



# NASEO Annual Meeting DoD Energy Technology Update

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***Energy***

# Representative DoD Energy Pilots & Programs



DOD Plug-in Electric Vehicle (PEV) Vehicle to Grid (V2G) Program – 4 sites in Ca ISO, ERCOT, PJM



**ENERGY INITIATIVES TASK FORCE**  
*Securing Army installations with energy that is clean, reliable and affordable*

CTC provides expertise to implement large scale renewable energy projects at Army installations in coordination with energy developers, Federal agencies, state and local governments, and Congress.



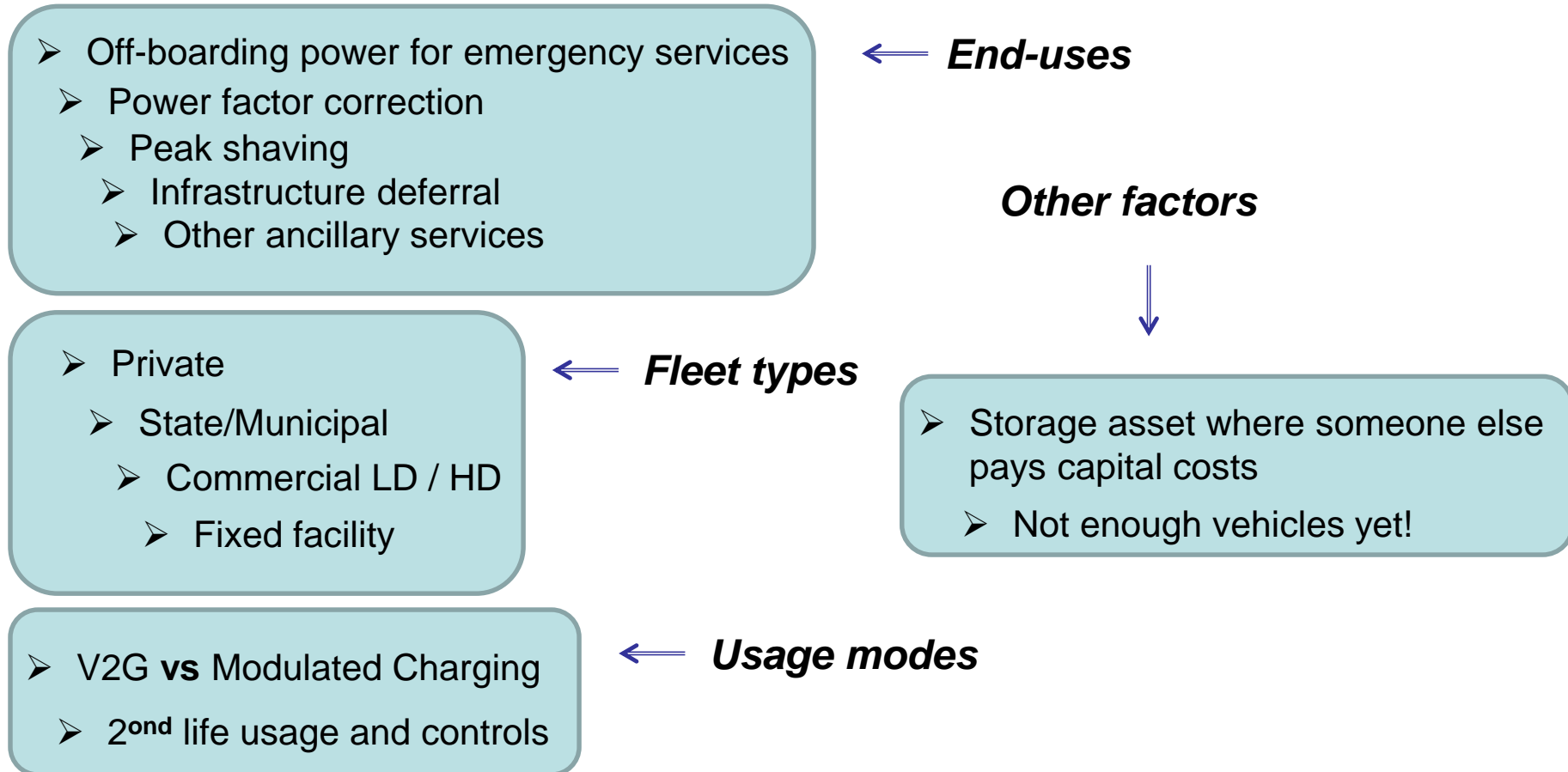
**Net Zero**  
 Energy / Water / Waste

Integrated support to Army Net Zero Program – strategy to bring the overall consumption of resources on DoD installations down to an effective rate of zero.



Energy Security Assessments and Microgrid design – standardized approach co-developed with ERDC-CERL to assess critical loads and develop tailored microgrid design to deliver power necessary for assured operations.

