

The Sacramento Emergency Clean Air and Transportation (SECAT) Program

Policy and Guidelines for:

- **New low-emission or zero-emission vehicle purchases**
- **Repowering of existing high-emitting diesel vehicles with newer, lower-emitting engines**
- **Retrofitting of existing diesel engines with after-treatment equipment**
- **Use of cleaner diesel fuel formulations**
- **Other verified, cost-effective NO_x reduction technologies**

Prepared By:

The Mobile Source Division

Sacramento Metropolitan Air Quality Management District

February 2002

POLICY AND GUIDELINES
SACRAMENTO EMERGENCY CLEAN AIR AND TRANSPORTATION PROGRAM

INTRODUCTION

The Sacramento Area Council of Governments (SACOG) requests applications for grants under the Sacramento Emergency Clean Air and Transportation Program (the SECAT Program). This program was created by California Assembly Bill (AB) 2511 to help assure that the Sacramento region remains in conformity with its State Implementation Plan (SIP) for air quality attainment. A total of \$70 million in funding (\$50 million from the Governor's Transportation Initiative Program and \$20 million in Congestion and Air Quality funding) has been allocated for grants under the SECAT program. It is anticipated that these funds will be awarded in several cycles between November 1, 2000 and December, 2001. Approximately \$15 million is anticipated to be awarded in response to applications submitted beginning on November 1, 2000 on a first-come, first-serve basis, until funds are exhausted. Future funding cycles will follow until all funds are exhausted or until the emission reduction targets are met.

Funding under the SECAT Program is available to offset the costs of projects that reduce oxides of nitrogen (NOx) emissions from on-road vehicles operating in the Sacramento Federal Ozone Nonattainment Area (Nonattainment Area). Eligible types of projects include the following:

- i. purchase of new, low or zero-emitting vehicles;
- ii. repowering of existing high-emitting diesel vehicles with new, lower-emitting engines;
- iii. retrofit of existing heavy-duty vehicles with aftertreatment systems to reduce NOx;
- iv. use of "cleaner" diesel fuel formulations and/or diesel emulsion fuels in place of California diesel fuel; and
- v. any other verifiable, enforceable, and cost-effective technology for reducing NOx emissions from heavy-duty on-road vehicles.

Eligible applicants include any individual, company, or public agency that owns or controls one or more vehicles that operate primarily within the nonattainment area, or that otherwise contribute significantly to the NOx emissions inventory in the nonattainment area. Other organizations may also submit applications, but these must be accompanied by a satisfactory, binding contract with the person(s) or organization(s) that own or control the vehicles whose emissions are to be reduced.

This program is distinct from the Carl Moyer Memorial Air Quality Standards Attainment Program (the Moyer Program). Among the key differences are that the SECAT Program is not limited to financing the incremental *capital* costs of emission control measures, but can also pay for operating costs, facility modifications, out-of-cycle replacement, and financial incentives for participation. This may make the SECAT Program more attractive than the Moyer program for some types of projects. Another difference is that the SECAT Program can only fund projects for *on-road* vehicles. Projects involving non-road vehicles or engines cannot be funded under the SECAT Program, but could be eligible for funding under the Moyer Program.

BACKGROUND INFORMATION

State Implementation Plan for Air Quality

The Federal Clean Air Act requires that all regions of the country achieve National Ambient Air Quality Standards (NAAQS) by specific dates. Regions that are not now in attainment are classified based on their geographic and meteorological characteristics and the severity of the air quality problem. Each classification has a specific date by which it must attain the clean air standards.

The Sacramento Federal Ozone Nonattainment Area has been classified as “Severe” for ozone, and as such must achieve the NAAQS for ozone by December 31, 2005 or face serious sanctions by the federal government. In 1994 the Sacramento Metropolitan Air Quality Management District Board of Directors adopted an Ozone Attainment Plan which specified the strategies to be implemented to meet the clean air goal. The Ozone Attainment Plan was submitted to the California Air Resources Board (CARB) and incorporated into the overall air quality plan for the state. This overall plan is the State Implementation Plan or SIP. Emission reductions that can be counted toward meeting this plan are “SIP Claimable.” A project must produce SIP claimable emission reductions to be eligible for funding under the SECAT program.

