Army Strategic Energy Goals

Erik Kallio
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Report Documentation Page

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Standard Form 298 (Rev. 8-98)
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Policy Drivers

Army Strategic Energy Security Goals

- Reduced energy consumption
- Increased energy efficiency across platforms and facilities
- Increased use of renewable / alternative energy

Installation & Forward Operating Base (FOB) “Net Zero” electrical power production strategy (generated = consumption)

Forthcoming Operational Energy Initial Capabilities Document

Meeting energy & power mandates, goals, and strategy requires understanding of the challenge
Alternative Energy Efforts

### Alternative Fuels
- **Fuel Evaluations**
  - Chemical Composition
  - Physical properties
  - Fuel system impacts

### Alternative Fuel Vehicles & Infrastructure
- **System Evaluations**
  - Fuel-system interactions
  - System performance and durability
  - Fuel specification inputs
  - Suitability of fuel for use in Army equipment

### Domestic Manufacturing Capability

### Advanced Automotive Batteries
- **Dual-Use Applications**
  - Engine Evaluations
    - Fuel ignitability
    - Fuel combustion
    - Performance / durability

### Advanced Mobile Microgrid
- **SANGB Hydrogen Filling Station**

### Technology Driven. Warfighter Focused.
TARDEC’s End-to-End Energy Business: From Generation to Application

Generation

Distribution

Transfer

Vehicle

Energy Storage

Power & Thermal Management

Pulse Power

Prime Power

Non-primary Power

UNCLASSIFIED

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.
Smart-Charging Micro-Grid

- Installation of microgrid at Schofield Barracks, tied to critical infrastructure
  - Photovoltaic array
  - Dedicated electric vehicle charging
  - Grid connected
  - Conventional generator for extended backup power
  - Advanced stationary energy storage
  - Load management
- AC architecture
- Microgrid scheduled to be operational in August 2010
- Data collection and operational support for one year
Next Steps

TARDEC

• Approved plan to procure an additional micro-grid for installation in Hawaii
  • Side-by-side architecture comparison
  • Incorporation of heavier weight class vehicles
  • Increased impact of transportation demands on infrastructure due to increased charging power requirements and larger on-board energy storage
• Partnership with the Corps of Engineers on modeling micro-grid performance

Army-wide

• Renewed and strengthened partnership across RDECOM components in the areas micro-grid and intelligent energy management

DOD-wide

• Expected upcoming efforts to coordinate similar efforts across the services under the Energy and Power Community of Interest
Vision: Entities share energy:

- From Those That Have, to Those That Need Energy…
- Redundant Energy Sources = Increased Energy Security
- Operational Energy Concept

Improving **energy** capability through holistic power sharing - you’re in the fight…!