

External Combustion Static Electricity Generator Project

- **Low Cost**
- **Efficient**
- **Silent**
- **Self-Starting**
- **Vibration-free**
- **Multi fuel**
- **No Hydrogen**



Concern about the effects on the environment of the growing requirement for Distributed and Temporary Electricity Generation, coupled with the desire to avoid waste in any form, leads us to seek a more efficient way of generating electricity from Natural Gas and Diesel Fuel. Modern advances in materials and other sciences enable us to achieve more of the greater efficiency potential of the external combustion engine, and thus replace the internal combustion engine with its multitude of moving parts, noise and vibration in the static generation role.

The external combustion engine offers silent, vibration free operation from a low cost package, and will run on Natural Gas, LPG, Kerosene, or Diesel. With an electrical efficiency of over 40% it will reduce the impact of rising Fossil Fuel prices.

The stable and continuous combustion gives a clean exhaust which contains negligible quantities of pollutants, making it easy to meet the most difficult emissions standards. Because the combustion is continuous there is a very low level of noise and vibration, so that no soundproofing enclosure or damping mounting is necessary. It will be sufficient to place the generator set as delivered on flat ground, connect up the fuel supply and the electrical load, and start up! Since there are few moving parts, and these parts are not in contact with the fuel or exhaust gasses, the generator will require very little maintenance in continuous use, giving low and easily forecasted costs to enable any business to benefit from a trouble-free and reliable source of electricity.

The development of this engine requires only bringing together existing automobile and aerospace technologies and materials, and thus can be completed in a timely and straightforward fashion.

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We have completed a preliminary design study of an external combustion engine which, whilst benefiting from the large fund of knowledge concerning these engines, is a completely new approach which incorporates -

- A simple and compact mechanical layout
- A minimum number of moving components
- No complex gas seals
- Much proven automotive technology for ease of production
- Much reduced thermal gradients to reduce conduction losses
- The ability to start-up without using electrical power
- A regeneration function without the thermal inertia of a regenerator
- A condensing burner for greater efficiency
- A version is possible giving high efficiency at partial power

The resulting engine will have a low cost per kilowatt installed and per kilowatt hour, and long life with low maintenance in continuous service.

The provisional specification to which we are working is below, and this can be adapted to ensure that the final specification responds to the widest possible market requirement.

Electrical Output	1 MW
Skid size	Comparable with current units
Output Voltage	400 VAC, 3 ph. 50 or 60 Hz
Electrical Efficiency	better than 40%
Nominal cogeneration water outlet temp	60°C
Fuel Pressure	1 bar
Generator Type	Induction or Synchronous
Rotation speed	1.500 or 1800 r.p.m.
Output quality	3% THD
Power Factor	0.9
Exhaust temperature	< 100 °C
Noise level	65 dBA at 5 meters.

Should you wish to participate in this development program, please contact **A. T. M. S.** on +447717763510 or via the web site.