

Staff's Proposed Amendments to the April 7, 2009 Proposal for Implementing the Legislatively Directed Changes

A. Background

As part of the recently signed California budget (Assembly Bill 8 2X), the California Legislature directed ARB to make several changes to the Regulation for In-Use Off-Road Diesel-Fueled Vehicle Fleets (the regulation). The changes include the following:

1. Fleets who are now using their off-road vehicles less than they did as of July 1, 2007, may take credit for this reduced fleet activity to satisfy the turnover and retrofitting requirements of the regulation in 2010 and 2011.
2. Fleets will be given credit (for both PM and NOx) for any vehicle retirements made between March 1, 2006, and March 1, 2010, provided that total fleet horsepower decreased from the previous year.
3. For the total cumulative turnover and retrofit requirements for the years 2011 through 2013, fleets may complete 20 percent of those requirements by March 1, 2011, an additional 20 percent by March 1, 2012, and the balance by March 1, 2013.

On April 7, 2009, the staff of the Air Resources Board (ARB or Board) held a public workshop in Sacramento to discuss ARB staff's initial proposal for how to implement the legislatively directed changes to the regulation and ways to mitigate the potential loss in emission benefits resulting from these changes. At the workshop, stakeholders expressed a number of suggestions regarding improving staff's proposal. ARB staff has taken these suggestions into account and has made several revisions to the proposal.

Staff plans to hold another workshop April 29, 2009 in Diamond Bar and would like to solicit input at that time on the revisions discussed below. The workshop in Diamond Bar will be webcast, and details on the webcast will be posted to our email list serve and available prior to the workshop at: <http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>.

The first section below discusses how ARB staff proposes to implement the legislatively directed changes, and highlights areas where staff has changed the proposal based on input from the April 7, 2009, workshop. The second section discusses possible additional changes to the regulation to mitigate the potential loss in emission benefits. Finally, the third section provides explanation regarding two issues that were discussed at the April 7, 2009, workshop – namely, the status of repower credit that fleets have already accumulated, and why ARB staff is proposing provisions that will ensure fleets are all treated equally by not allowing double counting the reductions achieved through retirement and activity reduction.

B. Staff Proposed Changes to April 7 Proposal for Legislatively Directed Changes

The subsections below outline ARB staff's April 7, 2009, proposal for implementing each of the legislatively directed changes, the feedback received at the workshop, and – where

applicable - ARB staff's revised proposal. ARB staff would like to solicit input on the proposed revisions.

1. Additional Credit for Reduced Activity

Original Proposal:

On April 7, 2009, ARB staff proposed requiring hour meter readings on every vehicle, and logs extending back to July 2007, to document any reductions in activity. Staff proposed calculating the activity reduction as the percent reduction in horsepower hours (hp-hours) activity during the initial period (July 1, 2007 - June 30, 2008) compared to a later period (March 1, 2009 - February 28, 2010).

Based on an informal poll at the April 7, 2009 workshop, it appears that nearly all fleets do not have well-documented hour meter logs extending back several years. Attendees also expressed reservations about other potential types of records – i.e., fuel use data, billed hours, operator hours, etc. – not correlating exactly to off-road vehicle usage.

In addition, many attendees at the workshop expressed a preference for having the initial period start earlier (either the 12-month period ending July 1, 2009, or the 12-month period centered on July 1, 2007). Several attendees suggested that such an earlier initial period was more in line with the legislature's intent.

Proposed Changes:

Based on the feedback at the workshop, ARB staff now proposes the following:

a) Enable Fleets with Incomplete Records to Receive Credit – The regulation would have a higher threshold for fleets claiming reduced activity above a certain threshold (15 percent in the example below). To get reduced activity credit for below the threshold, incomplete records would be accepted. For example, the system could work as described below:

- To get credit up to 15 percent, a fleet would have to show some record that they reduced their activity for the relevant time period. Records could include employment records, revenue records, man-hours, taxes, operation records, fuel use, etc.
- To get credit more than 15 percent, a fleet would have to submit hour meter logs for each vehicle.

