

Lightweight, Small Form-Factor Vehicle Mounted Hybrid Auxiliary Power Unit

PROJECT OVERVIEW

This project will develop and demonstrate a small form factor lightweight hybrid Auxiliary Power Unit (APU) for vehicle mounted applications. This system will be comprised of axial flux motor(s) paired with an engine and hybridized with a 6T battery system using power electronics to enable bidirectional power capabilities. By combining APU power generation with storage technology, a smaller and more lightweight genset can be selected without sacrificing the ability to meet operational power demands. This smaller APU will be able to operate in a more efficient generator regime, resulting in reduced fuel consumption and can enable peak shaving for surges.

BENEFITS

Provides silent watch capability. Decreases thermal, acoustic, and EMI signatures. Untethers from stationary power generators. Decreases maintenance downtime (MTTR) and class 9 constraints in contested and DDIL environments. Powers mission equipment on the move, at the halt, and with the vehicle off. Increases mobility and survivability.

PATH FORWARD

Mechanical mount fabrication; electrical integration and testing of hybrid architecture; fit check and delivery in 4Q 2026. Followed by in-house government testing, New Equipment Training, and demo with 101st for integrated H-APU on ISV-9.

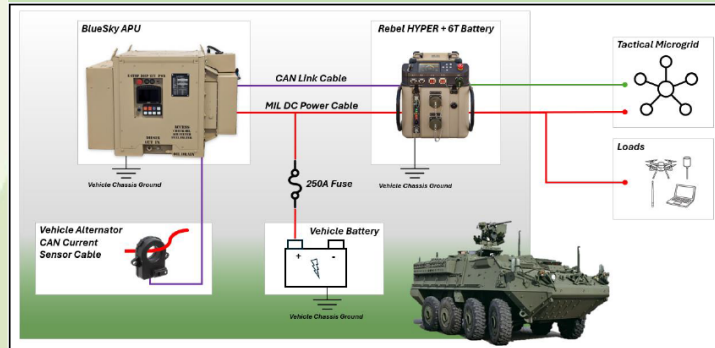
DoD Executive Agent

Office of the Assistant Secretary of the Army for Installations, Energy, and Environment

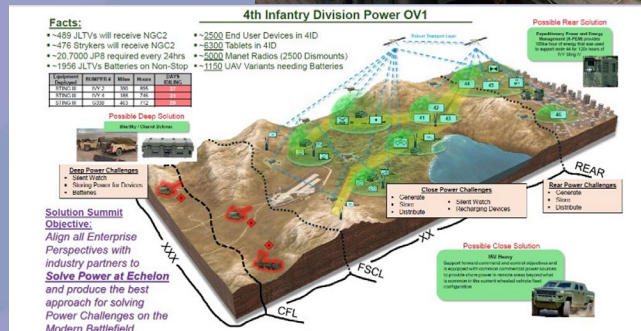
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Revised 05.2026

PROJECT PHOTOS



Impact: Critical enabling technologies such as C-UAS, NGC2, and layered protection have available platform power to facilitate overwatch locally and across large disbursed formations by echeloning power appropriately.



FOR FURTHER INFORMATION

National Defense Center for Energy and Environment
<http://www.denix.osd.mil/ndcee/home>
 US Army DEVCOM C5ISR Center Power Division
<https://c5isrcenter.devcom.army.mil/>