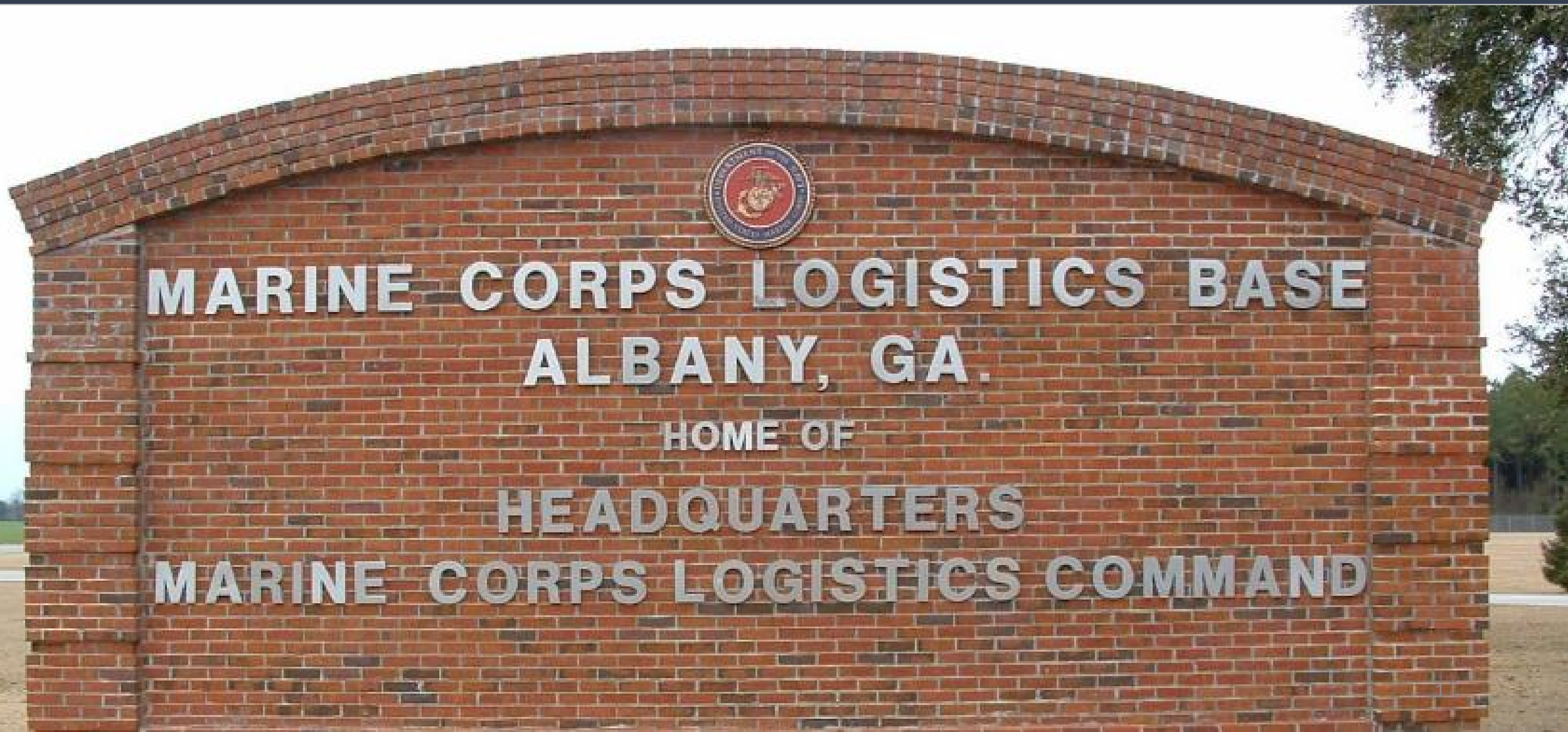
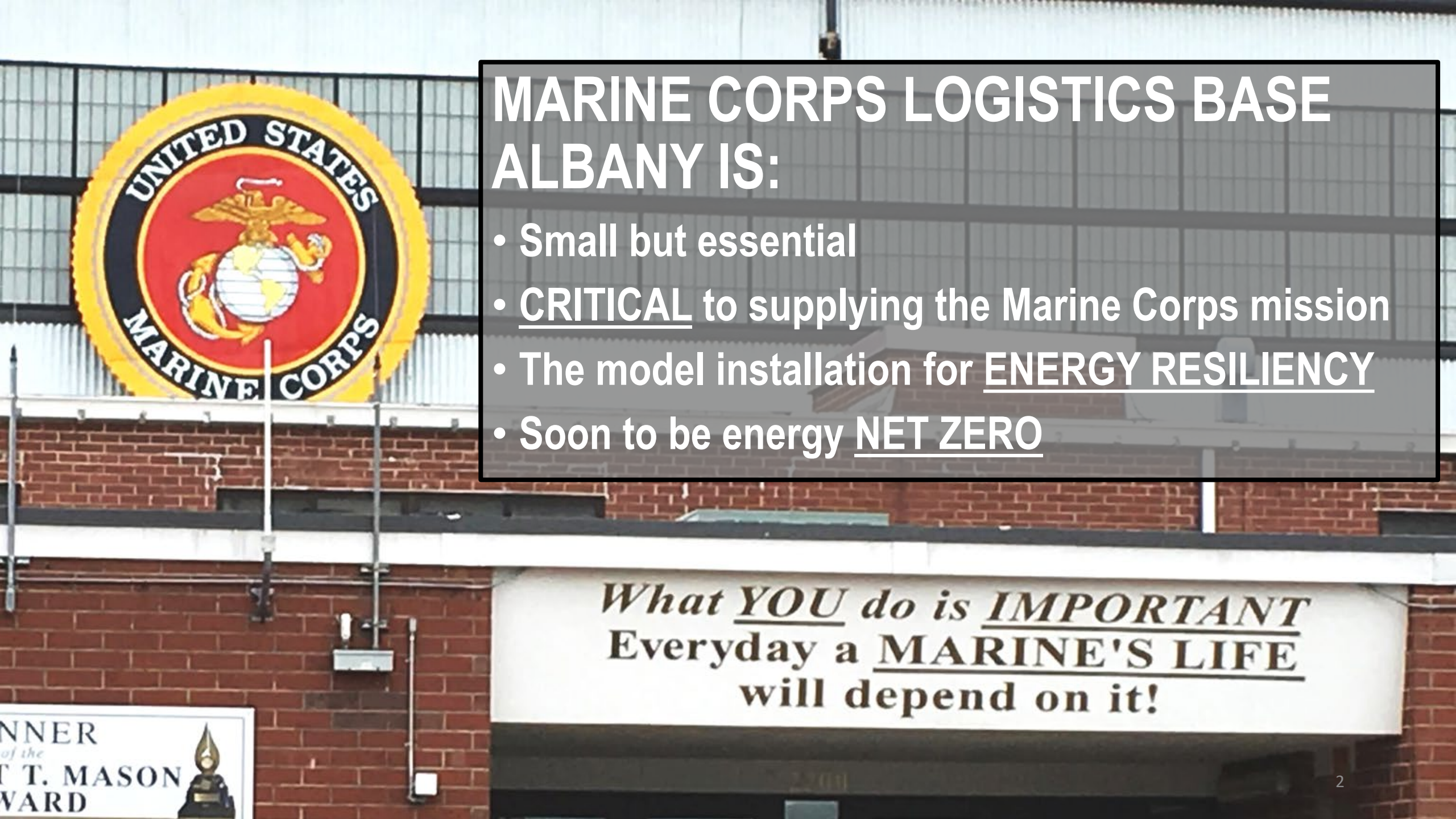
ENERGY RESILIENCE AT MCLB ALBANY