Feedback Requested - ARB staff would like to solicit feedback on the idea of having two sets of criteria for reduced activity records, depending on the amount of credit claimed, as well as input as to the appropriate level at which to set the threshold for requiring more complete records. ARB staff would also like to solicit input on the requirements for records for getting reduced activity credit more than the threshold. Should hour meter records be required for every vehicle? Are there suggestions for how to give credit for fleets that have incomplete hour meter records?

b) Adjust Historic Baseline Activity Period to be Centered on July 1, 2007 -

Begin measuring activity with the period January 1, 2007-December 31, 2007 (centered on July 1 2007, the date specified in the legislation). Thus, the activity reduction would be the percent reduction in horsepower hours (hp-hours) activity during the initial period

(January 1, 2007 - December 31, 2007) compared to a later period (March 1, 2009 - February 28, 2010).

Feedback Requested - ARB staff would like to solicit feedback on this revised baseline period for calculating reduced activity credit.

2. Additional Credit for Vehicle Retirement

Original Proposal:

On April 7, 2009, ARB staff proposed that the new retirement credit would be implemented as follows:

- The new retirement credit could be used toward the NOx and PM BACT requirements.
- In order to be consistent with the provisions in the regulation that require turnover of dirtier vehicles before turnover of cleaner vehicles can count, only retirement of Tier 0s would generate credit.
- As specified in AB8 2X, which restricts credit to retirements that reduce total fleet horsepower, the maximum credit would be the horsepower drop between March 1, 2006, and March 1, 2010.

Several attendees at the workshop commented that it would be fair and consistent with the rest of the regulation to allow credit for Tier 1s as well, especially for fleets that have already retired their Tier 0s. Some attendees requested that credit be given for retirement of any vehicle, no matter the tier.

Proposed Changes:

Based on the feedback at the workshop, ARB staff now proposes the following:

Allow Retirement of Tier 1s to Get Credit -

Staff believes it was the intent of the legislature to extend backwards the retirement credit provisions already in the regulation. As such, staff is now proposing to allow retirement of all Tier 0s and those Tier 1s without a particulate matter standard (i.e., Tier 1s between 50 and 174 horsepower) to count toward credit. Staff is also proposing to allow other Tier 1s to count if all other Tier 0s and Tier 1s without a particulate matter standard are retired first. This change is consistent with the Order of Turnover requirements in Title 13, section 2449.1(a)(2)(A)3.

However, staff does not propose allowing credit for retirement of vehicles of higher tier because crediting retirement of such vehicles would not be consistent with the Order of Turnover requirements in Title 13, section 2449.1(a)(2)(A)3. That is, fleets cannot get credit for turnover of Tier 2 or higher vehicles until their Tier 0 and dirtiest Tier 1 vehicles are retired first. Because the new retirement provisions extend into the future, if retirement of such higher tier vehicles were credited, in addition to being inconsistent with the existing structure of the regulation, it could present fleets with an incentive to retire their cleaner (higher tier) vehicles, thereby making their fleets dirtier. For example, a fleet that retires its Tier 2 and 3 vehicles and keeps its Tier 0 and 1 vehicles is making its fleet dirtier on average, which should not count toward meeting the requirements of the regulation.

Feedback Requested - ARB staff would like to solicit feedback on the proposed revisions to the new retirement credit.

3. Change to Cumulative Turnover and Retrofit Requirements for 2011 to 2013

Original Proposal:

On April 7, 2009, ARB staff proposed that the changes to the total cumulative turnover and retrofit requirements for the years 2011 through 2013 be implemented as shown in Table 1 below. The discussion at the workshop was supportive of this proposal, and staff does not propose any change to it.

Table 1: Revised BACT Schedule
(% turnover required/ % retrofit required)

	2010	2011	2012	2013	2014
Existing	8 / 20	8 / 20	8 / 20	8 / 20	8 / 20
Proposed	8 / 20	4.8 / 12	4.8 / 12	14.4 / 36	8 / 20

C. Other Potential Changes to the Regulation

Because the legislative directed changes could lessen the requirements for many large fleets in the early years of the regulation, without mitigation, the changes will likely result in a loss in emission reductions and their associated health benefits. The changes could also have a negative economic impact on retrofit manufacturers and installers, which could result in reduced ability of that industry to have product available for compliance in future years.

