

ADDRESSING ESSENTIAL INSTALLATION AND COMMUNITY HUMAN INFRASTRUCTURE CHALLENGES

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UNCLASSIFIED THREAT CAPABILITY OF PEERS AND NEAR-PEERS

“ODNI ANNUAL THREAT ASSESSMENT OF THE U.S. INTELLIGENCE COMMUNITY”
dated February 6, 2024

“If Beijing feared that a major conflict with the United States were imminent, it almost certainly would consider undertaking aggressive cyber operations against U.S. homeland critical infrastructure and military assets worldwide. Such a strike would be designed to deter U.S. military action by **impeding U.S. decision making, inducing societal panic, and interfering with the deployment of U.S. Forces....**”

Quote from FBI Director Wray’s comments to the House January 31, 2024 -
“PRC [People's Republic of China] hackers are targeting our critical infrastructure—our water treatment plants, our electrical grid, our oil and natural gas pipelines, our transportation systems”

How would this impact our Communities and our installations’ wartime missions?

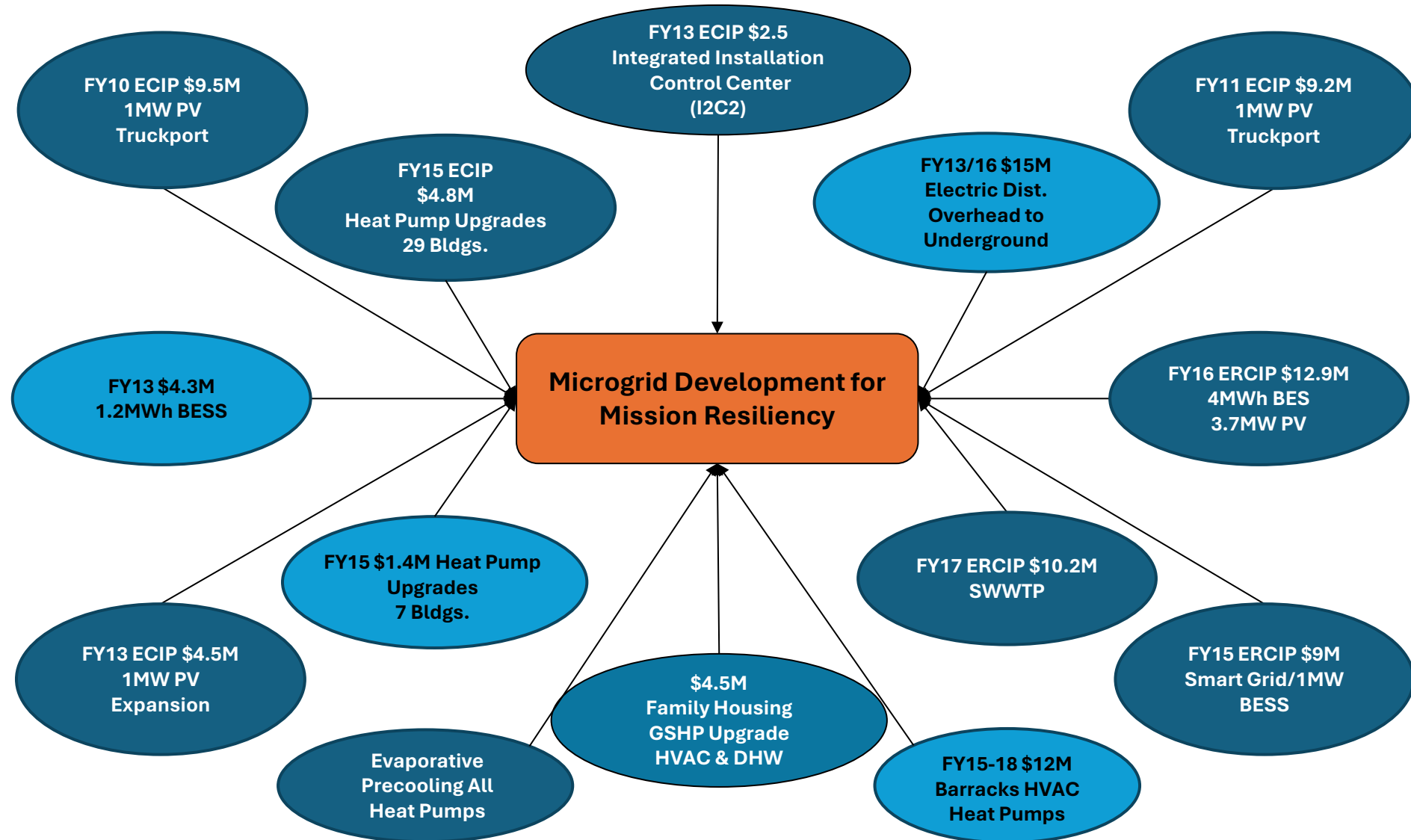
How many days can your organization operate of grid?