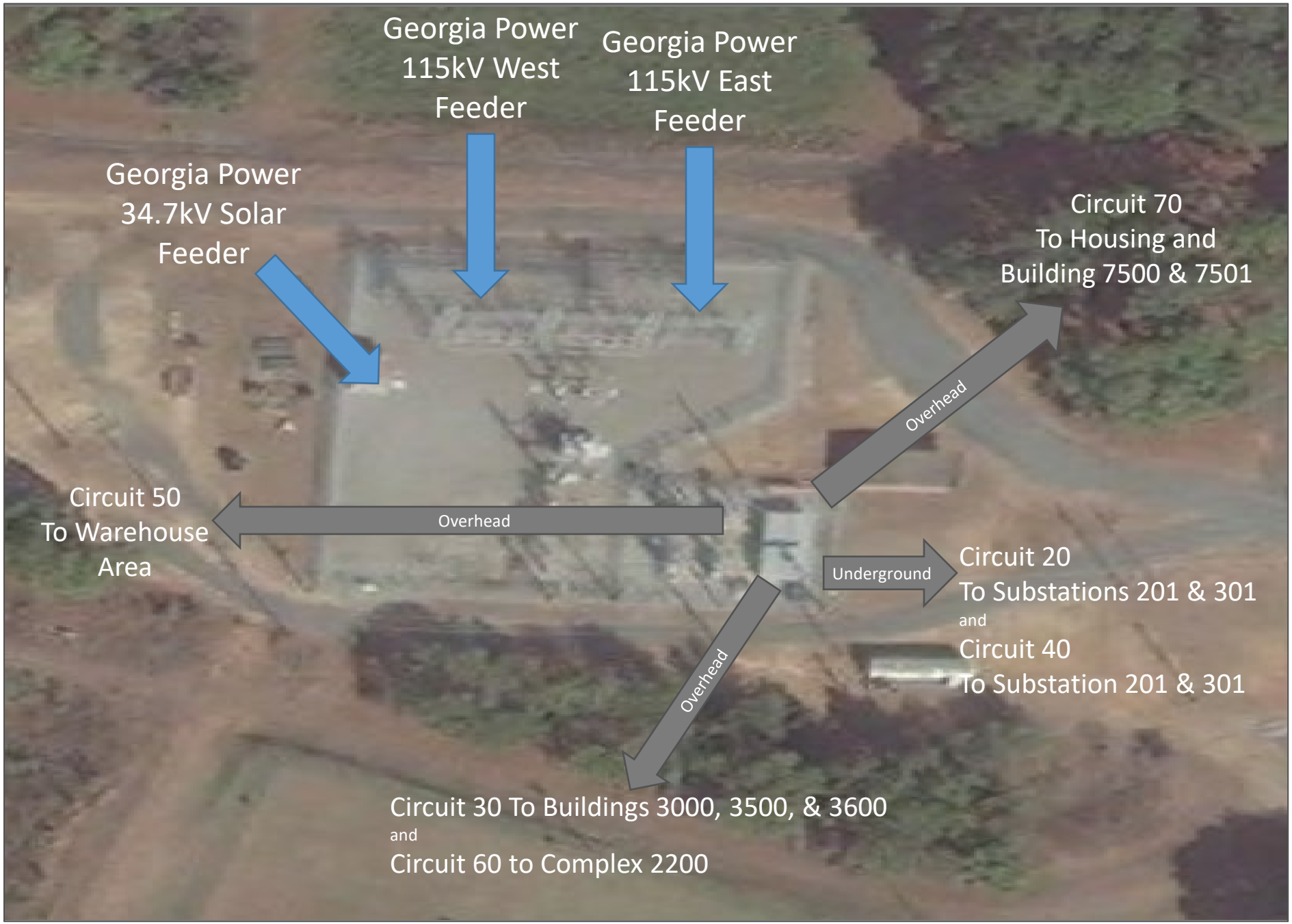
MARINE CORPS ENERGY





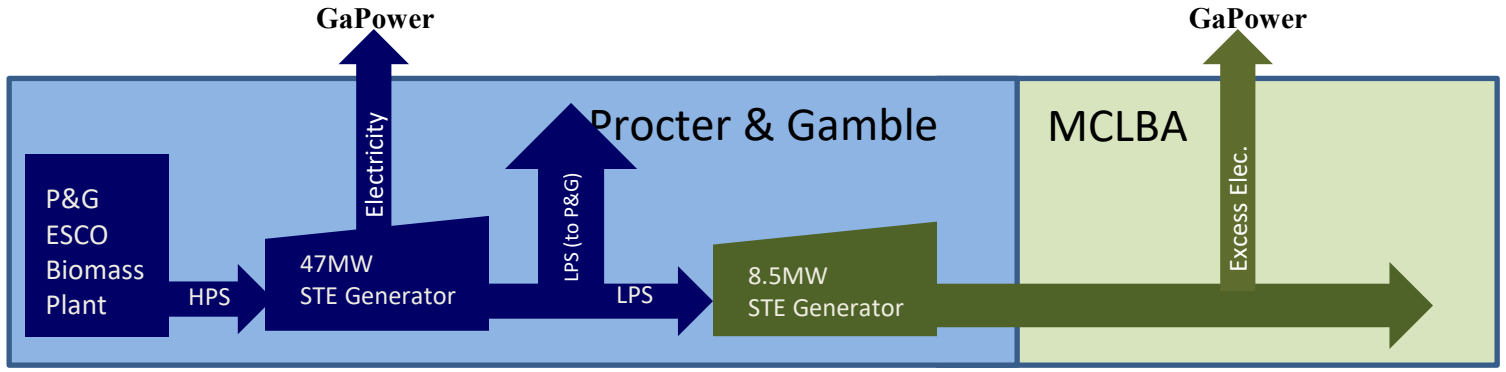
MARINE CORPS LOGISTICS BASE ALBANY IS:

- Small but essential
- CRITICAL to supplying the Marine Corps mission
- The model installation for ENERGY RESILIENCY
- Soon to be energy NET ZERO


Georgia Power
115kV West
Feeder
Georgia Power
115kV East
Feeder
Georgia Power
