

Indigenous Micro and Small Gas Turbine Engines

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Why in News?

Recently CSIR-National Aerospace Laboratories (CSIR-NAL) unveiled 3 indigenous Micro and Small Gas Turbine Engines for defence applications.

- **Aim** - To strengthen Atmanirbhar Bharat in aerospace propulsion and unmanned defence technologies.
- **Key facts**

Engine	Thrust	Possible Applications
NJ-05	5 kg	Tactical UAVs, small platforms
NJ-50	50 kg	UAVs, drone interceptors
NJ-100	100 kg	UAVs, drone interceptors, compact missiles

About the Engines

- **Developed by** - Indigenously by CSIR-NAL.
- These are designed *as compact propulsion systems*.
- **Based on** - Advances in High-RPM turbomachinery
 - High-temperature combustion
 - Intended to support the domestic UAV, drone and defence aerospace ecosystem.
 - Domestic manufacturing at scale could enable wider adoption by Indian defence industries.
- **Strategic significance**
 - It *reduces dependence* on foreign propulsion technologies.
 - It strengthens India's capability in critical aerospace technologies.
 - It supports *indigenous development* of UAVs, Drone-interception systems, Compact missile platforms.
 - Can help integrate Indian aerospace start-ups and industries into defence manufacturing.



About CSIR-National Aerospace Laboratories (CSIR-NAL)

- **Location** - Bengaluru.
- It is India's only government aerospace research and development laboratory in the civilian sector.
- **Established in** - 1959.
- It focuses on advanced aerospace technologies, civil aircraft design, and supporting national space and defense programs

Reference

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