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(54) Title: POWERPLANT AND RELATED CONTROL SYSTEM AND METHOD

(57) Abstract: A hydrogen fueled powerplant including an internal combustion engine that drives a motor-generator, and has a two-stage turbocharger, for an aircraft. A control system controls the operation of the motor-generator to maintain the engine at a speed selected based on controlling the engine equivalence ratio. The control system controls an afterburner, an intercooler and an aftercooler to maximize powerplant efficiency. The afterburner also adds power to the turbochargers during high-altitude restarts. The turbochargers also include motor-generators that extract excess power from the exhaust.

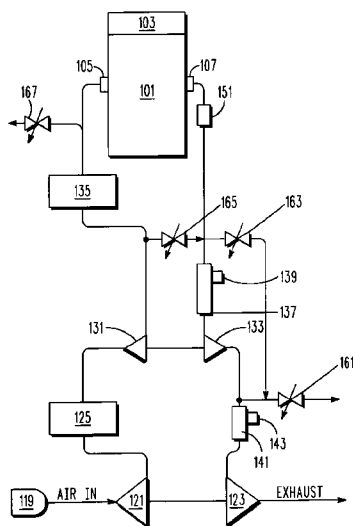


FIG. 1



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