34.7kV Solar
Feeder
Circuit 70
To Housing and
Building 7500 & 7501
Overhead
Circuit 50
To Warehouse
Area
Overhead
Underground
Circuit 20
To Substations 201 & 301
and
Circuit 40
To Substation 201 & 301
Overhead
Circuit 30 To Buildings 3000, 3500, & 3600
and
Circuit 60 to Complex 2200

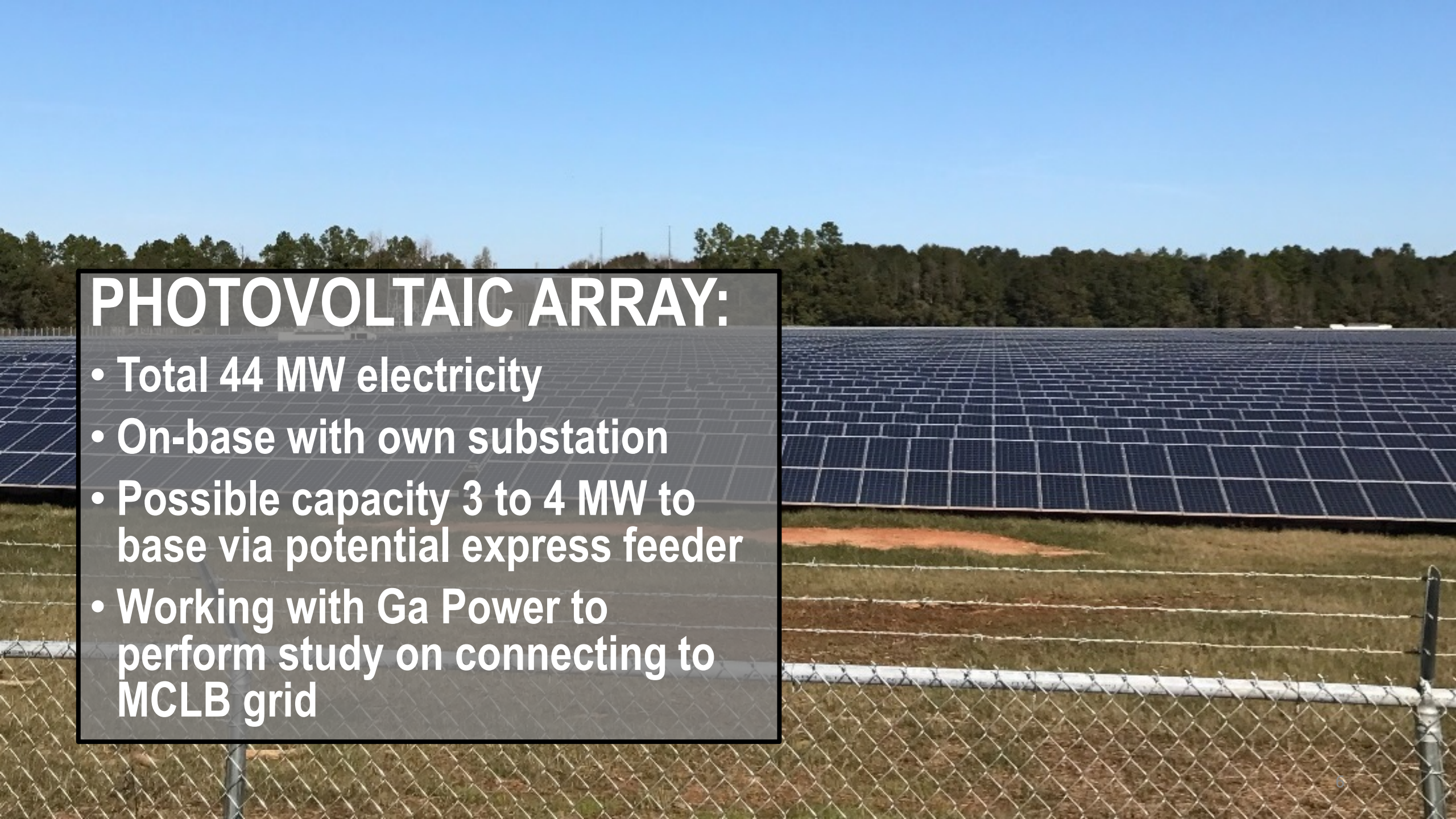
ESPC Project in Partnership w/P&G Biomass Plant

