The Bennett Clayton Way

Most engine manufacturers strive to build a unit that combines power, size, weight, efficiency and emissions performance fit for the task, at the best possible price.

This has led most down the path of direct injection, complex computer control and sophisticated exhaust treatments, catalyst, filters and urea injection systems.

But surely, if a Hydrocarbon burns, it should produce only water from the hydrogen, and CO2 from the carbon, while releasing 100% of the fuel energy.
Unfortunately, this does not happen, as diesel and petrol are cocktails of dozens of hydrocarbons of varying combustion requirements, so there is not a complete burn of all the elements, leading to smoke and other products of partial combustion.
Some of these, notably CO (partially burned carbon) are fuels themselves, which burn at elevated temperatures in part of the cycle, the temperatures being high enough to form NOx.

The Bennett Clayton method is to use short chain, homogeneous fuels such as methane, methanol, LPG, ensure that they are thoroughly mixed with ample oxygen to completely burn, induce high speed charge movement to light as much of the fuel as possible, and incorporate a chamber design and thermal management that ensures stable combustion.

This method extracts almost all the energy from the charge as the burn is all but complete, the exhaust is inherently clean as the burn temperature is below that necessary to form NOx, and CO and HC are all but absent.

All this is achieved using domestic fuels, not imported diesel, and no exhaust treatment. Testing has shown exhaust emissions within Euro4 limits, power and torque matching diesel levels and a reduction in noise and vibration due to the absence of diesel “knock”.

The efficiency of the Bennett Clayton engine is outstanding, with a measured thermal efficiency exceeding 50% at 60% load and above, and a BSFC of under 140g/kwhr.