

9th Microgrid Global Innovation Forum:

Key Microgrid Initiatives and Takeaways to Date

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Improve Mission **Readiness**

- Energy and water resources are critical mission enablers required to train, sustain, and deploy a globally responsive Army

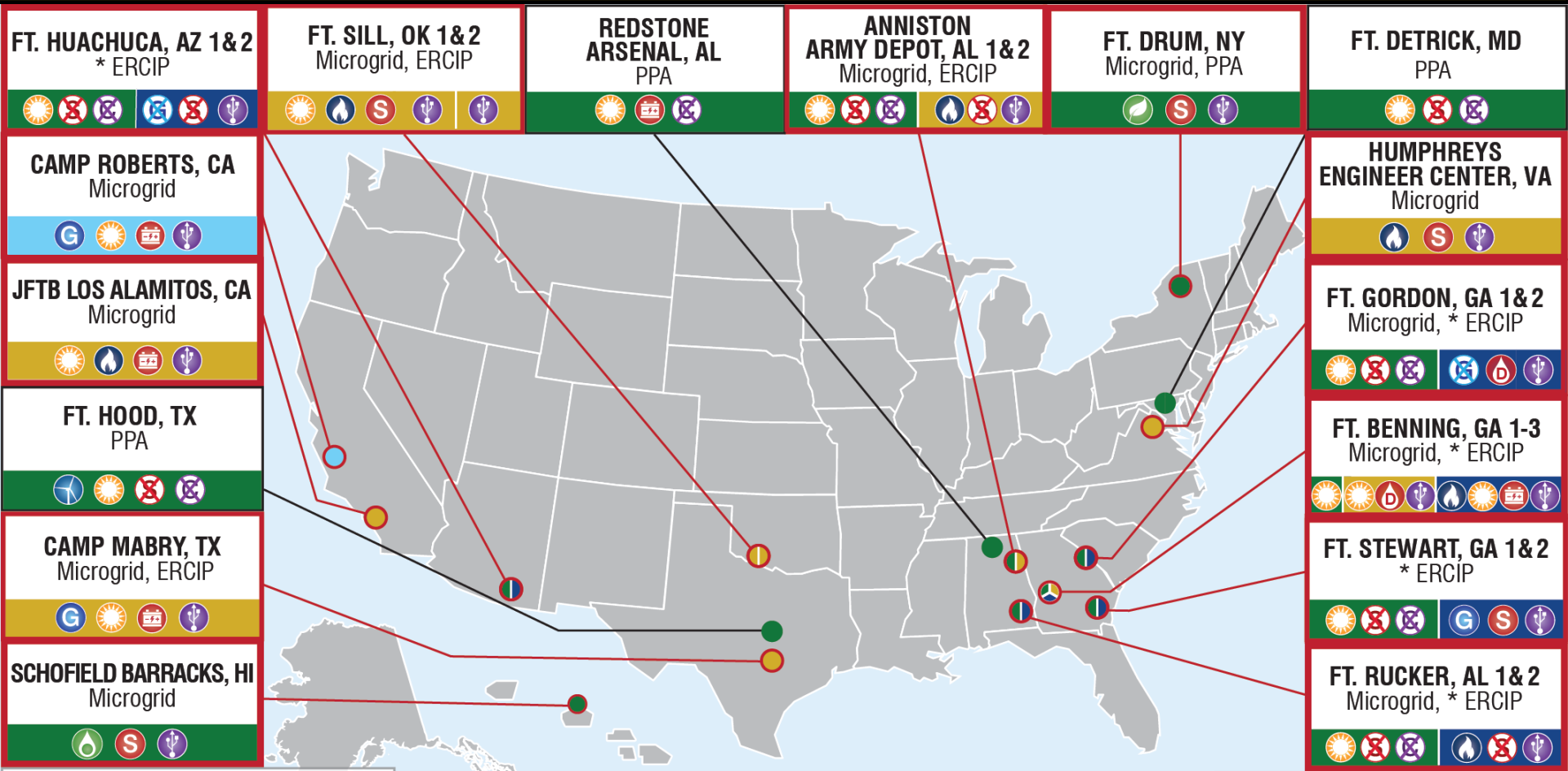
Modernize Energy Systems

- New capabilities emerging from advances in distributed energy, smart grids, and storage technologies

Reform Army Business Practices

- Attract private sector capabilities and capital to ensure Army energy systems are equipped with best capabilities to withstand modern threats





ERCIP - Energy Resilience and Conservation Investment Program
PPA - Power Purchase Agreement