- Net-Zero Base: Renewable energy (electrical only) produced on base equals/exceeds amount used
- Net-Zero Energy Project in partnership with neighbor Procter & Gamble
  - P&G ESCO Albany Green Energy (AGE) provides steam from their new plant to MCLBA ESCO Constellation New Energy (CNE) 8.5MW steam to electric plant producing electricity for the base.
  - Base receives electricity to meet needs (adds to other renewable generation to provide 100% of electricity from renewable generation)
  - Utility Company (GaPower) purchases electricity not used by the base.



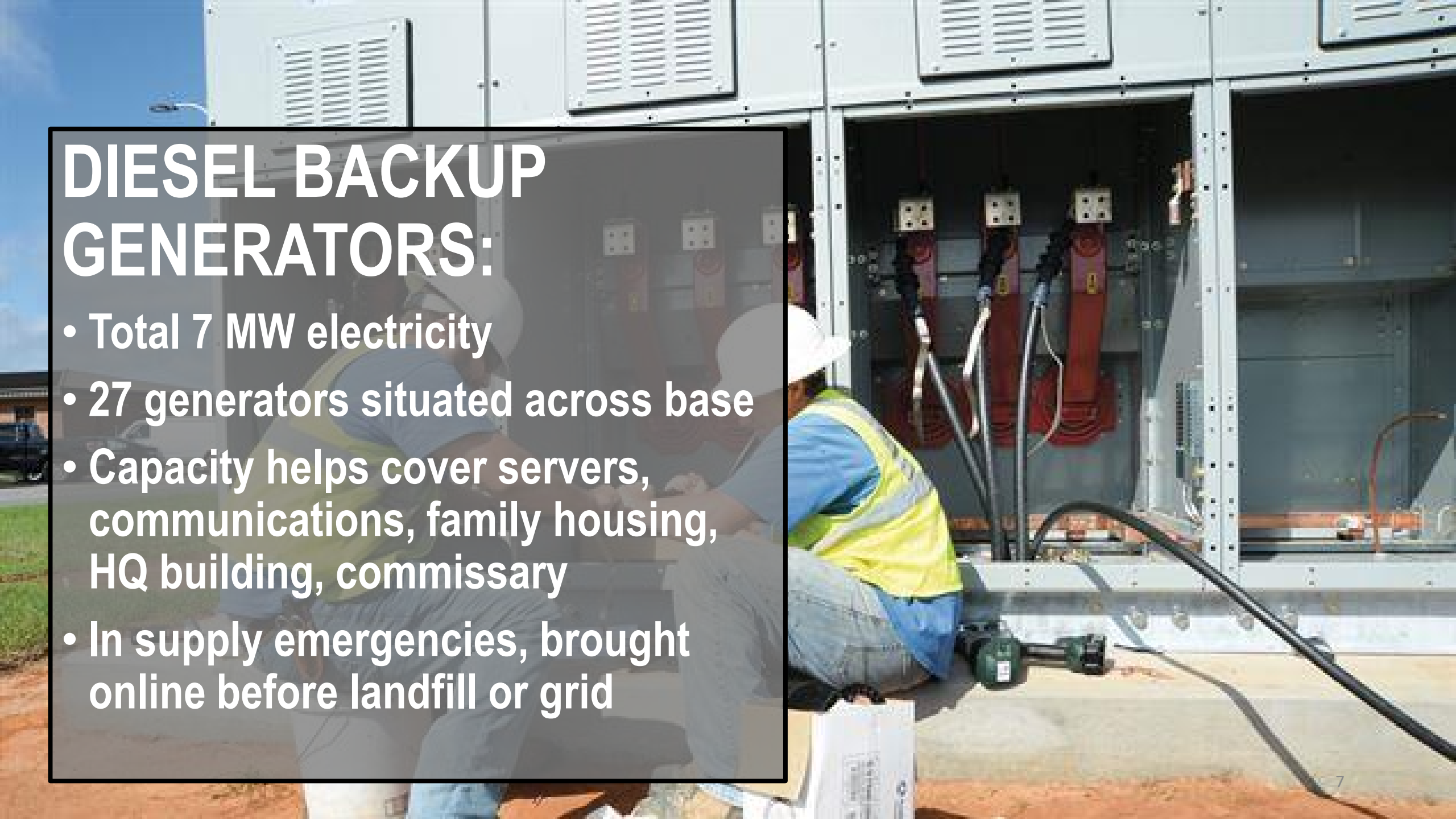
LANDFILL GAS-TO-ENERGY GENERATORS:

