240.313.791	80.130.959	.152.174.832	.631
		PCs Tatal	1.348.252	1.348.252	65	212,52	113,47	-51%	313.499.642	152.990.910	.160.508.732	-511
		heEne	1.084	1.084	PN-	629.25	645.95	3%	682.274	780.373	18.099	35
		Ears 1	283	283	0%	858,74	384,47	-85%	243.289	86.158	-157.132	-855
		Eare 2	1,164	1,164	PN-	268,66	191,68	-28%	310.529	223.189	-87.348	-285
	Gaseline	Eare 3	783	TES	PS -	85,97	95,39	11%	67.320	74.792	7.381	315
		Ears 4	2.562	2.562	PS	37,38	46,51	24%	95.785	119.152	23.376	245
		Ears S	201	241	P5	16,13	46,51	180%	3.082	11.190	7.308	180%
14356		Earl 6	0	0	85	16,00	46,51	283%	1	3	2	283%
Light Duty		Gasoline tatal	6.118	6.118	65	229,35	198,57	-13%	1.483.081	1,214,776	-188.305	.131
Vehicles		he-Ene	3.995	3,995	P%	425.09	306,79	-28%	1.698.290	1.225.602	472.598	-285
(LOVs)		Ears 1	4.787	4.787	PN	395,71	215,24	-45%	1.894.390	1.030.425	-852.525	-465
		Euro 2	10.815	10.815	PN	338,90	193,29	-43%	3.644.582	2.091.063	-1.953.530	-435
	Diesel Oil	Eare 3	28.876	28.876	PS	541,53	150,54	-72%	15.637.249	4.346.870	-11.200.379	-725
		Ears 4	60.832	60.632	PS	490,82	89,26	-12%	30.039.914	5.429.811	-24.610.104	-825
		Ears 5	6.659	6.659	P5	448,05	89,26	-80%	2.930.190	684.364	-2.335.836	-80%
		Ears 6	0	0	8%	196,21	89,25	-47%	14	8	-6	-43%
		Diesel oil tatal	115.967	115,967	65	481,55	126,82	-745	\$5,844,518	14,718,142	-41.126.376	-76
		LDVs Total	122,005	122,085	65	468,52	130,84	-72%	\$7,247,599	15.932.918	-41.314.681	-121
		pre-Euro	2.620	2.620	PN	1082,89	1015,78	-8%	2,836,189	2.671.331	-164.778	-65
		Eart	2.255	2.255	PN .	752,91	751,40	0%	1.689.787	1.686.297	-3.410	05
1.4.3.6 11.		Ears I	9.074	9.074	PS	804,57	643,36	-20%	7.297.125	5.837.959	-1.458.166	-205
Reavy Duty	Desel Oil	Ears II	14.007	14.007	PS	633, 96	457,38	-20%	9.425.890	6.889.064	-2.616.827	-205
Vehicler	Contract Cont	Ears N	6.131	6.131	P5	448,00	361,01	-22%	2 363 339	1.005.274	-498.064	-22%
Beses		Ears V	13.396	13.396	PK	336,60	182,62	-46%	4,689.062	2.446.399	-2.062.663	-465
		Ewa VI	0	Ó	P%			0%		¢		65
		Beses Total	47,365	47,365	65	592,65	448,99	-245	28.071.221	21.296.323	-6.804.898	-241
		be-gaa	8.044	8.044	PN -	1038,87	783,88	-26%	8.365.423	6.144.903	-2.210.491	-265
		Eart	4.384	4.384	PN .	758,96	574,04	-25%	3.288.422	2.5%377	-772.044	-235
1.A.3.b H - feavy Duty		Ears I	29.277	29.277	PS	017,07	520,31	-36%	23.947.723	15.233.223	-8.714.429	-365
Vehicle:	Desel Oil	Ears II	121.581	121.581	05	635,56	372,68	-41%	77.271.520	45.312.437	-31.953.004	-615
Trucks &		Ears N	68.430	68.430	9%	390,25	289,48	-26%	22.977.764	16.989.685	-6.068.019	-261
Lorries		Ewa V	342.175	342,175	8%	279,30	162,00	-46%	95.569.479	52.019.687	43.549.793	-465
		Ewa VI	0	0	P%			0%		¢	0	65
		Trucks Total	563,891	563,891	65	410,38	244,97	-40%	231,410,271	138.136.342	-83.273.529	-481
		he-gas	7.389	7.389	PN	122,96	150,24	22%	908.588	1.110.178	201.580	225
A3biv-		Ears 1	4.885	4.885	PN PN	324,72	165,25	35%	589.299	888.547	209.248	355
Motorised		Ears 2	3.544	3.544	PS	137,85	194,58	41%	488.582	689.683	201.851	-415
Two.	Gaspline	Ears 3	3.680	3.690	PS	39,59	194,58	382%	140.553	680.034	\$58,208	3025
Wheelers		Ears 4	0	0	8%			0%		0		01
(M2W4)		Eara 6	0	Ó	8%			0%		¢		01
		M2Ws Total	19,289	19,289	65	110,79	171,04	54%	2,137,082	3,299,162	1.162.168	641
Alb Box	Transport	Total	2,100,083	2,100,003	85	305.00	157,85	.015	612.365.736	301.625.655	300,740,801	-485

6/12

#### adjustment de-a

ment details for 2052 Factor differences in [N] -12% -31% -25% 14% -1% 162% -7% Activity arrent addra in [1,4] 11.641 47.447 72.141 188.443 488.443 188.443 188.443 188.443 188.443 188.443 188.443 188.443 188.443 188.541 18 NO, Emi adjusted in [kg] 6.189.786 11.426.129 10.035.380 7.876.172 18.436.736 4.681.311 4.681.311 Implied En Implied Ennine-ent adjusted in (kg/TJ) 72 636,20 sions adjustment NFR Code Fuel nd diffe CATER 4 11.661 47.467 72.761 108.443 405.541 101.001 7.026.041 16.671.746 13.487.749 6.927.963 18.541.881 1.887.396 436 256 6.145 817 -3.372 369 547 269 -105.145 2.703 954 5.709 241,02 137,92 72,62 45,13 45,13 348,56 184,27 63,89 45,39 18,61 Earn 1 Earn 2 Earn 3 Earn 4 Earn 5 Earn 6 Ganoline par Gano Earn 1 Earn 2 Earn 3 Earn 4 Earn 5 Earn 6 Danel of Danel of 5.200 5.8002.745 468.801 -308.617 -46.361.787 -39.903.208 -57.315.201 -40.301.908 28 790.95 1.45 7.338 64.379.394 463.3423 1.960,344 13.867,432 58.398.007 51.724.135 75.244.364 464.664 242.062.962 366.462.896 647,739 199.886 285.154 74.623 75.155 3.941 12.736 581.577.226 383.577.226 383.577.226 383.587 7.445.646 37.445.646 37.445.646 37.445.557 225.035.57 225.035 32.535.557 225.036 31.645.646 31.558 35.559 35.559 25,00 85,73 311,36 297,79 408,82 594,82 299,41 434,89 250,41 435,36 **234,41** 435,36 **234,41** 435,36 **234,41** 435,36 16,38 38,49 16,30 45,13 78,00 2964,96 2966,44 279,27 178,63 146,45 146,45 146,45 159,66 159,66 159,29 1685,96 383,22 155,74 36,33 47,58 47,58 1A3bi Passenge Cars 1.487 6.660 33.967 183.539 234.943 173.112 40 530 990 -176 578 **.153 966 203 .159 368 968** 13.411 -729 861 -74 596 7.463 16.445 15.063 4 1.557 535,245 1.306,262 982 232 989 835 2.030 610 535.245 396.262 962 232 989 635 2.030 610 Post of Post Tata preferen Earn 1 Earn 2 Earn 3 Earn 4 Earn 5 Earn 5 Earn 5 Earn 2 Earn 3 Earn 4 Earn 3 Earn 3 Earn 4 Earn 5 Earn 6 Earn 5 Earn 5 Earn 5 Earn 5 Earn 6 Earn 7 Ear 16,27 218,83 421,45 395,34 335,40 554,53 454,22 442,70 151,94 485,91 485,91 485,91 485,91 7053,45 422,94 434,90 347,94 454,50 347,84 543,222 1008,95 47,68 183,15 386,79 215,24 153,39 150,44 89,85 89,85 2 1.238.520 1.368.754 1.445.580 2.882.325 13.050.281 29.368.070 7.040.461 492 6 1.092.662 982.093 787.034 1.639.772 3.566.082 5.337.395 1.420.905 4 .145.859 .376.961 .458.528 .1.212.553 .5.454.129 24.821.453 .4.811.555 .24 1.A.3.b ii Light Duty Vehicles (LOVs) 5.467 3.291 3.696 8.479 23.785 59.485 15.984 5.457 3.291 3.656 8.479 23.785 59.485 15.984 1426 596 72 13.741.354 1.362 283 937.184 4.997.478 6.589.344 1.975.377 2.787.467 13.296 7.040.461 122 55.166.382 56.344.983 1.410.646 907.475 5.085.891 9.073.197 2.442.179 7.218.663 3.961 89.65 120,17 123,41 1919,45 751,15 643,34 457,51 364,85 182,99 384,33 795,85 570,57 576,43 370,24 280,44 182,32 48 41.365.828 41.510.882 22 700 -1.008.413 -2.403.453 -066.403 -3.421.096 8.334 -7.517.094 -0.521.701 405.215 -7.116.200 -25.578.472 114.350 120.088 1.325 1.245 7.765 14.463 6.331 20.762 114.350 114.350 129.068 1.325 1.245 7.765 14.463 6.331 20.762 25 LDA's Total pre-Ears Ears I Ears II Ears II Ears IV Ears IV Ears IV Ears I Ears I Ears I Ears I 4% 3% -1% -1% -2% -1% 14356 Vehicle: Bases 
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 73 50,942 6,922 3,630 23,577 56,726 50,550 405,981 9,300 50.962 1A.3.6 Hi Reavy Det Vehicle: Trucks & Lorries 745,70 818,27 634,65 396,50 291,24 3.630 23.577 96.726 90.660 Ears II Ears II Ears IV Ears IV Ears IV Ears I Ears 1 Ears 1 Ears 3 Ears 3 Ears 4 Ears 5 MWN Total -6.411.723 -62.324.278 2.300 589,585 6.790 4.305 3.267 3.954 0 341,856 -52,764,428 -155,351 -201,435 -121,846 -626,238 2.305 545,545 6.700 4.305 3.267 3.954 384,33 122,76 124,61 136,22 30,66 224,00 151,03 171,35 154,95 154,95 1A3biv Motorises Two-Wheelers (M2Ws) 0% 8% 0% 0 0 0 0 61% 1.962.546 3.165.439 1.202.893 18,268 18,268 907,43 173,38 1.4.3.b - Road To 65 295,79 151,71 616.721.438 316.301.343 330.426.894 10% 49%

