

46ESS-24: Auxiliary power systems for aircraft

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The auxiliary power unit (APU) is a small self-contained gas turbine engine which is conventionally included in an aircraft. Generally, power supply is satisfied by the main engine of aircraft and the power system connected. APU is intended for the power need of the aircraft prior to the starting, and after the stopping, of the main engine. Or to satisfy the power demands of the aircraft in an emergency in high altitude. An auxiliary power unit for an aircraft includes a gas turbine. With a combustion chamber, a compressor and a turbine. A compressor is coupled with the turbine, for generating compressed air. A generator is present for generating electric energy. The disadvantage of auxiliary power units is their relatively poor efficiency, particularly with respect to generating electricity. Their operation is also connected with high exhaust gas and noise emissions. Nowadays, the electricity generating part of the conventional auxiliary power unit is usually replaced by a fuel cell system which helps to reduce fuel consumption and emission.