

DYNEGEN *is the FUTURE of Engines*

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Alternative energy sources are being explored with greater urgency for mainstream use than at any time in the past.

DyneGen has identified three alternate energy camps vying as fuels of the future: **Natural Gas, NH₃ – Anhydrous Ammonia** and **H₂ - Hydrogen** (the leader among 'low BTU fuel' or LBTUF alternatives). DyneGen research suggests that there will likely not be one 'winner' in this race but rather, a *combination* of leaders will dominate.

DyneGen brings together new, market-disruptive technologies and capabilities to design and manufacture **the first spark ignited, large-displacement, multi-fuel engine that can lower CO₂ by 30%, initially with natural gas and 100% with H₂ and NH₃ over time.**

Energy utilization improvements are initially expected to be on the order of 15-20% and eventually achieve as much as 40-50%. These engines run all three fuels of the future and offer four distinct points of differentiation that create superior technology.

The DyneGen senior management brings deep experience in engine design, product development, manufacturing, sales and marketing averaging over 25 years of industrial experience, including leadership positions in the Fortune 500.

With planned enhancements to reduce components and further increase efficiencies, **DyneGen presents the Engine of the Future ..TODAY!**

The DyneGen Difference

- **Heritage.** A high-performance racing engine manufacturing and design background
- **Reliability.** Proven dependability (>200 million hrs) in the field with 24/7/52 operation
- **Performance.** Remarkable ability to produce diesel power while running clean on natural gas
- **Design Flexibility.** The ability to run on multiple alternative fuels with sizes from 7.5 liter - 12 liter



THE DYNEGEN NATURAL GAS SOLUTION

The opportunity for natural gas engines is based on the fact that current offerings do not achieve the performance of diesel engines on the market today and therefore are not as widely used where better performance is required.

A custom-made engine product family that is built to burn natural gas and/or ammonia and ranges in size from 7.5 to 12 liters.



THE DYNEGEN HYDROGEN SOLUTION

Hydrogen has the potential to revolutionize transportation and, possibly, our entire energy system. The simplest and most abundant element in the world, hydrogen can be produced from fossil fuels, biomass, by electrolyzing water or as a by-product of other processes.

This made-to-order engine is currently under development with pending orders. It will be fielded for a number of pilot projects where there is abundant hydrogen being produced.

Initially, this 12 liter custom engine will burn LBTUF, (specifically, hydrogen) and will be matched to either 250 kW or 500kW generators to produce competitively priced electricity.



THE DYNEGEN AMMONIA SOLUTION

Ammonia is currently the second most used chemical in the world. Recent ammonia-for-fuel production breakthroughs suggest dramatically lower NH₃ production costs in the near future making NH₃ viable as an alternative fuel and an economically competitive choice. Additionally, the potential impact of carbon taxes from cap and trade legislation and looming EPA regulations will make this fuel of the future even more attractive.

Currently in field testing is a standard 460 cubic inch engine block modified to use new technology injectors, controls, and a bi-fuel delivery system to allow it to burn natural gas first and then switch over to anhydrous ammonia (NH₃).

The differences between engine models include the compression ratio, displacement, and fuel maps for the controller.

- All New Proven Technology with a Focus of the Fuels of the Future and capable of running any of the Top Three
- The Perfect Alternative-Fuels Replacement for GM 8.1L and Ford V-10
- Big Block Engines that deliver Improved Efficiency and Reduced Emissions.



DYNEGEN IS THE FUTURE OF ENGINES. Our anticipated product releases utilize the 460 cubic inch displacement (CID) block with over 200,000,000 hours (24/7/52) of runtime in the field. The control systems, valves, injectors and tanks covering the first two product releases are also proven technologies. The engines currently under development are standard 460 cubic inch engine blocks being modified to use new technology injectors, controls, and a bi-fuel delivery system to allow them to burn natural gas first and then anhydrous ammonia.