February 11, 2021

Mr. Evan Belser
Air Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
Mail Code 2242A
U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: *Notice of Availability of EPA Tampering Policy and Request for Information Regarding 1986 Catalyst Policy*

Dear Mr. Belser:

The Northeast States for Coordinated Air Use Management (NESCAUM) and the Ozone Transport Commission (OTC) are pleased to submit the following comments on the U.S. Environmental Protection Agency's (EPA's) "Notice of Availability of EPA Tampering Policy and Request for Information Regarding 1986 Catalyst Policy." [85 Fed. Reg. 80782-80785 (December 14, 2020)] (hereinafter "Tampering Policy" and "1986 Catalyst Policy"). NESCAUM is the regional association of state air pollution control agencies representing Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. NESCAUM provides technical advice and policy guidance to its member states. The OTC members are Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia. In addressing their collective regional ozone problem, the OTC members are responsible for developing and implementing initiatives to reduce nitrogen oxides (NOx) and volatile organic compounds (VOCs), the emitted precursor air pollutants that contribute to the formation of ground-level ozone pollution.

The NESCAUM and OTC states have a long history of engagement on the issues of tampering and aftermarket catalysts, given the importance of tampering and aftermarket catalyst policy to NOx emissions and ozone formation in the region. Tampering of emission control systems result in substantial excess emissions: A recent EPA analysis based on enforcement against tampering in class 2b/3 trucks estimated that emissions controls have been removed from more than 550,000 diesel pickup trucks in the last decade.[1] As a result of this tampering, excess emissions of more than 570,000 tons of NOx and 5,000 tons of particulate matter (PM) may occur from

[1] EPA, "Tampered Diesel Pickup Trucks: A Review of Aggregated Evidence from EPA Civil Enforcement Investigations," November 20, 2020.

these tampered trucks over their lifetimes. The number of tampered trucks constitutes approximately 15 percent of the national population of diesel trucks that were originally certified with emissions controls. But, due to their severe excess NOx emissions, these trucks have an air quality impact equivalent to adding more than nine million additional (compliant, non-tampered) diesel pickup trucks to our roads. Additional significant excess emissions may also be occurring from tampering of vehicles in other weight classes, but the extent of the problem has not yet been evaluated by EPA.

NESCAUM and OTC member states are devoting significant resources to deter vehicle aftertreatment tampering and to enforce against entities that sell tampered vehicles. States are conducting inspections at dealerships, auto auctions, and other facilities. In recent inspections in the region, more than 25 percent of vehicle aftertreatment systems were found to have been tampered.

Likewise, on the issue of aftermarket catalysts, NESCAUM and OTC states have been actively engaged in efforts to improve standards for aftermarket catalysts. In 2009, the OTC called on EPA to update its policy regarding the use, installation, and purchase of aftermarket catalytic converters.[2] In 2011, the OTC provided recommendations for a revised and updated federal aftermarket catalyst program.[3] And in 2012, the OTC developed an estimate of emissions impacts of OTC's Recommended Federal Aftermarket Catalytic Converter Program.[4] OTC's study forecasted benefits from implementing its recommended Federal Aftermarket Catalytic Converter Program in the OTR and estimated that 10,000 tons of NOx per year and 2,000 tons per year of total hydrocarbons would be reduced through the implementation of the OTC's recommended program.

Given the substantial impact that the performance of aftermarket catalysts and tampering with emission control systems have on overall NOx emissions and air quality in the NESCAUM and OTC regions, we are encouraged by EPA's Tampering Policy. We believe this policy has the potential to substantially reduce emissions from motor vehicles. These excess emissions often adversely affect disadvantaged communities that have been subjected to disproportionate amounts of diesel exhaust. We have the following specific recommendations that we believe are needed to ensure the Tampering Policy yields these emission benefits.