The development of the Ozone Attainment Plan specific strategy was based on the best model of motor vehicle emissions available at the time. This model was the CARB’s Emission FACTors 7F (EMFAC7F). Dramatic improvements have been made to the emissions model since that time and many of the emission assumptions in EMFAC7F have been updated. However, in order for the strategies implemented under the current SIP to be evaluated in the context of the current SIP, all emission calculations must be calculated in the “currency” of the SIP which is EMFAC7F currency. Emission reductions will also be calculated using the current emission model (EMFAC2000) for purposes of advising the public of the best estimate of the real emission benefits associated with each project implemented. All projects funded must provide both SIP claimable credit and real air quality benefit.

Transportation Conformity

Conformity to a SIP means that transportation activities will not produce air quality violations, worsen existing violations, or delay timely attainment of the national ambient air quality standards (NAAQS). Areas that are in conformity (consistent with adopted air quality goals for an area) will be better able to ensure Federal approval and funding of transportation projects. Current law stipulates that projects cannot be approved, funded, advanced through the planning process, or implemented unless the project is from a fiscally constrained and conforming transportation plan and transportation improvement program (TIP).

Metropolitan Planning Organizations (MPOs) are responsible for producing transportation plans and programs that conform to the adopted SIP. In the Sacramento region, the Sacramento Area Council of Governments (SACOG) is the responsible MPO. This agency must make a formal conformity

determination for its plans and programs before submitting them to the U.S. Department of Transportation (U.S. DOT) for its review and approval.

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is a joint powers agency composed of twenty-three local governments (six counties and seventeen cities). The member governments are the counties of El Dorado, Placer, Sacramento, Sutter, Yolo and Yuba and the cities of Auburn, Citrus Heights, Davis, Folsom, Galt, Isleton, Lincoln, Live Oak, Marysville, Rocklin, Roseville, Sacramento, West Sacramento, Wheatland, Winters, Woodland, and Yuba City. SACOG provides planning services for the portion of El Dorado and Placer County west of the Sierra Crest, which excludes the Lake Tahoe Basin planning area.

SACOG is governed by a Board of Directors composed of County Supervisors or City Councilpersons, appointed by member jurisdictions. The Board is advised by several policy and technical committees. A full time staff is employed to implement Council policies and work programs as well as coordinate the efforts of consultants who are retained to augment the staff's effort.

SACOG is the Metropolitan Planning Organization (MPO) for its six member counties (which encompasses the western portions of El Dorado and Placer Counties only), and is the Regional Transportation Planning Agency (RTPA) for the Counties of Sacramento, Sutter, Yolo, and Yuba.

Sacramento Federal Ozone Nonattainment Area (SFNA) Air Quality Management Districts

The Sacramento Federal Ozone Nonattainment Area is comprised of five Air Districts covering parts or all of six counties.

| | |
|---|--|
| Sacramento Metropolitan Air Quality Management District | All of Sacramento County |
| Yolo/Solano Air Quality Management District | All of Yolo County and the eastern part of Solano County |
| Placer County Air Pollution Control District | Placer County to the crest of the Sierras |
| El Dorado County Air Pollution Control District | El Dorado County to the crest of the Sierras |
| Feather River Air Pollution Control District | The southern part of Sutter County |

Air Quality Policy Group

In order to structure the SECAT program, SACOG has created the Air Quality Policy Group. This group is charged with assisting SACOG, the air quality districts of the Sacramento Federal Nonattainment Area (SFNA), the California Air Resources Board and the Federal Highway Administration in developing strategies that focus available resources on achieving attainment of the National Ambient Air Quality Standard set by the Federal Clean Air Act for ozone by 2005 and conformity goals which will arise in 2000 – 2005.

The Air Quality Policy Group will establish criteria for evaluating proposals submitted under the SECAT Program, establish administrative procedures that ensure timely disbursement of funds, review marketing and outreach programs that may be funded.

Membership on the Air Quality Policy Group consists of:

1. One representative from each of the five air districts in the SFNA;
2. Two representatives from the CARB (one from their technical division and their conformity liaison person to the SACOG);
3. One representative from the USEPA;
4. One representative from the FHWA; and
5. One representative from the SACOG.

