

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-732

Relating to Exemptions under  
Section 27156 of the Vehicle Code

Central Valley HHO, Inc.  
Hydrogen Generator Device

Pursuant to the authority vested in the Air Resources Board by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: That installation of the hydrogen generator device, manufactured by Central Valley HHO, Inc. (1320 Standiford Avenue #4 PMB 316, Modesto, California 95350), has been found not to reduce the effectiveness of the applicable vehicle pollution control systems, and therefore, the OSS76, OS136, and OSS78 hydrogen generator devices are exempt from the prohibitions in Section 27156 of the Vehicle Code for all 1920-2014 model year passenger cars, light-duty trucks, and medium-duty trucks with gasoline or diesel engines up to 8 liters.

The OSS76, OS136, and OSS78 hydrogen generator devices consists of a 2, 3, or 4 quart water reservoir, a single cell electrolysis generator, a controller, various electrical components, electrical wiring and connectors, an electrolyte, and clear braided vinyl supply hose for the hydrogen gas.

This Executive Order is based on emission test results using Cold-Start CVS-75 Federal Test Procedure test, Supplemental Federal Test Procedure test, and On-Board Diagnostic II System test submitted by Central Valley HHO, Inc. with the hydrogen generator device installed.

If evidence provides the Air Resources Board with reasons to suspect that the hydrogen generator device will affect the durability of the emission control system, Central Valley HHO, Inc. shall be required to submit durability data to show that the durability of the vehicle emission control system is not, in fact, affected and/or that the add-on or modified parts demonstrate adequate durability.

This Executive Order is valid provided that installation instructions for the hydrogen generator device do not recommend tuning the vehicles to specifications different from those of the vehicle manufacturer.

Changes made to the design or operating conditions of the hydrogen generator device, as exempt by the Air Resources Board, which adversely affect the performance of the vehicle's emission control system, shall invalidate this Executive Order.

Marketing of the hydrogen generator device using identification other than that shown in this Executive Order or for an application other than that listed in this Executive Order shall be prohibited unless prior approval is obtained from the Air Resources Board.

Exemption of the hydrogen generator device shall not be construed as exemption to sell, offer for sale, or advertise any component of the kit as an individual device.

This Executive Order shall not apply to any hydrogen generator device advertised, offered for sale, sold with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

This Executive Order does not constitute any opinion as to the effect the use of the hydrogen generator device may have on any warranty either expressed or implied by the vehicle manufacturer.

No claim of any kind, such as "Approved by the Air Resources Board," may be made with respect to the action taken herein in any advertising or other oral or written communication.

In addition to the foregoing, the Air Resources Board reserves the right in the future to review this Executive Order and the exemption provided herein to assure that the exempted add-on or modified part continues to meet the standards and procedures of California Code of Regulations, Title 13, Section 2222, et seq.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF CENTRAL VALLEY HHO, INC.'S HYDROGEN GENERATOR DEVICE.

Violation of any of the above conditions shall be grounds for revocation of this Executive Order. The Executive Order may be revoked only after a ten day written notice of intention to revoke the Executive Order, in which period the holder of the Executive Order may request in writing a hearing to contest the proposed revocation. If a hearing is requested, it shall be held within ten days of receipt of the request, and the Executive Order may not be revoked until a determination is made after the hearing that grounds for revocation exist.

Executed at El Monte, California, this 25<sup>th</sup> day of June 2014.

  
Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division

## EVALUATION SUMMARY

Manufacturer Name: Central Valley HHO, Inc.

Name of Device: OSS76, OS136, and OSS78 Hydrogen Generator Device

Background:

Central Valley HHO, Inc. of 1320 Standiford Avenue #4 PMB 316, Modesto, California 95350 has applied for exemption from the prohibitions in Section 27156 of the California Vehicle Code for its hydrogen generator device. The device is designed for use on 1920-2014 model year (MY) passenger cars, light-duty trucks, and medium-duty trucks with gasoline or diesel engines up to 8.0 liters.

