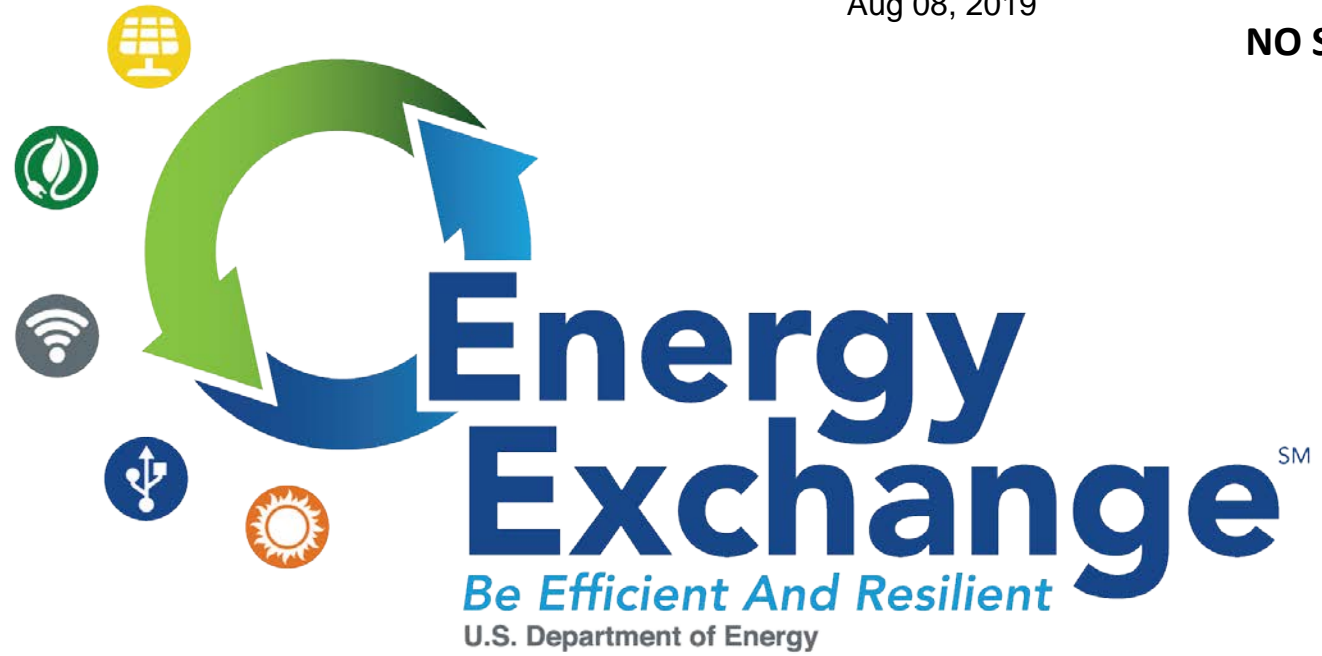


Aug 08, 2019

**SLIDES ONLY**  
**NO SCRIPT PROVIDED**



# Oliver Fritz

Principal Director

Office of the Deputy Assistant  
Secretary of Defense (Energy)



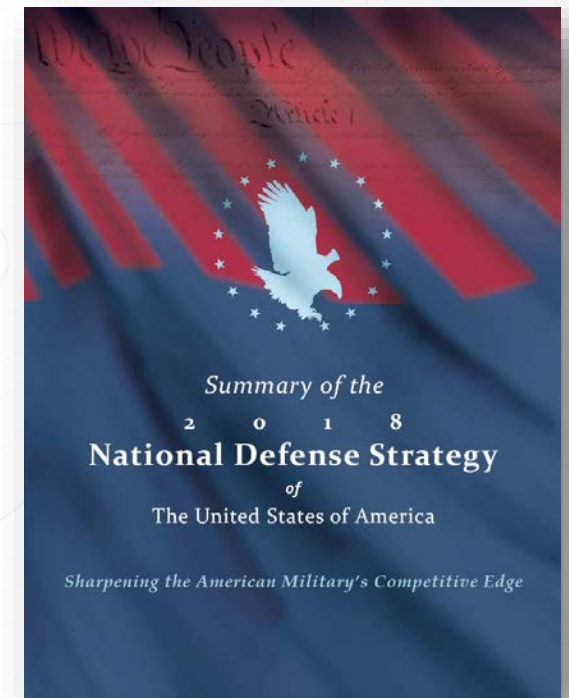
# Energy Storage at DOD

21 August 2019



# Why Energy Storage?

- Energy supply and distribution is at risk
  - “Every domain is contested”
  - “The homeland is no longer a sanctuary”
  - All Hazards risks to energy resilience
- Energy dependence of DoD bases, equipment, operations
  - Critical missions at installations
  - Reachback and operations from the U.S.
  - High energy weapons and sensors
  - Austere, agile, distributed operations
- Evolving technology and policy
  - Multiple energy sources, two way energy flows
  - Resilience and cyber security integral to energy decisions
  - Potential to reduce need for re-supply



**Energy storage → Energy resilience → Military capability**



# Applications of DoD Energy Storage



## ***Permanent Bases***

- Large format storage to support renewables, microgrids
- Power for hotel loads, sensors, communications, directed energy, force protection



