In-Use Compliance Cost Range Estimates

Oct. 14, 03

This Matrix calculates the in-use cost of compliance for TRUs and TRU gen sets ("TRUs".) It takes the annual TRU population numbers (same as used for emissions inventory purposes) and multiplies them by the capital and annual costs for the compliance technology shown.

The capital costs are amortized over an assumed ten-year useful life, and all annual costs are converted to constant year (2002) dollars using standard present worth analysis techniques.

In this scenario, on a year-by-year basis, population figures for each engine category are multiplied by the annualized capital cost and the early retirement allowance factor; these products are then summed to determine the compliance cost for a given year.

Interest Rates Used for Present Worth Analysis

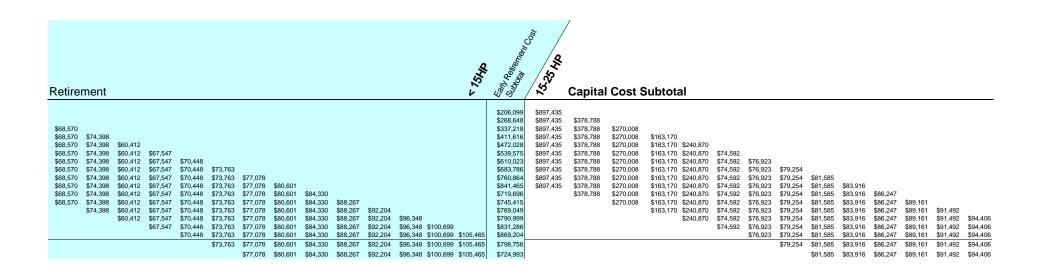
Capital Costs: 0.05 Real interest rate, which is a 7% nominal rate minus an assumed 2% inflation rate
Annual Costs: 0.05 Real interest rate, which is a 7% nominal rate minus an assumed 2% inflation rate

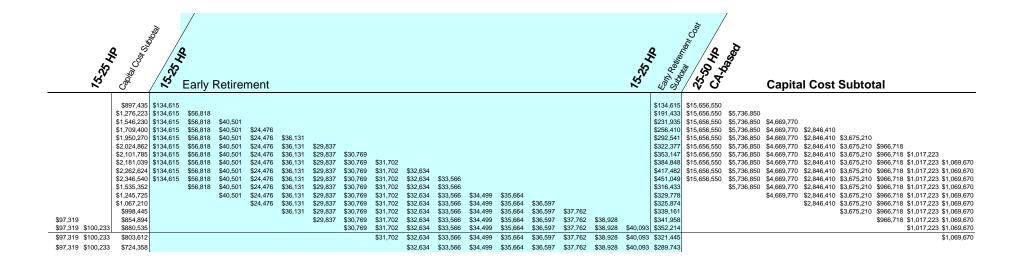
Assumptions: 10-year useful life for compliance technology; capital cost is amortized over a 10-year period.

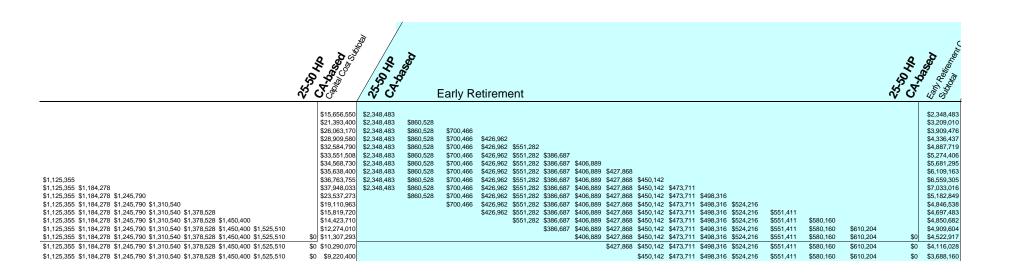
Lack of VDECS Scenario:

