

Carl Moyer Program Revised Cost Effectiveness Criteria and Capital Recovery Factors

In order to receive Carl Moyer Program funding, each project must meet the specified maximum cost-effectiveness criteria. The cost-effectiveness is a measure of the dollars provided to a project for each ton of covered emissions reduced. To calculate Carl Moyer Program cost-effectiveness, the project grant amount is annualized based upon the project's life and an appropriate discount rate. This annual cost is divided by the project's estimated emission reductions to determine the overall cost-effectiveness of the covered emissions reduced.

The enabling legislation for the Carl Moyer Program established the initial cost-effectiveness cap at \$12,000 in 1998. Subsequent statutory revisions increased the limit to \$13,600 addressing inflation. As Carl Moyer Program guidelines have been updated to reflect program changes, staff have reviewed the cost-effectiveness limit, as required by statute, to account for subsequent changes in inflation. The 2008 guidelines specify a cost-effectiveness cap of \$16,000.

Section 44283(a) of the Health and Safety Code authorizes the Board to adjust the cost-effectiveness criteria to "a higher value that reflects state consumer price index adjustments by the state board on or after January 1, 2006..." Also, Section 44283(i) states "Every year the state board shall adjust the maximum cost-effectiveness amount established in subdivision (a) and per any per-project maximum set by the state board pursuant to subdivision (h) to account for inflation."

Revised Cost Effectiveness Cap

Using the California Consumer Price Index¹ (CA CPI) and the California Department of Finance method² of converting the CA CPI to an inflation rate, a change in the cost-effectiveness thresholds can be seen over time. The table below shows how inflation impacts the cost-effectiveness limit using the annual increase in the CA CPI converted to an inflation rate:

Year	Annual CA CPI	Percent change (inflation rate)	Annual modified amount	Revised CE cap
1998	163.7	NA	NA	\$12,000
1999	168.5	2.93%	\$352	\$12,352
2000	174.8	3.74%	\$462	\$12,814
2001	181.7	3.95%	\$506	\$13,319
2002	186.1	2.42%	\$323	\$13,642
2003	190.4	2.31%	\$315	\$13,957
2004	195.4	2.63%	\$367	\$14,324
2005	202.6	3.68%	\$528	\$14,852
2006	210.5	3.90%	\$579	\$15,431
2007	217.4	3.28%	\$506	\$15,936
2008	224.8	3.40%	\$542	\$16,479

Revised Capital Recovery Factors

The capital recovery factors (CRF) used for determining the annualized costs of Carl Moyer Program grants are based on a discount rate. The CRF uses an interest rate and project life to determine the rate at which earnings could reasonably be expected if the same funds were invested over a length of time. The CRF is calculated using the formula below:

$$[(1 + i)^n (i)] / [(1 + i)^n - 1]$$

Where

i = discount rate

n = project life (see specific project criteria for default maximums)

Previous versions of the guidelines, updated the CRF using the average annual yield of U.S. Treasury securities³ with a 3-year, 5-year, 7-year, and 10-year maturation over a specific period of time. Most recent annual data for 2009 using the average rates of return for U.S. Treasury securities over the past year (January to December 2009) yields a revised discount rate as shown below:

	Average Monthly Rate - 2009												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
3 year	1.13%	1.37%	1.31%	1.32%	1.39%	1.76%	1.55%	1.65%	1.48%	1.46%	1.32%	1.38%	1.43%
5 year	1.60%	1.87%	1.82%	1.86%	2.13%	2.71%	2.46%	2.57%	2.37%	2.33%	2.23%	2.34%	2.19%
7 year	1.98%	2.30%	2.42%	2.47%	2.81%	3.37%	3.14%	3.21%	3.02%	2.96%	2.92%	3.07%	2.81%
10 year	2.52%	2.87%	2.82%	2.93%	3.29%	3.72%	3.56%	3.59%	3.40%	3.39%	3.40%	3.59%	3.26%
Overall average for Jan-Dec 2009													2.36%

Rounding to a whole number yields a discount rate of two percent.

¹ The California Consumer Price Index, California Department of Industrial Relations, Division of Labor Statistics and Research, web page. [<http://www.dir.ca.gov/dlsr/CPI/PresentCCPI.PDF> and <http://www.dir.ca.gov/dlsr/CPI/EntireCCPI.PDF>]

² The method to convert from the CA CPI to an inflation rate can be found at http://www.dof.ca.gov/HTML/FS_DATA/LatestEconData/FS_UseCPI.php

³ U.S. Federal Reserve Statistical Release (<http://federalreserve.gov/releases/h15/>)