# DoD PEV Program is evaluating DoD Base Fleets against Frequency Regulation and Demand Response



# Why a Pilot Demonstration?

- Attracts capital by increasing business confidence
  - Shows state commitment to create optimal conditions for EVs
  - Resolves risks that deter business investment
  - Informs and attracts high-quality employers
  - Exposes regulatory and commercial barriers to successfully deploying EVs and RE
- Engages key stakeholders
  - Consumers – offsets EV purchase costs
  - Utilities – demonstrates solutions to technical hurdles
  - Regulators – instills confidence to take required action
- Validates Policy
  - Demonstrates commitment to achieve EV and RE goals
  - Defines benefit to consumers and businesses
  - Prevents time and funds from being wasted on inadequately planned programs

# DoD Microgrids: The Driver

*“Military installations are almost completely dependent on a fragile and vulnerable commercial power grid, placing critical military and Homeland defense missions at unacceptable risk of extended outage.”*

- Backup power not adequately sized to meet new Homeland defense missions
- Comprehensive program needed to assess and mitigate site-specific risk
- Be more aggressive on energy efficiency – treat EPACT 2005 / EO 13423 / US GBC standards as minimums

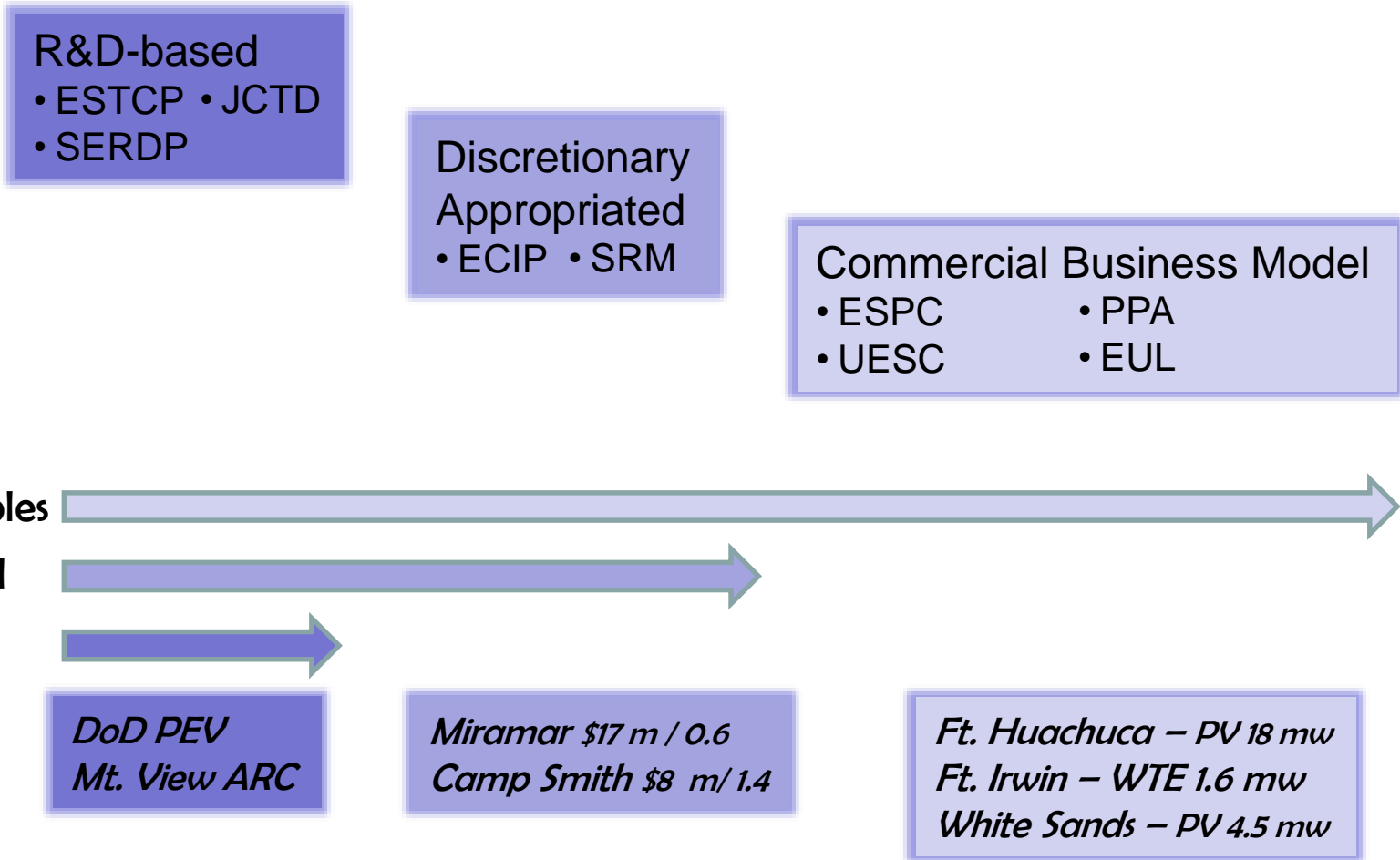
Defense Science Board, 2008: *“More Fight – Less Fuel”*

***BUT*** – didn’t place value on security

# What DoD has to work with

- Energy Conservation Investment Program (ECIP)
  - FY15 funding = \$150 million at DoD level
  - Includes typical energy-related maintenance items
  - Projects highly ROI-driven
- Environmental Security Technology Certification Program (ESTCP)
  - Energy and environmental technology demonstration and validation
  - < \$100 million budget / project size \$500k - \$3 million
- Smart Power Infrastructure Demonstration for Energy Reliability and Security (SPIDERS)
  - Joint Capability Technology Demonstration (JCTD)
  - First complete DoD installation with a secure, smart, islandable microgrid
  - Template for DoD-wide installation energy security
- ESPC / UESC / PPA / EUL
  - ROI by statute

# DoD Move Toward Viable Commercial Solutions



# States' Interests

- Collaboration for resiliency
  - Optimal benefit requires scale and integration of needs
  - Peripheral infrastructure and population support necessary for DoD and beneficial for local residents
- Playing into your energy markets
  - Microgrid, energy management systems, storage assets at DoD installations will become increasingly able to interact with the grid
  - Renewable assets commissioned by or for DoD impact loads
- Technology transfer
  - Direct availability and application of technology
  - Through energy service companies serving DoD/Federal and commercial markets





*Concurrent  
Technologies  
Corporation*

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How we can help you achieve your mission?