Appendix 3.12

Calculation of Emission Factor in Year 2031

(Open Road)

Calculations of Emission Rates from Open Road Sections Using EMFAC-HK Fleet Average Emission Factor

				Car		Taxi	SPB					LGV			HGV		PT		
Seg ID	Traffic Flow ID	Speed Limit	Total Vehicle	Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Calculations of Emission Rates from Open Road Sections Using EMFAC-HK Fleet Average Emission Factor

Calculations of Emission Rates from Open Road Sections Using EMFAC-HK Fleet Average Emission Factor

Seg ID	Traffic Flow ID	Speed Limit	Total Vehicle	Car		Taxi	PLB			
				Motor Cycles	Petrol PC & LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	…

Calculations of Emission Rates from Open Road Sections Using EMFAC-HK Fleet Average Emission Factor

Seg ID	Traffic Flow ID	Speed Limit	Total Vehicle	Car		Taxi	SPB					LGV			HGV		PT		
				Motor Cycles	Petrol PC & LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<=15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses

Calculations of Emission Rates from Open Road Sections Using EMFAC-HK Fleet Average Emission Factor

Calculations of Emission Rates from Open Road Sections Using EMFAC-HK Fleet Average Emission Factor

Emission Factor for NO_x in g/mile-veh (50kph)

Emission Factor for NO_x in g/mile-veh (70kph)

Emission Factor for NO_x in g/mile-veh (80kph)

Emission Factor for RSP in g/mile-veh (50kph)

Emission Factor for RSP in g/mile-veh (70kph)

Emission Factor for RSP in g/mile-veh (80kph)

Seg ID	Traffic Flow ID	Speed Limit	Total Vehicle	Car		Taxi	SPB					LGV			HGV		PT			Car		Taxi	SPB					LGV			HGV		PT			NO_x E.F. 20% of NO	Car		Taxi	SPB					LGV			HGV		PT			RSP E.F.
				Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses	Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses	(g/mile-veh)	Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses	(g/mile-veh)

Calculations of Emission Rates from Open Road Sections Using EMFAC-HK Fleet Average Emission Factor

				Car		Taxi	SPB					LGV			HGV		PT			Car		Taxi	SPB					LGV			HGV		PT				Car		Taxi	SPB					LGV			HGV		PT			RSP E.F.
Seg ID	Traffic Flow ID	Speed Limit	Total Vehicle	Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses	Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses	NOx E.F. 20% of NO (g/mile-veh)	Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses	(g/mile-veh)

Calculations of Emission Rates from Open Road Sections Using EMFAC-HK Fleet Average Emission Factor

Emission Factor for NOx in g/mile-veh (50kph)

Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses
[illegible]	[illegible]	[illegible]	0.000	[illegible]	0.000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Emission Factor for NOx in g/mile-veh (70kph)

Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses
[illegible]	[illegible]	[illegible]	0.000	[illegible]	0.000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Emission Factor for NOx in g/mile-veh (80kph)

Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses
[illegible]	[illegible]	[illegible]	0.000	[illegible]	0.000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Emission Factor for RSP in g/mile-veh (50kph)

Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses
[illegible]	[illegible]	[illegible]	0.000	[illegible]	0.000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Emission Factor for RSP in g/mile-veh (70kph)

Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses
[illegible]	[illegible]	[illegible]	0.000	[illegible]	0.000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Emission Factor for RSP in g/mile-veh (80kph)

Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses
[illegible]	[illegible]	[illegible]	0.000	[illegible]	0.000	0.000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

				Car		Taxi	SPB					LGV			HGV		PT		
Seg ID	Traffic Flow ID	Speed Limit	Total Vehicle	Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses
10319	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10320	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10321	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10322	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10323	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10324	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10325	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10326	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10327	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10328	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10329	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10330	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%
10331	1020->1021	50	1500	2%	21%	14%	0%	7%	0%	0%	2%	1%	5%	7%	21%	2%	1%	5%	6%

	Car		Taxi	SPB					LGV			HGV		PT			NO2 E.F. 25% of NOx
Seg ID	Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses	g/veh-km
10319	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10320	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10321	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10322	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10323	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10324	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10325	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10326	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10327	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10328	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10329	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10330	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6
10331	37.0	53.2	90.0	0.0	445.9	0.0	0.0	11.3	6.8	37.1	265.1	1604.4	192.4	50.6	388.5	30.0	99.6

	Car		Taxi	SPB					LGV			HGV		PT			RSP E.F.
Seg ID	Motor Cycles	Petrol PC &LGV	Taxi	Non-franchised Buses <6.4t	Non-franchised Buses 6.4-15t	Non-franchised Buses >15t	Private Light Buses <3.5t	Private Light Buses >3.5t	Diesel PC&LGV <2.5t	Diesel LGV 2.5-3.5t	Diesel LGV >3.5t	HGV<15t	HGV>15t	Single Deck Franchised Buses	Double Deck Franchised Buses	Public Light Buses	g/veh-km
10319	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10320	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10321	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10322	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10323	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10324	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10325	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10326	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10327	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10328	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10329	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10330	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495
10331	2.0	2.4	6.5	0.0	21.1	0.0	0.0	6.3	2.7	12.7	22.6	109.9	10.0	3.4	13.6	22.5	0.1495