At the April 7 workshop, ARB staff proposed a number of potential changes to the regulation that could partially mitigate these impacts. Also, stakeholders proposed some additional ideas. Staff has not decided which, if any, concepts will be included in staff's proposal for Board consideration in July 2009. However, ARB staff would like to solicit additional public input on the following concepts:

1. Exempt Vehicles Retrofit Early from Future Turnover

One idea staff proposed at the April 7, 2009, workshop was to exempt vehicles that are retrofit early, for example by March 1, 2011, from future turnover requirements. This could potentially provide an incentive for fleets to install retrofits and achieve immediate PM reductions earlier than they otherwise would. Participation by each fleet would be limited to some maximum level to limit potential long-term emission disbenefits. Because it would be purely voluntary, it would impose no additional requirements on fleets.

Feedback Requested - ARB staff would like to solicit input on this proposal in general, and especially from affected fleets regarding whether this option would be likely to encourage additional early retrofitting. ARB staff would also like to solicit input on what maximum level of participation to allow for fleets (for example, 20 percent of a fleet's horsepower).

2. Double Credit for Oxides of Nitrogen (NOx) Retrofits

ARB staff would also like to solicit comment on an additional idea not discussed at the April 7, 2009, workshop - providing double credit for NOx retrofits installed by January 1, 2010. For example, a fleet that installed a NOx retrofit verified to reduce NOx 60 percent on a 200 horsepower (hp) engine would get 400 hp carryover turnover credit toward the NOx BACT requirements. This would provide the same double credit as is currently provided for early PM retrofits. Alternatively, the double credit for NOx retrofits could extend through March 1, 2011.

Double credit for NOx retrofits could help mitigate the potential loss in NOx emission reductions from the legislatively-directed changes by providing an incentive for early NOx reductions. Because it would be purely voluntary, it would impose no additional requirements on fleets.

Feedback Requested - ARB staff would like to solicit input on this proposal in general, and especially from affected fleets regarding whether this option would be likely to encourage additional early retrofitting.

3. Require Minimum Annual Retrofitting for Fleets that Utilize the New Credit

At the April 7, 2009, workshop, the Natural Resources Defense Council (NRDC) proposed requiring minimum annual retrofitting and turnover for fleets, regardless of how much new retirement and reduced activity credit they receive. NRDC proposed requiring 10 percent annual retrofitting and 4 percent annual turnover for fleets not meeting the fleet average targets. Staff is not proposing requirements for minimum annual turnover. However, staff would like to solicit additional feedback on the idea of having some minimum annual retrofitting requirements for fleets utilizing the new retirement and reduced activity credit. For example, the regulation could require 5 percent per year retrofitting in 2010 through 2012 for fleets not meeting the fleet average targets and utilizing the new credit. Because fleets are granted double credit for retrofits completed through, a fleet could actually satisfy the 2010 requirement by retrofitting 2.5 percent of its horsepower.

Feedback Requested - ARB staff would like to solicit input on the idea of requiring minimum retrofitting for fleets utilizing the new credits, and specifically, on what level of retrofitting would be appropriate.

Explanation of Repower Credit and Preventing Double Counting

1. Maintaining Previous Credit

At the April 7, 2009, workshop, several workshop attendees asked whether ARB staff's proposal for new reduced activity and retirement credit would affect credit they already had from repowers (i.e., swapping out dirtier engines and replacing them with clean ones). They were concerned that they might lose credit they already had accumulated by performing repowers. ARB staff clarified at the workshop and would like to confirm here again that staff does not propose limiting, removing, or restricting the use of any credit fleets have accumulated through early retrofitting or repowering. Such credit would be added to any new credit obtained through the new reduced activity and retirement credit.

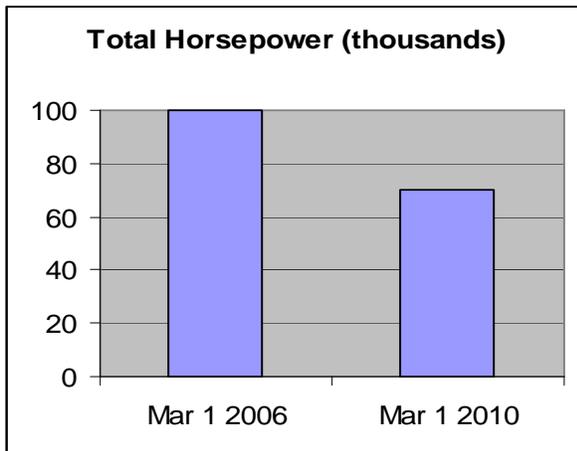
2. Preventing Double Counting of Credits

