

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER B-73U

Relating to Conversion of Off-Road Engines to Alternative Fuels

2Fuel Technologies, Inc.

Pursuant to the authority vested in the California Air Resources Board by Sections 43013 and 43018 of the Health and Safety 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 the propane-diesel dual-fuel conversion system, manufactured by 2Fuel Technologies, Inc. of 914 Moonlight Drive, San Antonio, Texas 78133, is certified as described below for the following off-road compression-ignition engines and applications:

Fuel type: Propane-diesel or diesel-only

Engine: 2011 and older Caterpillar, Cummins, Detroit Diesel, John Deere, Kubota, MTU Detroit Diesel, Navistar, and Volvo

Displacement: 2.5 to 15 liters

Horsepower: 100 to 675

Emission standards: Tier 1, Tier 2, and Tier 3

Application: Mobile

Test cycle: 8-mode steady-state

Major conversion system components:

Propane engine control unit	Diesel rack actuator (mechanical only)
Propane regulator	Diesel rack position sensor (mechanical only)
Mixer pin assembly	Throttle position sensor (mechanical only)
Injector rail assembly	Exhaust temperature sensor
Propane injectors	Air intake temperature sensor (mechanical only)
Propane supply hose assembly	Air intake pressure sensor
Safety solenoid valve	Engine coolant temperature sensor (mechanical only)
Propane temperature/pressure sensor	RPM sensor (mechanical only)
Diesel oxidation catalyst	

This certification is only valid provided the engines converted with the propane-diesel dual-fuel system operate within the exhaust backpressure limits specified by the original equipment engine manufacturers.

The 8-mode steady-state certification test emission values and the applicable emission standards for the test engines are shown below:

	<u>THC</u>	<u>NMHC</u>	<u>NMHC+NOx</u>	<u>NOx</u>	<u>CO</u>	<u>PM</u>
1999 Caterpillar 3406	0.6	n/a	n/a	2.5	2.6	0.1
Tier 1 Std. (g/bhp-hr)	1.0	n/a	n/a	6.9	8.5	0.4
2006 Cummins QSM11	n/a	n/a	3.4	n/a	0.2	0.17
Tier 3 Std./FEL (g/kW-hr)	n/a	n/a	4.0	n/a	3.5	0.18

All emission control systems and engine manufacturer's tune-up label shall be retained. The engine shall be adjusted to 2Fuel Technologies, Inc.'s tune-up specifications. The production conversion system shall be in all material respect the same as that for which certification is granted.

BE IT FURTHER RESOLVED: That 2Fuel Technologies, Inc. shall provide a supplemental emission control information label, which shall be affixed in a permanent manner adjacent to the original Emission Control Information Label, and shall comply with the labeling requirements described in Sections I.E. of the "California Certification and Installation Procedures for Systems Designed to Convert Off-Road Vehicles, Engines, and Equipment to Use Alternative Fuels," adopted October 1, 1999.

BE IT FURTHER RESOLVED: That 2Fuel Technologies, Inc. shall maintain a record of the converted engine and/or equipment identification numbers as required under Section I.G. of the "California Certification and Installation Procedures for Systems Designed to Convert Off-Road Vehicles, Engines, and Equipment to Use Alternative Fuels," adopted October 1, 1999.

BE IT FURTHER RESOLVED: That 2Fuel Technologies, Inc. has submitted and the Executive Officer hereby approves the materials required to demonstrate certification compliance with the warranty requirements under Section X. of the "California Certification and Installation Procedures for Systems Designed to Convert Off-Road Vehicles, Engines, and Equipment to Use Alternative Fuels," Adopted October 1, 1999.


This Executive Order shall not apply to any propane-diesel dual-fuel conversion system advertised, offered for sale, sold with, or installed on an engine prior to or concurrent with transfer to an ultimate purchaser.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE AN ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE CALIFORNIA AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF 2FUEL TECHNOLOGIES, INC.'S PROPANE-DIESEL DUAL-FUEL CONVERSION SYSTEM.

The conversion system certified under this Executive Order must conform to all applicable California emission regulations. Certification of the conversion system shall not be construed as a certification to sell, offer for sale, or advertise any component of the conversion system as an individually certified part.

Executed at El Monte, California this 26th day of June 2017.



 Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division