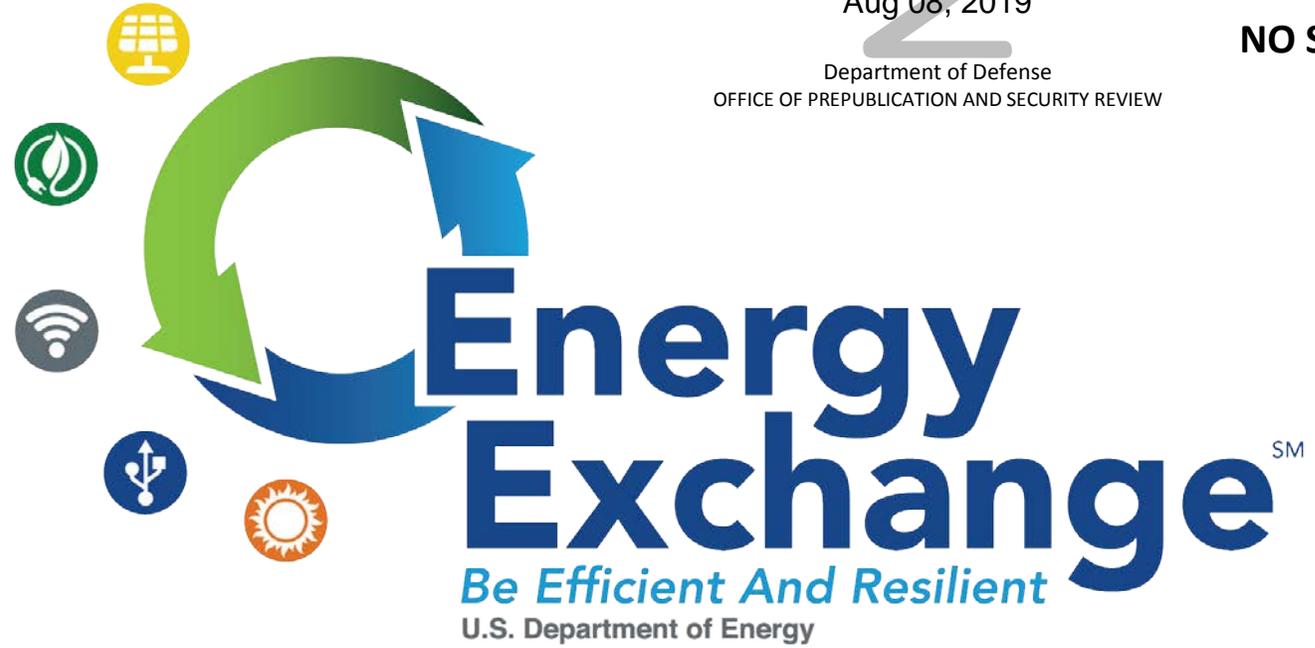


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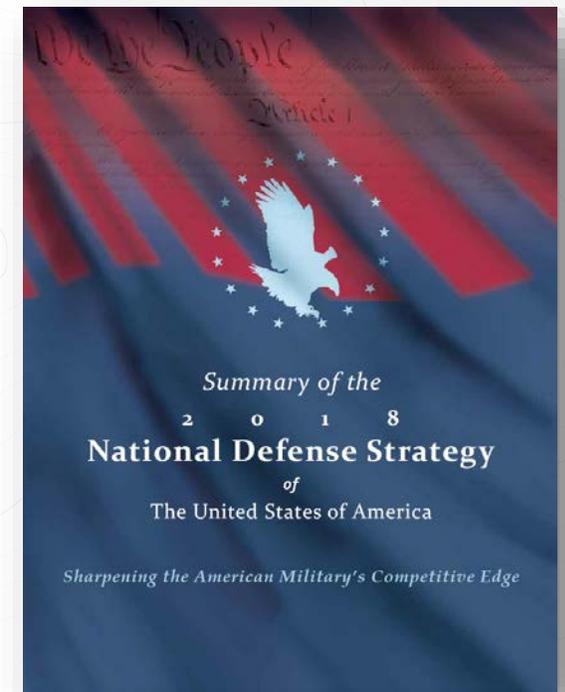
Energy Storage at DOD