- Total 4 MW electricity
- Combined heat + power (CHP)
- Steam byproduct powers Production Plant Albany
- Gen. 1: 1.9 MW | ESPC | 2011
- Gen. 2: 2.1 MW | ECIP 2012 fund | ESPC 2017 activate/maintain



PHOTOVOLTAIC ARRAY:

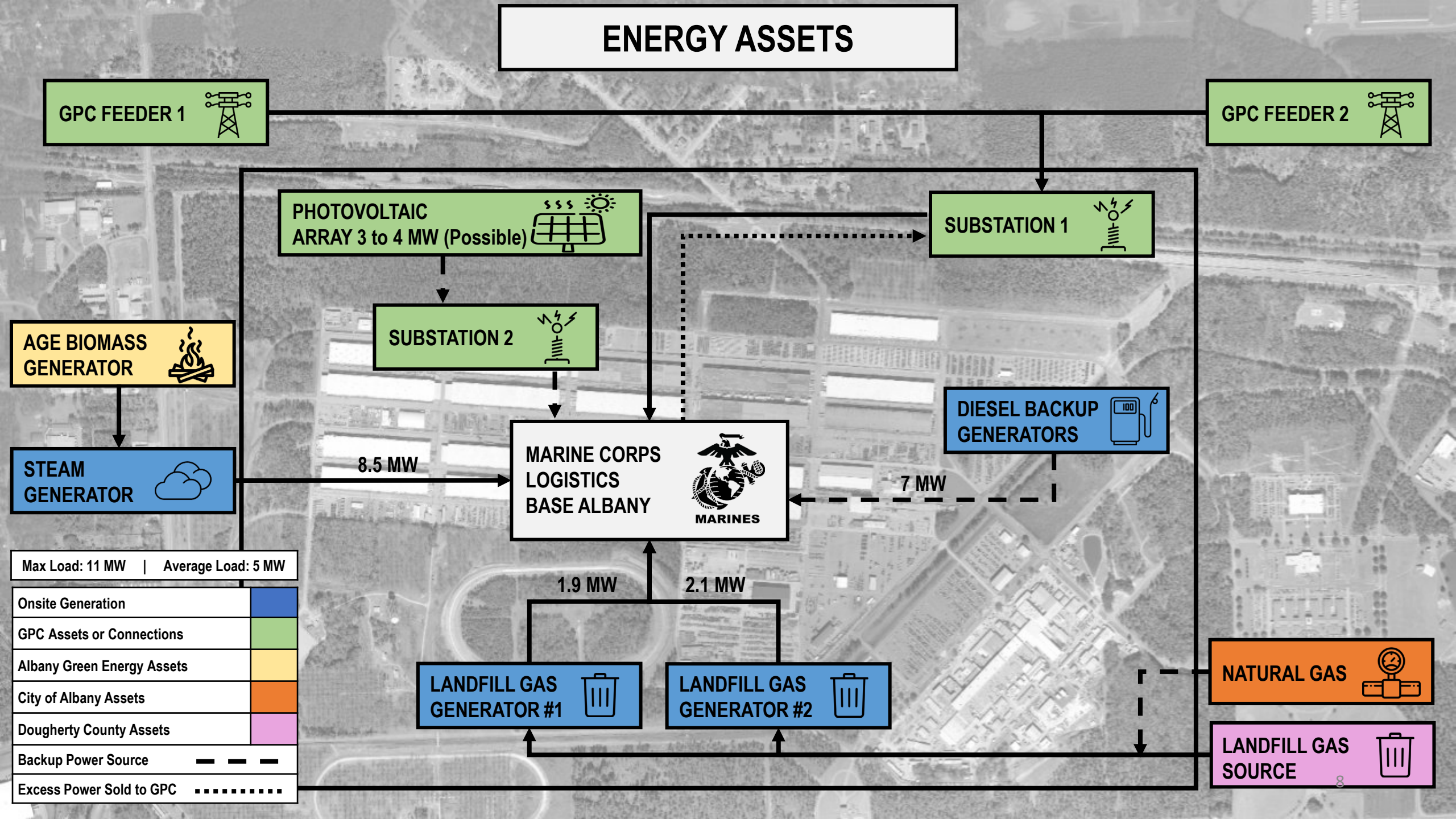
- Total 44 MW electricity
- On-base with own substation
- Possible capacity 3 to 4 MW to base via potential express feeder
- Working with Ga Power to perform study on connecting to MCLB grid