Recommendation:

Grant exemption to Central Valley HHO, Inc. as requested and issue Executive Order D-732.

Device Description:

The hydrogen generator device produces hydrogen through an electrolysis process by supplying water from a reservoir containing distilled water and an activator (sodium hydroxide or potassium hydroxide) to an electrolysis dry cell containing stainless steel plates that are supplied electricity from the vehicle's battery. The device consists of a 2, 3, or 4 quart water reservoir, a single cell electrolysis generator (which contain the positive, negative, and neutral metal plates), a controller, various electrical components, electrical wiring and connectors, and clear braided vinyl supply hose for the hydrogen gas. The device is connected to the vehicle's fuel pump relay circuit so that hydrogen gas is only produced when the engine is operating.

Discussion/Basis for the Recommendation:

This exemption is based on: FTP, SFTP, and OBD II System tests conducted on a 2013 MY 2.0 liter Ford Fusion LEV II ULEV and also FTP and OBD II System tests conducted on a 2011 MY 6.7 liter Ford F-350 diesel medium-duty truck LEV II ULEV. Testing was conducted on these vehicles and modified with the hydrogen generator device to evaluate the impact on emissions. Results are shown below:

FTP, SFTP, and OBD II System tests on a 2013 MY 2.0 liter Ford Fusion

	FTP Emissions (grams/mile)				
	NMOG	CO	NOx		
Test Results	0.026	1.1	0.02		
Test Results w/50K DF	0.026	1.2	0.02		
50K Standards	0.040	1.7	0.05		
Pass/Fail	Pass	Pass	Pass		
Test Results w/120K DF	0.026	1.4	0.03		
120K Standards	0.055	2.1	0.07		
Pass/Fail	Pass	Pass	Pass		
				SFTP Emissions (grams/mile)	
				NMHC+NOx	CO
Test Results				0.09	2.2
4K Standards				0.14	8.0
Pass/Fail				Pass	Pass

	OBD II System Results		
	Readiness Indicator	Trouble Code	MIL
At vehicle receipt	All complete	None	Off
After 50 mile drive	All complete except evaporative system	None	Off
After hydrogen generator device FTP and SFTP tests	All complete	None	Off

**FTP and OBD II System tests on a 2011 MY 6.7 liter Ford F-350 diesel medium-duty truck**

	FTP Emissions (grams/mile)					
	NMOG	CO	NOx	PM		
Test Results	0.031	0.5	0.2	0.01		
Test Results w/120K DF	0.066	0.7	0.2	0.01		
120K Standards	0.167	7.3	0.4	0.06		
Pass/Fail	Pass	Pass	Pass	Pass		

	OBD II System Results		
	Readiness Indicator	Trouble Code	MIL
At vehicle receipt	All complete	None	Off
After 50 mile drive	All complete except fuel system and exhaust gas sensor	None	Off
After hydrogen generator device FTP test	All complete except fuel system	None	Off

- Notes:
1. The fuel system monitor was not able to set to complete on the 2011 Ford F-350 because the vehicle's powertrain control module had not yet been reprogrammed, based on Ford Motor Company's Technical Service Bulletin 12-8-21. Staff feels that the emission test results are well below the emission standards and that this incomplete monitor will not affect the test results.
  2. Deterioration factors (DF) are additive.
  3. Testing laboratory for all above tests – Automotive Testing and Development Services, Inc. in Ontario, California.

FTP and SFTP exhaust emission results for the 2013 Ford Fusion and 2011 Ford F-350 showed that the modified vehicles meet the exhaust emission standards. Testing also showed that the modification does not have any adverse impact on the vehicle's OBD II System. Similar results are expected when Central Valley HHO, Inc.'s hydrogen generator device is used on the 1920-2014 model year passenger cars, light-duty trucks, and medium-duty trucks with gasoline or diesel engines up to 8 liters stated in this application.