1. **Establish an expeditious transition to the Tampering Policy and recall the 1986 Catalyst Policy**[5]
   With the Tampering Policy, EPA is rescinding previous policies and replacing them with the Tampering Policy. Specifically, the Mobile Source Enforcement Memorandum 1A,[6]

[2] OTC, "Statement of the OTC Calling on the EPA to Update its Policy on Motor Vehicle Aftermarket Catalytic Converters," June 10, 2009.
[3] OTC, "OTC Mobile Source Committee Recommended Federal Aftermarket Catalytic Converter Program (FACCP)," April 8, 2011.
[4] OTC, "Emissions Impact of OTC's Recommended Federal Aftermarket Catalytic Converter Program, Discussion Paper," October 10, 2012.
[5] EPA, "Sale and Use of Aftermarket Catalytic Converters," 51 Fed. Reg. 28114 and 51 Fed. Reg. 28132, August 5, 1986.

the Exhaust System Repair Guidelines,[7] and the Engine Switching Fact Sheet[8] have been rescinded and replaced by the Tampering Policy. Likewise, the 1986 Catalyst Policy should also be rescinded and replaced. Until this action is taken, the 1986 Catalyst Policy requirements will conflict with the Tampering Policy.

However, before the 1986 Catalyst Policy can be rescinded, EPA will need to establish a phase-in schedule for replacement catalysts that meet the requirements of the Tampering Policy. We recommend that EPA work with states and the aftermarket catalyst converter industry to establish a schedule for an expeditious phase-in of compliant catalysts. In establishing the phase-in schedule, EPA should consider phasing in the requirement by vehicle and engine model year and gradually increasing the percent of catalysts required to meet the Tampering Policy to ensure emissions reductions are realized as soon as possible. The NESCAUM and OTC states stand ready to work with EPA as it develops a transition plan for implementing the new policy.

Once a schedule for this transition is established, NESCAUM and OTC encourage EPA to recall the 1986 Catalyst Policy and instead apply the provisions from the Tampering Policy to replacement catalysts for light-duty gasoline motor vehicles that are beyond their emissions warranty. The 1986 Catalyst Policy has not been updated to reflect significant changes in automotive technologies and vehicle emission standards. The 1986 Catalyst Policy requires manufacturers to demonstrate that their converters will reduce engine-out NOx emissions by at least 30 percent for 25,000 miles of vehicle use. However, aftermarket catalyst technology has advanced significantly since 1986 and new aftermarket catalysts can reduce emissions well beyond what is required by the 1986 Catalyst Policy. For example, aftermarket catalysts certified by the California Air Resources Board were shown to reduce NOx 77 percent below federal aftermarket converters in a study conducted by the Manufacturers of Emission Controls Association.[9]

2. Establish a presumptive testing protocol for aftermarket catalysts and aftertreatment systems

One of the Tampering Policy bases for a replacement to be acceptable is through installation of an "aftermarket part certified or approved by EPA" (Reasonable Basis E). NESCAUM and OTC agree with this in theory, but in practice there is not currently an EPA certification process for aftermarket converters. We urge EPA to develop a presumptive testing protocol for aftermarket systems so that aftermarket aftertreatment manufacturers know with certainty what is expected of them with regard to emissions testing and documentation. As mentioned previously, in 2011, the OTC provided

[6] EPA, "Mobile Source Enforcement Memorandum No. 1A," June 25, 1974.
[7] EPA, "Fact Sheet: Exhaust System Repair Guidelines," March 13, 1991.
[8] EPA, "Engine Switching Fact Sheet," March 13, 1991.
[9] Brezny, R. and Kubsh, J., Manufacturers of Emission Controls Systems, "Emission Performance of California and Federal Aftermarket TWC Catalysts," 2013-01-1298, SAE International, April 4, 2013.

recommendations for a revised and updated federal aftermarket catalyst program. These recommendations could still provide a template for a presumptive set of standards to be considered a reasonable basis (under Reasonable Basis B-2). We recognize that other approaches could also be acceptable. The 2011 OTC recommendations are attached to this letter.

3. **Establish a robust enforcement program of the Tampering Policy**
   Given the potential extensive tampering of vehicle aftertreatment systems, enforcement of the Tampering Policy will be essential to identifying entities engaged in marketing and selling tampering devices and in deterring tampering. This enforcement needs to be conducted in conjunction with the states, while also considering the limitations that exist under the Clean Air Act. In addition, we urge EPA to establish a consistent enforcement approach for all types of vehicle aftermarket aftertreatment system tampering: Common aftertreatment systems include catalytic converters, diesel particulate filters, selective catalytic reduction systems, and diesel oxidation catalysts.

4. **Continue to support state I/M programs**
   EPA requests information on whether the agency has accomplished the goals of the 1986 Catalyst Policy, including continued support to state and local vehicle inspection programs.

