

# Air independent propulsion system

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**Why in news?**

DRDO has successfully tested the Air independent propulsion system for Submarines



**What is this system?**

- It is any technology that allows the operation of a non-nuclear submarine without exposure to atmospheric oxygen (by surfacing or using a snorkel).
- It augments or replaces the diesel-electric propulsion system of non-nuclear vessels.
- The fuel cell air-independent propulsion converts chemical energy from fuel cell into electricity through a chemical reaction of positively charged hydrogen ions with oxygen or other oxidizing agents.
- It is based on the combustion of stored oxygen and ethanol to augment battery-powered propulsion.
- AIP increases stealth by allowing a submarine to generate electricity for operation and battery charging and propulsion while being completely submerged.
- The Non-nuclear submarines running on this can be virtually silent.