Technical Advisory Committee

A Technical Advisory Committee (TAC) has been established to develop the proposed guidelines and criteria for review and approval by the Policy Advisory Group. Upon implementation of the SECAT program, the TAC will be responsible for reviewing project proposals, interacting with project proponents and developing recommendations for project funding.

GENERAL ELIGIBILITY

1. Projects must reduce emissions from on-road motor vehicles in the nonattainment area. On-road motor vehicles are defined as “self-propelled motor vehicles that are manufactured for or designed primarily for use on public roads.”
2. Any individual, company, or public agency may apply to receive an incentive. If the applicant does not itself own or control the vehicles in question, the application must include a satisfactory, binding contract with the person(s) or organization(s) that do own or control those vehicles. This contract must commit the owner/controller of the vehicles to carry out the actions described in the proposal.
3. This program is designed to produce SIP claimable emission benefits. Therefore, any engines or vehicles purchased under the program must be emission certified or verified by the California Air Resources Board (CARB); and any emission control technologies must be certified or verified by CARB or otherwise approved by CARB for the generation of SIP and conformity credits. *Research and development will not be funded under the SECAT program.* Subject to ARB approval, however, the SECAT program *may* fund in-use durability demonstration programs for technologies provisionally certified/verified by ARB pending the outcome of such demonstrations.
4. Purchases or retrofits that are required by any local, state, and/or federal rule or regulation – including, but not limited to, Energy Policy Act (EPACT) requirements, existing regulations, memoranda of agreement/understanding, or other legally binding documents – are not eligible for funding under the SECAT Program
5. Low-emission engines, vehicles, or technologies funded under the SECAT program cannot be used to generate credit in any emissions averaging, banking, and trading program, and may not be used to generate emission reduction credits in the Sacramento Federal Ozone Nonattainment Area.

APPLICATION AND EVALUATION PROCEDURE

Before submitting a final application, applicants are *strongly* advised to discuss their proposed projects with the staff of the Technical Advisory Committee (TAC). They will be available to provide information and assistance in developing the details of each application, and particularly in estimating the emission reductions to be expected as a result of each project. They can be contacted at the Sacramento Metropolitan Air Quality Management District by contacting:

| | |
|----------------|--|
| Sam Gregor | (916) 874-4890 |
| Marc Olsen | (916) 874-4892 |
| Mike Neuenburg | (916) 874-1676 |
| Gary Bailey | (916) 874-4893 |
| Tom Swenson | (916) 874-4889 |
| SECAT Hotline | 1-866-256-7697 (toll-free) |
| Web Site | www.4secat.com |

Application forms are attached to this document. Specific application forms have been developed for the following four types of projects:

- (1) purchase of new heavy-duty vehicles equipped with engines certified to ARB's optional low-NOx emission standards (presently, all engines so certified use alternative fuels);
- (2) repowering of existing heavy-duty diesel vehicles with ARB-certified diesel or alternative-fuel engines; NOTE (1): Only cost of unique parts, in the SECAT Program's opinion, directly related to the installation of the lower emission engine that, on a per part basis, cost more than \$100 are eligible for reimbursement by the SECAT Program. If there is an installation upgrade kit available, the kit cost will be included in the incentive amount. NOTE (2): Any engines that are replaced as a part of an approved project funded through the SECAT program must be either destroyed or remanufactured through a factory-certified remanufacturing program. Proof of the disposition of the replaced engine may be required before reimbursement takes place.
- (3) retrofit of existing heavy-duty diesel vehicles with aftertreatment such as NOx catalysts and selective catalytic reduction systems, for which ARB has verified the emissions reduction performance;
- (4) use of "cleaner" diesel fuel formulations and/or diesel emulsion fuels for which ARB has verified the emissions reduction performance, in place of California diesel fuel.

