



*The NDCEE program focuses on developing innovative technologies to address energy and environmental challenges in the DoD, leading to successful initiatives*



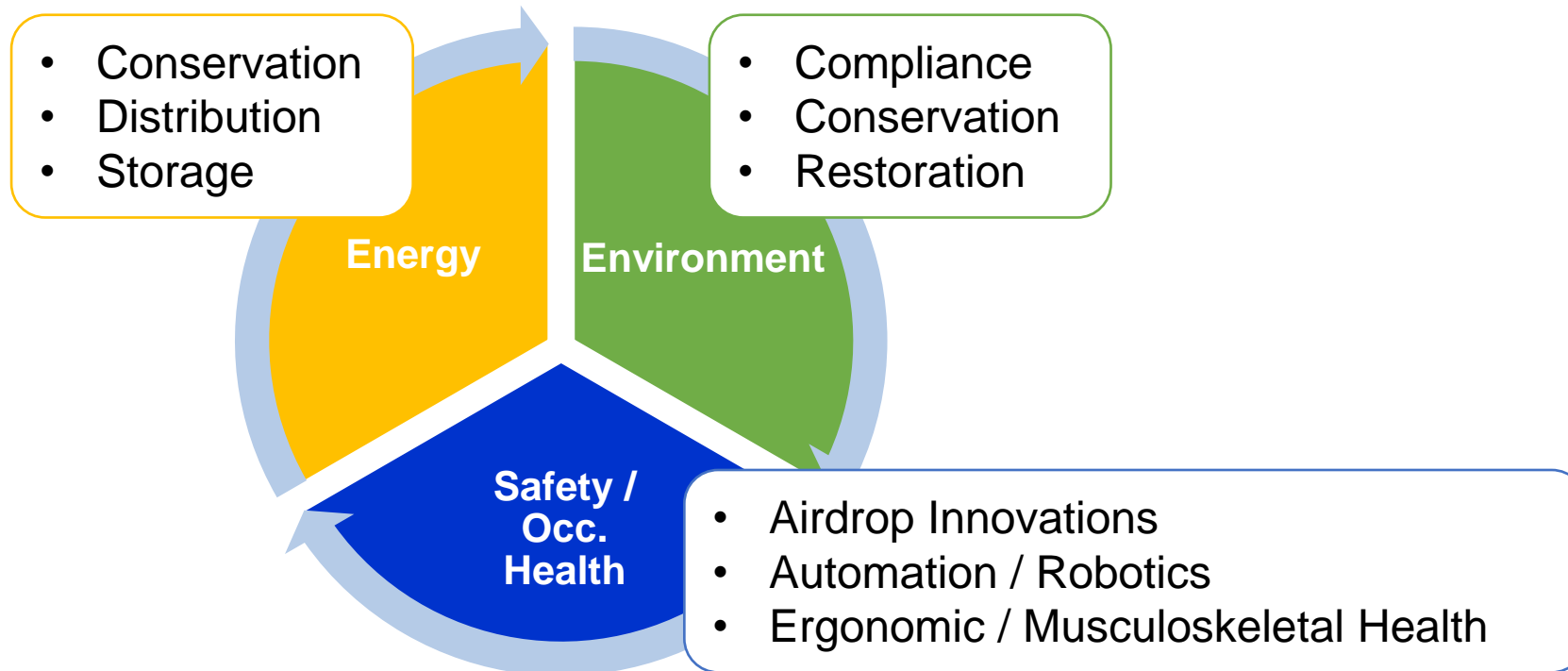
# NDCEE

National Defense Center for Energy and Environment



# Introduction to NDCEE

NDCEE develops and implements innovative technologies, processes, and strategies to enhance energy security, Warfighter protection, military operation efficiency, and reduce environmental impacts





# Successful Project – Environment Example

## Wastewater Evaporation as AFFF Mitigation Strategy at Firefighting Training Facilities

- Utilized adsorptive media for feedstock pretreatment, followed by thermal evaporation
- Processed 1.3+ M gallons of wastewater
- Achieved 98+% waste reduction
- Saved over \$2.5M



# Successful Project – Energy Example

## Expeditionary Direct Current Power Distribution

- Developed a standardized power distribution architecture and connectors suitable for the majority of DC loads
- Full scale development; Apr. 2024; >2500 systems
- Provides a solution that will satisfy 95%+ of user equipment and load cases



# Successful Project – Safety / Occ. Health Example

## Immediate Response Force (IRF) Soldier Offload

- Reduces aircraft exit and ground impact injuries by offloading up to 3,000 pounds from jumpers per aircraft (30-46 lbs/jumper)
- Converting expired personnel parachutes for cargo use saves around \$2,150 per parachute compared to one-time-use cargo systems.
- Initial ROI > \$5.7M





