

Supporting Information

Evaluation of real-world gaseous emissions performance of SCR and DPF bus retrofits

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Number of Pages: 6; Number of Tables: 2; Number of Figures: 2

List of Tables

Table S1. 2016 Hong Kong Vehicle Emission Inventory.....	2
Table S2. Mean test conditions by test vehicle and retrofit configuration.	3

List of Figures

Figure S1. Histograms of exhaust gas temperature for each vehicle when equipped with an SCR (Buses A1-A3 / left column) or SCRT (Buses B1-B3 / right column).....	4
Figure S2. Pie charts showing contribution of vehicle types to travel and emissions.	5

Table S1. 2016 Hong Kong Vehicle Emission Inventory.

Veh	NOx (Tonnes)	PM10 (Tonnes)	Population	VKT (million km)
Motor Cycle	140	<5	50,900	310
Private Car	450	20	531,000	5,500
Taxi	3,000	<5	18,300	2,900
Public Light Bus	750	40	4,300	440
Private Light Bus	140	<5	4,300	130
Light Goods Vehicle	2,400	80	71,800	2,100
Medium & Heavy Goods Vehicle	4,800	150	42,600	1,300
Non-franchised Bus	1,400	40	8,000	350
Single-Deck Franchised Bus	110	<5	310	30
Double-Deck Franchised Bus	3,100	70	5,600	480
Grand Total	16,200	420	737,000	13,600

Remark: Numbers smaller than 5 are shown as "<5", numbers between 5 and 10 are rounded to the nearest integer, numbers between 10 and 1,000 are rounded to the nearest ten, numbers between 1,000 and 10,000 are rounded to the nearest hundred, and three significant figures are retained for the numbers greater than 10,000.

Table S2. Mean test conditions by test vehicle and retrofit configuration.

Vehicle	Stage/ Retrofit Configuration	Average Speed (km/h)	Average Positive Acceleration (m/s ²)	Total Distance/ Hours Travelled (VKT/VHT)	Fuel Consumption (l/100km)	Ambient Temperature (°C)	Average Exhaust Temperature (°C)	Proportion Time Exhaust Temperature below 200°C (%)
A1	S1 / DPF	12	0.30	86/7.4	96	33	274	0.7
	S2a / DPF+SCR	11	0.37	101/9.1	100	33	268	1.0
A2	S1 / DPF	34	0.24	486/14.3	51	35	360	< 0.1
	S2a / DPF+SCR	34	0.24	531/15.6	51	33	369	< 0.1
A3	S1 / DPF	10	0.38	81/8.4	113	33	309	0.1
	S2a / DPF+SCR	14	0.45	103/7.2	89	19	270	2.4
B1	S0 / No retrofit	9	0.32	91/10.2	125	22	195	52.3
	S1 / DPF	8	0.31	75/9.3	124	19	207	31.4
	S2b / SCRT	8	0.29	108/13.5	140	32	264	3.0
B2	S0 / No retrofit	11	0.27	101/9.5	105	26	237	16.6
	S1 / DPF	10	0.28	130/12.7	113	21	259	10.3
	S2b / SCRT	10	0.29	73/7.2	126	31	295	5.9
B3	S0 / No retrofit	34	0.29	496/14.6	56	22	277	4.1
	S1 / DPF	33	0.33	528/16.0	58	18	308	2.2
	S2b / SCRT	35	0.27	459/13.1	57	23	341	< 0.1