				ctivity Det			od Ernimion			NO <sub>2</sub> Emi		
NFR Code	Fuel				difference	CUTIENT	adjusted	difference	CUITERS	adjusted	adjustment	difference
			in (1		in [5]		ų/TJ]	in [N]		in [kg]		in [5]
		ребиз	11,490	11,490	4%	618,22	619,36	-16%	7.011.641	6.967.452	-1.864.899	-16%
		Ewa 1	37,743	37,743	4%	363,78	241,88	-32%	13.352.906	9,129,405	-4.223 501	-32%
		Ewe 2	62,680	62,680	4%	188,93	139.33	-27%	11.889.922	8,722,244	-3.167.678	-27%
	Gaustine	Ewe 3	97,792	97,792	9%	65,38	73,19	10%	8,481,618	7.156.920	665.303	10%
		Ears 4	397.911	397.911	9%	47,22	46,52	-1%	18,790,345	15.589.937	-258.407	-15
		Eare 5	138.863	138.863	- PS	18,60	46,52	150%	2.583.150	6.459.681	3.876.451	150%
		Ears 6	2.7%	2.716	- 15	25,99	46,52	79%	70.526	126.237	55.711	795
1A3bi.		Gasoline total	749.116	749.116	65	88,35	74,85	.25	60.190.067	56.071.797	4.118.211	.71
Passenger		рьела	1.389	1,089	4%	312,26	264,95	-16%	433.981	369.139	46.742	-165
Cars		Ewa 1	6.625	6.625	0%	298.42	296,79	-11%	1.678.472	1,680,688	-177.894	-11%
		Ewe 2	28.437	28.437	0%	406.64	219,91	-45%	11.563.522	6.253.531	-6.309.991	-465
	Diesel Oil	Eare 3	52,795	52,795	9%	574,33	178,67	-89%	53,294,995	16.579.373	-36.715.583	-89%
	Liese us	Ears-4	222.583	222.583	45	390,55	149,27	-62%	87.598.471	33,225,586	-54.372.905	-62%
		Ears 5	233,796	233,765	- PS	435,42	149,27	-86%	101.787.275	34.884.755	-56.892.507	-66N
		Euro-6	4.536	4.536	0%	268,53	149,27	-42%	1.177.151	677.045	-508.106	-65
		Diesel oil tatal	589,131	589,131	65	437,54	150,71	.645	257.533.728	\$3,499,010	.164.804.718	
		PCs Total	1.338.245	1.338.245	65	217,42	111,37	-53%	317.723.735	149.570.896	-168.152.828	.571
		No Ena	897	897	4%	630,81	645.95	2%	568.320	679,293	10.894	25
		Ewe 1	154	154	4%	863.50	386.27	-85%	167,261	59.326	-107.535	-85%
		Euro 2	836	835	9%	214,42	291,18	-21%	229.520	168,255	-61.258	-27%
	Gasaline	Euro 3	784	714	4%	92,66	101,70	10%	72.691	79,780	7.859	305
	Coassenine	Ears 4	1.089	1.699	- 95	40,70	45,89	20%	77.284	92.833	15.549	205
		Ears 5	966	966	- 65	16,67	40,09	193%	15.187	47,240	21.141	1935
		Ears 6	1	1	0%	17,60	40,09	170%	26	72	46	170%
Light Duty		Gasoline total	5.578	5.578	8%	202,80	184,67	.9%	1.131.209	1.026.727	.104.492	.81
Vehicles		BarEna	2,754	2,754	4%	434.37	386,79	-29%	1,168,757	844.928	-323 828	-28%
(LOV)		Ears 1	2,948	2,948	9%	395,75	215,25	-45%	1,166,782	634.586	-532.138	-46%
		Euro 2	6.982	6.982	9%	338,62	193,35	-42%	2.345.147	1.350.014	-896.133	-425
	Diesel Oil	Ears 3	20.421	20.421	0%	568, 12	150,38	-73%	11.437.995	3.070.913	-8.367.882	-735
	Dese Oil	Ears 4	\$5.0ET	55.007	0%	497,72	90,45	-82%	27.775.440	5.048.416	-22.728.824	-825
		Ears 5	29.024	29.034	0%	441,97	90,45	-80%	13.101.325	2.687.964	-10.403.361	-80%
		Ears 6	41	41	4%	161,28	90,45	-40%	6.169	3.688	-2.479	-40%
		<b>Diesel oil tatal</b>	118,777	118,777	65.	498,60	114,90	-76%	\$7,083,533	13.650.488	-43.433.845	-765
		LDVs Total	124,354	124,354	65	468,14	118,00	-79%	58,214,742	14,677,215	43.537.527	-198
		ps-Ess	1.172	1,172	4%	1055.08	1015,23	-4%	1,249,028	1.194.143	-54.835	-4%
		Eart	1.054	1.054	<b>PN</b>	727,68	750,99	3%	765.620	791.181	24.961	35
14388.		Ears I	6.884	6.884	4%	764,07	643,48	-10%	5.334.965	4.378.271	-856.637	-105
teavy Duty		Ears II	13.107	13.107	0%	631.43	457,65	-21%	8.262.680	5.998.226	-2.264.575	-27%
Vehicler	Diesel Oil	Ears N	4.946	4.946	4%	468,55	361,71	-34%	2.278.061	1.739.786	-638.354	-24%
Beses		Ears V	34.096	31.095	4%	358,08	183,46	-49%	8.435.583	4.420.743	-4.014.761	-495
		Ewa VI	637	637	4%	44,76	183,46	310%	34.047	98.572	74.825	3105
		Buses Total	51,716	51,716	8%	508,54	380,05	-295	25.350.969	18.620.843	-7.730.126	-291
		pre-Euro	5.863	5.863	4%	1035.72	737,35	-29%	6.072.170	4.322.888	-1.748.303	-295
		Eart	2.985	2.985	<b>FN</b>	748,27	565,27	-24%	2.176.846	1.650.969	-525.877	-245
1A36H-		Ears I	15.444	15.444	0%	010,57	5/(3,46	-37%	15.089.861	9.469.975	-5.619.856	-375
feavy Duty		Ears II	75.130	75.130	0%	630,53	367,30	-42%	47.587.440	27.587.780	-19.999.608	-625
Vehicle: Trucks &	Desel Oil	Ears N	42.781	42.781	4%	396,90	267,27	-37%	16.936.007	12,289,770	-4.647.037	-27%
Lorries		Ears V	436.999	436,999	4%	291,70	152,65	-45%	123.101.334	66,786,496	-56 394 827	-46%
		Ewa M	18.020	18.020	4%	60.67	152,65	201%	913.082	2,750,630	1.837.548	2015
		Trucks Total	680.139	600.139	85	353,06	297,90	-415	211.887.531	124,788,469	-87.899.862	-411
		pre-Euro	6.382	6.352	0%	123.07	151,79	23%	781,736	964.179	152.443	23%
UA3.biv-		Euro 1	4.013	4.013	15	125.11	173.15	35%	582.073	684.880	192.807	385
Motorised		Euro 2	3.382	3.382	15	132.24	195,58	40%	435.668	645.884	209.136	405
Tere	Gaustine	Ears 3	4.542	4.582	45	39.01	195,58	201%	181.610	082.175	718.555	3915
Wheelers		Ears 4	0	0	15			016		0		01
(M2Ws)		Ears 6	- or		4%			ond		0		01
		M2Ws Total	18.229	18.229	85	104.34	175,38	6875	1.962.088	3,197,008	1,294,851	683

#### 7/12

#### adjustment\_de-a

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				Activity Dat		legell.	ed Emission	Earter		NO, Emi	anicona .	
NFR Code	Fuel		current in [	adjusted	difference in [5]	CUTIENT	adjusted	difference in [5]	current	adjusted in [kg]	adjustment	difference in [5]
		peGas	11.647	11.647	0 pg 0%	612.37	644,11	-11%	7.132.689	6.307,464	-7% 844	-115
		Ewa 1	30.667	30.667	45	368,77	242.90	-32%	11.002.246	7.480.541	3.621.705	-324
		Ewa 2	63,485	53,485		196,58	140,31	-29%	10.514,477	7.684.432	-3.010.044	-295
		Euro J	87,374	87,374	65	68.31	73.93	1%	6.055.588	6,459,797	404,218	75
	Gasaline	Ears 4	387,759	387,799	65	45.15	47.80	-3%	13,053,585	15.535.009	-523.557	-35
		Euro 5	171.278	171.278	05	18.59	47.80	157%	3.163.292	8.187.581	5.004.209	1575
		Euro 6	10.315	10.315	05	25,97	47,80	H5	267.050	483.098	225.240	045
14301.		Gasoline total	752.526	752,526	65	76,03	73,09	-45	\$7,215,533	54.998.921	3.316.612	- 41
Passenger		ребиз	1.941	1,941	4%	311,73	264,95	-19%	417.967	366.246	42,722	-68
Cars		Ewe 1	4.982	4,992		298.92	267,29	-11%	1,462,284	1.307.043	-155.161	-113
		Ewe 2	23.934	23.934		406,71	220.45	-45%	9,734,484	6.276.400	-4.458.884	-965
	Diesel Oil	Ewe 3	82,749	82,749		585,53	178,81	-82%	48.451.830	14.795.245	-33.855.585	-695
		Ears 4	211.237	211.237	<b>PN</b>	397,27	151,77	-62%	83.917.680	32.059.973	-51.857.706	-625
		Ears 5	285.811	285.811		436,38	151,77	-65%	124.721.395	43.378.300	-81.343.896	-655
		Euro 6 Dissel oli tatal	15.081	15.081	15	253,34	191,77	-415	4.170.580	2.440.686	-1.729 814	-115
		PCs Total	1.328.521	1.328.521	175.	218.44	159,12	-515	330.091.594	154,612,813	.175.478.281	.57
		PCS Total pro Euro	1.3/8.5/1	1.3/8.5/1	1% 1%	434.74	645.95	-376	568 683	678,724	-1/3.4/6.261	ne. 8
		Ern 1	173	173		868.27	389.96	-64%	150.074	53.575	-96.499	-643
		Ears 2	145	148		254.73	207.11	-21%	212,868	154,839	-58.829	-275
		Euro 3	771	771	15	58.62	105.21	1%	75.982	81.070	5.078	75
	Gaseline	Euro 4	1.067	1.067	15	43.47	50.15	15%	81.139	\$3.6%	12.479	105
		Earn 5	1.374	1.374		17.11	50.15	193%	23.617	60.910	45.401	1935
		Ears 6	17	17	05	18.00	60.15	179%	312	870	667	1795
14368.		Gasoline total	5.845	5.845	6%	198.34	176,49	25	1.112.584	1.001.612	.86.872	.21
Light Duty Vehicles		no-Eno	2.637	2.637	0%	429.16	306,79	-27%	1.065.819	778,259	-287 558	-279
(LOV)		Ears 1	2,588	2,588	0%	390.62	215,25	-45%	987,136	539,808	-447.328	-465
		Ears 2	6.007	6.007	<b>FN</b>	338,61	193,25	-42%	1.985.995	1.160.889	-825.125	-425
	Diesel Oil	Ears 3	18.220	18.220		571,75	150,58	-74%	10.417.075	2,742,056	-7.675.020	-745
		Ears 4	\$2.361	52.361		499,70	91,09	-12%	25.164.485	4.789.746	-21.394.748	-825
		Ears 5	45.749	45.749		438,44	91,09	-79%	20.496.234	4.250.526	-16.207.708	-795
		Ears 6	157	157	0%	161,18	91,09	-40%	29.929	17.974	-11.855	-40%
		Diesel oil tatal	128.578	128,578	65	415,56	110,96	-77%	61.146.575	14,267,237	-46.879.338	-771
		LDVs Total	134,423	134,423		463,16	113,81	-795	62.299.160	15,298,849	-46.968.311	-191
		pre-Euro	984	984	9%	1069,48	1019,23	-05	1.052.384	1.082.921	-49.443	-85
		Earol	5,586	837		728, 12	750,98 643,67	3% -10%	689.232	628.359	18.127	-105
A3bH.		Eara II Eara II	11.221	5.586	PS PS	764,95	450.30	-10%	4.394.328 7.082.748	5.143.528	-790.857	-100
Reavy Duty Vehicles	Desel Oil	Ears N	4.279	4.270		461.10	361.79	-21%	1.972.610	1.584.970	-467.632	-245
Bases		Ears V	22.042	22.042	45	368.66	182.99	-40%	7,726,921	4.055.532	-3.671.399	-40
		Ewa M	4.182	4.182		42.78	183.99	330%	178,913	789.476	690 563	3304
		Buses Total	49.143	49.143	85	468.37	339,99	-275	23.017.115	16,788,234	4.308.881	-271
		p+2#1	4,782	4,782	1%	1034.34	737,38	-29%	4.945.942	3.525.808	-1.428.134	-255
		Evel	2,285	2,285		748.66	581.41	-25%	1.650.685	1,237,759	-412,848	-255
1A38H-		Ears I	13.629	13.629	05	817,90	510,38	-30%	11.145.889	6.965.738	4.191.131	-385
leavy Duty	-	Ears II	54.685	54.685	05	612,52	364,41	-42%	34.589.677	19.927.835	-14.651.841	-625
Vehicle: Trucks &	Desel OI	Ears N	36.037	36.037	65	396,37	286,34	-20%	13.491.199	9.711.896	-3.779.262	-201
Lorrise		Ears V	369.263	369.263	0%	202,92	153,05	-46%	110.112.782	59.568.043	-50.544.749	-465
		Ewe VI	74,214	74,214	4%	60.06	153.05	189%	3.937.089	11.358.542	7.421.413	1895
		Trucks Total	572,754	572,754		314,05	196,05	-38%	179,874,133	112,285,582	-87.588.551	-387
		be-gas	6.185	6.165	<b>8%</b>	122,65	158,04	29%	796.185	974.368	218.162	295
A3bir -		Ears 1	3.837	3.637		124,71	174,84	40%	478.514	670.859	192.346	405
Motorised		Ears 2	3.365	3.365		121,94	196,25	52%	433.674	660.378	226.504	525
Two.	Gasoline	Ears 3	5.385	5.365		39,63	196,25	396%	209.722	1.001.109	801.467	3965
(M2Ws)		Ears 4	0	0	0%			0%		0		01
(Jonnie)		Eara 6	0	0			100.00	0%		0	0	01
		M2Ws Total	18.673	18.673	8%	100,59	179,34	785	1.878.294	3.346.794	1.468.499	18
A.3.b - Road	Transport	Total	2.153.563	2,153,563	65	217,27	140,35	-675	557.120.257	382,352,371	294.868.825	-491

