Project 10 - Industrial Fuel Booster Retrofit System

A Water-Assisted HHO Combustion Technology for Vehicles, Gensets, Marine and Industrial Diesel Engines

Fuel Saving Up to 70% - Carbon Emission Reduction Up to 85%

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Project Overview

The Industrial Fuel Booster Retrofit System is an advanced water-assisted HHO combustion enhancement technology designed to improve fuel efficiency, engine power, torque, pickup, speed response, engine health, and emission performance in existing diesel and fuel-based engines.

This invention uses an on-demand HHO gas production unit that generates hydrogen-oxygen gas from water and supplies it into the engine intake system to support cleaner and more complete combustion. The system is designed as a retrofit solution, meaning it can be installed into existing engines with minimal modification.

The technology is suitable for cars, buses, trucks, diesel generators, ships, boats, marine engines, power plants, mining equipment, construction machinery, and industrial engines.

The major purpose of this invention is to deliver up to 70% fuel saving, up to 85% carbon emission reduction, no visible smoke, lower NOx tendency, better torque, improved pickup, smoother speed response, and healthier engine operation.

Problem in Existing Fuel Engines

- High fuel consumption
- Rising diesel and fuel costs
- Smoke and exhaust pollution
- Higher carbon emissions
- NOx and harmful exhaust gases
- Carbon deposits inside engine parts
- Poor pickup under load conditions
- Reduced torque and power efficiency
- Engine wear due to incomplete combustion
- High maintenance cost
- Lower combustion efficiency
- Heavy fuel dependency in transport, marine, and industrial sectors

Core Innovation

- Compact and industrial HHO production unit options
- Water-assisted hydrogen combustion support
- On-demand HHO gas generation
- Smart ECU-based control system
- Digital monitoring display
- Water inlet with pre-filter

- SS 316 HHO cell for long life and high efficiency
- Gas outlet connection to engine intake
- Water drain and maintenance-friendly design
- Multiple safety protection systems
- Retrofit installation with minimal engine modification
- Scalable design for small vehicles and large industrial engines

Technology Concept

The Fuel Booster Retrofit System produces HHO gas only when the engine is operating. Water is supplied into the electrolysis cell, where HHO gas is generated and then routed into the engine air-intake system.

When HHO mixes with the incoming air-fuel charge, it supports faster flame propagation and more complete combustion. This helps the engine burn fuel more effectively, reducing unburned fuel loss, visible smoke, carbon deposits, and harmful exhaust output.

By improving combustion quality, the system is designed to support:

- Up to 70% fuel-saving target
- Up to 85% carbon emission reduction target
- No visible smoke target
- Lower NOx tendency through cleaner combustion control
- Good torque and pulling power
- Better pickup and acceleration response
- Smoother speed performance
- Cleaner and healthier engine operation

System Working Process

- Water Input: Water is supplied into the HHO production unit through a filtered inlet system.
- Electrolysis Cell: The HHO cell produces hydrogen-oxygen gas on demand while the engine is operating.
- HHO Gas Delivery: Generated HHO gas is delivered safely through the gas outlet line to the engine air-intake system.
- Engine Combustion Support: The HHO gas supports combustion inside the engine by improving flame speed, burn quality, and thermal efficiency.
- Fuel Saving and Emission Reduction: Improved combustion helps reduce fuel consumption, visible smoke, carbon deposits, carbon emissions, and harmful exhaust gases while improving torque, pickup, and engine response.

Key Benefits

- Up to 70% fuel-saving target
- Up to 85% carbon emission reduction target
- No visible smoke target
- Lower NOx tendency
- Good torque and pulling power
- Better pickup and acceleration
- Improved speed response

- Healthier engine operation
- Cleaner combustion
- Reduced CO2, HC, smoke, and unburned fuel losses
- Lower engine wear
- Reduced carbon deposits
- Reduced maintenance cost
- More engine power and efficiency
- Quick return on investment
- Retrofit-compatible system
- No major engine modification required
- Smart ECU control with safety interlocks
- Suitable for small and heavy-duty engines

Application Categories

Vehicle Applications

- Passenger cars
- SUVs
- Buses and coaches
- Light trucks
- Heavy trucks
- Commercial vehicles
- Fleet vehicles

Generator Applications

- Diesel generator sets
- Large gensets
- Industrial backup power systems
- Power plant auxiliary engines

Marine Applications

- Boats
- Ships
- Marine diesel engines
- Fishing vessels
- Port and harbour support engines

Industrial Applications

- Mining equipment
- Construction machinery
- Oil and gas industry engines
- Industrial diesel engines
- Heavy-duty mechanical systems

System Versions

Compact Fuel Booster Unit

Designed for cars, SUVs, buses, trucks, and smaller diesel engines.

Industrial Fuel Booster Unit

Designed for large diesel generators, marine engines, heavy-duty industrial engines, and high-power applications.

Technical Specifications - Indicative

Compact Version

- HHO Gas Output: 0.5 - 1.5 Nm3/hr
- Operating Pressure: 0.1 - 0.5 bar
- Input Power: 12V / 24V DC
- Power Consumption: 120 - 240 watts
- Water Consumption: 0.1 - 0.5 L/hr
- Installation: Retrofit with minimal modification
- Control System: Smart ECU with safety interlocks

Industrial Version

- HHO Gas Output: 10 - 25 Nm3/hr
- Operating Pressure: 0.1 - 0.5 bar
- Input Power: 110 - 240V AC / 50-60 Hz
- Power Consumption: 300 - 600 watts
- Water Consumption: 0.5 - 2.0 L/hr
- Application: Large diesel engines, generators, marine engines, industrial engines
- Installation: Retrofit with minimal modification
- Control System: Smart ECU with safety interlocks

Commercialization Opportunity

- Patent licensing agreements
- Automotive retrofit partnerships
- Diesel generator retrofit programs
- Marine engine fuel-saving partnerships
- Fleet fuel-efficiency programs
- Industrial engine upgrade projects
- Manufacturing rights agreements
- International fuel-saving technology licensing
- Clean combustion technology partnerships

Important Technical Positioning

This technology should be presented as a water-assisted HHO combustion retrofit system requiring engine-wise calibration, fuel-saving validation, emission testing, safety certification, and regulatory approval before large-scale commercial deployment.

Vision Statement

Up to 70% fuel saving, up to 85% carbon emission reduction, no visible smoke, better torque, stronger pickup, lower emissions, and healthier engine life - transforming existing engines with smart HHO fuel booster technology.