Projects of these types may qualify for accelerated "fast track" processing and approval under either of the following two circumstances:

- A. the total grant requested is less than \$6,000 per ton of NOx reduced in the Sacramento nonattainment area over the project's lifetime *and* less than \$25,000 per ton of NOx reduced annually; or

- B. the total grant requested is less than \$12,000 per ton of NO_x reduced in the Sacramento nonattainment area over the project's lifetime *and* less than \$50,000 per ton of NO_x reduced annually, *and* does not exceed the incremental costs of the project to the applicant.

Projects of a type other than those listed under (1) through (4) above, as well as projects that do not meet the financial criteria listed in (A) and (B) above, may still qualify for funding, but are ineligible for "fast track" approval. Projects that do not qualify for "fast track" approval under the criteria adopted by the SACOG board may be considered individually by the SACOG Board or by other entities with authority as designated by the SACOG Board. The SACOG Board may review and from time to time revise the "fast track" criteria.

The SECAT Program will operate on a first-come, first-served basis in proposal review scheduling. Applications providing all the required information will be evaluated using the methodology in Appendix A to determine NO_x emission reductions and cost-effectiveness on a per vehicle and overall project cost basis. In the event that proposals are submitted on the same day and meet program requirements, but there are insufficient funds available for all proposals, the Technical Advisory Committee will review each proposal and forward a recommended project list to the Policy Advisory Group for consideration. The Technical Advisory Committee reserves the right to reject any proposals.

The application procedure is as follows (using the forms provided in Appendix C):

1. Complete the "SECAT Program General Application Form". If your project has multiple vehicles, only one "SECAT Program General Application Form" is required.
2. Complete and attach the Vehicle Information Form (one for **each** lower emission vehicle). This form can be used for the project types listed in (1) through (4) above. For projects that do not meet these criteria, please contact the Technical Advisory Committee for assistance.
3. Attach the forms to the "SECAT Program General Application Form" and submit the package to the SMAQMD at the following address (please do not fax original application):

**Attention: Tom Swenson
Sacramento Metropolitan Air Quality Management District
Mobile Source Division
SECAT Program Application
777 12th Street, Third Floor
Sacramento, CA 95814-1908**

4. The application will be reviewed to determine that all the required information has been provided and that all the program requirements are met. If the application does not meet the program requirements, the applicant will be requested to provide additional information or to modify the application. The SECAT Program reserves the right to request additional information of the applicant and can deny the application if such requested information is not provided.

5. Applications providing all the required information will be evaluated using the methodology in Appendix A to determine NOx emission reductions and cost-effectiveness on a per vehicle and overall project cost basis. Based on the results of that evaluation, each application will be placed into one of the following categories. Fast Track applications will be approved immediately at the staff level. SACOG Board Items will require SACOG Board approval.

i. **Fast Track Application** – When the total request is equal to or lower than the maximum cost-effectiveness amount for that type of project, the application will be managed by SECAT staff. The maximum cost-effectiveness thresholds are shown in the table below.

| Type of Project | Existing Vehicle Model Year | Maximum 1 Year Cost Effectiveness (\$/ton) |
|--------------------------|-----------------------------|--|
| Lower Emission Fuel | All | \$50,000 |
| New Low-Emission Vehicle | New | \$50,000 |
| Repower | 1976 and older | \$20,000 |
| Repower | 1977 – 1983 | \$45,000 |
| Repower | 1984 and newer | \$50,000 |
| Retrofit | All | \$50,000 |

ii. **SACOG Board Consideration** – When the application meets the requirements of the SECAT Program, but does not meet the cost-effectiveness requirements for approval under Fast Track or the application is for a technology other than those for which specific approval criteria has been approved by the SACOG Board, then the application may be forwarded to the SACOG Board or its authorized designee.

iii. **Rejected** because it does not meet the requirements of the SECAT Program.

6. Projects will be evaluated according to the Evaluation Criteria found in Appendix B.

CONTRACTING AND REIMBURSEMENT PROCESS

1. Following application approval, each applicant will be required to enter into an agreement for the incentive funds with SACOG.
2. The agreement will include a timetable for project implementation incorporating specific milestones and the dates by which these are to be accomplished. Payments under the SECAT Program will be tied to achievement of specific milestones. Failure to meet any of the agreed milestones by the agreed time may result in cancellation of the agreement, and may require the applicant to refund any monies already paid. The Executive Director of SACOG may, at his sole discretion, extend the time for accomplishment of any milestone upon written request by the applicant.
3. The agreement will provide that any emission reductions in the Sacramento Federal Ozone Nonattainment Area resulting from the project will be retired in the interest of air quality

improvement. The applicant will be required to waive, for all time, its right to claim emission reduction credits which may accrue at anytime as a result of the project, and to agree not to apply to the SMAQMD or any other Air Quality Management District or Air Pollution Control District for any such credits based on reductions generated in the Sacramento Federal Ozone Nonattainment Area.

