

# Energy Capability Requirements

1. Efficient electrical generation at Forward Operating Bases (FOBs), Combat Outposts (COPs) and Patrol Bases (PBs)
  - Fuel cells
  - Fuel powered generators
  - Micro generators
  - Onboard vehicle power generation
  - Wind turbine power generation
  - Solar arrays
  - Space based solar power generation
  - Hydrologic power generation
  - Geo thermal power generation
  - Waste to fuel to energy generation
  - Hybrid powered vehicles
  - Auxiliary power units for vehicles
  - Kinetic production (e.g., braking vehicles recapture & store energy)
  - Fuel autonomic sensing (FAS) and reporting
  - Other technology
2. Energy Storage
  - i. Lighter, more efficient rechargeable batteries and battery chargers
  - ii. Individual power generation
  - iii. Portable or temporary billeting insulation to reduce energy loss
  - iv. Individual micro-grid distribution
3. FOBs. COPs and PBs
  - i. Storage during peak production
  - ii. Delivery during peak demand
4. Flexible Expeditionary Electrical Distribution Grids at FOBs. COPs and PBs
  - Easily expandable (Micro to Macro)
  - Portable – move with FOB & reset as required

- Stationary – Potential to leave behind for local population
- Power/Load Management system at FOBs, COPs, and PBs
  - i. Including FOB layout of structures
  - ii. Optimize for minimum energy use
  - iii. Optimize for other measures (e.g., dispersion)

#### 5. Energy Efficient Structures

- Designed for construction using HNS
- Energy efficient HVAC systems
- Portable – move with the FOB, COP, or PB & reset as required
- Stationary – leave behind for local population

#### 6. Water

- Light weight individual purification
- Light weight, low power, scalable water purification
- Solar Powered water purification
- Light weight water bottling
- On-site testing & certification
- Drilling support technology
  - i. On-call geologist support
  - ii. Drilling site locator
  - iii. Evaluation of impact on local wells

#### 7. Alternate distribution systems (other than road convoys)

- Aerial (e.g., JPADS, UAV's, )
- Improved contracting (local transport capabilities)

#### 8. Waste

- Minimize or convert waste
  - i. More efficient disposal methods (currently burning using fuel)
  - ii. Packaging convertible to power generation
  - iii. Waste to fuel conversion/refinement
  - iv. Mulch or composte waste