   We encourage EPA to continue to assist states in their introduction and implementation of new I/M programs and advancements in existing I/M programs. Specifically, we request EPA evaluate the potential to identify engine control module defeat device tampering through inspection and maintenance programs and/or OBD. We also encourage EPA to determine the extent of vehicle aftertreatment system tampering in all classes of vehicles and to include emissions due to tampering into the MOVES model. In addition, we request that EPA work with the states to evaluate the emissions effectiveness of anti-tampering programs, California aftermarket converter programs, and light-, medium-, and heavy-duty diesel (e.g., OBD, opacity) I/M programs. We encourage EPA to update the MOVES model with the conclusions of these evaluations. In the interim, we recommend that EPA include the emission reductions attributed to anti-tampering programs in the MOVES model that had previously been included in an earlier version of MOVES. EPA and states have extensive evidence that tampering exists so this would be an appropriate action.

We encourage EPA to make the above changes and to implement and enforce the Tampering Policy in collaboration with the states and aftermarket parts manufacturers. We appreciate the opportunity to comment and look forward to working with the Agency on the implementation of this important policy.

Sincerely,

Kelly Crawford
Associate Director
Air Quality Division
Department of Energy & Environment
Government of the District of Columbia
Chair, OTC Mobile Sources Committee

Coralie Cooper
Deputy Director
NESCAUM

Attachment: 2011 OTC Recommendations

cc: OTC & NESCAUM Air Directors
EPA OTAQ - Sarah Dunham, Bill Charmley

Attachment A: 2011 OTC Mobile Source Committee Recommended Federal Aftermarket Catalytic Converter Program (FACCP)

OZONE
TRANSPORT
COMMISSION

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Maryland

Massachusetts

New Hampshire

New Jersey

New York

Pennsylvania

Rhode Island

Vermont

Virginia

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Executive Director

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April 8, 2011

Mr. Karl Simon, Director
Compliance and Innovative Division Strategy
USEPA Headquarters
Ariel Rios Building
120 Pennsylvania Avenue, N.W.
Mail Code 6405J
Washington, DC 20460

Dear Mr. Simon:

In June 2009, the Ozone Transport Commission (OTC) formally called on the USEPA to amend its enforcement policy regarding the sale and use of aftermarket catalytic converters (see Attachment 1). Per your request, the Ozone Transport Commission undertook an effort to develop a recommendation for a program design.

The OTC's recommended program design for a federal program (see Attachment 2), which is based on the California program, would establish more stringent emission performance and durability requirements for new aftermarket converters, in recognition of the significant advances in performance and durability of original equipment catalytic converters. These advances have also made the improved technology readily available and affordable for aftermarket converters. We have discussed our proposed program design with key stakeholders.

The USEPA's current enforcement policy regarding the use, installation and purchase of aftermarket catalytic converters was established in 1986, and has not been updated to reflect the significant improvements in automotive technologies and vehicle emission standards.

On-road mobile sources are significant sources of emissions contributing to the formation of ozone. Implementation of the OTC's recommended program is expected to provide significant and highly cost-effective emission reductions from the existing vehicle fleet.

A revised federal aftermarket catalytic converter program implemented nationally will provide states with needed significant NO_x reductions to

help all areas attain and maintain the health-based ozone standards.

Sincerely,

William L. Driscoll
Executive Director

Attachments

cc: Lori Stewart, Associate Director, EPA OTAQ
Lee Cook, Manager, State Measures and Conformity Group, EPA OTAQ
Chet France, Director, Assessment and Standards Division, EPA OTAQ
Chris Salmi, OTC Mobile Source Committee Chair
OTC State Air Directors

Attachment-1: OTC Statement

OZONE TRANSPORT COMMISSION

Connecticut

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Statement of the OTC Calling on the EPA to Update its Policy on Motor Vehicle Aftermarket Catalytic Converters

The Ozone Transport Commission (OTC) states call on the Environmental Protection Agency to update its policy regarding the use, installation and purchase of aftermarket catalytic converters. That policy was established in 1986 and has not been updated to reflect the significant changes in automotive technologies and vehicle emission standards.

Motor vehicles are significant sources of emissions that lead to the formation of ozone and to toxic air emissions. However, with the significant advances in emission control performance and durability of motor vehicles that have occurred since 1986, improvements to the performance requirements for non-original equipment aftermarket catalytic converters are needed to keep pace.

The updated policy should address conversion efficiency and durability for new aftermarket catalytic converters as well as compatibility with the vehicle's Onboard Diagnostics (OBD) system for 1996 and newer vehicles. The policy should also address the sale of used original equipment catalytic converters.