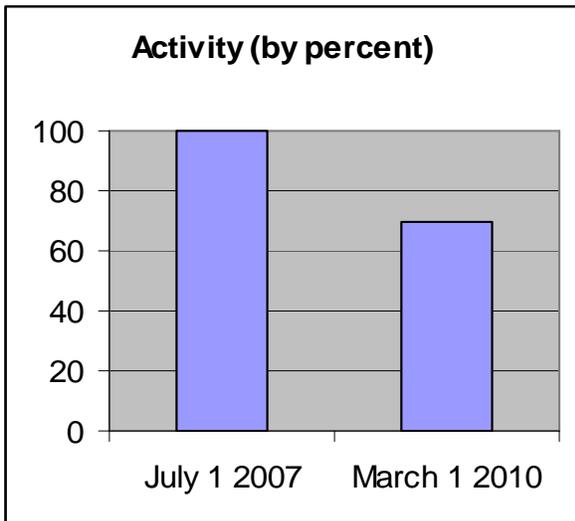
At the April 7, 2009, workshop, ARB staff proposed allowing fleets to pick the higher of their new reduced activity and retirement credit, but not to allow fleets to count both. In the weeks since the workshop, several stakeholders have questioned this proposal and requested instead that fleets get new credit for both reduced activity and retirement, i.e., that the credit be additive. Staff would like to present further rationale here to enable stakeholders to understand the reasoning behind staff's proposal.

The example below illustrates why allowing fleets to count both reduced activity and vehicle retirement would inappropriately double the amount of credit given for the same action.

Example fleet:

Consider a 100,000 Horsepower fleet. The fleet retires 30,000 horsepower of Tier 0 equipment in 2008. These retirements lead to a 30 percent reduction in activity. (For the example, we assume the vehicles retired are of average horsepower for the fleet and were of average hours used in 2007 compared to the other vehicles.) The emission reductions achieved by the fleet are approximately equal to if they had reduced to 0 the emissions of 30 percent of their fleet.





Retired Horsepower Credit to PM and NOx: 30,000 HP

Reduced Activity Credit: $30\% \times 100,000 \text{ hp} = 30,000 \text{ HP}$

If allowed to combine their credits, the fleet would gain:

60,000 HP total credit to PM and NOx for retiring 30,000 HP

In other words, the fleet would receive credit for the same action twice (60,000 hp credit for an action that reduced emissions from 30,000 hp vehicles). This would be equivalent to 86 percent of the fleet's final horsepower (60,000 hp/70,000 hp). As shown in Table 2 below, no vehicle or engine turnover would be required until 2016, and no retrofits would be required until 2013. ARB staff believes that allowing the fleet to accumulate 60,000 hp credit in the example above would incorrectly double count and overstate the emission reductions actually achieved.

Table 2: Example Fleet Credit and BACT Requirements (for remaining 70,000 hp in fleet)

Date	Credits and Requirements	
	NOx BACT	PM BACT
Starting Credit	60,000 HP	60,000 HP
March 1, 2010	8% Turnover Required (5,600 HP) 54,600 Credits Remain	Required 20% Retrofit (14,000 HP) 46,000 Credits Remain
March 1, 2011	4.8% Turnover Required (3360 HP) 51,240 Credits Remain Activity credits expire 30,000 Credit Remains	Required 12% (8,400 HP) 37,600 Credits Remain Activity Credit Expires 30,000 Credit Remains
March 1, 2012	4.8% Turnover Required (3360 HP) 26,640 Credits Remain	Required 12% (8,400 HP) 21,600 Credit Remains
March 1, 2013	14.4% Turnover Required (10,080 HP) 16,560 Credits Remain	Required 36% (25,200) All credit used. 3600 HP Required for PM BACT First year retrofits are required
March 1, 2014	8% Turnover Required (5,600 HP) 10,960 Credits Remain	
March 1, 2015	8% Turnover Required (5,600 HP) 5,360 Credits Remain	
March 1, 2016	10% Turnover Required (7,000 HP) All credit used 1,640 HP Required for NOx BACT First year turnover is required	

Feedback Requested - ARB staff would like to solicit input on the topic of double counting and, in particular, if there are situations where staff's proposal for new reduced activity and retirement credit unfairly limits the credit given to fleets (i.e., understates the emission reductions achieved by fleets).