# Ongoing Project - Environment

## Dripless Brush Zinc-Nickel Electroplating as a Cadmium Alternative

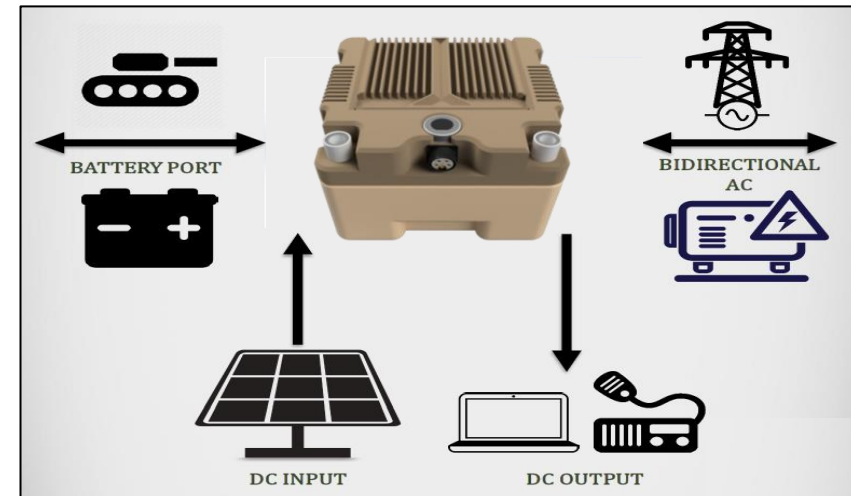
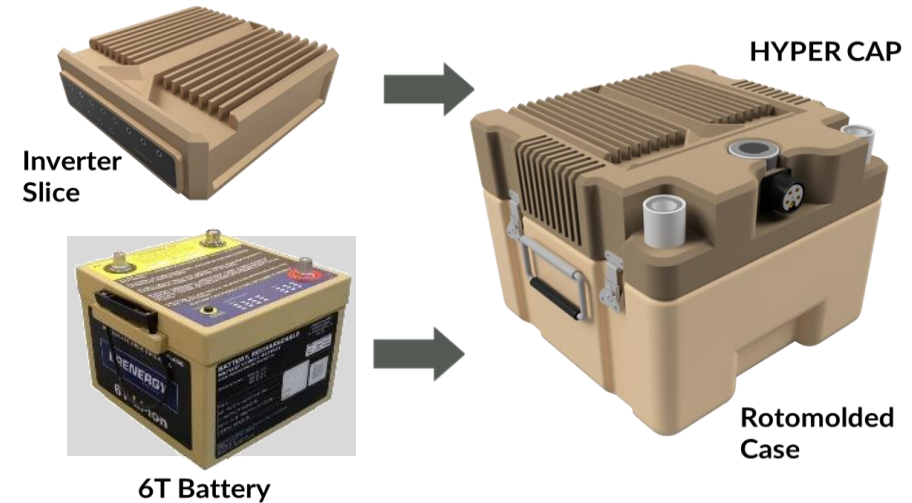
- Developing a portable dripless brush plating system for depot, field, and on-aircraft use
- Enhancing Zn-Ni solutions and processes for better corrosion and hydrogen embrittlement resistance compared to traditional methods
- Projected Benefits include:
  - Reduced hazardous waste disposal
  - Lower ESOH compliance costs
  - Eliminating brush Cd usage across USAF and DoD after transitioning to depot and field maintenance



# Ongoing Project - Energy

## 6T HYbrid Power Energy Router (6T-HYPER) - 6T Based Bi-directional Inverter Cap

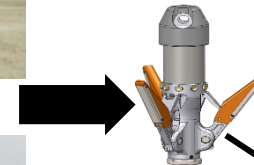
- Developing an inverter-based system to provide immediate, clean, and uninterruptable power for both AC and DC loads from any fielded 6T Li-Ion or AGM battery, vehicle power source, or generator set
- Proposed Benefits include:
  - Lightweight single-person carry solution
  - Harvests power from diverse battlefield sources
  - Improves power reliability, reduces generator set usage



# Ongoing Project – Safety / Occ. Health

## Unmanned Helicopter Hook for Sling Load Operation

- Developing and maturing an unmanned helicopter sling load (HSL) hookup capability to connect payloads without Soldiers under the helicopter during hookup.
- Projected Benefits include:
  - Enhanced payload hookup safety in austere environments
  - Increased operator safety while maintaining operational effectiveness
  - Enables unmanned equipment drop-offs





# Seeking Collaboration with New Stakeholders



NDCEE collaborates with various stakeholders, including government agencies, private industry, and research institutions, to carry out these projects





# Interested in Learning More?

**Call For Project Proposals - 1 March**



**Our mission is to demonstrate and transition technology solutions in support of the DoD as it strives to enhance readiness, meet sustainability goals, and support warfighters at home and abroad by providing funding to project teams. For more information visit <https://denix.osd.mil/ndcee/home/>**

 **NATIONAL DEFENSE CENTER FOR ENERGY & ENVIRONMENT**

Visit our home page at:

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

- How to Do Business with NDCEE Guide
- Multi-Year Review
- Examples of Active and Closed Projects







# Q&A