				Activity Data			od Erminalion			NO <sub>2</sub> Emi		
NFR Code	Fuel		CUTIENT		difference	CUTIENT	adjusted	difference	CUTER	adjusted	adjustment	<b>cifforen</b> :
			in (		in [5]		#/TJ]	in [5]		in [kg]		in [5]
		ребиз	11.380	11.080	2%	630,23	644,11	-14%	7.206.112	6.191.942	-1.014.168	-1
		Ewa 1	24,112	24,112	4%	371,34	245,71	-34%	8.953.981	6.924.674	-3.029.228	-34
		Ewa 2	42,925	42,925	PN	207.78	142,09	-32%	8.918.785	6.089.059	-2.819.646	-3
		Ewe 3	72,871	72,871	PN	73.85	74,74	1%	5.381.351	5.446.237	64.887	1
	Gasaline	Ears 4	353,474	353,474	15	52.30	49.02	-67%	18,485,637	17,326,221	-1.158.416	
		Euro 5	180.783	180.783	15	12.11	49.02	157%	3,454,481	8.861.455	5.406.515	15
		Euro 6	29.612	29.612	05	25,70	49.02	64%	790.701	1.451.403	660.793	
14381.		Gasoline total	715,156	715.156	65	74.38	71.23	45	53,190,787	51,300,903	.1.805.805	
1.0.3.0 L. Passenger		pre-Euro	1,282	1,282	15	318.32	264.95	-10%	367.917	309,733	-68.194	-1
Cars		Ewa 1	4,219	4,219	15	299,14	267,84	-10%	1,261,930	1,129,909	-132 821	- 3
			19.689	19.689	15			-45%				- 2
		Ewe 2				407,00	220.38		8.013.587	4.338.719	-3.674.788	
	Diesel Oil	Eare 3	71.044	71.044	<b>PN</b>	595,01	179,04	-70%	42.271.648	12.719.962	-29.551.685	-7
		Ears 4	152,410	192.410	PN	401,42	154,07	-62%	77.237.685	29.644.450	-47.593.206	-4
		Ears 5	384.345	304.345	PS	434,67	154,07	-65%	132.290.483	45.880.424	-85.400.053	-4
		Euro 6	\$2.576	\$2.576	0%	258,76	154,07	-41%	13.657.082	0.180.384	-6.956.778	-4
		Diesel oil tatal	645.565	645.565	65	406,19	159,00	.635	275.130.233	183,163,501	.171.966.732	
		PCs Total	1.369.721	1.368.721	65	241,28	113,52	-53%	328.321.020	154.464.484	.173.856.536	4
		pre-Euro	879	879	2%	654,37	645.95	-1%	635.380	667.977	-7.404	
		Ewe 1	150	150	15	895.63	311,90	-85%	134,623	46.851	-87.672	.4
		Ears 2	629	629	<b>FN</b>	298.27	212.54	-22%	187,533	133.879	-53.854	- 2
		Euro J	TH	701	15	105.50	188.62	3%	73.909	76.155	2.156	
	Gaseline	Eart 4	1,720	1,720	15	47.05	51.30	9%	80.955	85,245	7,290	
		Ears 5	1.620	1.620	15	18.41	51,30	179%	29.012	83.006	63.274	17
		Ears 6	54	54	0%	18,71	61,30	174%	1.762	4.004	3.862	17
Light Duty		Gasoline tatal	5,783	5,793	65.	187,12	172,88	.85	1.083.997	1.080.999	42.528	
Vehicles		he-Ene	2,323	2.323	9%	416.01	386,79	-26%	966.185	712.601	-253.654	3
(LOV)		Ewe 1	2,185	2,105	PN .	391,47	215,25	-45%	824.270	453.227	-371.843	-
		Eare 2	5.025	5.025	PN .	334,81	193,29	-40%	1.632.296	971.296	-850 529	
	Diesel Oil	Eare 3	15.701	15,701	<b>PS</b>	588,35	150,67	-74%	2.112.414	2.365.713	-6.746.701	-7
	Creating Con	Ears-4	47.480	47.480	0%	501,73	91,74	-82%	23.782.396	4.348.298	-19.434.898	-4
		Ears 5	62.116	62.116	0%	406.10	91,76	-79%	27.090.214	5.680.295	-21.392.009	-7
		Euro 6	635	636	15	154.01	91,74	-40%	\$7.759	58,230	-09.628	-4
		Diesel oil tatal	135.386	135.305	15	44.15	107,95	.775	63,585,643	14,697,490	48.897.953	-1
		LDVs Total	141.098	141.098	85	457,76	110,62	-765	64,589,370	15.688.490	48.588.881	-1
		pre-Euro	979	979	15	1070.34	1019.23		1.048.312	598.255	-50.058	
		Evel	147	THE	15	738.26	751.91	3%	545.471	561,636	16.155	
		Care I	5,211	5,211	IS IS	787.43	644.45	-10%	4.103.607	3.355.634	-745.053	-
A3bH.												
leavy Duty Vehicle:	Desel Oil	Ears II	11.282	11.282	PS	633,00	458,67	-20%	7.141.732	5.174.909	-1 966 822	-2
Beses		Ears N	4.586	4.586	0%	468,70	361,99	-25%	2.154.086	1.614.177	-639.829	-4
Cener		Ears V	24.257	24.257	0%	368,77	184,68	-49%	8.727.068	4.477.641	-4.349.427	-4
		Ewa VI	6.224	6.224	4% -	60.19	184,68	247%	277.542	964.225	686.684	24
		Beses Total	52,207	\$2,287	65	414,96	327,99	-29%	23,997,817	17,149,448	4,848,379	
		pre-Ears	4.319	4.319	PN	1034,65	737,38	-29%	4.468.571	3.184.428	-1.284.143	-2
		Earol	1.853	1.853	PN .	748,71	553,48	-25%	1.307.291	1.025.551	-361.740	-2
A388-		Ears I	11.082	11.082	<b>PS</b>	017,98	587,98	-35%	9.072.840	5.633.460	-3.439.301	-3
leavy Duty		Ears II	43.481	43.481	15	631,55	361,64	-43%	27.460.779	15.724.631	-11.736.147	-4
Vehicle:	Diesel Oil	Ears N	29.233	29.233	15	396.00	283.72	-20%	11.672.060	0.294.100	-3.278.268	-3
Trucks & Lorries		Ears V	329 726	329 726	2%	284.17	153.49	-4676	\$9,413,973	60.456.496	-42 957 477	
1.01100		Ewa M	120.797	120.797	25	67.49	153.49	167%	9.813.354	26,282,007	16 388 684	16
		Trucks Total	585,411	585,411	05	264.69	187,55	-365	157,189,675	110.520.703	46.668.973	
			5.744	5.744	15	125.41	157,28	-36%	194,189,645	983,470	183.828	-1
		pe-Care										
A3bir-		Ears 1	3.517	3.517	PN .	127,40	176,22	30%	445.085	619.819	171.733	3
Motorised		Ears 2	3.382	3.382	<b>PS</b>	\$27,36	196,90	55%	430.680	685.985	235.306	5
Teres	Gasoline	Ears 3	5.011	5.011	PS	40,29	196,90	389%	234.126	1.164.415	910.209	38
Wheelers		Ears 4	4	4	P%	16,96		-180%	69	904	736	106
(M2W4)		Ewa 6	0	0	0%			0%	0	0		
		M2Ws Total	18.459	18,459	65	99.32	180,65	825	1.833.382	3.334.472	1.501.898	1