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



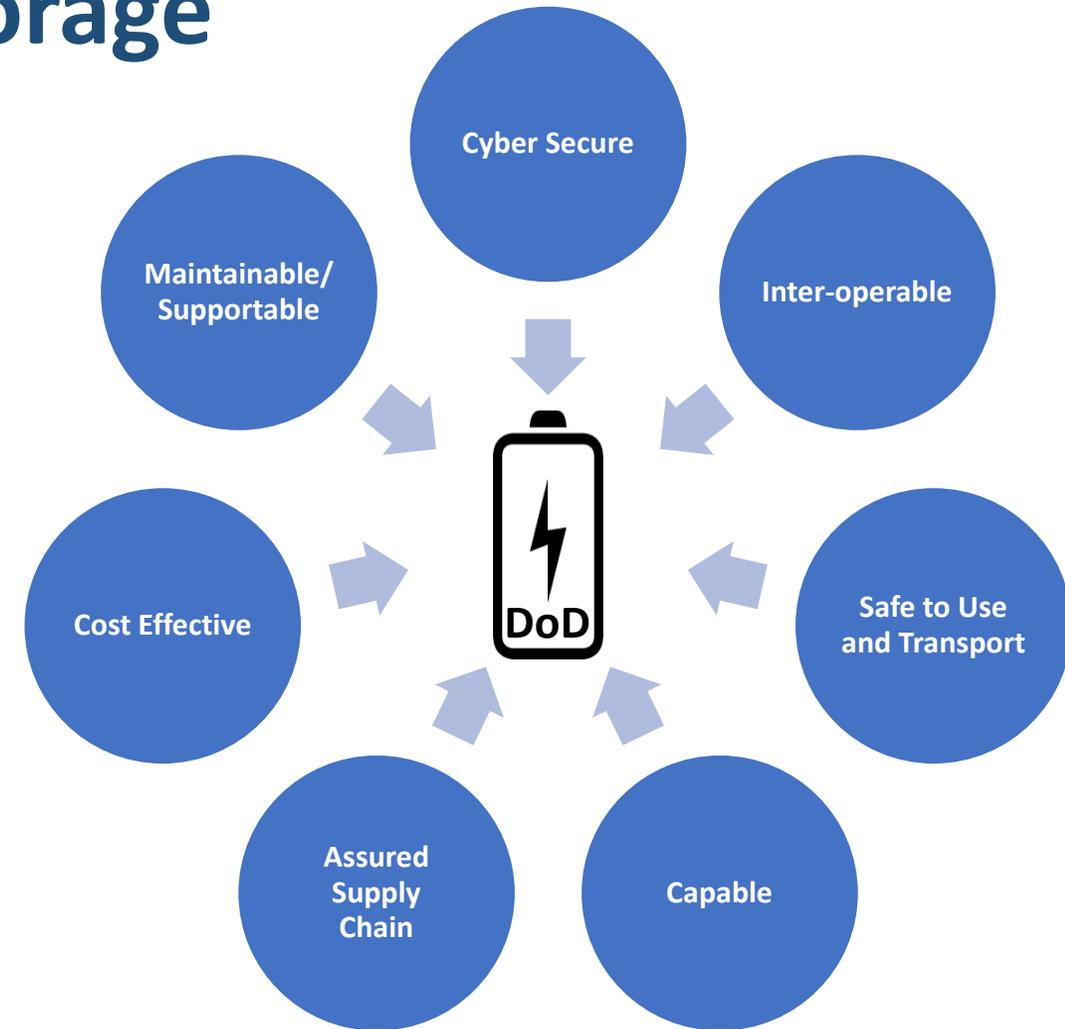
Dismounted Warfighter

- 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

