
OTIS AIR NATIONAL GUARD BASE

ENERGY INITIATIVES FOR RESILIENCY



November 2nd, 2017

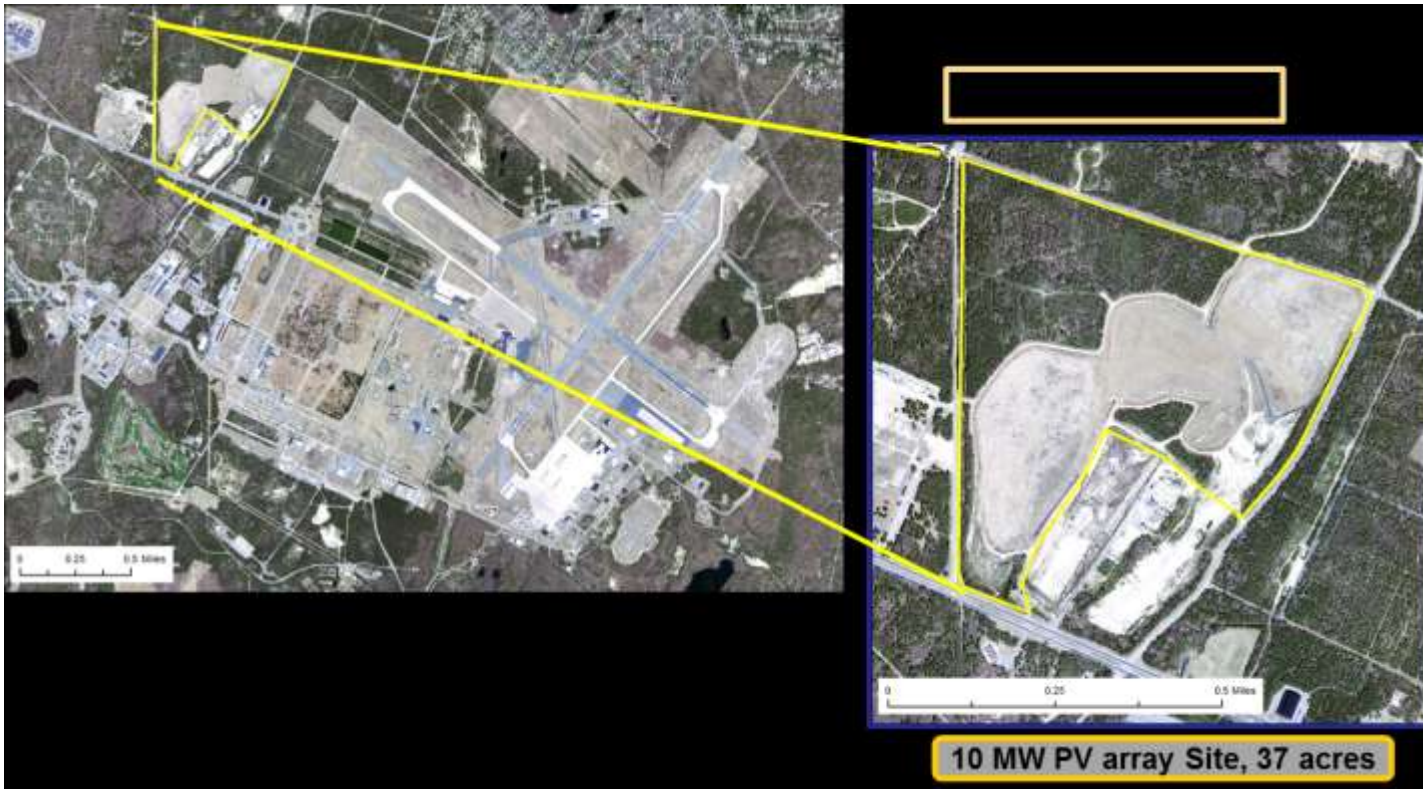
Shawn Doyle
Deputy Base Civil Engineer
102 Civil Engineer Squadron





Solar Power Purchase Agreement

- 10 MW PV = Otis ANGB 100% renewable x 2
- \$20 Million savings/20 years, net metering
- Estimate Operational Q1 FY19
- Possible JBCC-wide microgrid capability (TBD)





Microgrid R & D Project

- **\$6.7 Million DoD research grant, \$925 MA contribution**
- **Partnership with Raytheon, 249th EN BN, USAF, 20+ others**
- **Requirements:**
 - **Sustain up to 1.5 MW independent power for 120 hours**
 - **Wind & battery as primary power**
 - **Utility-sized battery storage system**
 - **Minimum diesel generator backup**
 - **Create first-ever cyber-secure connection to ISO for ancillary services (\$450+k/yr revenue)**
 - **Frequency Regulation**
 - **Demand Management**
 - **Emergency Demand Response**



JBCC Power Grid

- Owned by 102d IW
- 1.5 – 4.8 MW Load
- 7 Distribution Feeders
- 12.5 KV Substation
- 2 Commercial Feeders

Primary Feed

Substation

Secondary Feed



0 0.25 0.5 Miles

Otis ANGB Microgrid

- 1.6 MW Battery
- 1.5 MW Wind1 Turbine
- 1.5 MW Diesel Generator
- Intelligent controller
- No load shedding required
- Otis ANGB indefinitely sustainable