8/12

#### adjustment\_de-a

Adjustment details for 2006

			1	ctivity Dat	8	Implic	od Ereission	Factor		NO <sub>3</sub> Emi	ssions	
NFR Code	Fuel			adjusted	difference	CUTIENT	adjusted	difference	CUTER	adjusted	adjustment	difference
			in (		in [5]		g/TJ]	in [5]		in [kg]		in [5]
		ребиз	11.782	11,782	0%	634,75	644,11	-14%	7.478.914	6.410.967	-1.067.967	-141
		Ears 1	20.270	20.270	0%	372.26	241,68	-05%	7.645.483	4.099.000	-2.646.596	-361
		Ewa 2	36.062	36.062	2%	212,73	143,11	-33%	7,671,591	5.180.887	-2.510.893	-335
		Ewe 3	63.039	63.039	25	28.17	75.50	-1%	4.801.482	4,759,259	-42 233	-11
	Gaspline	Euro-4	334.413	334,413	<b>FN</b>	53,74	50.17	-7%	17,909,904	16,177,445	-1.192.450	-7
		Euro 5	183.374	183.374	15	19.09	50,17	163%	3.500.745	9.199.834	5.009.000	163
			66.332	65.332	15	25.67	50.17	80%	1.768.917	3.327.850	1,558,533	60
		Earth										
14361.		Gasoline total	715.272	715.272	65	70,93	70,65	65	50.736.967	50.535.049	201.918	
Passenger		ребиз	1.280	1.280	65	308,76	264,96	-14%	386.262	309.173	-66.009	-14
Cars		Ewa 1	3,749	3,749	2%	299.38	259,65	-10%	1,122,449	1.011.025	-111.425	-10
		Ewe 2	18.584	16.584	0%	407.19	221,48	-45%	6,720,132	3.663.964	-3.066.168	-47
	Diesel Oil	Ears 3	61.398	61,398	65	802,50	179,24	-70%	38.991.999	11.005.049	-25.958.958	-70
	Dese Os	Eart 4	175.840	175.840	<b>FN</b>	405.78	155,24	-415	71.352.220	21.474.005	-43.878.214	-51
		Euro 5	299.654	299.654	15	433.94	155,24	-64%	130.032.044	45.819.229	-83 212 815	-54
		Euro 6	115.684	116.634	15	268.75	156,24	-40%	30.427.585	10.232.785	-12.194.778	-40
		Diesel oil tatal	675.119	675.119	85	411.36	160,75	.615	277.041.660	100.535,230	.168.506.438	.61
		PCs Total	1.390.391	1.390.391	85	235,75	114,41	-51%	327.778.627	159.070.380	-168,208,342	-51
		he Ene	910	910	9%	662,79	646.96	-1%	583,788	687,663	-4.225	-1
		Ewe 1	136	136	0%	908,31	312,78	-85%	122,126	42,425	-79.700	-42
		Ears 2	540	540	<b>FN</b>	308,39	217,84	-21%	162.311	117,787	-44.604	-27
		Ears 3	680	680	<b>FN</b>	108,43	111,97	3%	70.432	72,731	2.299	3
	Gaseline	Euro-4	1.684	1.684	15	49.06	52.36	7%	78.714	84.003	5.205	7
		Euro S	1.724	1,724	05	19.02	52.36	164%	36.157	90,258	56.108	164
		Euro 6	363	363	45	18.65	62.36	181%	6.764	10.992	12.228	181
14368.			5.996	5.105	15							.5
Light Duty		Gosoline total				\$88,27	171,05	.5%	1.068.292	1.013.678	-54.614	
Vehicles		he-Ena	2,169	2,169	9%	414,87	306,79	-26%	899.848	665.433	-234.415	-26
(LOV-)		Ears 1	1.790	1,790	PN	391,09	215,25	-45%	780.169	385.371	-314.798	-45
		Ewe 2	4.223	4,223	626	323,43	193,31	-40%	1.365.994	816.452	-548.542	-40
	Discussion (Cal	Ears 3	13.582	13.582	<b>PN</b>	568,91	150,77	-74%	8.084.323	2.049.233	-5.955.890	-74
	Diesel Oil	Ears-4	43.141	43.945	05	504.48	92.40	-82%	21,763,989	3.986.141	-47.777.768	-82
		Ears 5	74.231	74.231	25	434.10	92.40	-72%	32,223,283	6.050.700	-25 364 903	-79
		Euro 6	4.901	4.901	0%	163.49	92,40	-40%	795.285	454.676	-308 609	-40
		Diesel oil tatal	144.068	144.068	65	416.12	105.62	.775	65,712,732	15,216,007	-50.4%5.726	.17
		LDVs Total	145,954	149,994	8%	445.23	108,29	-76%	66,781.025	16.229.684	-50.551.340	-11
		he-gas	891	891	9%	1070,81	1019,23	-8%	954,197	988.234	-45.953	-8
		Eart	583	583	PN	731,38	752,57	3%	433.675	446.236	12.558	3
14388.		Ears I	4.375	4.375	<b>PS</b>	768,25	645,03	-10%	3.445.614	2.822.021	-626.594	-12
Heavy Duty	Desel Oil	Ears II	10.333	10.333	05	632,67	450,91	-21%	6.539.364	4.741.027	-1.797.536	-27
Vehicler	Dense On	Ears N	4.449	4.449	0%	475,90	362,29	-36%	2.117.210	1.565.001	-660 330	-20
Beses		Ears V	24.390	24,390	8%	366.38	186.22	-49%	8.935.974	4.617.617	-4.418.457	-49
		Ears VI	9.126	9.126	85	62.79	185.22	195%	673,066	1.680.401	1.117.336	195
		Buses Total	54.157	54.157	85	494,73	308,24	-27%	23.062.189	16.683.117	6.308.910	-27
		pre-Euro	3.933	3.933	62	1034,01	737,35	-29%	4.067.249	2.900.319	-1.166.930	-29
		Ears I	1.585	1.585	PN	748,96	587,92	-32%	1.163.462	789.813	-373.569	-32
1A35H-		Ears I	8.876	8.876	PS	817,75	585,52	-30%	7.258.045	4.485.828	-2.771.218	-38
Heavy Duty Vehicle:	Desel Oil	East II	36.167	36.167	0%	638,81	360,66	-43%	21.553.200	12.251.155	-9.302.133	-0
Trucks &	Dense Of	Eas N	34.297	26.267	0%	396,94	291,06	-29%	9.640.094	6.845.581	-2.794.893	-29
Lorries		Ears V	259,735	269,735	0%	267,22	153,92	-45%	74,680,233	39.978.610	-04.621.623	-46
2.01100		Ewa VI	261,460	261.460	85	61,77	153,92	149%	16,149,288	40,244,036	24.094.748	1.09
		Trucks Total	554.013	554.013	85	28.31	180,97	-20%	134,431,899	107,496,252	-26.535.637	-20
			5.543	5.543	15	125.59	155,78	24%	696.072	863,299	167,218	-40
		pre-Caro										
1A3biv		Ears 1	3.360	3.360	05	127, 11	177,29	39%	427.113	585.796	168.592	39
Motorised		Ears 2	3.375	3.375	0%	125,04	197,68	50%	421.961	667.078	245.127	50
Two	Gaspline	Ears 3	6.443	6.443	0%	40,30	197,68	391%	259.627	1.273.571	1.013.543	391
Wheelers		Ears 4	65	65	0%	17,47	197,68	1031%	1.134	12.802	11.698	10011
(M2Wi)		Eara 6	0	0	0%			0%	8	0		0
		M2Ws Total	18,785	18,785	65	96,14	181,65	895.	1.805.897	3,452,476	1.606.579	89
A.3.b - Road	Transport	Total	2.267.339	2.207.339	85	258,89	137,32	-435	553,799,558	382.901.820	250,897,738	-45
ustment deta	ella for 2017											
				ctivity Dat		la elle	od Emission	Easter		NO <sub>2</sub> Emi	and on a	
MED Code	Freed											difference
NFR Code	Fuel		CUTHER	adjusted	difference	OWNER	adjusted	difference	OWNER	adjusted	adjustment	
			in (		in [N]		g/TJ]	in [5]		in (kg)		in [5]
		ребиз	12.282	12.282	0%	636,73	644,11	-14%	7.914.207	6.689.107	-1.126.108	-14
		Ears 1	17,449	17,449	0%	372,99	241,68	-36%	6.608.911	4.217.044	-2 291 267	-09
					25	217.43	141 35	.3446	6.617.620	4 314 140	.2 303 438	.364

