

Camp Lejeune Solar Project

FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

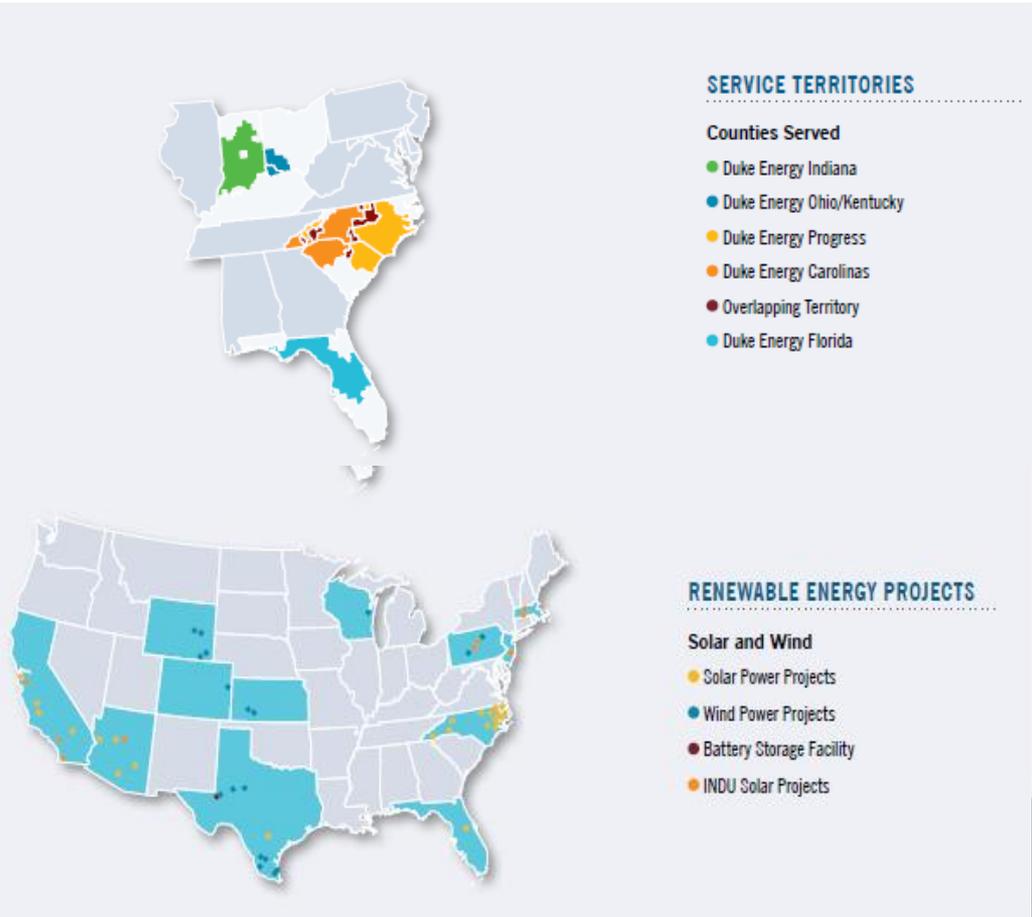
Cincinnati, OH May 18, 2016



- Duke Energy Overview
- Project Overview
 - Project Background / Goals & Objectives
 - Timeline
- Project Development
 - Partnership
 - Initial Development Steps
- Project Background
- Lessons Learned

Duke Energy Overview

- Largest electric power holding company in the United States
- 150+ years of service
- 7.4 million electric customers and 525,000 gas customers
- 52,700 megawatts of generating capacity from a diverse mix of coal, nuclear, natural gas, oil and renewable resources
- Service area covering approximately 95,000 square miles in the Southeast and Midwest
- ~ 2,500 megawatts (MW) of renewable energy:
 - 2,100 MW wind power
 - 400 MW solar power



Kick Off Meeting – August 2014

- United States Navy / Duke Energy Executive Meeting
- Navy Renewable Energy Program Office Goals and Objectives
 - Facing mandates for sustainability, energy security, and energy intensity – 1 GW Goal
 - Three models to support Renewable Energy Goals
 - Camp Lejeune – First Model 2 in United States
- Duke Energy Renewable Energy Goals in North Carolina
 - Optimal Timing
 - North Carolina Renewable Energy Portfolio Standard
 - North Carolina State Investment Tax Credit
 - Camp Lejeune is one of DEP's largest customers.
 - Base distribution system owned and managed by government employees
 - Camp Lejeune would be first distributed generation asset located on a military base in service territory