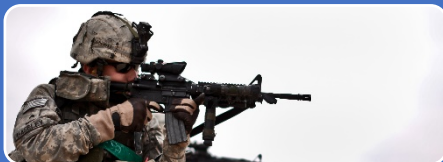
## ***Contingency Bases***

- Large format storage to support solar, hybrid generation, microgrids; transportable via air/sea
- Power for hotel loads, sensors, communications, directed energy, force protection



## ***Platforms***

- Power for comms, directed energy weapons, high power sensors, electronic warfare
- Rugged, transportable via air/sea



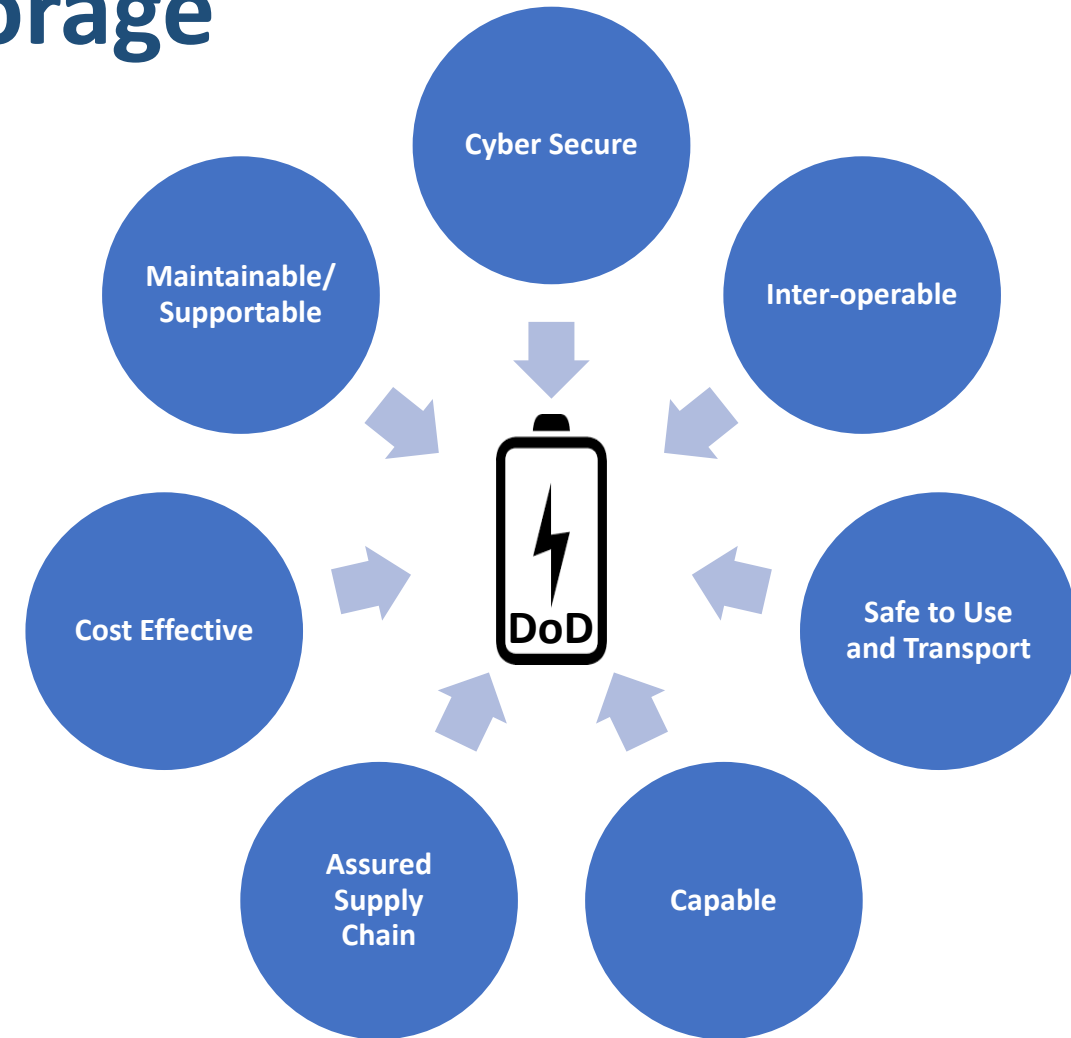
## ***Dismounted Warfighter***

- Disposable and rechargeable batteries, transportable via air/sea
- Power for night vision, communications, IT, sensors, command and control, weapons



# Attributes of DoD Energy Storage

- Attributes of desired energy storage aligned to military use cases
- Similarities with commercial storage balanced against unique DoD requirements





# Solutions to DoD Energy Storage Needs

- DoD-owned and operated
  - Develop, acquire, field
  - Rapidly prototype and field
  - Rapidly field mature equipment
- Operational Contract Support
  - Commercial services in support of operations and exercises
- Third Party Financing
  - ESPC/UESC, Utilities Privatization, Power Purchase Agreements

*Enabled  
by people*



# Way Ahead:

## Energy Resilience through Energy Storage

- Support the fielding of interoperable, capable, and transportable batteries
- Continue to take advantage of energy storage as part of third party financing solutions
- Support development of human capital to oversee, use, and apply energy storage across installations





# Thank You