NO. Em

NFR Code	FLIEF		CUTIENE	acquired	difference	CUTHER	adjusted	deference	CUTTER	adjusted	adjustment	Cifforence
			in		in [5]		g/TJ]	in [5]	7.044.047	in [kg]	4 475 476	in [5]
		pelins	12.282	12.282	0%	636,73	644,11	-14%	7.914.207	6.680.107	-1.126.108	-1
		Ewa 1	17,449	17,449	8%	372,99	241,68	-36%	6.609.311	4.217.044	-2.291.267	-3
		Ewa 2	30.435	30.435	PN	217,48	141,75	-35%	6.617.570	4.314.140	-2.303.430	-3
	Gaustine	Ewe 3	54.271	54,271	PN .	78,40	76,27	-3%	4.254.938	4.139.376	-115.562	-
		Ears-4	315.086	315.085	<b>FN</b>	54,96	51,25	-1%	17.316.320	15.151.861	-1.154.450	-
		Ears 5	180.245	180.245	<b>PN</b>	19,17	51,25	167%	3.465.382	9,239,8%	5,784,513	15
		Euro 6	114.791	114,791	<b>PS</b>	26,66	51,26	92%	3.060.226	5.084.372	2.824.146	2
14351.		Gasoline total	724.571	726.571	05	67,66	69,88	35	49.026.074	50.634.714	1.607.848	
Passenger		prefare	1.210	1.010	4%	305.09	264,95	-12%	480.983	347.020	-63 893	-1
Cars		Ewa 1	3,360	3,390	2%	298.17	271,67	-9%	1.002.298	910.182	-92.116	
		Ewa 2	13,788	13,788	15	407,17	222,48	45%	5.614,130	3.066.393	-2.547.736	
		Ears 3	52,128	52,128	15	408.05	179.65	-70%	31,696,478	9.364.708	-22 331 768	-7
	Diesel Oil											
		Ears 4	157.847	157.847	PN .	410,10	155,34	-015	64.733.465	24.993.323	-39.740.142	-4
		Ears 5	283.480	263,460	PS	423,99	155,34	-63%	120.157.686	44.873.190	-75.254.455	-4
		Ears 6	184.760	184.768	- PS	262,61	150,34	-40%	48.521.163	29.255.985	-19.265.258	-
		Diesel oil tatal	696.582	696.582	65	398,65	161,95	.595	272.126.091	112.010.721	.159.315.370	4
		PCs Tatal	1.421.162	1.421.162	65	225,98	115,01	-895.	321.152.965	163.485.435	.157.207.538	
		pa Eura	940	940	0%	651,61	645.95	-1%	612.240	686.918	-6.322	
		Ears 1	124	124	PN-	906.23	312,78	-85%	112,083	38.682	-73.401	4
		Euro Z	485	485	15	302.32	221.62	-21%	140.344	182,950	-37.394	
		Ears 3	586	595	ES .	111.57	115.36	4%	05.995	65,812	2.157	
	Gaseline											
		Ears-4	1.475	1.476	PS	50,72	53,38	5%	74.877	78.8%	3.536	
		Ears 5	1.660	1.668	PS	21,73	53,38	146%	36.240	89.004	52.706	10
		Ears 6	918	918	<b>P</b> 5	18,68	63,38	187%	17.062	49.000	31.948	1
A3bil . Ight Duty		Gasoline total	6,186	6.185	8%	171,15	167,18	-75	1.058.799	1.034.211	-24.588	
Vehicles		Bargina (	2,067	2.057	8%	413,41	306,79	-26%	860.489	631,163	-218.336	- 4
(LOV)		Ewe 1	1,538	1,638	25.	398.47	215.25	-45%	600,716	331,158	-259 558	
(Court		Ears 2	3,580	3,580	PN I	321.26	153.04	-40%	1.143.793	687,293	-456.501	-
		Euro J	11.664	11.664	ES .	595.08	150,79	-75%	6.940.879	1.758.747	-5.152.132	- 4
	Diesel Oil	Earl 4	39.050	39,050	15	506.76	130,73	-12%	13,789,647	3.635.035	-16.154.612	-
		Ears S	75.789	75.789	95	412,66	93,09	-70%	32,790,965	7.054.945	-26.736.011	-7
		Ears 6	19.625	19.625	PK	161,71	93,09	-39%	2.977.439	1.826.875	-1.158.964	. 4
		Diesel oil tatal	153,284	153,284	65.	424,66	183,89	-76%	65.083.930	15.925.216	-49.168.214	
		LDVs Total	199,470	199,470	65.	414,83	106,35	-74%	66,152,729	16.999.427	-49.193.302	-
		pre-Euro	136	735	4%	1073.33	1015,23	-8%	790,259	750.425	-35.834	
		Eart	411	411	PN .	731.97	752.57	3%	300.684	389.062	8.458	
A358.		Ears I	3.325	3.325	15	767.91	645.79	-10%	2,620,067	2,147,450	-472.606	
leavy Duty		Care II	0.670	8.678	15	631.33	459,12	-21%	5.478.480	3.984.085	-1.494.395	
Volution	Desel Oil	Ears N	3.023	3,023	15	474.47	362.49	-36%	1,012,300	1,347,680	-464,708	
Bases		Ears V	21.913	21.013	15	363.92	185,84	-49%	7.937.976	4.053.686	-3 894 291	
		Ewa VI	14,686	14,595	P%	64.62	185,84	218%	864,215	2712.680	1.858.375	21
		Beses Total	\$3,382	\$3,382	65	379,80	296,71	-21%	19,793,901	15.384.828	-4.489.013	
		ps-Essa	3.686	3.686	PN	1034,40	737,38	-29%	3.730.272	2,689,016	-1.071.256	2
		Eart	1.311	1.311	<b>FN</b>	748,03	465,38	-31%	980.842	614.151	-356.090	-3
A35H-		Ears I	7.007	7.087	PS	017,66	583,45	-35%	5.794.876	3.568.026	-2.226.851	-3
leavy Duty		Ears II	26.08G	26.085	15	638, 17	366,72	-44%	15.942.661	9.563.641	-7.378.821	4
Vehicle:	Desel Oil	Ears N	20.082	20.082	25	397.77	279.34	-30%	7.995.414	6.687.466	-2.368.948	-3
Trucks &		Ears V	264.385	264.385	25	298.56	154.35	-47%	69,290,789	31,636,367	-07 746 342	
Lorrise		Ewa M	335.065	335.065	15	65.62	154.35	135%	21,985,365	51,718,641	29 730 275	13
		Trucks Total	598,263	598,263	05	195.02	175,52	-105	116.671.141	105,246,508	-11.424.833	10
_	_											
		pre-Euro	5.335	5.335	PN-	125,91	157,19	25%	671.888	838.789	156.851	3
A3biv -		Ears 1	3.257	3,257	PS	\$28,39	177,86	415	411.617	579.244	167.627	· 4
Motorised		Euro 2	3.396	3.396	PS	\$22,55	196,33	62%	415.290	673.548	257.348	
Teres	Gaspline	Ears 3	6.761	6.741	PS	40,22	190,33	383%	271.107	1.336.956	1.055.849	
Wheelers		Ears 4	430	430	4%	18,29	199,30	986%	7.962	86.270	77.408	94
(M2Ws)		Eara 6	0	0	8%	0.00		0%	0	Ó		
		M2Ws Total	19,160	19,160	85	92.83	183,39	985.	1,728,624	3.543.787	1,235,114	
			10.100									
A.J.b. Road		Total	2,251,437	2,251,437	85	203.43	135,23	-405	525.549.410	384,469,986	321.075.424	

