**Diesel Engines for Boats**

1. **Brief Description/ Technical Details.**

(a) Indigenous development of diesel engines for boat propulsion in power range of 220-330 HP, cater for various types of boats used in Indian Navy

(b) The engine is to be supplied with its associated ancillary equipment, pipes, fittings, instrumentation which broadly include the following:-

 (i) All piping and fittings forming integral parts of the engine like flywheel, governor, lub oil and fw cooler, engine driven fresh water pump, lub oil pump, sea water pump, hand operated sump drain pump, filters (air, lub oil and fuel oil).

 (ii) 24 V electric starting equipment along with suitable battery catering to minimum 40 starts of the engine with provision for alternative mechanical/ hand start

 (iii) Exhaust system comprising silencer, manifold (water cooled type)

 (iv) Engine driven fresh water, fuel oil and lube oil pumps

 (v) Instrumentation consisting of ammeter, push button for starting, lo pressure gauge, Low temperature gauge, engine cooling water temp gauge, tachometer with drive, hour meter, gearbox oil temp gauge. The instrumentation panel should be water proof.

 (vi) The engine should be fresh water cooled which in turn should be cooled by sea water.

2. **Tentative** **Quantity.** 220 over a period of 05 years

3. **Tentative Timeline for Development/ Production**. Two- three years