



MDE Maryland Department of the Environment

Aftermarket Catalytic Converter Regulation



AQCAC Meeting - Karl Munder

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What is a Catalytic Converter?

- A device installed on a vehicle that reduces emissions formed in the engine during fuel combustion prior to their exhaust out the tailpipe
- Catalytic converters contain a combination of precious metals that reduce the amount of harmful pollution being emitted through the vehicle's exhaust system
- As they age, contaminants may build up on the catalyst surfaces, making them less efficient

Replacement Options ...

... for Catalytic Converter Failures

- Three Options
 - Original Equipment Manufacturer (OEM)
 - Still functional replacement from another vehicle (used)
 - One manufactured by a third party (Aftermarket)



Options

Two types of Aftermarket Catalytic Converters

- Federal (USEPA)
- California Air Resources Board (CARB)





Federal Aftermarket Converter

- Performance based on a reduction efficiency of 70/70/30% for the pollutants HC/CO/NO_x
- Manufactures certify to EPA that their converters meet the requirements
- Performance warranty of 25,000 miles

HC = Hydrocarbon
CO = Carbon monoxide
NO_x = Nitrogen oxide



CARB Aftermarket Converter Program

- Converter must allow vehicle to meet its original certification level (e.g. LEV, TLEV, ULEV, etc.)
- Must be OBD II (On Board Diagnostic II) compatible, if it is an OBD equipped vehicle – check engine light must stay out
- Does not allow used converters



CARB (continued)

- CARB reviews test results from independent labs to certify converters.
- CARB executive orders are issued to specific engine families
- CARB audits/tests converters to ensure they meet the standards
- Warranty of 50,000 miles/5 years covers converter, parts and labor





Need for an Updated Program

- Federal program not updated since 1986
 - Does not consider the significant technological advances occurring over the years
- The Ozone Transport Commission (OTC)
 - Made a push for an update of the federal program
 - Developed a model rule based on CARB AMCC Program
- Two OTC states (NY,ME) have already adopted this program
 - Other OTC states also moving forward
- Rule will move Maryland forward ...
 - ... but it will also continue to push for a federal program or implementation through a partnership ... this one simply makes the most sense as a federal rule, policy or program



Benefits of Newer Converter Technology

- Catalytic converter technology has progressed dramatically in response to stricter vehicle emissions standards
- New Catalytic converters can reduce engine-out emissions by over 99 %
- Federal AMCCs have not benefited from technology progression
- Allowing poorly performing federal AMCCs on new vehicles defeats technological advancements of today's vehicles





Why is a CARB Approved Converter...

... a better option?

	Federal Converter	CARB Converter	Is CARB Better
Converter Efficiency	70/70/30% (HC/CO/NO _x)	must allow vehicle to meet its original certification level	Yes
Warranty (conversion efficiency)	25,000 miles	50,000 miles	Yes
Compatible with an OBD II Vehicle	No	Yes	Yes

- Consumer protection through better warranty is another important reason to move ahead





Reductions from New OTC Measures

OTC Model Control Measures	Regional Reductions (tons per year)	Regional Reductions (tons per day)
Aftermarket Catalysts	10,059 (NOx) 2,235 (VOC)	27 (NOx) 6 (VOC)
On-Road Idling	19,716 (NOx) 4,067 (VOC)	54 (NOx) 11 (VOC)
Nonroad Idling	16,892 (NOx) 2,460 (VOC)	46 (NOx) 7 (VOC)
Heavy Duty I & M	9,326 (NOx)	25 (NOx)
Enhanced SMARTWAY	2.5%	
Ultra Low NOx Burners	3,669 (NOx)	10 (NOx)
Consumer Products	9,729 (VOC)	26 (VOC)
AIM	26,506 (VOC)	72 (VOC)
Auto Coatings	7,711 (VOC)	21 (VOC)

- Potential for large regional emission reductions
- Somewhere around 30 tons per day of NOx reductions in the OTC states
- Greater reductions if a national program
- Compared to other options ... this is a large NOx reduction



Industry Support for OTC Effort

- OTC has worked for over 3 years with manufacturers of aftermarket converters
- OTC has industry support for their efforts on the model rule and for pushing EPA to update the federal aftermarket converter program
- One concern from the manufacturers ...
 - Much better if done through a federal rule





Maryland's Proposed Regulation

- Based on OTC Model Rule
- Requires use of CARB-approved AMCCs on MY 2000 and newer vehicles beginning 1/1/2018
- Prohibits the sale or installation of used, recycled, or salvaged converters
- Provides waivers for unusual cases on a case by case basis
- Applies to a person that installs, sells, supplies, or offers for sale an AMCC in the state
- Sunsets if EPA revises federal policy or if EPA/OTC develop an alternative implementation program with manufacturers





Maryland's Progress

- Anticipate adoption of regulation by end of 2015
- Held Stakeholder meeting in April 2015
 - Industry was represented by the following groups:
 - Chesapeake Automotive Business Association
 - Washington, Maryland, Delaware Service Station & Automotive Repair Association
 - Manufactures of Emission Controls Association
 - Auto Car Association
 - Generally supportive
 - Would prefer federal program ... or
 - Partnership process



Questions