## Table 2: annual NO,,x,, adjustment proposals, in kilotonnes

# **REVISION OF ADJUSTMENT PROPOSAL COMPARED TO SUBMISSIONS 2014 to 2019**

14358.		Earth	237	237	25	732.78	752.57	3%	173,678	178.368	4.820	
LAJER.		Earl I	2.270	2,270	05	787.83	646.33	-10%	1,788,686	1.457.437	-321,249	- 1
		Ears II	6.157	6.757	15	638.85	459.32	-21%	4,262,724	3.103.402	-1.153 232	-21
Heavy Duty Vehicle:	Desel Oil		3.043	3.043	15	473.56	459,32	-21%	4.262.724	1.073.303	-1.159 232	-20
Vehicle		Ears N										
Ceses		Ears V	18,189	18,189	4%	362,42	186,37	-49%	6.663.265	3.376.016	-3.198.249	-41
		Ewa VI	20.670	20.670	8%	64.89	186.37	229%	1,176,026	3,852,314	2 676 288	225
		Buses Total	51,634	\$1,634	85	308,75	263,50	.195	15.993.526	13.687,106	2.386.429	.1
					0%	1034.82	737.38		3.375.369	2405.071	-870 288	
		be-gao	3.282	3.262				-29%				-2
		Eart	1.094	1.094	65	747,82	465,35	-37%	818.052	512.378	-305.674	-3
1A38H-		Care I	5.544	5.544	15	817.44	581.68	-32%	4,532,195	2,781,540	-1.750.658	-3
Heavy Duty Vehicle:		Euro II	20.583	20.583	15	629.54	363,66	-44%	12.957.751	T.277.279	-5.600.472	-4
Vehicle:	Diesel Oil	Ears N	15.912	15.912	15	398,09	276,23	-31%	6.336.421	4.395.424	-1.538.997	-3
Trucks &												
Lorries		Eara V	196.983	196.983	0%	292,40	154,68	-47%	45.964.153	24.283.309	-21.620.843	-4
		Ewa VI	381,799	381,799	0%	68,76	154,68	125%	26.251.482	59,055,898	32,804,495	12
		Trucks Total	585,185	585,186	05	171.18	172,10	15.	100.123.337	180,710,869	512.512	
		p+2#1	4 940	4 940	0%	125.05	158.61	25%	622 686	783.451	150 756	2
1A3biv		Ears 1	2.965	2.905	0%	\$25,14	177,79	415	374.114	52T.294	153.160	-4
Motorised		Ears 2	3.221	3.221	0%	128,33	195,64	65%	387.596	639.833	252.237	6
Tere	Gaugline	Ears 3	6.241	6.241	45	40.24	190.64	394%	251,125	1,229,680	908.962	39
Wheelers		Ears 4	1.130	1.130	4%	28.41	199.64	673%	23.066	224.682	201.436	97.
(M2Wh)		Fare 6			4%	0.00		0%				_
			. Q	Ŷ								
		M2Ws Total	18.497	18,497	65	89,66	184,61	1065.	1.658.558	3,454,367	1,256,209	10
1.A.3.b - Road		Total	2,180,993	2,180,993	65	215.85	133,49	385	470,758,205	291.139.612	479,618,590	3
LA.J.D. Hoad	Transport	Total	2.180.985	X100.985	6.	215,85	133,49	-365	4/0.150.205	291.1250412	179.418.590	3
												-
ustment detai	ih for 2010											
and the state of the				_								_
			1	Activity Date		Impli	ed Emission	Factor		NO <sub>2</sub> Emir	aliona	
NFR Code	Fuel		CUTIENT	adjusted	difference	OWNER	adjusted	difference	CUTTER	adjusted	adjustment	difference:
			in[	1.	in [5]			in [N]		in [kg]		in [5]
						in p	up/TJ]					
		ребаз	13.669	13.669	0%	638,58	644,11	-16%	8.664.621	7.382.698	-1.291.822	-1
		Ears 1	12,427	12.427	0%	378.32	241,68	-36%	4,701,480	3.083.383	-1.698.896	0
		Ewa 2	20.085	20.085	45	225.58	82.60	.6946	4.531.070	1.858.018	.2 673 852	
	Gaustine	Eare 3	36.216	36.216	9%	82,22	78,12	-8%	2.977.840	2.829.186	-148.873	-
		Ears 4	295.220	255.220	622	57,04	53,29	-7%	14.558.285	13.589.621	-858.554	-
		Euro 5	100.537	100.537	05	19,77	53,29	170%	3.173.728	8.554.355	5.380.628	17
		Ears 6	205.635	205.636	45	25.63	\$3,29	180%	5.295.099	11.010.782	5,715,603	10
14381		Gasoline total	764,691	764,691	65	62.30	68,45	105	43.901.941	40,230,025	4,336,804	1
Passenger		ребиз	2,736	2,736	4%	339,76	264,95	-21%	913,199	724.923	-100.275	-2
Cars		Ewa 1	2,665	2.665	0%	299.00	272,05	-9%	766.913	687,786	-68.127	
		Ewe 2	8.891	8.891	0%	407.19	229.18	-44%	3.620.296	2,037,480	-1.582 826	-4
		Ears 3	33.019	33.019	15	415.11	180.42		20.310.125	5.957,403	-14 352 723	3
	Dietel Oil											
		Ears-4	111.305	111.335	65	415,57	162,44	-01%	45.668.685	18.085.228	-28.583.457	-5
		Euro 5	231.784	231,784	05	418.37	162,44	-60%	95.117.643	37.650.997	-57.456.645	-9
		Euro 6	273,511	273,511	05	227.30	162.44	-22%	62,169,230	44,429,184	-47,748,854	-2
		Diesel oil tatal	663,041	663.041	65	345.01	165,07	.52%	229.566.088	189,582,982	.119.903.106	
		PCs Total	1.368.532	1.368.532	65	199,83	115,32	.42%	273.468.029	157.821.087	.115.647.822	- 4
		No Ena	926	926	4%	643,69	645,95	-1%	601,459	687,992	-3.468	
		Ears 1	97	97	4%	915.28	312.78	-85%	88.953	30.396	.68.667	.0
		Euro 2	316	316	85	304.63	224.45	-203	96,155	70.848	-25.310	- 3
	Gaseline	Eare 3	447	447	0%	112,68	121,47	8%	50.385	54.293	3.928	
		Ears 4	1.126	1.125	05	\$3,00	55,25	4%	59.682	62.199	2.547	
		Euro S	1.361	1.351	65	25.34	55.26	110%	34.240	74.680	40.432	11
		Ears 6	2,420	2,420	45	18.75	66.26	190%	45,292	133,753	08.358	19
14358.												
Light Duty		Gasoline total	6.683	6,683	65	146,08	153,35	55.	976.219	1.024.150	47.811	
Vehicles		во Еко	1,764	1,764	4%	411.96	306,79	-25%	725.111	641,316	-183,795	-2
(LOVs)		Ewe 1	1.079	1.079	0%	388.52	215.25	-45%	420.285	232.255	-188.830	-
(COAR)		Ears 2	2.334	2.334	15	315.98	194.79	-35%	737.682	454,650	-362.912	-3
	Diesel Oil	Eare 3	7.649	7.649	68	601,11	150,70	-75%	4.587.943	1.152.711	-3.448.233	-75
	Cashe Ca	Ears 4	28.711	25.711	05	512,28	94,57	-82%	14,708,308	2.715.154	-11.993.154	-4
		Ears 5	58,714	58,714	15	434,30	94,57	-70%	25,499,580	6.552.420	-19.547.152	-7
		Euro 6	68.901	68,901	- 15	145.18	94.67	-35%	8,614,685	6.672.892	-3.641.614	-3
		Diesel oil tatal	159,183	159,183	65	347,42	101,90	-71%	\$5.363.335	16.221.445	-39.081.890	7
		LDVs Total	165,866	165,866	65	338,31	103,97	-69%	98.279.554	17,245,596	-39.833.958	4
		pr-5au	485	489	4%	1080,20	1015.23	-6%	505.887	478.258	-28.609	-
		Evel	147	147	15	736.37	152.57	25	105,212	110,583	2.381	
		Earl I	1.611	1.611	15	788.47	646.77	-10%	1.271.445	1.041.621	-229 824	
14368.		Ears II	5.789	5.789	0%	631,65	459,55	-21%	3.606.361	2.623.779	-902.572	-2
1.A.3.b H - Reavy Duty	Dent Of				4%	473,92	362,64	-36%	1.382.061	969.413	-332.648	-3
Heavy Duty Vehicle:	Diesel Oil	Ears N	2.747	2.747						3.199.781	-3.014.394	-4
1.A.3.b H - Heavy Duty Voticle: Bases	Desel Oil			17.120	8%	362.91	186.84		6.213.125			
Heavy Duty Vehicle:	Desel Oil	Ears V	2.747 17.120 25.135		2%	362,91	186,84	-49%	6.213.175	4,686,133	3 177 200	100
Reavy Duty Vehicle:	Desel Oil	Ears V Ears VI	17.120 25.135	17,120 25,135	4%	60.43	186,84	-29% 289%	1.618.901	4.686.133	3.177.232	
Reavy Duty Vehicle:	Diesel Oil	Ears V Ears V Bases Total	17.120 25.135 \$2.909	17.120 25.135 52.939	0% 0%	60.43 274.41	186,84	-29% 209% -10%	1.518.901 14.527.012	4.686.133	-1.408.434	.1
Reavy Duty Vehicle:	Desel OI	Ewa V Ewa V Beses Total pre-Ewa	17.120 25.135 52.939 3.140	17.120 25.135 52.939 3.140	1% 0% 7%	60.43 274.41 1034.56	186.84 247,81 737,35	-29% 209% -10% -29%	1.518.981 14.527.012 3.250.020	4.686.133 13.118.578 2.315.443	-1.408.434 -834.577	-1
laavy Duty Vehicle Bases	Desel OI	Ears V Ears V Bases Total	17.120 25.135 \$2.909	17.120 25.135 52.939	0% 0%	60.43 274.41	186,84	-29% 209% -10%	1.518.901 14.527.012	4.686.133	-1.408.434	29 -1 -2 -3
Isavy Duty Vehicle: Bases	Desel OI	Euro V Euro V Beses Total pro Euro Euro I	17.120 25.135 52.939 3.140 989	17.120 25.135 52.939 3.140 989	1% 1% 1% 1%	60.43 274.41 1004.96 747.60	186.84 247,81 737,35 465,39	-49% 289% -18% -29% -31%	1.518.981 14.527.012 3.250.020 724.240	4.686.133 13.118.578 2.315.443 453.754	-1.408.434 -834.517 -270.456	1 2 3
Isavy Duty Vehicle: Bases		Ears V Ears M Bases Total pre-Ears Ears I Ears I	17.120 25.135 52.939 3.140 989 4.565	17.120 25.135 52.939 3.140 989 4.565	2% 2% 2% 2% 2%	60.43 274,41 1034.96 747,60 817,42	186.84 247,81 737,35 465.30 581,04	-49% 289% -10% -29% -31% -32%	1.518.981 14.527.012 3.290.020 724.240 3.734.343	4.696.133 13.118.578 2.375.443 453.754 2.298.967	-1,408,434 -834,577 -276,486 -1,445,376	1 2 3 3
Isavy Duty Volide Bases 1.A.3.b II - Isavy Duty Volidelar	Desel OI	Ears V Ears M Bases Total proCars Ears I Ears I Ears II	17.120 25.135 52.939 3.140 989 4.585 16.377	17.120 25.135 52.939 3.140 969 4.565 16.377	15 15 15 15	60.43 274,41 1034.95 747,50 017,42 628,94	186,84 247,81 737,35 468,35 581,04 351,58	49% 29% 29% 37% -2% 4%	1.518.981 14.527.012 3.250.020 724.240 3.734.343 10.300.323	4.696.133 13.118.578 2.375.443 453.754 2.298.967 5.756.580	-1,408,434 -834,517 -276,488 -1,445,376 -4,543,743	1 -2 -3 -3 -4
Isavy Duty Volide Bases 1.A.3.b II - Isavy Duty Volidelar		Ears V Ears M Bases Total pre-Care Care I Care I Ears II Ears II Ears N	17,120 25,135 52,939 3,140 989 4,585 16,377 13,127	17.120 25.135 52.939 3.140 969 4.565 16.377 13.107	n n n n n n	60.43 274,41 1034.95 747,50 817,42 628,94 298,85	186,84 247,81 737,35 468,39 581,04 361,60 273,43	4%6 28%6 - 38%6 - 37%6 - 37%6 - 32%6 - 31%6	1,518,981 14,527,012 3,290,020 724,240 3,734,343 10,300,323 5,235,679	4.686.133 13.118.578 2.315.443 453.754 2.285.967 5.756.580 3.689.330	-1,408,434 -534,517 -270,455 -1,445,3175 -4,543,743 -1,645,345	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Heavy Duty Vehicle: Bases 1.A.3.b II - Heavy Duty Vehicle: Trucks &		Ears V Ears M Bases Total proCars Ears I Ears I Ears II	17.120 25.135 52.939 3.140 989 4.585 16.377	17.120 25.135 52.939 3.140 969 4.565 16.377	15 15 15 15	60.43 274,41 1034.95 747,50 017,42 628,94	186,84 247,81 737,35 468,35 581,04 351,58	49% 29% 29% 37% -2% 4%	1.518.981 14.527.012 3.250.020 724.240 3.734.343 10.300.323	4.696.133 13.118.578 2.375.443 453.754 2.298.967 5.756.580	-1,408,434 -834,517 -276,488 -1,445,376 -4,543,743	1 2 3
Heavy Duty Vohicle: Bases 1.A.3.b H - Heavy Duty Vohicle:		Ears V Ears M Bases Total pre-Cars Ears I Ears I Ears II Ears II Ears IV Ears V	17,120 25,135 52,939 3,140 989 4,585 16,377 13,127	17.120 25.135 52.939 3.140 969 4.565 16.377 13.107	n n n n n n	60.43 274,41 1034.95 747,50 817,42 628,94 298,85	186,84 247,81 737,35 468,39 581,04 361,60 273,43	4%6 28%6 - 38%6 - 37%6 - 37%6 - 32%6 - 31%6	1,518,981 14,527,012 3,290,020 724,240 3,734,343 10,300,323 5,235,679	4.686.133 13.118.578 2.315.443 453.754 2.285.967 5.756.580 3.689.330	-1,408,434 -534,517 -270,455 -1,445,3175 -4,543,743 -1,645,345	1 2 2 4 5 4
Heavy Duty Vehicle: Bases 1.A.3.b II - Heavy Duty Vehicle: Trucks &		Ears V Ears M Bases Total pre-Cars Ears I Ears I Ears II Ears II Ears IV Ears V Ears V Ears M	17,120 25,135 52,939 3,140 989 4,565 16,377 13,127 125,233 4,32,488	17,120 25,135 52,939 3,140 969 4,565 16,377 13,127 13,523 432,498	************	60.43 234,41 1034.56 747,50 817,42 620,54 296,85 296,13 72,08	186,84 247,85 737,35 468,39 581,54 351,50 273,43 154,92 154,92	49% 29% 25% 37% 37% 44% 31% 44% 11%	1,518,981 14,527,012 3,250,020 724,240 3,734,343 10,300,323 5,235,679 36,960,689 31,175,486	4.686.133 13,118,578 2.375,443 453,754 2.285,967 5,756,580 3,589,330 19,481,449 67,083,863	-1,408,434 -834,577 -278,468 -1,445,376 -4,543,743 -1,646,349 -57,558,158 -36,828,357	1 2 2 2 2 4 2 4 1 4 1 4 1 4 1 4 1 4 1 4
Isovy Duty Vehicle: Bases 1.A.3.b II - Isovy Duty Vehicle: Trucks &		Ears V Ears M Bases Total pro-Ears Ears I Ears I Ears N Ears N Ears V Ears V Ears M Trucks Total	17.120 25.135 52.939 4.563 16.377 13.127 125.233 432.488 595.913	17,120 25,135 52,939 3,140 989 4,565 16,377 13,127 125,233 432,498 995,913	55 55 55 55 55 55 55 55 55 55 55 55 55	60.43 274,41 1004.96 747,50 817,42 620,94 296,83 72,08 160,36	186,84 247,85 737,35 468,39 581,04 351,58 273,43 154,92 154,92 154,92 199,17	49% 29% -18% -2% -3% -4% -3% -4% -1% -4% 15%	1.618.901 14.527.012 3.290.020 1724.240 3.734.343 10.300.323 6.236.679 36.960.699 31.175.496 91.300.780	4.696.133 13.118.578 2.315.443 453.734 2.280.967 5.736.580 3.589.330 19.481.449 67.083.853 180.889.376	-1,408,434 -534,517 -270,488 -1,445,376 -4,543,376 -4,543,376 -1,646,345 -17,568,168 -36,828,357 -9,428,678	1 2 2 2 4 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1
Heavy Duty Vehicle: Bases 1.A.3.b II - Heavy Duty Vehicle: Trucks &		Ears V Ears M Bases Total pre-Cars Ears I Ears I Ears II Ears II Ears IV Ears V Ears V Ears M	17,120 25,135 52,939 3,140 989 4,565 16,377 13,127 125,233 4,32,488	17,120 25,135 52,939 3,140 969 4,565 16,377 13,127 13,523 432,498	************	60.43 234,41 1034.56 747,50 817,42 620,54 296,85 296,13 72,08	186,84 247,85 737,35 468,39 581,04 351,58 273,43 154,92 154,92 154,92 199,17 184,70	49% 29% -1% -2% -3% -4% -1% -4% 1% 1% 1%	1,518,981 14,527,012 3,250,020 724,240 3,734,343 10,300,323 5,235,679 36,960,689 31,175,486	4 686 133 13.118.578 2.315.443 453.754 2.280.967 5.756.580 3.689.300 19.411.449 67.083.863 180.889.376 732.771	-1.408.434 -834.577 -276.456 -1.445.376 -4.543.743 -1.645.345 -07.658.158 -35.828.357 -9.428.878 -187.774	1 2 2 2 2 4 2 4 1 1 1 1 1 1 1
Iteavy Duty Vehicle: Bases 1.4.3.5 III- Neavy Duty Vehicle: Lorries		Ears V Ears M Bases Total pro-Ears Ears I Ears I Ears N Ears N Ears V Ears V Ears M Trucks Total	17.120 25.135 52.939 4.563 16.377 13.127 125.233 432.488 595.913	17,120 25,135 52,939 3,140 989 4,565 16,377 13,127 125,233 432,498 995,913	55 55 55 55 55 55 55 55 55 55 55 55 55	60.43 274,41 1004.96 747,50 817,42 620,94 296,83 72,08 160,36	186,84 247,85 737,35 468,39 581,04 351,58 273,43 154,92 154,92 154,92 199,17	49% 29% -18% -2% -3% -4% -3% -4% -1% -4% 15%	1.618.901 14.527.012 3.290.020 1724.240 3.734.343 10.300.323 6.236.679 36.960.699 31.175.496 91.300.780	4.696.133 13.118.578 2.315.443 453.734 2.280.967 5.736.580 3.589.330 19.481.449 67.083.853 180.889.376	-1,408,434 -534,517 -270,488 -1,445,376 -4,543,376 -4,543,376 -1,646,345 -17,568,168 -36,828,357 -9,428,678	1 2 3 3 4 5 4 19 1 2 4 5 4 19 1 1 1 2
teavy Duty Vehicle: Bases 1.4.3.b II - teavy Duty Vehicle: Tracks & Lorries		Eara V Eara V Benes Total pre-Cara Eara I Eara I Eara I Eara V Eara V Eara V Eara V Eara I Tancia Tetal pre-Cara Eara I	17,120 25,135 52,939 4,565 16,377 13,127 125,233 432,498 595,913 4,813 2,835	17,120 25,135 52,939 4,565 16,377 13,107 125,233 432,488 595,913 4,813 2,635	55 55 55 55 55 55 55 55 55 55 55 55 55	60.43 234,41 1034.55 747,60 817,42 628,54 296,13 32,08 155,25 125,59 125,59	186,84 2947,85 737,35 468,35 581,64 351,58 273,43 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92	-20% 20% -3% -3% -3% -3% -3% -3% 1% -3% 1% -3% 1% -3% 1% -3% 1% -3% -3% -3% -3% -3% -3% -3% -3% -3% -3	1.518.981 14.587.012 3.250.020 724.240 3.734.343 5.235.679 36.960.639 31.135.496 91.380.180 684.997 385.495	4 696 133 13,118,578 2,375,445 453,755,445 453,755,445 2,288,967 5,756,580 3,589,330 19,411,449 67,083,853 190,889,376 752,771 582,589	-1.408.434 -834.517 -216.485 -1.445.3176 -4.543.743 -1.645.345 -07.568.158 36.828.357 5.428.418 187.714 147.113	1 2 2 2 2 4 2 4 2 4 2 4 4 4 4 4 4 4 4 4
Seses 1.4.3.6 H - Heavy Duty Webicke Tracks & Lorrise 1.4.3.5 is - Notorised		Ears V Ears M Deces Total pre-Ears Ears I Ears I Ears I Ears I Ears V Ears V Ears V Ears M Tracks Total pre-Ears Ears 1 Ears 2 Ears 1 Ears 2 Ears 1 Ears 2 Ears 1 Ears 2 Ears 2 E	17,120 25,135 52,939 4,555 46,377 13,127 126,233 432,488 596,913 4,813 2,835 3,084	17:100 25:135 52:939 3:140 969 4:560 46:377 10:127 105:230 4:12:498 595:913 4:22:498 595:913 2:235 2:235 3:054	55 55 55 55 55 55 55 55 55 55 55 55 55	60.43 234,41 1034.95 747,50 817,42 628,94 398,85 296,13 72,08 1950,38 1050,38 125,59 125,59 119,33	186,84 247,85 737,35 468,39 581,04 351,59 273,43 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92	40% 20% 30% 30% 30% 44% 44% 11% 44% 11% 11% 11% 11% 11% 11	1.518.981 14.587.012 3.250.020 724.240 3.734.343 10.380.323 5.235.679 36.960.689 31.155.486 91.380.780 684.997 205.486 309.224	4 686 133 13,118,578 2,315,445 453,734 2,280,967 5,736,640 3,649,330 19,411,449 67,063,863 180,889,376 752,771 562,569 645,317	- 1.408.434 - 834.517 - 276.485 - 1.445.376 - 4.543.743 - 1.666.345 - 47.568.168 - 36.828.878 - 9.428.678 - 107.774 - 113 - 246.820	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Ita 3 b III- Bears Ita 3 b III- Bears Duty Vehicle: Tracks & Lorries Ita 3 b III- Biotroired Two:		Ears V Ears M Beees Total pre-Ears Ears I Ears I Ears N Ears N Ears N Ears N Ears N Ears N Ears N Ears 1 Ears 1 Ears 1 Ears 1 Ears 1 Ears 1	17,120 25,135 52,939 3,140 989 4,565 46,307 13,127 125,233 432,498 595,913 4,813 2,525 3,054 6,082	17,120 25,135 52,539 4,555 4,555 4,557 13,137 13,137 135,233 4,32,458 595,513 4,371 2,535 3,054 6,662		60.43 274,41 1004.98 747,50 817,42 628,04 296,13 32,08 980,28 125,59 125,59 125,29 119,23 40,03	186,84 2017,85 737,35 4468,39 501,04 351,50 273,43 154,92 154,92 154,92 169,17 164,70 177,25 150,05 180,05	40% 20% 30% 30% 30% 40% 40% 10% 10% 10% 10% 10% 10% 10% 10% 10% 1	1.518.981 <b>14.527.012</b> 3.230.020 174.240 3.734.240 3.734.243 10.300.323 5.215.679 36.960.599 31.155.496 <b>91.300.780</b> <b>64.917</b> 325.456 329.224 240.284	4 696 133 13,118,578 2,375,445 4,53,754 4,2280,967 5,756,580 3,689,330 19,481,449 67,033,863 190,889,376 752,771 582,569 615,317 1,183,617	-1,408,434 -834,577 -278,458 -1,445,375 -4,543,743 -1,545,345 -1,558,158 -55,858,158 -55,828,357 -5,428,678 -187,774 -147,113 -246,192 -246,123 -246,123 -246,123 -246,123 -246,123 -246,123 -246,123 -246,124 -247,124 -24	1 2 2 5 5 5 4 4 5 4 5 4 5 4 5 4 5 5 5 5 5
Isary Day Vehicle Beses 1A.3.6 H- Isary Duty Vehicle Taucis & Lorries S.A.3.b iz- Motorised Tau:		Ears V Ears M Deces Total pre-Ears Ears I Ears I Ears I Ears I Ears V Ears V Ears V Ears M Tracks Total pre-Ears Ears 1 Ears 2 Ears 1 Ears 2 Ears 1 Ears 2 Ears 1 Ears 2 Ears 2 E	17,120 25,135 52,939 4,555 46,377 13,127 126,233 432,488 596,913 4,813 2,835 3,084	17:100 25:135 52:939 3:140 969 4:560 46:377 10:127 105:230 4:12:498 595:913 4:22:498 595:913 2:235 2:235 3:054	55 55 55 55 55 55 55 55 55 55 55 55 55	60.43 234,41 1004.96 747,50 817,42 629,94 298,85 296,13 32,08 1980,25 125,59 125,59 125,59 125,59 125,29 119,33 40,03 21,69	186,84 247,85 737,35 468,39 581,04 351,59 273,43 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92 154,92	40% 20% 30% 32% 32% 44% 44% 11% 44% 11% 11% 11% 11% 11% 11	1.518.981 14.587.012 3.250.020 724.240 3.734.343 10.380.323 5.235.679 36.960.689 31.155.486 91.380.780 684.997 205.486 309.224	4 686 133 13,118,578 2,315,445 453,734 2,280,967 5,736,640 3,649,330 19,411,449 67,063,863 180,889,376 752,771 562,569 645,317	- 1.408.434 - 834.517 - 276.485 - 1.445.376 - 4.543.743 - 1.666.345 - 47.568.168 - 36.828.878 - 9.428.678 - 107.774 - 113 - 246.820	1 2 2 2 2 2 4 4 4 4 4 4 5 4 2 5 2 5 2 5 5 5 5
Ita 3 b III- Bears Ita 3 b III- Bears Duty Vehicle: Tracks & Lorries Ita 3 b III- Biotroired Two:		Ears V Ears M Beees Total pre-Ears Ears I Ears I Ears N Ears N Ears N Ears N Ears N Ears N Ears N Ears 1 Ears 1 Ears 1 Ears 1 Ears 1 Ears 1	17,120 25,135 52,939 3,140 989 4,565 46,307 13,127 125,233 432,498 595,913 4,813 2,525 3,054 6,082	17,120 25,135 52,539 4,555 4,555 4,557 13,137 13,137 135,233 4,32,458 595,513 4,371 2,535 3,054 6,662		60.43 234,41 1004.96 747,50 817,42 629,94 298,85 296,13 32,08 1980,25 125,59 125,59 125,59 125,59 125,29 119,33 40,03 21,69	186,84 2017,85 737,35 4468,39 501,04 351,50 273,43 154,92 154,92 154,92 169,17 164,70 177,25 150,05 180,05	40% 20% 30% 30% 30% 40% 40% 10% 10% 10% 10% 10% 10% 10% 10% 10% 1	1.518.981 <b>14.527.012</b> 3.230.020 174.240 3.734.240 3.734.243 10.300.323 5.215.679 36.960.599 31.155.496 <b>91.300.780</b> <b>64.917</b> 325.456 329.224 240.284	4 696 133 13,118,578 2,375,445 4,53,754 4,2280,967 5,756,580 3,689,330 19,481,449 67,033,863 190,889,376 752,771 582,569 615,317 1,183,617	-1,408,434 -834,577 -278,458 -1,445,375 -4,543,743 -1,545,345 -1,558,158 -55,858,158 -55,828,357 -5,428,678 -187,774 -147,113 -246,192 -246,123 -246,123 -246,123 -246,123 -246,123 -246,123 -246,123 -246,124 -247,124 -24	1 2 2 5 5 5 6 6 7 6 6 7 6 6 7 7 8 8 8 8 8 8 8 8 8 8
Isary Day Vehicle Beses 1A.3.6 H- Isary Duty Vehicle Taucis & Lorries S.A.3.b iz- Motorised Tau:		Euro V Euro V Beses Total pre-Euro Euro I Euro I Euro I Euro N Euro V Euro V Euro V Euro V Euro 1 Euro 1	17,120 25,135 52,639 9,99 4,555 46,537 12,137 126,239 432,448 596,913 4,613 2,635 3,054 6,662 2,065	17,120 25,135 52,539 4,555 4,555 4,557 13,137 13,137 135,233 4,32,458 595,513 4,371 2,535 3,054 6,662	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	60.43 274.41 1004.56 747.60 817.42 266.53 266.53 72.08 195.08 125.09 125.29 113.33 40.03 21.69 0.00	186,84 2847,85 737,35 465,35 581,64 273,43 154,50 154,50 154,50 154,50 154,51 154,51 154,51 154,51 154,51 154,55 150,65 190,65	40% 29% -3% -3% -3% -3% -3% -3% -3% -3% -3% -3	1.518.981 <b>14.527.012</b> 3.230.020 174.240 3.734.240 3.734.243 10.300.323 5.215.679 36.960.599 31.155.496 <b>91.300.780</b> <b>64.917</b> 325.456 329.224 240.284	4 696 133 13,118,578 2,375,445 4,53,754 4,2280,967 5,756,580 3,689,330 19,481,449 67,033,863 190,889,376 752,771 582,569 615,317 1,183,617	-1,408,434 -834,577 -278,458 -1,445,375 -4,543,743 -1,545,345 -1,558,158 -55,858,158 -55,828,357 -5,428,678 -187,774 -147,113 -246,192 -246,123 -246,123 -246,123 -246,123 -246,123 -246,123 -246,123 -246,124 -247,124 -24	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Isary Day Vehicle Bases 1A.3.8 H- Isary Duly Vehicle Trucks & Lorries 5.8.3.5 in- Motorised Tare.	Desel Of Gazalite	Euro V Euro V Reses Total Pro-Euro Euro I Euro I Euro I Euro I Euro I Euro I Euro I Euro V Euro V Euro V Euro I Euro I	17,120 25,135 3,140 969 4,560	17,120 25,136 82,939 4,565 46,377 13,137 13,137 14,249 432,496 432,496 432,496 432,496 432,496 432,496 43,205 3,054 6,062 6,062 0,0	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	60.43 234,41 1004.96 747,50 817,42 629,94 298,85 296,13 32,08 1980,25 125,59 125,59 125,59 125,59 125,29 119,33 40,03 21,69	186,84 2017,85 737,35 4468,39 501,04 351,50 273,43 154,92 154,92 154,92 169,17 164,70 177,25 150,05 180,05	49% 28% 38% 37% 48% 31% 48% 11% 11% 11% 11% 11% 11% 11% 11% 11% 1	1.518.981 <b>14.527.012</b> 3.290.020 1734.240 3.734.343 <b>10.300.323</b> 5.235.679 <b>31.135.496</b> <b>91.380,190</b> <b>64.997</b> <b>35.486</b> <b>309.224</b> 240.284 240.284	4 686 133 15,118,548 2,315,445 4,55,754 4,228,967 6,756,540 3,649,330 160,849,376 19,411,449 67,083,853 180,849,376 79,271 192,771 502,569 645,347 1,410,647 206,647 0	-1,408,434 -534,577 -278,485 -1,445,378 -4,543,743 -1,646,348 -57,558,158,558,158-57,558,	1 2 2 5 5 6 6 6 6 7 7 6 7 7 6 7 7 6 7 7 7 7 7