FHL at a glance

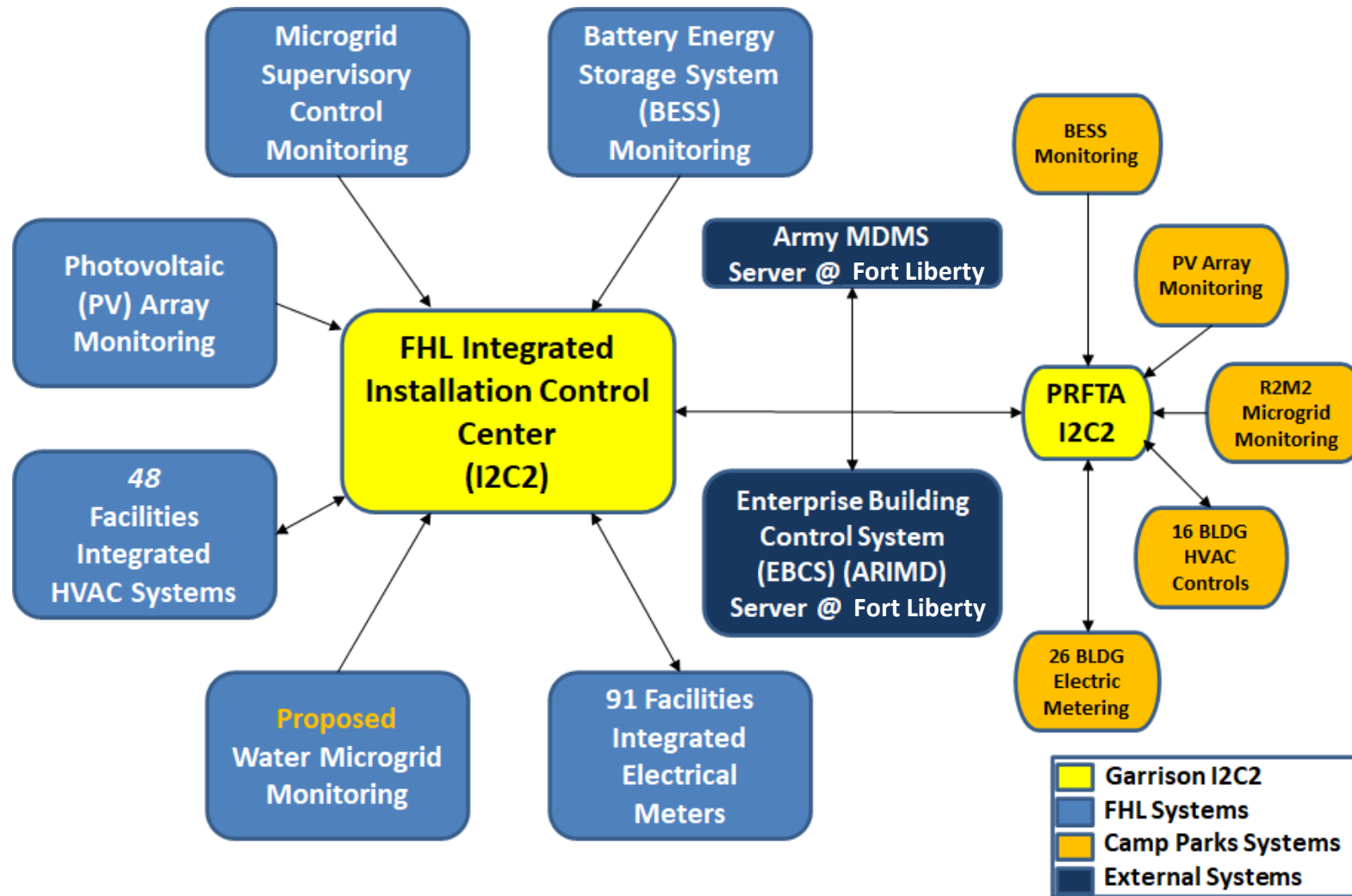
- Total Force Training Center for U.S. military components and allied nations
- Over 165 thousand acres of diverse training land
- Suited for year-round and large scale joint exercises
- Sub-installation (Parks Reserve Forces Training Area)
- Setting precedence in designing and implementing scalable microgrid systems across the Department of Defense