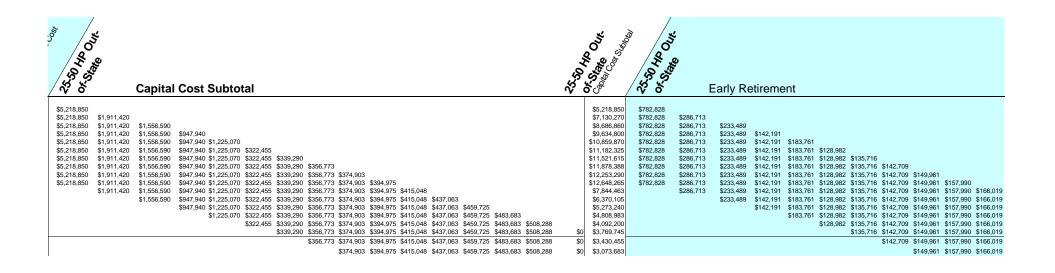
	Early Retirement Allowance Profile (cost factor attributable to ATCM)														
				Year											
Compliance Scenario	Size	Cap. Cost	Ann. Cost	<u>1</u>	2	3	4	5	6	7	8	9	10		
LETRU: TRU Replacement	<15 HP	\$10,000	\$0	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15		
	15-25 HP	\$15,000	\$0	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15		
	>25 HP	\$20,000	\$0	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15		
LETRU-GEN: Replacement w/new	>25 HP	\$12,000	\$0	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15		
ULETRU: Engine Replacement	<15 HP	\$4,000	\$0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4		
	15-25 HP	\$4,500	\$0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4		
	>25 HP	\$5,000	\$0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4		
ULETRU-GEN: Engine Replacement	>25	\$5,000	\$0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4		

See.	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Engine F	Population	Category	350 S	55h 04 64 84 04 64 84 84	ESON ES	10g 50 10g 10g 10g 10g 10g 10g 10g 10g 10g 10	COA(Mis Vean)	C 15HD	/ Capita	ıl Cos	st Sub	total											~ 15Hp	Capia/Cox Soft.	75/40	Early
-2001 2008 AI	II 2125	880	11162	3721	856	285	822	16846	19851																			
-1998 2008	1061	462	6045	2015	509	170	539	9278		\$1,373,995																\$1,373,995		
1999 2008	322	195	2215	738	80	27	89	3149		\$1,373,995																\$1,790,985		
2000 2008	353	139	1803	601	124	41	94	2663			\$416,990 \$4															\$2,248,120		
2001 2008	383	84	1099	366	142	47	100	1754			\$416,990 \$4															\$2,744,105		
2002 2009	311	124	1419	473	156	52	105	2205	2640	\$1,373,995	\$416,990 \$4	457,135	\$495,985	\$402,745												\$3,146,850		
2003 2010	326	128	1493	498	172	57	110	2330			\$416,990 \$4		\$495,985													\$3,315,718		\$62,549
2004 2011	340	132	1571	524	189	63	116	2463			\$416,990 \$4				\$168,868											\$3,491,838		
2005 2012	356	136	1652	551	209	70	122	2604			\$416,990 \$4				\$168,868											\$3,676,246		
2006 2013	372	140	1738	579	230	77	128	2752			\$416,990 \$4		\$495,985	\$402,745	\$168,868	\$176,120	\$184,408	\$192,69	16							\$3,868,942		
2007 2014	389	144	1829	610	254	85	135	2913		\$1,373,995	\$416,990 \$4								6 \$201,50							\$4,070,444	\$206,099	
2008 2015	407	148	1924	641	279	93	142	3079	3634		\$416,990 \$4									2 \$210,826						\$2,907,275		\$62,549
2009 2016	426	153	2024	675	308	103	149	3259	3838		\$4	457,135	\$495,985	\$402,745	\$168,868	\$176,120	\$184,408	\$192,69	6 \$201,50	2 \$210,826	\$220,668					\$2,710,953		
2010 2017	445	157	2129	710	339	113	157	3448	4050				\$495,985		\$168,868											\$2,484,328		
2011 2018	465	162	2240	747	374	125	165	3651	4278					\$402,745	\$168,868	\$176,120	\$184,408	\$192,69	6 \$201,50	2 \$210,826	\$220,668	\$230,510	\$240,870			\$2,229,213		
2012 2019	486	167	2356	785	412	137	174	3864	4517						\$168,868						\$220,668					\$2,078,216		
2013 2020	509	172	a	а	a	а	а	a	681							\$176,120								\$251,748		\$2,173,010		
2021	а	а	a	а	а	а	a	а	а								\$184,408	\$192,69	6 \$201,50	2 \$210,826	\$220,668	\$230,510	\$240,870	\$251,748	263,662	\$1,996,890		
2022	а	а	а	а	а	а	а	а	а									\$192,69	6 \$201,50	2 \$210,826	\$220,668	\$230,510	\$240,870	\$251,748	263,662	\$1,812,482		