				Activity Dat	8	Impli	ed Ereission	Factor		NO <sub>3</sub> Emi	ssions	
NFR Code	Fuel		CUTIENT	adjusted	difference	CUTIENT	adjusted	difference	CUTTER	adjusted	adjustment	difference
			in (	ы	in [5]	in p	kg/TJ	in [N]		in [kg]		in [5]
		рьбаз	12.219	12.219	0%	437,59	644,11	-16%	7.790.965	6.649.721	-1.142.234	-15%
		Ears 1	14,362	14,362	0%	374,24	241,68	-35%	6.371.161	3,468,643	-1.902.518	-06%
		Ewe 2	24,295	24,295	0%	221.07	111.06	-50%	5.360.977	2,688,163	-2.662.814	-50%
		Ears 3	43.642	43.642	0%	80.15	76.95	-4%	3,497,781	3.358.617	-139.164	-4%
	Gasoline	Ears 4	278,738	278,738	<b>FN</b>	55.98	52.30	-1%	15.663.488	14.578.755	-1.824.743	-7%
		Ears 5	105.830	105.830	15	19.35	52.30	170%	3,228,282	8.725.668	5.497.458	170%
		Euro 6	159,041	159.041	15	0.00	52.30	0%	4.190.422	0.310.250	4.127.828	225
14381.		Gasoline total	689.027	689.027	65	61.02	60.36	65	45.032.996	41,116,017	2,753,820	65
Passenger		pe-Euro	1.003	1.363	45	303.66	264.96	-12%	395.466	346.173	-68.290	-12%
Cars		Ewa 1	2,949	2,949	-	298.17	272.05	-9%	852.432	776.156	-77 277	- 5%
		Ewa 2	10,784	10,784	15	407.20	222.87	45%	4.391.393	2,483,536	-1 987 858	-5%
								-40%				-71%
	Diesel Oil	Ears 3	40.785	40.785	9%	612,49	180,15		24.932.029	7.333.241	-17.558.788	
		Ears 4	130.534	130.534	<b>PN</b>	414,71	160,48	-015	54,133,837	20.937.329	-33.196.508	-61%
		Earo 5	251.212	251,212	05	416,25	160,48	-61%	104.505.705	40.293.731	-64 273 836	-61%
		Ears 6	228.685	228.685	- PS	254,87	160,48	-37%	58.284.140	36.680.440	-21.603.708	-37%
		Diesel oil tatal	666.074	666.074	65	371,66	163,30	-56%	247.596.063	100.750.604	.138.282.458	-56%
		PCs Total	1.365.181	1,365,101	65	214,34	114,68	-465	292.589.060	156.555.421	-136.833.639	-46%
		No Ena	917	917	2%	464.53	645.95	-1%	596.859	682,662	-4.207	-1%
		Ewe 1	188	188	PN	911.58	312,78	-86%	98.528	33.895	-64.723	-86%
		Ewe 2	377	377	<b>FN</b>	303,64	224,45	-25%	114.682	84,713	-29.859	-26%
	Gasaline	Ears 3	511	511	<b>PN</b>	111,92	115,84	6%	57.282	60.739	3.537	6%
	Classificate	Ears-4	1.275	1.275	05	52,02	54,36	4%	05.295	69.278	2.950	4%
		Ears 5	1.483	1.483	0%	23.70	54.36	129%	35.160	80.626	45.455	129%
		Ears 6	1.643	1.643	0%	18.69	64.36	182%	30.660	89.325	68.775	182%
14388.		Gasoline total	6.315	6.115	85	158.22	160,11	15.	999,199	1.011.138	11.809	Th
Light Duty		po Euro	1.872	1.872	0%	411.97	306,79	-36%	771.307	674.412	-196.825	-26%
Vehicles		Errs 1	1,285	1,265	05	388.84	275.25	45%	483.129	272,296	-228.842	-45%
(LOVA)		Euro 2	2.842	2.842	15	318.56	193,80	-39%	905.309	550,789	-354.540	-39%
		Euro J	2.363	2,363	es.	5298, 10	150.74	-75%	5.689.152	1.411.299	-4.197.853	-75%
	Diesel Oil	Ears 4	3.365	33,232	15 IS	508.42	130,74	-12%	16.929.182	3.117.457	-13.011.640	-12%
		Ears 5	66.283	66.283	45 45	412,92	93,81	-70%	28.654.080	6.217.060	-22.477.828	-70%
		Eart 6	39.482	39.482		168,79	93,81		6.941.615	3.686.228	-2.345.397	-38%
		Diesel oil tatal	154,259	154,259	65	384,71	182,69	.73%	\$9,344,525	15.840.310	-43.504.215	-77%
		LDVs Total	160.574	160,574	65	375,80	104,94	-725	60.343,725	16,851,449	-43.492.21%	-152
		he-gas	547	547	9%	1078,18	1019,23	-8%	589.357	587.147	-32.210	-8%
		Eart	237	237	9%	732,76	752,57	3%	173.678	178.368	4.890	3%
14316		Ears I	2.270	2.270	<b>PS</b>	767,83	646,33	-10%	1.788.686	1.467.437	-321.249	-10%
Heavy Duty	Direct Dir	Ears II	6.157	6.757	05	638,89	459,32	-21%	4.262.724	3.103.402	-1.159 232	-27%
Vehicle:	Desel Oil	Ears N	3.043	3.043	0%	473, %	362,73	-25%	1.429.790	1.073.303	-366.467	-25%
Bases		Ears V	18,189	18,189	0%	362,42	186,37	-49%	6.663.265	3.376.016	-3.198.249	-49%
		Ewa M	20.670	20.670	0%	66.89	186,37	229%	1,176,026	3,852,314	2,676,288	226%
		Buses Total	\$1,634	91,634	6%	308,75	253,50	-195	15,993,526	13,687,106	-2.386.429	-19%
		pre-Care	3,282	3,282	2%	1034.82	737.38	-29%	3.375.389	2,485,071	-810.288	-29%
		Evel	1.094	1.094	15	747.82	465.35	-37%	815.052	512.378	-305.674	-37%
1A38H-		Euro I	5.544	5.544	15	817.44	581,68	-32%	4.532.195	2,781,510	-1.750.658	-39%
Heavy Duty		Euro II	20.583	20.583	65	629.54	363.66	-44%	12.957.751	T 27T 279	-5.600.472	-44%
Vehicle:	Diesel Oil	Ears N	15.912	15.912	15	204.00	276.23	-31%	6.336.421	4.395.424	-1.908.997	-31%
Trucks &		Ears V	166.983	165,982	15	250.40	154,68	-47%	45,964,153	24.283.309	-1.620.843	-47%
Lorrise		Eara V	381,799	381,799	15	68,76	154,68	125%	26,964,153	59 055 898	32 804 495	125%
			381,799	381,799		68,76				100,710,889		
		Trucks Total			65		172,10	15	100.173.337		\$37.532	7%
		he-gas	4.940	4.940	PN	125,05	158,61	20%	622.686	783.451	150.795	26%
1.4.3.b iv -		Ears 1	2.965	2.905	0%	125,14	177,79	41%	374.114	52T.294	153.150	41%
Motorised		Ears 2	3.221	3.221	0%	121,33	195,64	65%	387.586	639.833	252 237	65%
Two	Gasoline	Ears 3	6.241	6.241	0%	40,24	190,64	394%	251.126	1.239.680	908.962	394%
Wheelers		Ears 4	1.130	1.130	0%	29,41	199,64	873%	23.066	224.682	201.435	873%
(M2Ws)		Eara 6	0	0	0%	0,00		0%	0	0		0%
		M2Ws Total	18,497	18,497	6%	89,66	184,61	1065.	1.658.558	3,454,767	1,256,209	106%
4.8.3.6. 0		-										