Adopted by the Commission on June 10,2009

Chair

Attachment-2: OTC Recommendation

OTC Mobile Source Committee
Recommended Federal Aftermarket Catalytic Converter Program (FACCP)

EXECUTIVE SUMMARY

In June 2009, the Ozone Transport Commission (OTC) formally called on the USEPA to amend its enforcement policy regarding the sale and use of aftermarket catalytic converters designed for use on federally certified passenger cars and light-trucks (see Attachment-1). This document lays out a recommended program design that is based on the recent changes California adopted for aftermarket catalytic converters (ACCs). In developing this recommendation, comments were solicited from interested stakeholders (see Section V).

The recommended changes to the USEPA's current policy for approving after market catalytic converters establish more stringent emission performance and durability requirements for new aftermarket converters in recognition of the significant advances in catalytic converter performance and durability that have occurred for original equipment catalytic converters. These advancements have made the technology more readily available and affordable. The recommendations also modify the current provisions allowing the sale and usage of used catalytic converters.

The recommended program was discussed with key stakeholders including the Manufacturers of Emission Controls Association (MECA) and their associated industries as well as the USEPA and staff from the California Air Resources Board (CARB). MECA supports the recommended program.

The USEPA's current enforcement policy governing aftermarket catalytic converters, adopted in1986, requires manufacturers to demonstrate that their converters will reduce engine out emissions by at least 30 to 70 percent for 25,000 miles of vehicle use. However, vehicles meeting current emission certification standards can require catalytic conversion efficiencies in excess of 95% in order to comply with the more stringent emission standards that have been adopted since the late 1980s. Further, catalytic converter technology has improved to the point where aftermarket converters can be designed to achieve a significantly higher level of performance in a cost-effective manner.

The recommended changes to the USEPA enforcement policy would replace the existing policy with performance standards for aftermarket catalytic converters based on reducing engine out emission levels to the point that in-use vehicles equipped with aftermarket catalysts can comply with certification emission standards. The required durability period for these aftermarket converters would be extended from 25,000 miles to 5 years or 50,000 miles of use. The amendments would also require manufacturers to demonstrate that their catalysts are compatible with vehicle on-board diagnostic (OBD) systems for 1996 and newer vehicles, warrant that the converters are free from defects, and

implement quality control procedures to ensure production components perform as expected in-use.

The USEPA policy currently permits the practice of reselling used original equipment catalytic converters provided that the reseller uses a process to ensure that the converters still have a reasonable level of performance. The recommended policy would eliminate the provisions permitting the sale of used converters for pre-ODB II vehicles (Model Year 1995 and older vehicles) and calls on the USEPA to study the appropriateness of allowing the reuse of OBD II era (Model Year 1996 and newer vehicles) catalytic Converters. If the reuse of OBD II era catalysts is to continue, verification of proper performance of the converter, and whether this would be accomplished through independent testing or reliance on the OBD II system, must be a component of the revised policy.

Based on the estimated emission reductions for the aftermarket catalytic converter rule amendments in California, the emission reductions that may be achieved in the OTR from the recommended new Federal Aftermarket Catalytic Converter Program (FACCP) policy will be significant. New aftermarket catalytic converters designed to meet the recommended requirements would cost up to $200 more per unit than those currently available for older vehicles. However, due to the substantially better emissions performance and durability requirements of these converters, it is estimated that the recommended requirements would be cost effective emission reductions.

I. Purpose

Under the recommended program, the USEPA would update its enforcement policy regarding the use, installation and purchase of aftermarket catalytic converters. The USEPA's enforcement policy was established in 1986 and has not been updated to reflect the significant changes in automotive technologies and vehicle emission standards.

The updated policy would address conversion efficiency and durability for new aftermarket catalytic converters as well as compatibility with the vehicle's Onboard Diagnostics II (OBD II) system for 1996 and newer vehicles. The policy would also address the sale of used original equipment catalytic converters.

II. Background

Catalytic converters reduce vehicle exhaust emission levels by chemically converting engine-out emissions before the exhaust gas leaves the tailpipe. A converter contains a substrate that directs exhaust gases through narrow channels coated with precious metals that initiate the conversion of pollutants into primarily carbon dioxide, water vapor and nitrogen.