August
2014

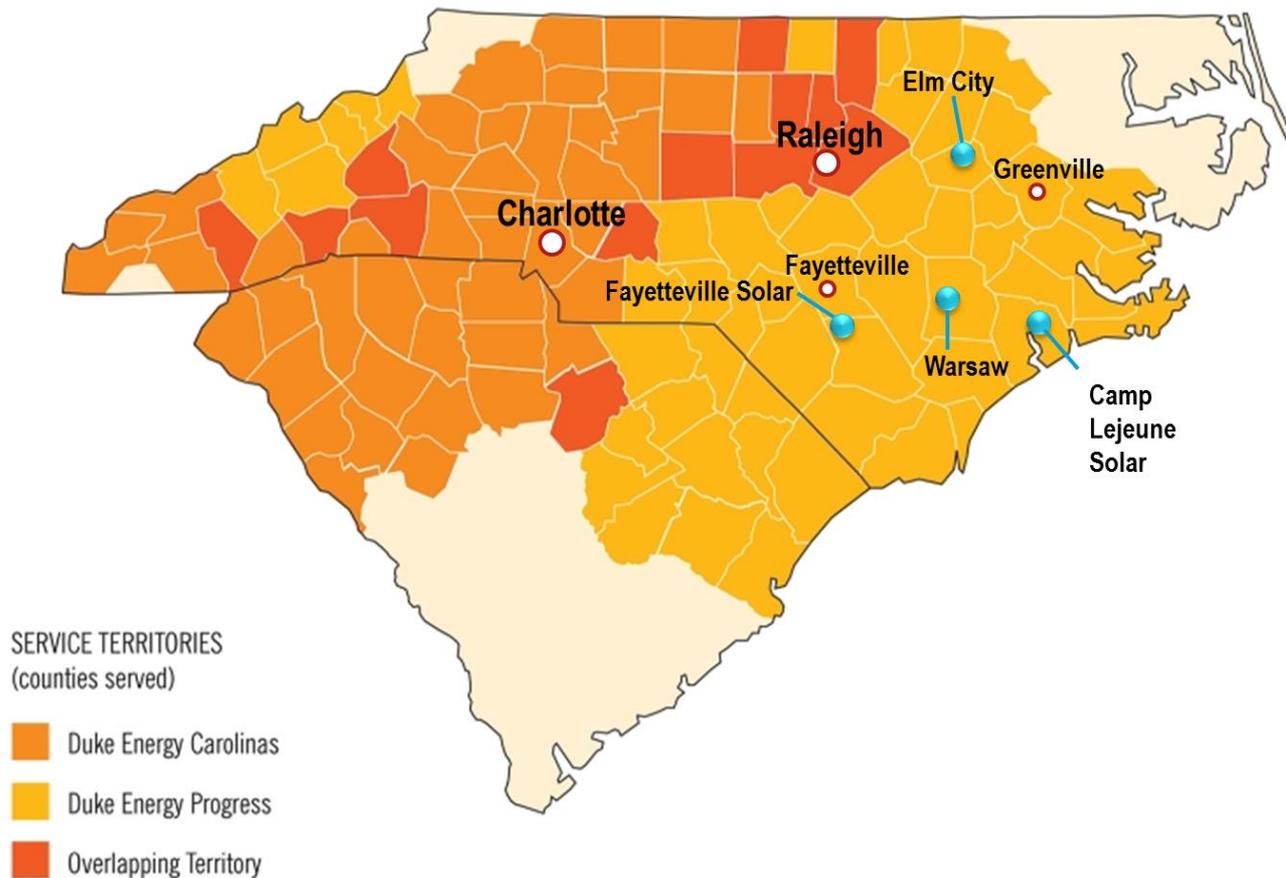
December
2015

Kick Off
Meeting

STEPS ?

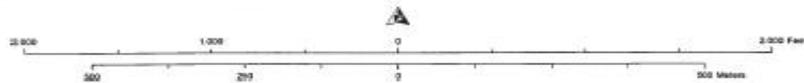
COD

Duke Energy North Carolina Service Area and Camp Lejeune Location



Camp Lejeune – Starting Point

Building 45 Potential PV Sites, MCB Camp Lejeune



NOTE THIS MAP FOR REFERENCE ONLY
Disclaimer: efforts have been made to ensure the accuracy of this map.
The user bears responsibility for the appropriate use of the information and, as such, is not held liable.



