

# TOWABLE, LOAD FOLLOWING 60KW (T-60) SELF CONTAINED MICROGRID

## PROJECT OVERVIEW

Increased OPEMPO and enhanced core warfighting capabilities place significant mobility demands on power systems and tactical vehicles. This demand compromises combat effectiveness of Future Force platforms. Highly power dense, versatile generator sets are the linchpin to effectively reduce fuel consumption and maintenance, increase operational reliability and system life, and maintain mission effectiveness. This effort will deliver a HMMWV/JLTV towable 60 kW power system with a self-contained microgrid that provides variable output, follows load and operates in grid tie and standalone power modes in any tactical environment. The system will use opensource control signals (TMS compliant) and a universal microgrid interface to enable use with any microgrid.

## BENEFITS

**Stakeholder/Beneficiary:** Program Manager Expeditionary Energy & Sustainment Systems – DOD fielding/procuring agent

**DOD Owned:** Firmware/source codes belong to the Army

**Operational Flexibility:** Self contained microgrid is software independent which allows multiple T-60's to be connect via simple DC link cables with no additional hardware or microgrid software. It can be programmed to stage the engines during periods of low demand or maintenance while distributing total available power to avoid interruption of ongoing applications.

## PATH FORWARD

The completion of this project promotes:

- A new family of load following 60 kW generator sets that can be transported, emplaced and provide power within 30 minutes for critical loads in theater.
- A family of inverter systems (2-60kW) cable of handling power surges of non-linear loads and correcting power factor.
- Delivery of Interface Control Documents, Tech Data Package, Performance Specification to PM E2S2



Water Cooled  
Alternator



T-60 Inverter  
System



John Deere Military  
4045HF485-JET Engine



Representation of T-60 Load Following Generator Set

- Output: 60 kW continuous power at 0.8 power factor
- 2800 Pounds (40% less than the current 60kW genset)

## DoD Executive Agent

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

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## FOR FURTHER INFORMATION

National Defense Center for Energy and Environment

<http://www.denix.osd.mil/ndcee/>

DEVCOM C5ISR Center

<https://c5isrcenter.devcom.army.mil/>

Project Manager Expeditionary Energy & Sustainment Systems

<https://www.peocscss.army.mil/pme2s2.html>