Since the introduction in mid-1970, catalytic converters continue to be the single most important technology for the control of emissions from gasoline powered motor vehicles. Current catalytic converter designs are more than 95% efficient in removing the

hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) from engine exhaust before they reach the atmosphere. Improvements in catalytic converter washcoats, precious metal loading, and substrate designs over the years, in combination with better vehicle fuel control systems, are the primary factors that have made compliance with Federal and State Inspection/Maintenance (I/M) programs' emission standards possible.

Original equipment manufacturer (OEM) catalytic converters are designed and certified to last for at least 100,000 to 150,000 miles on newer model vehicles. Heat, vibration, and poisons can eventually reduce catalytic converter efficiencies to the point that older vehicles will not be able to meet federal and state emission requirements and Onboard Diagnostics (OBD) test limits. Such converters need to be replaced; however, OEM replacement converters are typically expensive, costing from $500 to over $1000. Compounding the problem, many vehicles requiring a replacement converter have considerably less than 100,000 miles of expected life remaining, making such large repair costs difficult to justify.

Another significant advance that occurred in the 1990's was the implementation of On-Board Diagnostic II (OBD II) systems on light- and medium-duty vehicles. These systems use the vehicle's on-board computer to monitor the performance of its emission control systems, including the catalytic converter. Aftermarket catalytic converters meeting the current converter conversion efficiency requirements are generally not compatible with vehicle OBD II systems because their level of performance, even when relatively new, can fall below the levels at which the OBD II system will indicate a malfunction.

Because some OBD II equipped vehicles are now more than 14 years old, the need already exists in the marketplace for aftermarket catalytic converters that are compatible with these vehicles. As such, the USEPA policy on the use of aftermarket catalytic converters, last updated in 1986, clearly needs to be updated.

III. Main Components of the Recommended Aftermarket Catalytic Converter Program

Table-1 provides a summary and comparison of the recommended program to current Federal Aftermarket Catalytic Converter Program enforcement policy

1. Tightens durability and emissions requirements for pre-OBD (pre-1996) aftermarket converters.

   - The current policy requires 25,000 mile durability and 70%/70%/30% HC/CO/NOx conversion efficiencies.

   - The recommended policy requires 50,000 mile durability and meeting vehicle certification emission standards (mass-based).

- Simplify certification procedures by allowing for "worst-case" vehicle certification for pre-OBD to reduce certification costs while maintaining emissions reduction performance.

2. Requires OBD aftermarket converters demonstrate full functionality with OBD II system at emissions level of 1.5 x tailpipe OEM thresholds. To ensure that the in-use emissions from vehicles are not adversely compromised by the use of aftermarket catalysts, the recommended program would include new evaluation procedures for new aftermarket catalytic converters that would replace the existing performance requirements based on converter efficiency to standards based on vehicle tailpipe emission levels, require a demonstration of compatibility with the vehicle's on-board diagnostic II (OBD II) system, and extend the durability and warranty periods from 25,000 miles to a 5 year or 50,000 mile period

3. Sunsets "remanufactured" or used converters:

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Under the recommended program, the use of remanufactured or used OEM converters would sunset for pre-OBD II (Model Year 1995 and earlier) vehicles. For OBD II vehicles, the recommendation calls for the USEPA to evaluate the reuse of the catalytic converters, including a determination of whether additional verification testing and certification is necessary or if the OBD II system itself is sufficient to ensure continued compliance with emission standards. If the former, the USEPA would need to develop appropriate testing protocols to ensure the catalytic converter systems will continue to meet the applicable emission standards and goals of this recommendation. For example, the productive re-use of relatively new used OEM converters for vehicles that were scrapped for other reasons, e.g., accidents, may offer lower cost compliance mechanisms.

4. Other Recommended Components of the OBD II Compliant Federal Aftermarket Catalytic Converter Program

- OBD MIL demonstration required for OBD equipped vehicles: The recommended procedures would also require a demonstration of OBD II compatibility. Manufacturers would demonstrate through the emission testing that their new aftermarket catalytic converters would not cause a test vehicle's Malfunction Indicator Light (MIL) to illuminate when the catalyst is functioning properly. The manufacturers would then severely age a prototype converter to demonstrate that the test vehicle's OBD II system will detect the converter as malfunctioning by the time its conversion efficiency deteriorates to the point that vehicle emissions exceed the manufacturers' limits for malfunction detection by no more than a factor of 50 percent

- Allows for limited aggregation of similar vehicles for worst-case vehicle certification for OBDII vehicles

- Allow engine dynamometer aging for pre-OBD and OBD converters.