	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)	-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".<sup>8)</sup>

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 <sup>9)</sup> strongly effecting the TREMOD model underlying Germany's emission reporting for road transport and hence any adjustments of NO<sub>x</sub> 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<sub>x</sub> 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

<sup>10)</sup> <sup>11)</sup> <sup>12)</sup> <sup>13)</sup> <sup>14)</sup> ([KNOERR2020a> Knörr et al. (2019a): Knörr, W., Heidt, C., Gores, S., & Bergk, F.: ifeu Institute for Energy and Environmental Research (Institut für Energie- und Umweltforschung Heidelberg gGmbH, ifeu): Fortschreibung des Datenund Rechenmodells: Energieverbrauch und Schadstoffemissionen des motorisierten Verkehrs in Deutschland 1960-2035, sowie TREMOD, im Auftrag des Umweltbundesamtes, Heidelberg & Berlin, 2020.)] : 7 : UBA, 2018: CLRTAP submission 2018, Dessau, 2018 : 8 : ECE/EB.AIR/113/Add.1, 2012: Report of the Executive Body on its thirty-first session, Decision 2012/12 on Guidance for adjustments under the 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone to emission reduction commitments or to inventories for the purposes of comparing total national emissions with them; URL: http://www.unece.org/fileadmin/DAM/env/documents/2012/EB/ECE\_EB.AIR\_113\_Add.1\_ENG\_1\_.pdf : 9 : CEIP, 2014a: Centre on Emission Inventories and Projections (CEIP): CEIP/Adjustment RR/2014/GERMANY: Review of the 2014 Adjustment Application by Germany, URL:

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