

ANALYSIS TO DETERMINE ELECTRIC VEHICLE BUILDOUT PERIOD by Willem Post; February 18, 2011

Year	Passenger vehicles						Scrap			Production		
	Total	Gas	Gas	EV	EV	Total	Gas	EV	Total	Gas/yr	EV/yr	
	Chg	Net	Chg	Net	Scrap	Scrap	Scrap					
2015	265.0	-0.50	264.5	0.50	0.50	17.0	17.00	0.00	17.0	16.5	0.5	
	265.0	-0.97	263.5	0.97	1.47	17.0	16.97	0.03	17.0	16.0	1.0	
	265.0	-1.41	262.1	1.41	2.87	17.0	16.91	0.09	17.0	15.5	1.5	
	265.0	-1.82	260.3	1.82	4.69	17.0	16.82	0.18	17.0	15.0	2.0	
	265.0	-2.20	258.1	2.20	6.89	17.0	16.70	0.30	17.0	14.5	2.5	
	265.0	-2.56	255.6	2.56	9.45	17.0	16.56	0.44	17.0	14.0	3.0	
	265.0	-2.89	252.7	2.89	12.34	17.0	16.39	0.61	17.0	13.5	3.5	
	265.0	-3.21	249.5	3.21	15.55	17.0	16.21	0.79	17.0	13.0	4.0	
	265.0	-4.00	245.5	4.00	19.55	17.0	16.00	1.00	17.0	12.0	5.0	
	265.0	-4.74	240.7	4.74	24.29	17.0	15.74	1.26	17.0	11.0	6.0	
2025	265.0	-4.94	235.8	4.94	29.23	17.0	15.44	1.56	17.0	10.5	6.5	
	265.0	-5.12	230.6	5.12	34.36	17.0	15.12	1.88	17.0	10.0	7.0	
	265.0	-5.29	225.3	5.29	39.65	17.0	14.79	2.21	17.0	9.5	7.5	
	265.0	-5.45	219.9	5.45	45.11	17.0	14.45	2.55	17.0	9.0	8.0	
	265.0	-5.60	214.3	5.60	50.71	17.0	14.10	2.90	17.0	8.5	8.5	
2030	265.0	-5.74	208.5	5.74	56.45	17.0	13.74	3.26	17.0	8.0	9.0	
	265.0	-5.38	203.2	5.38	61.83	17.0	13.38	3.62	17.0	8.0	9.0	
	265.0	-5.03	198.1	5.03	66.86	17.0	13.03	3.97	17.0	8.0	9.0	
	265.0	-4.71	193.4	4.71	71.57	17.0	12.71	4.29	17.0	8.0	9.0	
	265.0	-4.41	189.0	4.41	75.97	17.0	12.41	4.59	17.0	8.0	9.0	
2035	265.0	-4.12	184.9	4.12	80.10	17.0	12.12	4.88	17.0	8.0	9.0	
	265.0	-3.86	181.0	3.86	83.95	17.0	11.86	5.14	17.0	8.0	9.0	
	265.0	-3.61	177.4	3.61	87.56	17.0	11.61	5.39	17.0	8.0	9.0	
	265.0	-3.38	174.1	3.38	90.94	17.0	11.38	5.62	17.0	8.0	9.0	
	265.0	-3.16	170.9	3.16	94.10	17.0	11.16	5.84	17.0	8.0	9.0	
	265.0	-2.96	167.9	2.96	97.06	17.0	10.96	6.04	17.0	8.0	9.0	
	265.0	-2.77	165.2	2.77	99.83	17.0	10.77	6.23	17.0	8.0	9.0	
	265.0	-2.59	162.6	2.59	102.42	17.0	10.59	6.41	17.0	8.0	9.0	
	265.0	-2.42	160.2	2.42	104.85	17.0	10.42	6.58	17.0	8.0	9.0	
	265.0	-2.27	157.9	2.27	107.12	17.0	10.27	6.73	17.0	8.0	9.0	
2045	265.0	-2.12	155.8	2.12	109.24	17.0	10.12	6.88	17.0	8.0	9.0	
	265.0	-1.99	153.8	1.99	111.23	17.0	9.99	7.01	17.0	8.0	9.0	
	265.0	-1.86	151.9	1.86	113.08	17.0	9.86	7.14	17.0	8.0	9.0	
	265.0	-1.74	150.2	1.74	114.82	17.0	9.74	7.26	17.0	8.0	9.0	
	265.0	-1.63	148.5	1.63	116.45	17.0	9.63	7.37	17.0	8.0	9.0	
	265.0	-1.52	147.0	1.52	117.98	17.0	9.52	7.48	17.0	8.0	9.0	
	265.0	-1.43	145.6	1.43	119.40	17.0	9.43	7.57	17.0	8.0	9.0	
	265.0	-1.33	144.3	1.33	120.74	17.0	9.33	7.67	17.0	8.0	9.0	
	265.0	-1.25	143.0	1.25	121.99	17.0	9.25	7.75	17.0	8.0	9.0	
	265.0	-1.17	141.8	1.17	123.15	17.0	9.17	7.83	17.0	8.0	9.0	
2055	265.0	-1.09	140.8	1.09	124.25	17.0	9.09	7.91	17.0	8.0	9.0	
	265.0	-1.02	139.7	1.02	125.27	17.0	9.02	7.98	17.0	8.0	9.0	
	265.0	-0.96	138.8	0.96	126.23	17.0	8.96	8.04	17.0	8.0	9.0	
	265.0	-0.90	137.9	0.90	127.12	17.0	8.90	8.10	17.0	8.0	9.0	
	265.0	-0.84	137.0	0.84	127.96	17.0	8.84	8.16	17.0	8.0	9.0	
	265.0	-0.78	136.3	0.78	128.75	17.0	8.78	8.22	17.0	8.0	9.0	
	265.0	-0.73	135.5	0.73	129.48	17.0	8.73	8.27	17.0	8.0	9.0	
	265.0	-0.69	134.8	0.69	130.17	17.0	8.69	8.31	17.0	8.0	9.0	
	265.0	-0.64	134.2	0.64	130.81	17.0	8.64	8.36	17.0	8.0	9.0	
	265.0	-0.60	133.6	0.60	131.41	17.0	8.60	8.40	17.0	8.0	9.0	
2065	265.0	-0.56	133.0	0.56	131.98	17.0	8.56	8.44	17.0	8.0	9.0	
2066	265.0	-0.53	132.5	0.53	132.50	17.0	8.53	8.47	17.0	8.0	9.0	

50/50 mix

The US has about 265 million passenger vehicles which is assumed constant for this study; i.e., the scrap rate is equal to the production rate, assumed at 17 million vehicles/yr.

Assuming EV production starts in 2015 at 0.5 million/yr and ramps up to 9.0 million/yr in 2030, and gas vehicle production ramps down from 17 million/yr in 2015 to 8 million/yr in 2030, and the scrap rates are the same for EVs and gasoline vehicles, there would a 50/50 mix by 2066.