* Proposed ERCIP Project

As of March 2019

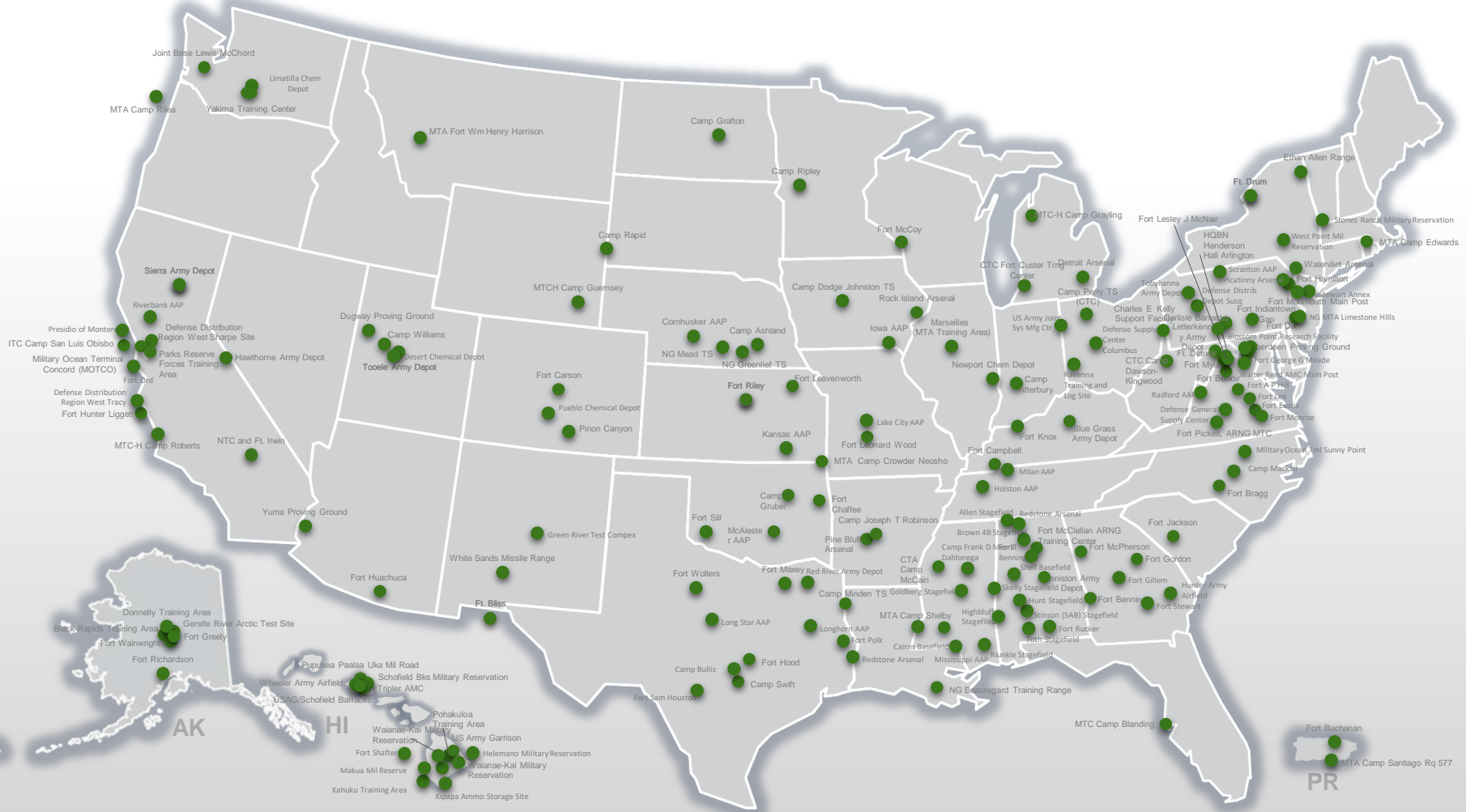
Renewable and Alternative Energy Key

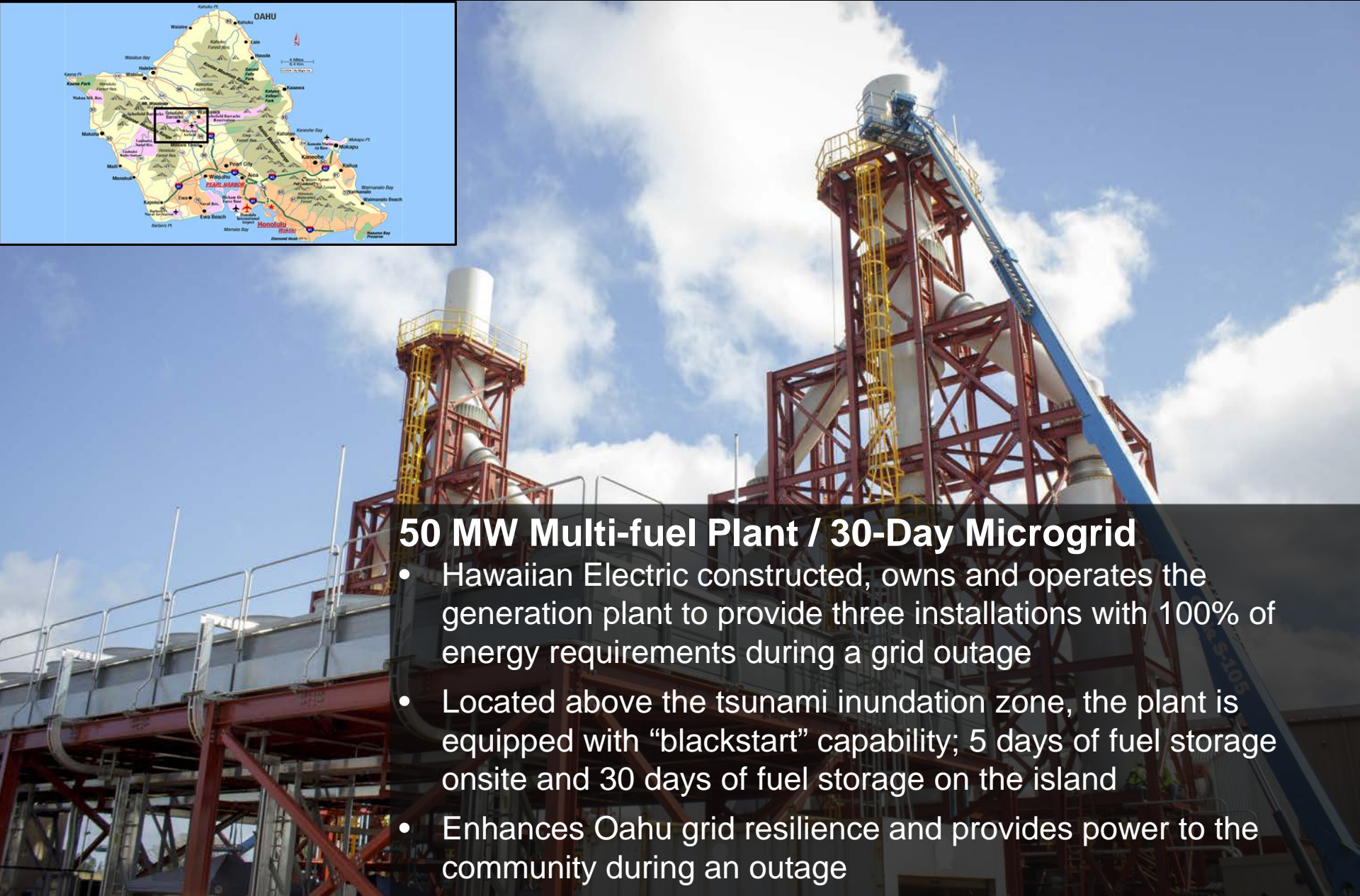
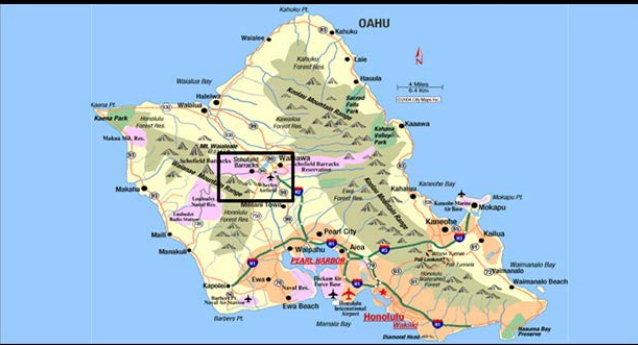
Biomass	Diesel	Hydro	Solar	Battery Storage	Controls	No Controls
Biodiesel	Generation	Natural Gas	Wind	Storage / Supply	No Storage	No Generation

Project Status

- **Phase 1:** Assessment
- **Phase 2:** Validation
- **Phase 3:** Contracts and Agreements
- **Phase 4:** Construction
- **Phase 5:** Operational
- Islandable Capability**

Total Continental U.S. Army Installations: 156 (including HI, and U.S. territories)





50 MW Multi-fuel Plant / 30-Day Microgrid

- Hawaiian Electric constructed, owns and operates the generation plant to provide three installations with 100% of energy requirements during a grid outage
- Located above the tsunami inundation zone, the plant is equipped with “blackstart” capability; 5 days of fuel storage onsite and 30 days of fuel storage on the island
- Enhances Oahu grid resilience and provides power to the community during an outage



36 MW Natural Gas / 14 MW Solar PV with Controls

- Public Service Corporation of Oklahoma may construct, own and operate the generation facility to enhance grid reliability in normal operations
- Enhances energy resilience by developing on-demand generating assets on Fort Sill capable of supplying reliable power to mission critical facilities during a commercial grid disruption
- Project provides operational flexibility to improve electrical service in surrounding Lawton community

Thank You

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