- Converter quality reporting requirements: The recommended program would require aftermarket catalytic converter manufacturers to monitor the aftermarket catalytic converter production process to ensure that production components actually meet the approved specifications. Manufacturers would check for adequate precious metal content, base metal content, and wash coat loading. Inspections to ensure proper application of the wash coat, installation of matting materials, and the absence of leaks in the converters shell would also be required. The recommended procedures would require manufacturers to report the results of their quality control checks to the USEPA on at least a quarterly basis.

5. Vehicles Applicability Guide requirement and installation requirements to be supplied by the aftermarket converter manufacturer

6. Labeling of aftermarket catalytic converters with permanent, visible labeling

IV. Estimated Emission Reduction Benefits

Estimate of Emission Benefits

- Emission Reductions Based on California Assumptions (source: Initial Statement of Reasons for Rulemaking, Public Hearing To Consider Amendments To Regulations Regarding New Aftermarket Catalytic Converters And Used Catalytic Converters Offered For Sale And Use In California, September 7, 2007).

    - 880,000 aftermarket converters sold in California per year
    - 74% of sales are pre-OBD aftermarket catalytic converters
    - 8,000 miles per year vehicle miles traveled (VMT)
    - Pre-OBD converter has 3 year average life
    - EMFAC estimates 3.5 M pre-OBD vehicles in California in 2012 and 1.26 million with aftermarket converters

- Based on measured emission rates and vehicle populations, CARB estimated their rule would result in a reduction of 5.3 tpd HC and 31.3 tpd NOx

- Simple ratio of California versus federal fleet populations (10%) would predict a potential 49 state benefit of:

    - 47.7 tpd HC and 282 tpd NOx
    - Added potential benefit of 462 tpd CO

- Actual emissions reductions are likely to be greater since California pre-OBD converters had to achieve 60% NOx conversion (vs. 30% for Federally certified converters) and 100% of federal aftermarket converters are pre-OBD technology.

- OBD compatible converters with advanced catalyst technology were being sold in California under an MOU since 2002.

V. Increased Prices for New Aftermarket Catalytic Converters under the Recommended Program

Aftermarket catalytic converters for pre-OBD II vehicles currently average $100 each. It is estimated that the average price of an aftermarket converter for pre-OBD II vehicles under the recommended program will initially increase by $100 to $200 as a result of the recommended changes. For OBDII equipped vehicles, the average price increase would range from $250 to $450.

VI. Public Process

The outreach process used in developing these recommendations included meetings and conference calls with interested parties including representatives from the California Air Resources Board (CARB), the USEPA's Regional Offices 1 and 2 as well as the Office of Transportation and Air Quality (OTAQ), the Manufacturers of Emissions Control Association (MECA), and state environmental representatives from states within the Ozone Transport Region (OTR) and the Northeast States for Coordinated Air Use Management (NESCAUM). A reverse chronologically ordered listing of those calls/meetings is as follows:

April 7, 2010 – Subcommittee Call – Final Recommendations review

April 1, 2010 - Subcommittee Call with the USEPA Regions 1 and 2, OTAQ, MECA and Umicore to review recommendations

February 17, 2010 - Subcommittee Call - Revising Recommendation

December 14, 2009 - Call with Mike McCarthy (California ARB) - pros and cons of the CA program

October 22, 2009 - Subcommittee Call - Developing recommendation

August 31, 2009 - Call with Chris Salmi and Karl Simon (EPA) - elements of a recommendation for Fed program

June 10, 2009 - OTC Statement at Annual Meeting Signed - request for federal program

February 26, 2009 - Call with MECA - MECA presentation on potential reductions

VII. Summary

- Significant advances in catalyst performance and durability for original equipment applications have made the technology more readily available today.

- Testing conducted by the CARB on used vehicles has demonstrated readily achievable, cost effective, reductions in emissions with advanced aftermarket converter technology on pre-OBD and OBD equipped vehicles.

- If the CARB requirements for aftermarket catalytic converters are implemented federally, the NOx reductions could be greater than CARB's estimates for California because current federal aftermarket catalytic converters are less effective than CARB-certified converters.

- Cost effectiveness is estimated to be under $4,000 per ton of VOC and NOx reduced

- Federal program could be based on streamlined version of CARB program and incorporate learning from the California experience to lower costs and improve vehicle coverage for ACCs under the revised program.