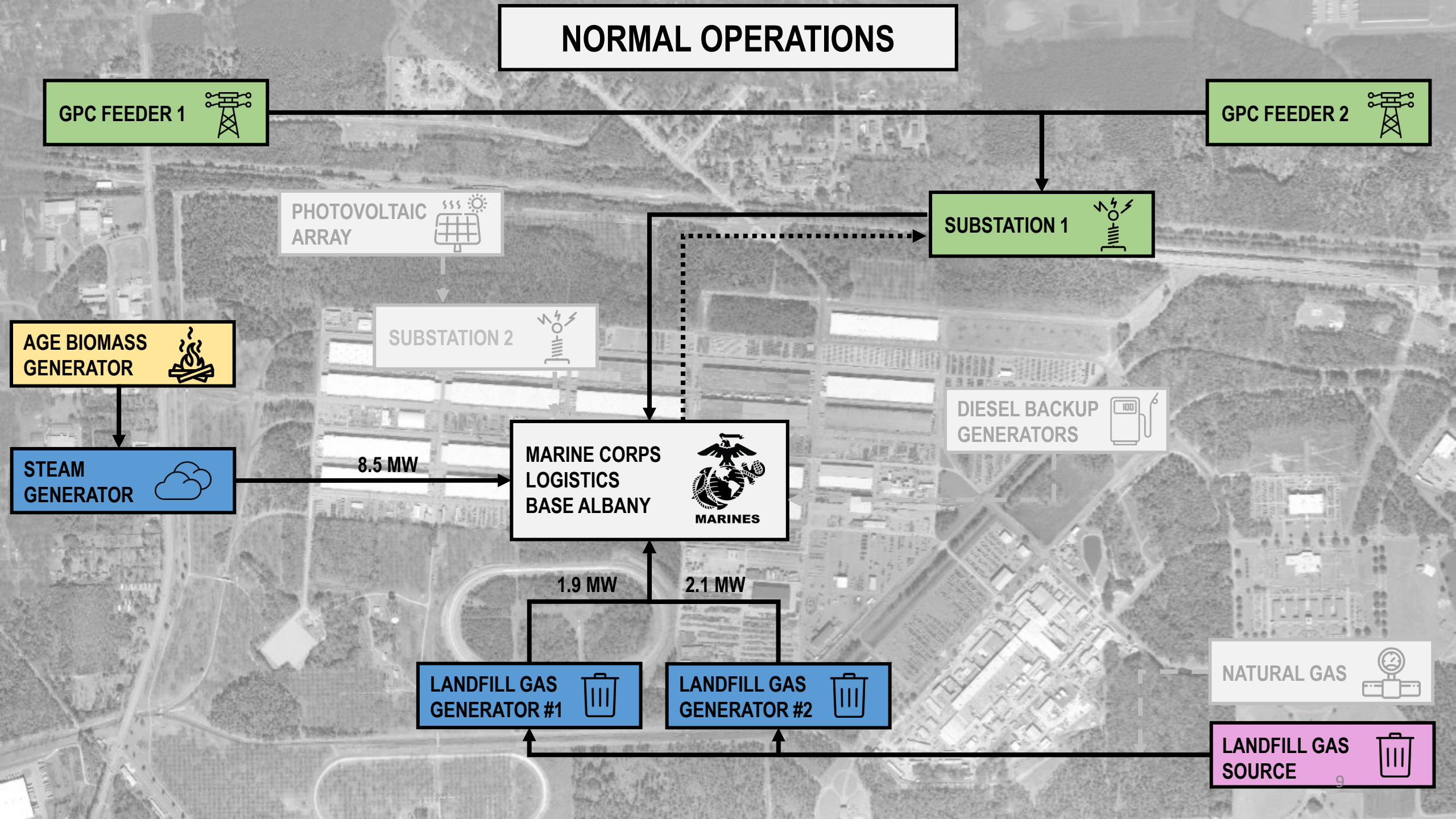


DIESEL BACKUP GENERATORS:

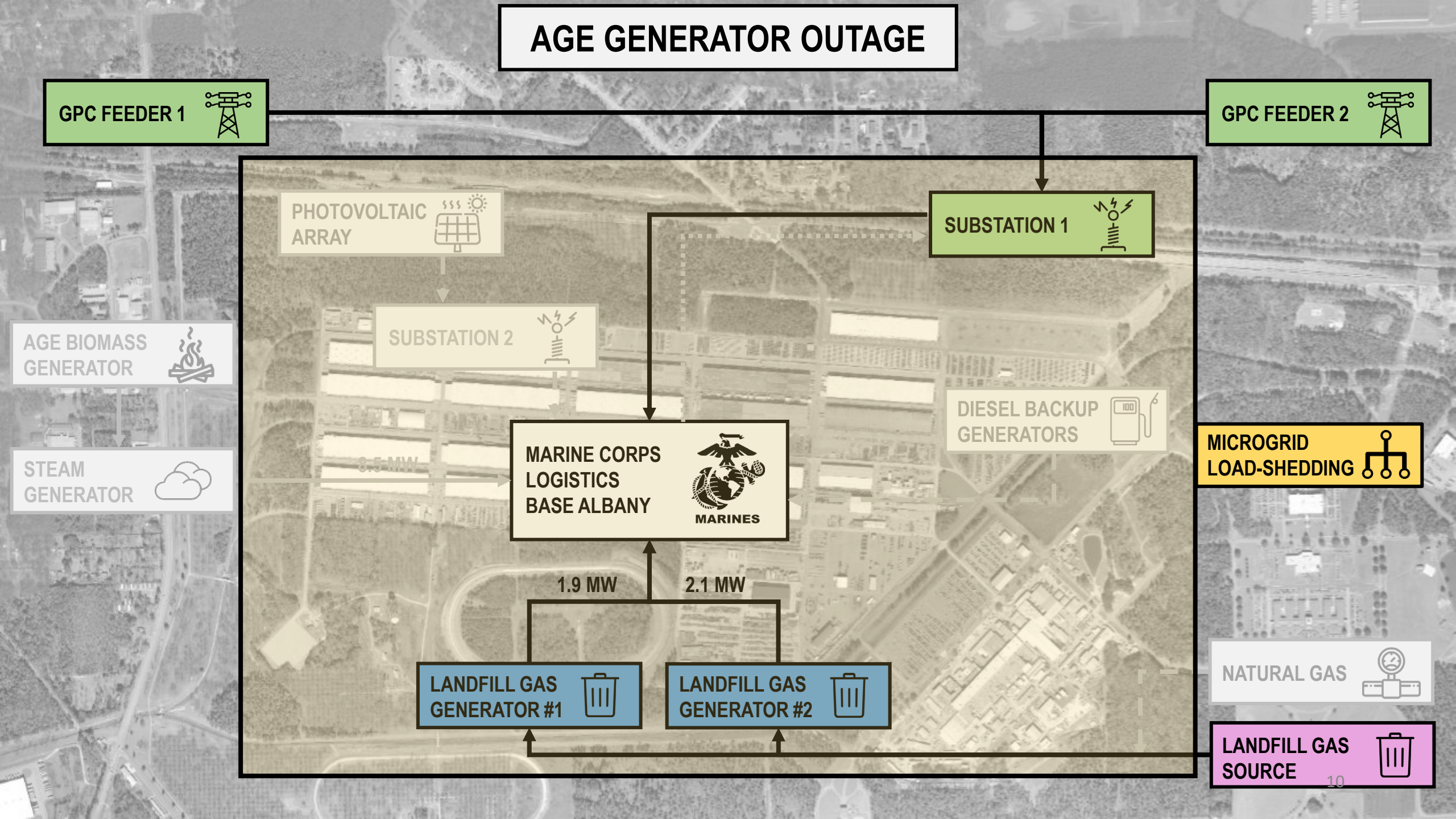
- Total 7 MW electricity
- 27 generators situated across base
- Capacity helps cover servers, communications, family housing, HQ building, commissary
- In supply emergencies, brought online before landfill or grid