4. Applicants will be required to furnish certificates of insurance coverage. Detailed insurance requirements are contained in Exhibit “C” of the draft incentive agreement. Self-insurance can satisfy these requirements and will be evaluated on a case-by-case basis.
5. Each agreement will include a minimum annual amount of emission reductions that must be achieved, based on projected usage (e.g. miles, hours, fuel consumption) in the Nonattainment Area. Participants will be required to document actual usage in the Nonattainment Area during each year to verify that this minimum emission reduction is achieved. Participants may be required to document usage during the ozone season (May 1 through October 30) by actual usage or percentage, at the option of the SECAT Program. Projects that fail to achieve at least the minimum emission reduction specified may be required to refund some or all of the funds received under the SECAT Program.
6. Invoices for payment may be submitted upon achieving the associated milestones, as verified by the Technical Advisory Committee. Participant shall provide the SACOG one (1) original signed invoice containing:
 - a. Participant’s name
 - b. Address
 - c. Participant’s federal tax identification number
 - d. Incentive agreement number
 - e. Incentive amount per vehicle
 - f. Vehicle identification number (VIN)
 - g. Vehicle fleet Identification number
 - h. Odometer reading at implementation of lower emission technology
 - i. Engine serial number
 - j. Copy of Department of Motor Vehicles registration
 - k. Evidence of required insurance – if self-insurance has been approved, provide a letter stating entity is self-insured

The SACOG shall notify the participant within 10 working days after receipt of the invoice whether additional information is required. Once all information has been provided, the SACOG shall pay the corresponding amount to the participant within a reasonable period of time.

APPENDIX A Methodology for Calculating Emission Benefits from SECAT Projects

Emission Benefit Calculation – General

The annual NO_x reduction is calculated using the formulas shown below. These formulas are applied using the emission factors from EMFAC7F1 to generate an emission reduction value consistent with the approved inventory in the 1994 State Implementation Plan (SIP). Emission reductions must be calculated for 2002, 2005, 2008, and 2010.

Credit Life

The life of the emission benefit from each SECAT project must be established consistent with the life of the engines as shown in EMFAC7F. The emission reduction benefits will be zero after the life of the credit expires.

Confirming Actual Emission Benefits

The actual emission benefit will be calculated every calendar year using actual annual mileage reported by the user. Actual mileage is subject to verification by SMAQMD staff.

Emission Benefit Calculation – Formula For Repower/New Engines

(Base NO_x emission factor – Reduced NO_x emission factor)_{g/mi}*annual miles

Note: divide the result of this formula by 908,000 to convert grams to tons.

Base NO_x emission factor - rate2 in grams per mile (g/mi) after applying correction factors, deterioration rates, etc.. The emission rate is selected for the model year of the engine being removed. If the model year of the engine being removed is older than the earliest date shown in the table, use the emission factor for the earliest date shown.

Reduced NO_x emission factor – rate2 in g/mi. after applying the correction factors (deterioration rates, etc..) The emission rate is selected for the model year of the engine replacement. In the case of reconditioned engines, apply the emission rate without the effects of deterioration, the so-called “zero mile” emission factor is determined using the following formula:

(zero mile)_{g/mi} + (accumulated miles*deterioration factor/10,000)

Accumulated miles – the sum of the annual miles.

¹ Emission reductions will also be calculated using emission factors from EMFAC7G and EMFAC2000 should that data ever be necessary for SIP or conformity determinations.

² Emission factors are provided in Attachment A.