	25.50 HD OF STATE OF	-550 HD Ser. 100.	CA-Passed	Capita	l Cost Subtotal					\$5.50 M \$6.50 M \$2.40 \$2.40 \$2.40 \$2.40 \$3.00 \$3	198 (28) (18) (18) (18) (18) (18) (18) (18) (1	25.50 HD 3.00%	CA-69/80	Early Re	tireme	ent
	\$782,828	\$790,986									\$790,986	\$118,648				
	\$1,069,541		\$124,320								\$915,306	\$118,648	\$18,648			
	\$1,303,029		\$124,320	\$192,696							\$1,108,002	\$118,648	\$18,648	\$28,904		
	\$1,445,220		\$124,320	\$192,696	\$220,668						\$1,328,670	\$118,648	\$18,648		\$33,100	
	\$1,628,981	\$790,986	\$124,320	\$192,696	\$220,668 \$242,424						\$1,571,094	\$118,648	\$18,648	\$28,904	\$33,100	\$36,364
	\$1,757,963	\$790,986	\$124,320	\$192,696	\$220,668 \$242,424 \$111,370						\$1,682,464	\$118,648	\$18,648	\$28,904	\$33,100	\$36,364
	\$1,893,679	\$790,986	\$124,320	\$192,696	\$220,668 \$242,424 \$111,370 \$122	,378					\$1,804,842	\$118,648	\$18,648	\$28,904	\$33,100	\$36,364
	\$2,036,388	\$790,986	\$124,320	\$192,696	\$220,668 \$242,424 \$111,370 \$122	,378 \$135,328					\$1,940,169	\$118,648	\$18,648	\$28,904	\$33,100	\$36,364
	\$2,186,349		\$124,320	\$192,696	\$220,668 \$242,424 \$111,370 \$122						\$2,089,094	\$118,648	\$18,648			\$36,364
	\$2,344,339		\$124,320	\$192,696	\$220,668 \$242,424 \$111,370 \$122						\$2,253,559	\$118,648	\$18,648			\$36,364
	\$1,727,530	\$	\$124,320	\$192,696	\$220,668 \$242,424 \$111,370 \$122		,	,			\$1,643,226		\$18,648			\$36,364
\$174,825	\$1,615,642			\$192,696	\$220,668 \$242,424 \$111,370 \$122						\$1,718,336					\$36,364
\$174,825 \$183,890	\$1,566,044				\$220,668 \$242,424 \$111,370 \$122						\$1,745,142					\$36,364
\$174,825 \$183,890 \$193,473	\$1,617,326				\$242,424 \$111,370 \$122						\$1,766,639					\$36,364
\$174,825 \$183,890 \$193,473 \$203,315	\$1,636,880								\$219,503 \$242,165		\$1,790,985					
\$174,825 \$183,890 \$193,473 \$203,315	\$0 \$1,507,898				\$122	,	, ., , . ,	, ,,	\$219,503 \$242,165	,	\$1,679,615					
\$174,825 \$183,890 \$193,473 \$203,315	\$0 \$1,372,182								\$219,503 \$242,165		0 \$1,557,238					
\$174,825 \$183,890 \$193,473 \$203,315	\$0 \$1,229,473						\$148,925 \$164,465	\$180,653 \$199,430	\$219,503 \$242,165	\$266,770 \$	0 \$1,421,910					