- A revised federal aftermarket program would provide states significant NOx reductions to help with future ozone attainment efforts

Table-1: Summary of a Recommended Revisions to the Federal Aftermarket Catalytic Converter (FAMCC) Program		
Proposed Requirements for Non – OBD Equipped Vehicles		
Criteria	***Current Federal Program***[1]	***Recommended Federal Program***
Performance	**Efficiency based**: 70%, 70%, 30% conversion efficiencies (HC, CO & NOx) must be maintained at end of 25k miles or 5 years.	**Mass Based (grams/mile):** Performance Standards based on meeting the vehicle certification tailpipe emission levels for vehicle being tested for 50k, 5 yrs.
Warranty	25K, 5yrs.	50K, 5yrs.
Used or remanufactured converters permitted?	Yes	Yes, a reseller would be able to certify a used OEM converter using an approved emissions testing protocol that can evaluate whether the used converter meets the applicable standards.
Certification Procedure	Must demonstrate compliance with the worst case vehicle in the application category, i.e., the vehicle with the highest weight and largest engine in the category to which the converter is intended to apply	Must demonstrate compliance with the worst case vehicles within four general classes of vehicles, i.e., passenger cars and light-duty trucks each with single and dual exhaust configurations
FAMCC Aging Procedure	On-vehicle mileage accumulation	Would allow for the use of accelerated aging of converters using a RAT-A engine dynamometer cycle rather than actual on-vehicle mileage accumulation for durability demonstration (RAT-A refers to a defined engine dynamometer-based converter aging cycle)
Estimated Price	$100	$200 - $300

[1] Based on the USEPA's 8/5/86 policy document

Recommended Requirements for OBD Equipped Vehicles		
Criteria	***Current Federal Program[2]***	***Recommended Federal Program***
Performance	Efficiency based (70-70-30)and must meet 1 of these 2 Options: Option 1: AMCCs that meet the requirements of the current USEPA AMCC policy, provided the AMCC warranty is honored when the OBDII system indicates a catalyst malfunction during the 25000 mile warranty period or; Option 2: AMCCs that meet the requirements of the California AMCC/OBDII procedures provided the AMCC warranty is honored when the OBDII system indicates a catalyst malfunction during the 25,000 mile warranty period, and provided that the information described above is submitted to the USEPA.	Mass Based (grams/mile) Performance Standards based on meeting the vehicle certification tailpipe emission levels for vehicle being tested for 50k, 5 yrs. <u>with full OBD compliance.</u>
Warranty	25K, 5yrs	5yrs or 50,000miles & 50,000 miles emissions performance warranty
Used or remanufactured converters permitted?	Yes	Yes, a reseller would be able to certify a used OEM converter using an approved emissions testing protocol that can evaluate whether the used converter meets the applicable standards.
Certification/Applicability Procedures	Worst case vehicle	Aggregation of similar vehicles permitted for a limited worst case AMCC certification process for OBD-equipped vehicles. Criteria for worst case vehicle aggregation to be defined based on vehicle engine and emissions control similarities (note: this provision is not part of California's AMCC rules).

[2] Based on 8/2/00 and 9/30/04 letters from the USEPA to MECA

		2 Proposed Options for certifying an AMCC in the FAMCC Program: 1. AMCC must have a CARB Executive Order for the analogous California- certified vehicle with the AMCC manufacturer providing full OBD warranty on the Federally certified equivalent vehicle model or; 2. AMCC must meet California's AMCC/OBDII standards including durability and warranty requirements for the applicable federally emissions certified vehicle. The AMCC manufacturer must submit to the USEPA the same information that they would send to the CARB under their procedures.[3]
AMCC Aging Procedure	On-vehicle mileage accumulation	Would allow for the use of accelerated aging of converters using a RAT-A engine dynamometer cycle rather than actual on-vehicle mileage accumulation for durability demonstration (RAT-A refers to a defined engine dynamometer-based converter aging cycle)
Estimated Price	$100	$350 - $550

[3] The information to be submitted to the USEPA would include a list of applicable vehicles for each new converter; the USEPA would select vehicles from the list for the manufacturer's compliance determination.
Also, the AMCC manufacturer must conduct an OBDII compliance check, ie, aging of converter with demonstration that during emissions testing the converter will cause the MIL to illuminate while not exceeding the emissions limit (2.6 times the certification emission limit).