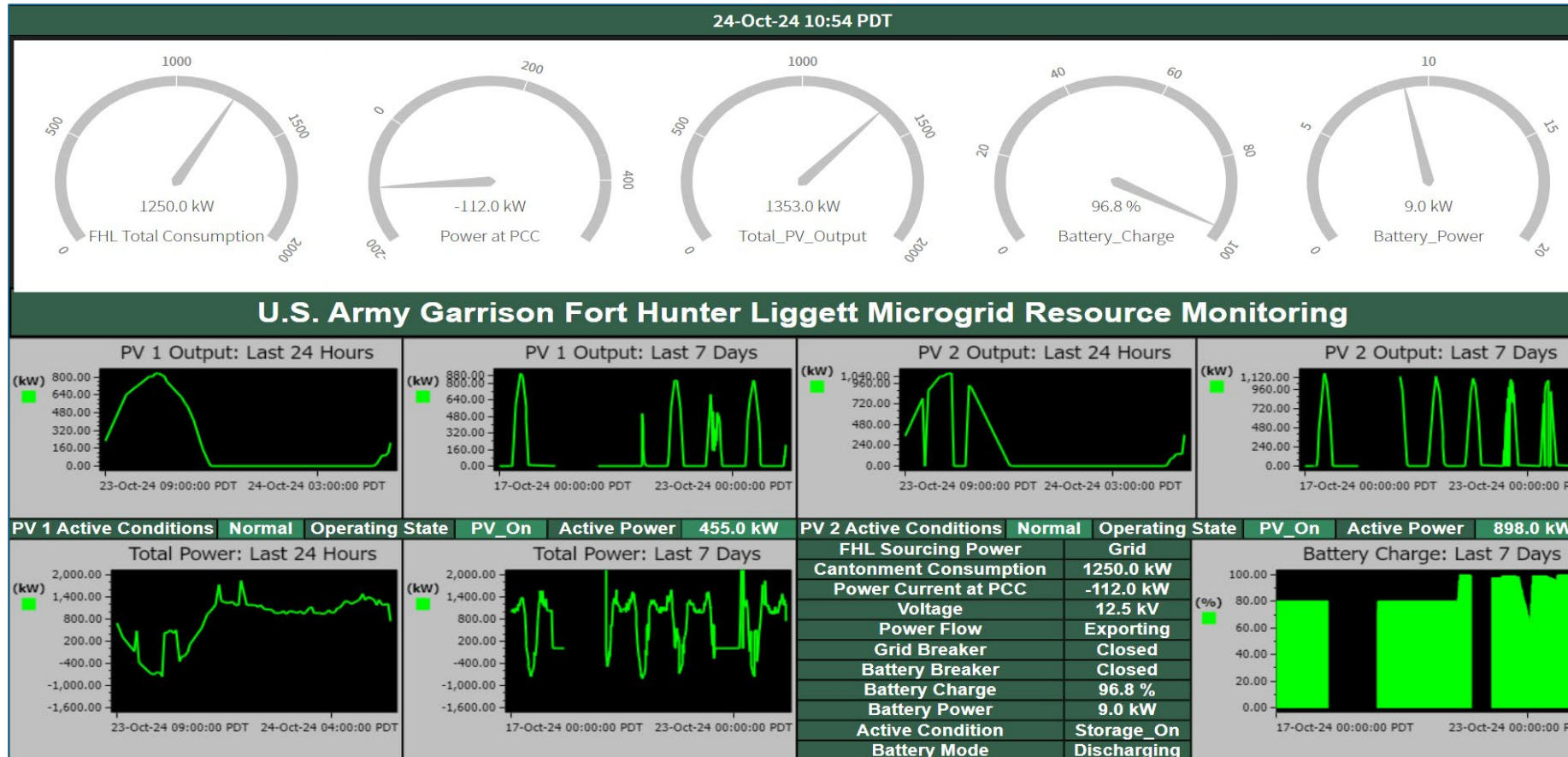
A decade of resilience



Integrated Installation Control Center



Microgrid monitoring



Road to resiliency

2011-2015

- **Pilot site for:**
 - Net zero energy and waste
 - Army Reserve Integrated Strategic and Sustainability Planning process
- Completed net zero energy assessment and adopted net zero energy plan to reduce reliance on fossil fuels
- Installed solar photovoltaic panels (multiple phases) and battery storage