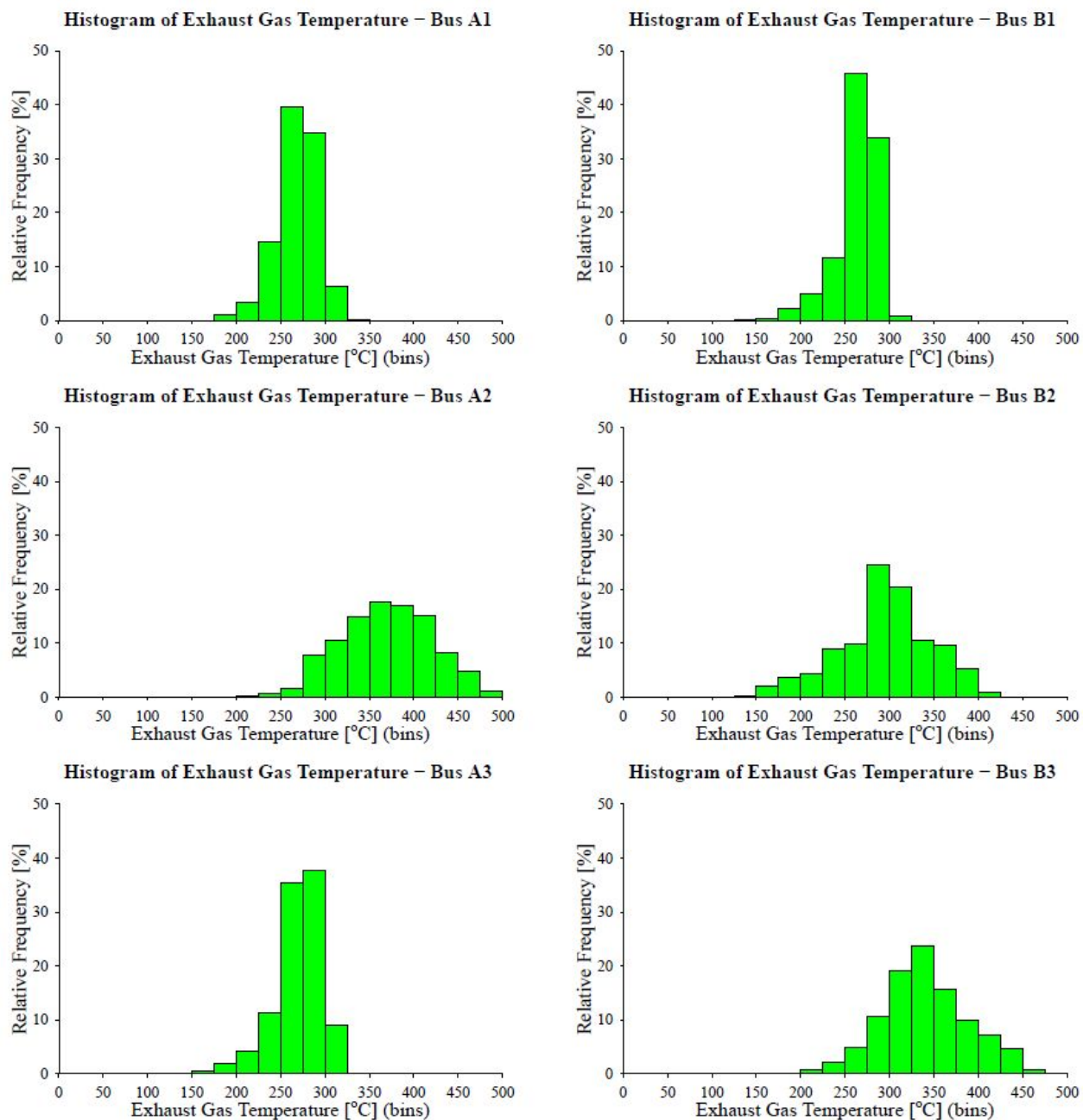


Figure S1. Histograms of exhaust gas temperature for each vehicle when equipped with an SCR (Buses A1-A3 / left column) or SCRT (Buses B1-B3 / right column).

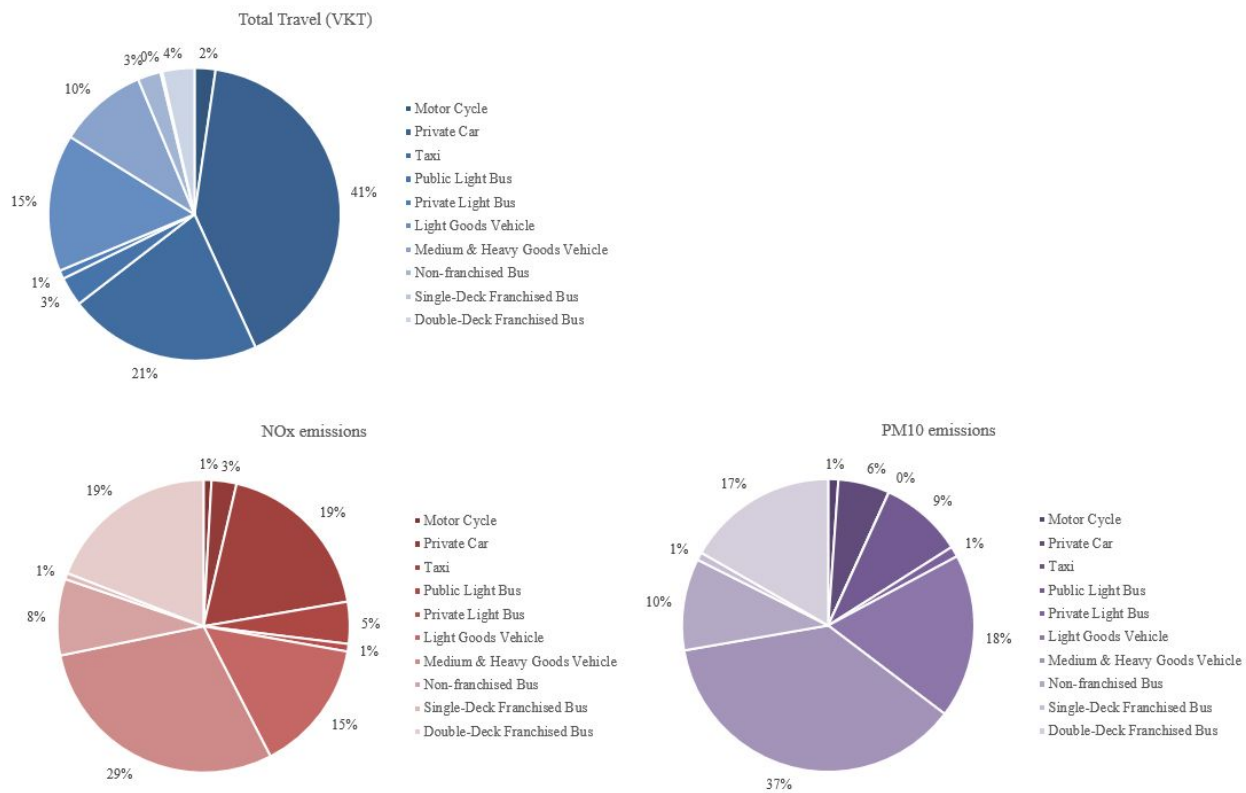


Figure S2. Pie charts showing contribution of vehicle types to travel and emissions.