Annual miles – Refer to the following table.

| | Annual miles |
|---|--|
| <u>Projected</u> emissions benefit calculations, except refuse trucks | Projected annual miles. For engine replacements, the mileage from the old engine and the new engine must be the same. (Verify previous engine mileage from maintenance logs or CHP mileage records.) |
| <u>Actual</u> emission benefits calculations, except refuse trucks | The lesser of actual annual miles or projected annual miles. |
| <u>Projected</u> emission benefits from refuse trucks ³ | Accumulated miles from EMFAC7F. |
| <u>Actual</u> emission benefits from refuse trucks | Accumulated miles from EMFAC7F. |

Emission Benefit Calculations – Formula For Retrofits Or Fuel Switching

(Base NOx emission factor)_{g/mi}*(% control efficiency/100)*annual miles

Control efficiency – as certified or verified by ARB. This control efficiency is assumed to include deterioration effects.

Total Lifetime Tons

For the purposes of cost effectiveness calculations, the emission benefits calculation for 2002 using projected annual mileage times the credit life (years) of emission benefit. In other words:

(Emission benefit)_{2002 tons}*(credit life)

³ Refuse trucks are treated differently because they operate under higher than average loads and generally, lower than average mileage. Refuse trucks are not separated from the emission factor calculations from other heavy heavy-duty trucks. Using the standard annual mileage would likely underestimate the actual emission benefits from refuse trucks.

APPENDIX B
Evaluation Criteria

August 22, 2000

DRAFT

NOx Project Selection Criteria

The main criteria that will be used to select projects submitted for the \$20 million in CMAQ funds set aside by the SACOG Board of Directors to match the Governor's \$50 million under AB 2511-Sacramento Emergency Clean Air and Transportation Program will be:

- * The amount of NOx emission reductions in the Sacramento region
- * The cost-effectiveness of those emissions reductions
- * The timeliness of the emissions reductions (i.e., before 2002 and 2005)

In general, the following criteria will be used as guidelines to evaluate projects. These guidelines support the above three overriding criteria.

Emissions

- * NOx emissions reductions are the primary objective.
- * Emissions reductions outside of the Sacramento nonattainment area will not be considered.
- * Reduction in diesel particulate is desirable
- * Increases in any pollutant is undesirable (but--except for NOx--does not de-facto result in rejection). Any increases in any pollutant must be shown to not endanger the attainment or maintenance of any NAAQS, nor increase the population risk to hazardous, toxic or cancer causing chemicals. Furthermore, any increase in any pollutant must be offset by reductions in NOx.
- * Emissions reductions must be fully documented in a manner acceptable to the appropriate regulatory agencies.
- * Projects selected must provide emissions reductions compared to baseline emissions (e.g., purchase of cleaner vehicle, vehicle repower or retrofit).
- * Emission reductions obtained through this program must not be required by any existing regulations, memoranda of agreement/understanding, or other legally binding documents.
- * Reduced-emission engines or retrofit kits or reformulated/altered diesel, must be determined by the ARB's Executive Officer to be an eligible NOx control technology for use in this program; eligible technology will be effective and durable. Eligible engines could include new engines;

aftermarket engine/control devices; or engines with ARB-approved experimental permits. Acceptable fuel alternatives include reformulations that have been determined to be eligible for the program by the ARB, which requires a demonstration of emission reductions. Alterations to diesel fuel, as well as engine retrofits or the use of alternative fuels, must include documentation of engine fuel economy effects and engine durability and maintenance effects.

- * Projects selected must operate for a minimum of 5 years within the Sacramento federal ozone nonattainment area.
- * A limited amount of funds may be set aside to fund research projects subject to approval by the Policy Advisory Group.

Cost

- * Cost-effectiveness will be based primarily upon NOx emissions reductions in the form of \$/ton NOx reduced in the Sacramento ozone nonattainment area.
- * Cost-effectiveness will have a secondary consideration of other pollutants reduced, especially diesel particulate. This will also be calculated in \$/ton of emissions reduced.
- * Cost estimates must be fully documented in a manner acceptable to the appropriate regulatory agencies.

Timing

- * Emissions reductions realized prior to November 15, 2002 will be given first priority.
- * Emissions reductions realized after 2002 but before November 15, 2005, will be given next priority.
- * Everything else being equal.