2016-2020

- **Awarded projects:**
 - Heating, ventilation, and air conditioning (HVAC) controls optimization, Enterprise Building Control System Integration, and HVAC features
 - Secondary wastewater treatment plant
 - Ground source heat pumps for housing
 - Cantonment microgrids
- Installation Energy and Water Plan completed
- Sierra Energy waste-to-energy demonstration
- Solid waste characterization study completed

2021 - 2030

Efficiency

- Complete ongoing building controls and metering projects, install advanced meters and integrate all critical buildings into the main control center
- Implement energy and water efficiency measures for critical buildings
- Initiate solid waste characterization recommendation

Resilient Infrastructure

- Complete construction of the cantonment microgrid (fully operational FY25)
- Study and size additional battery storage for the cantonment microgrid
- Award Utility Energy Service Contract for potable well and ammo supply point microgrid (ongoing)

Reduce Vulnerabilities

- Complete design of water modernization project
- Repair water utility infrastructure
- Implement additional electrical overhead to underground projects
- Review third-party contracts meet evolving security requirements

FHL will operate completely off the grid using renewables for electricity by 2030.

SCENARIO (THE “WICKED PROBLEM”)-ZERO DAY

- At 0200 hrs. you receive notification at your home by messenger that the power grid feeding the installation seems to have gone down over a wide area.
- Commercial cell service for the ATT, Verizon and T-Mobile systems are down. ATT First Net seems to be working for Public Safety.
- Driving through the adjacent community, it appears that all their power is also off.
- There have been no major storms in the area that would have caused a widespread outage.
- At 0400 you are informed that the entire Texas Grid is down and that a significant number of the grid’s major substations and their very large transformers have been destroyed by a cyber-attack.
- At 0600 you are informed that the grid outage will probably last several months due to a lack of a strategic reserve of large transformers.
- You have been alerted for a wartime mission deployment.

QUESTIONS – ZERO DAY

- Many of your pieces of critical energy infrastructure are privatized and maintained by the private utility owner’s civilian employees:
 - How do you communicate with these owners?
 - How do you “recall” their essential employees?
 - Have you previously exercised with their leadership?
 - Do they have a reserve inventory of critical equipment and has it been examined to ensure they are cyber-safe? Is it stored on installation?
- Your Army owned critical infrastructure is maintained by government Civilians augmented by contractors:
 - How are your civilian employees located and recalled? Is the process exercised?
 - Do you have an inventory of backup transformers, switches and valves? How has your inventory of critical replacements been determined and stocked? Are they cyber-safe?

QUESTIONS – ZERO DAY (Pg 2)

- A large percentage of the military families required to support the installation mission live in the community:
 - Are you aware of where they live and how will you contact them?
 - How prepared is your uniformed workforce for a widespread, extended power outage?
 - What provisions have you made to support the “off-base” uniformed family members and civilian workforce on base?
- Is your 14 day off-grid capability operating?
 - Does your community have a similar 14 day off grid capability?
 - What are private sector/local government entities’ role in your mission success and what is their 14-day capability?

QUESTIONS – ZERO DAY (Pg 3)

- Your adjacent community is also suffering from the widespread critical infrastructure outage:
 - Who and how are you meeting with the Community leadership?
 - Are you considering cross leveling of resources/capabilities?
- What role will the community play in supporting your mission requirements?
 - What critical services will you need from the community for your mission success?
 - What role will the community play in supporting your military and civilian workforce that live in the community?
 - How are you inventorying, securing and distributing critical supplies and equipment?
 - How are you preventing hoarding of medical, fuel, food and water supplies?
 - How are you resupplying and rationing medical, food, fuel, water and other critical supplies?