ENERGY ASSETS

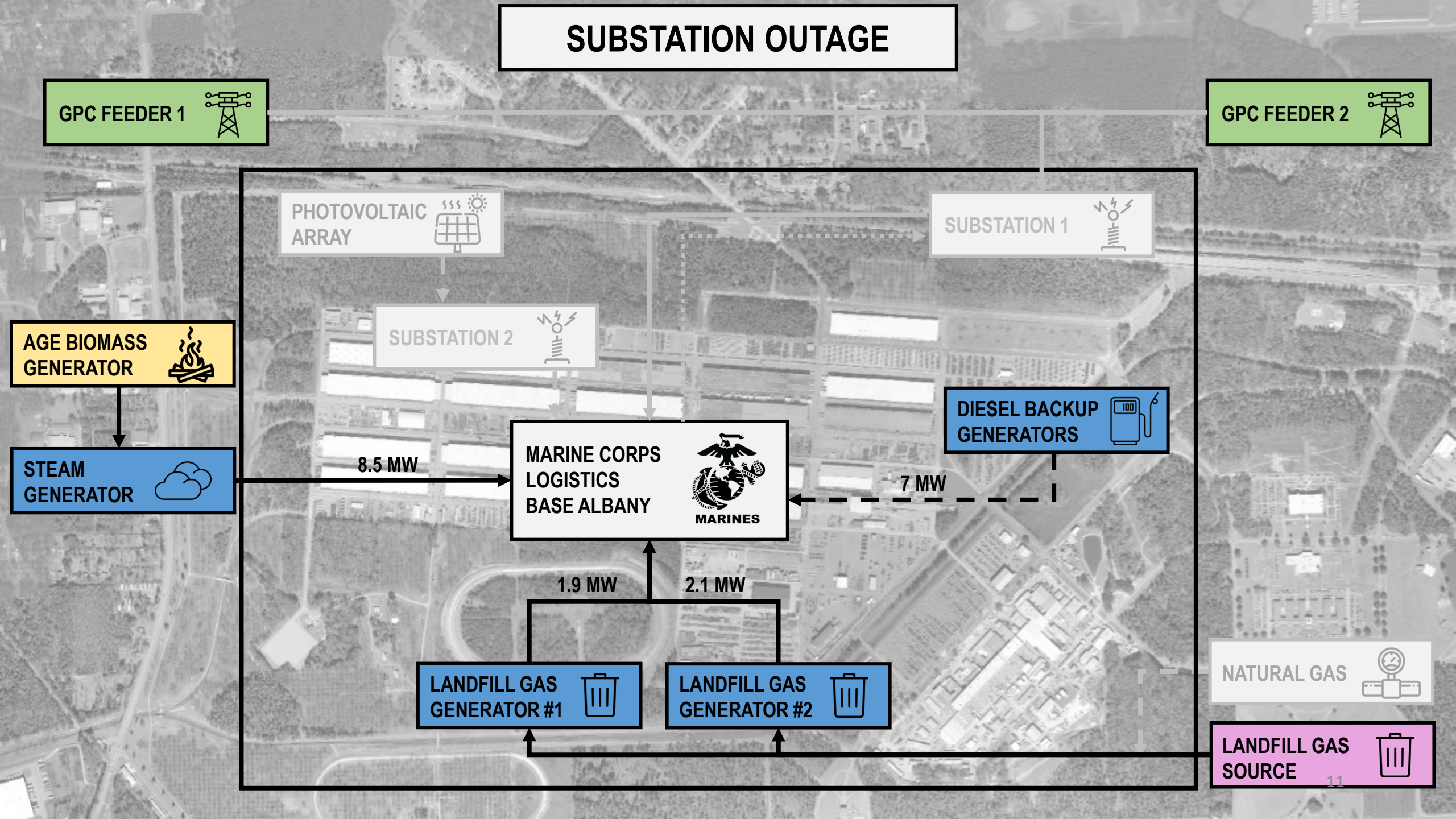


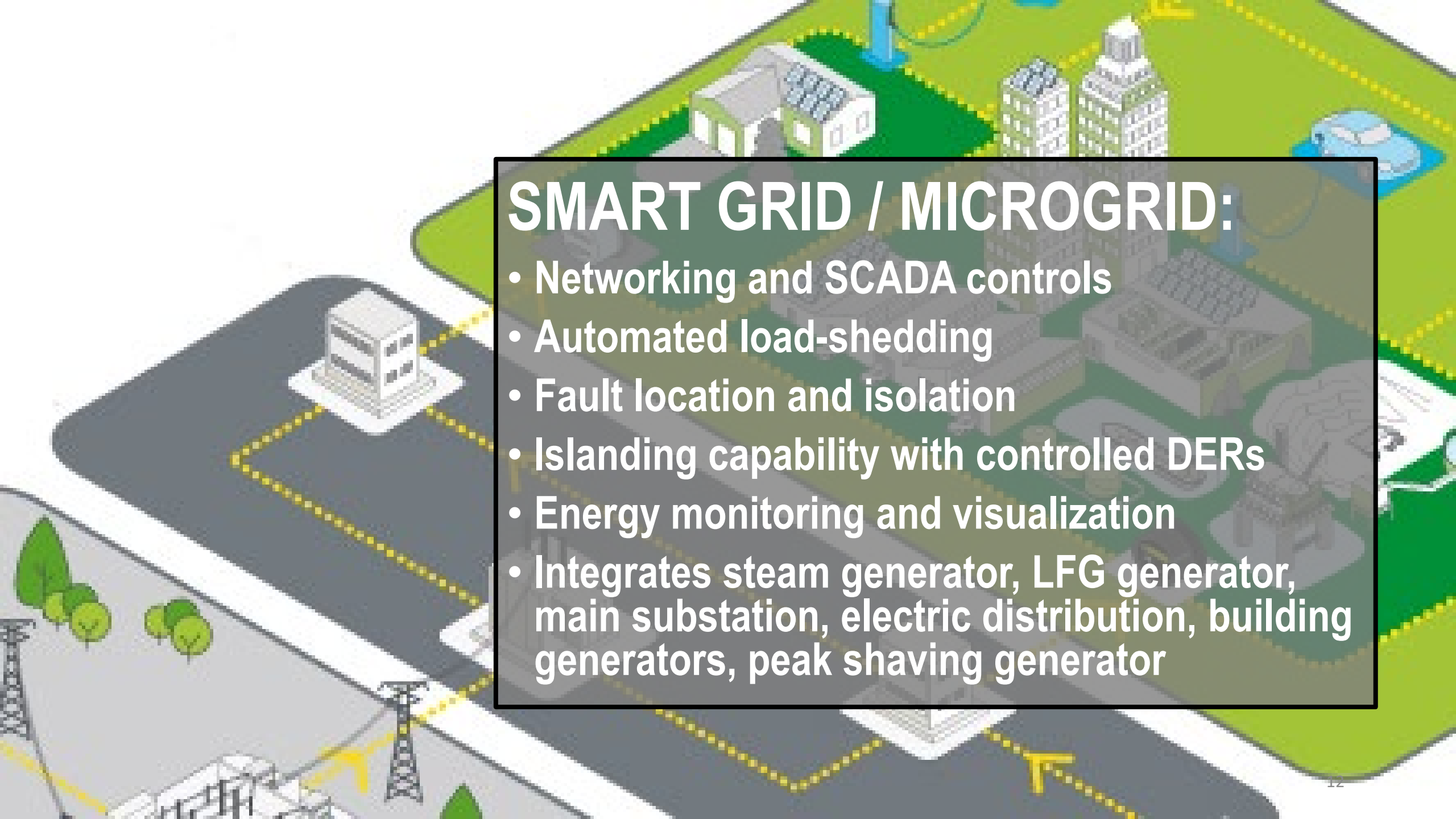

NORMAL OPERATIONS
GPC FEEDER 1
GPC FEEDER 2
PHOTOVOLTAIC ARRAY
SUBSTATION 1
SUBSTATION 2
AGE BIOMASS GENERATOR
STEAM GENERATOR
8.5 MW
MARINE CORPS LOGISTICS BASE ALBANY
MARINES
DIESEL BACKUP GENERATORS
1.9 MW
2.1 MW
LANDFILL GAS GENERATOR #1
LANDFILL GAS GENERATOR #2
NATURAL GAS
LANDFILL GAS SOURCE

AGE GENERATOR OUTAGE



SUBSTATION OUTAGE





SMART GRID / MICROGRID:

- Networking and SCADA controls
- Automated load-shedding
- Fault location and isolation
- Islanding capability with controlled DERs
- Energy monitoring and visualization
- Integrates steam generator, LFG generator, main substation, electric distribution, building generators, peak shaving generator