Supplementary Materials: Addressing Particle Number Emissions of Compressed Natural Gas (CNG) and Liquefied Petroleum Gas (LPG) Fueled Vehicles at Different Ambient Temperatures

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Table S1. Solid particle number, SPN4, SPN10 and SPN23, emissions, with and without loss correction, of the three vehicles VLPG, VCNG1 and VCNG2 for 23 °C hot start (HOT), 23 °C cold start (COLD) and sub-zero (SUB) cold start WLTC for gaseous fuel operation. Also excess of SPN4 over SPN10 (sub10–4) and SPN10 over SPN23 (sub23–10) with and without loss correction.

	VLPG, LPG				VCNG1, CNG				VCNG2, CNG		
	PN4	**PN10**	**PN23**		**PN4**	**PN10**	**PN23**		**PN4**	**PN10**	**PN23**
HOT	5.2E+10	4.8E+10	2.4E+10	**HOT**	2.3E+12	1.4E+12	1.1E+11	**HOT**	3.0E+11	1.2E+11	2.0E+10
COLD	2.0E+11	1.8E+11	1.2E+11	**COLD**	2.2E+12	1.6E+12	2.7E+11	**COLD**	2.4E+11	6.7E+10	2.0E+10
SUB	1.1E+12	1.0E+12	7.9E+11	**SUB**	4.3E+12	3.5E+12	2.7E+12	**SUB**	3.2E+11	1.5E+11	3.7E+10
	PN4c	**PN10c**			**PN4c**	**PN10c**			**PN4c**	**PN10c**	
HOT	1.0E+11	6.2E+10		**HOT**	6.3E+12	2.2E+12		**HOT**	8.0E+11	1.7E+11	
COLD	3.5E+11	2.2E+11		**COLD**	5.8E+12	2.5E+12		**COLD**	6.5E+11	9.5E+10	
SUB	1.7E+12	1.1E+12		**SUB**	7.4E+12	4.1E+12		**SUB**	8.4E+11	2.2E+11	
	sub10–4	**sub23–10**			**sub10–4**	**sub23–10**			**sub10–4**	**sub23–10**	
HOT	10	101		**HOT**	61	1161		**HOT**	158	469	
COLD	9	56		**COLD**	37	516		**COLD**	266	240	
SUB	9	28		**SUB**	23	33		**SUB**	112	316	
corrected	**sub10c–4c**	**sub23–10c**		**corrected**	**sub10c–4c**	**sub23–10c**		**corrected**	**sub10c–4c**	**sub23–10c**	
HOT	68	162		**HOT**	182	1858		**HOT**	362	750	
COLD	56	90		**COLD**	136	826		**COLD**	582	384	
SUB	45	44		**SUB**	82	52		**SUB**	278	506	

Table S2. Solid particle number, SPN4, SPN10 and SPN23, emissions, with and without loss correction, of the three vehicles VLPG, VCNG1 and VCNG2 for 23 °C hot start (HOT), 23 °C cold start (COLD) and sub-zero (SUB) cold start WLTC for gasoline operation. Also excess of SPN4 over SPN10 (sub10–4) and SPN10 over SPN23 (sub23–10) with and without loss correction.

	VLPG,E10				VCNG1,E10				VCNG2,E5		
E5	**PN4**	**PN10**	**PN23**		**PN4**	**PN10**	**PN23**		**PN4**	**PN10**	**PN23**
HOT	5.3E+11	4.8E+11	2.6E+11	**HOT**	1.4E+13	1.2E+13	1.0E+13	**HOT**	2.9E+11	1.4E+11	3.0E+10
COLD	7.1E+11	6.6E+11	3.9E+11	**COLD**	1.5E+13	1.3E+13	1.1E+13	**COLD**	8.6E+11	3.5E+11	5.7E+10
SUB	1.8E+12	1.7E+12	1.2E+12	**SUB**	2.4E+13	2.1E+13	1.9E+13	**SUB**	1.3E+12	1.1E+12	6.9E+11
	PN4C	**PN10c**			**PN4C**	**PN10c**			**PN4C**	**PN10c**	
HOT	1.0E+12	6.1E+11		**HOT**	2.0E+13	1.3E+13		**HOT**	7.5E+11	2.0E+11	
COLD	1.3E+12	8.2E+11		**COLD**	2.2E+13	1.4E+13		**COLD**	2.3E+12	5.2E+11	
SUB	3.0E+12	1.9E+12		**SUB**	3.3E+13	2.2E+13		**SUB**	2.5E+12	1.3E+12	
	sub10–4	**sub23–10**			**sub10–4**	**sub23-10**			**sub10–4**	**sub23–10**	
HOT	10	84		**HOT**	14	19		**HOT**	108	360	
COLD	8	69		**COLD**	15	17		**COLD**	148	516	
SUB	10	40		**SUB**	13	12		**SUB**	26	54	
corrected	**sub10c–4c**	**sub23–10c**		**corrected**	**sub10c–4c**	**sub23–10c**		**corrected**	**sub10c–4c**	**sub23–10c**	
HOT	65	135		**HOT**	52	30		**HOT**	270	576	
COLD	57	111		**COLD**	54	27		**COLD**	342	825	
SUB	52	65		**SUB**	47	20		**SUB**	95	87	