Map Number 3014-0796
Production Date: 20 August 2014
For more information on this map, contact:
GEOGRAPHIC INFORMATION SYSTEMS
Data Sources:
Energy Features - USGS
GIS Data - USMC
Imagery - ESRI

Camp Lejeune - Preliminary Steps & Constraints



Camp Lejeune - Preliminary Constraints



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Legend

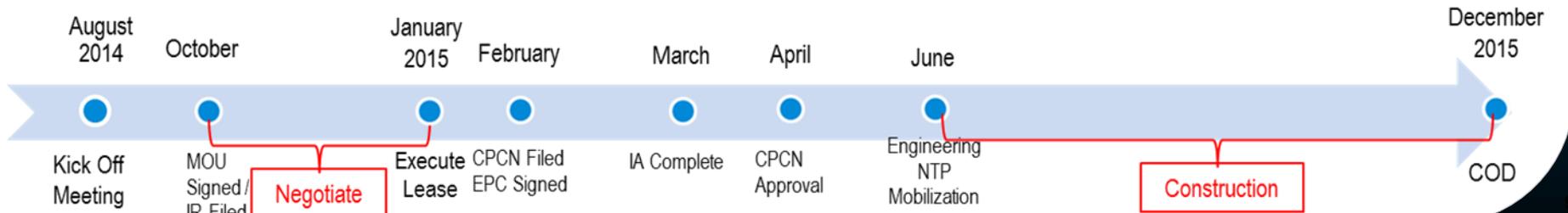
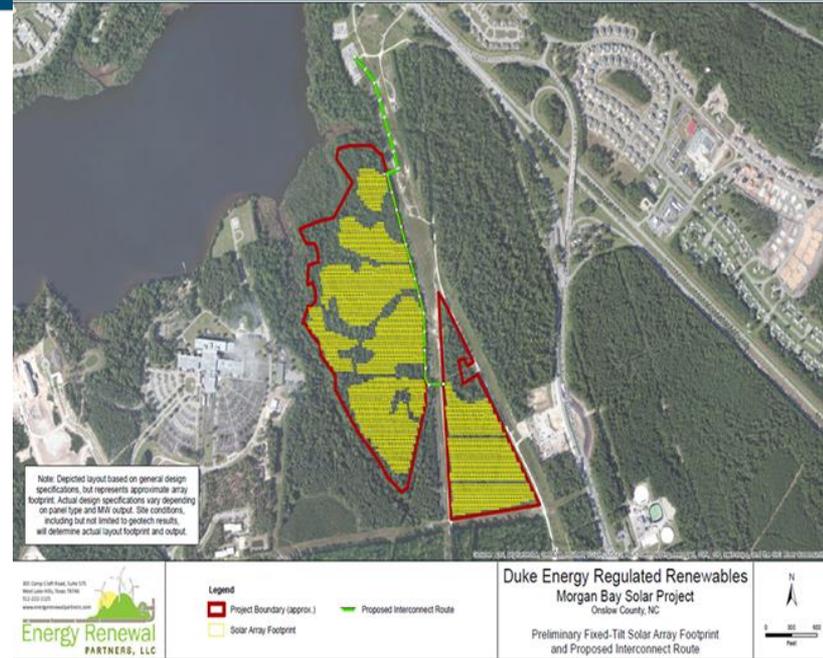
- Project Boundary (approx.)
- Delineated Wetland
- Stream/Drainage (NHD)
- 100-year Floodplain (FEMA)
- Electric Transmission
- Electric Distribution
- Gas Pipeline

**Duke Energy Regulated Renewables
 Camp Lejeune Solar Project**
 Areas of Interest

Camp Lejeune Solar Final Plans

Solar Offering

- Duke builds, owns and operates ~ 13 MW_{ac} / 17MW_{dc} solar asset on Base
- Camp Lejeune provides land via a lease satisfied through in-kind consideration that aligns with energy security goals
- Cost Effective Solar facility that is interconnected to Duke Energy Substation – project is grid-tied
- No upfront capital required by Navy; costs are spread across system as it is a grid-tied asset
- RECs retained by Duke Energy on behalf of NC Renewable Portfolio Standard (RPS) compliance.



Camp Lejeune Progression



July 2015



August 2015



October 2015

Lessons Learned

- Environmental Assessment Completed Prior to Discussions 
- Avoid Sensitive Areas
- Ensure EV Team Alignment with Project Team
- Tree Clearing is Not Fun

Project Management



Lease

- Critical
- Not Your Normal Project Access
- Determine Access Requirements in Advance of EPC Discussions
- Cannot Unnecessarily Add to Costs
- Base Relationships Key!

- My Regulatory Requirements are Important & So Are Yours
- Land Lease; Not a MILCON
- Boundaries are Boundaries
- IKC & Value of Land
- Project Plan & Engineering will not be finalized to support lease discussions
- Ability to support emerging project needs

the Highway

Project
Management

Base
Coordination

Communication

Would you do it again????

Environmental

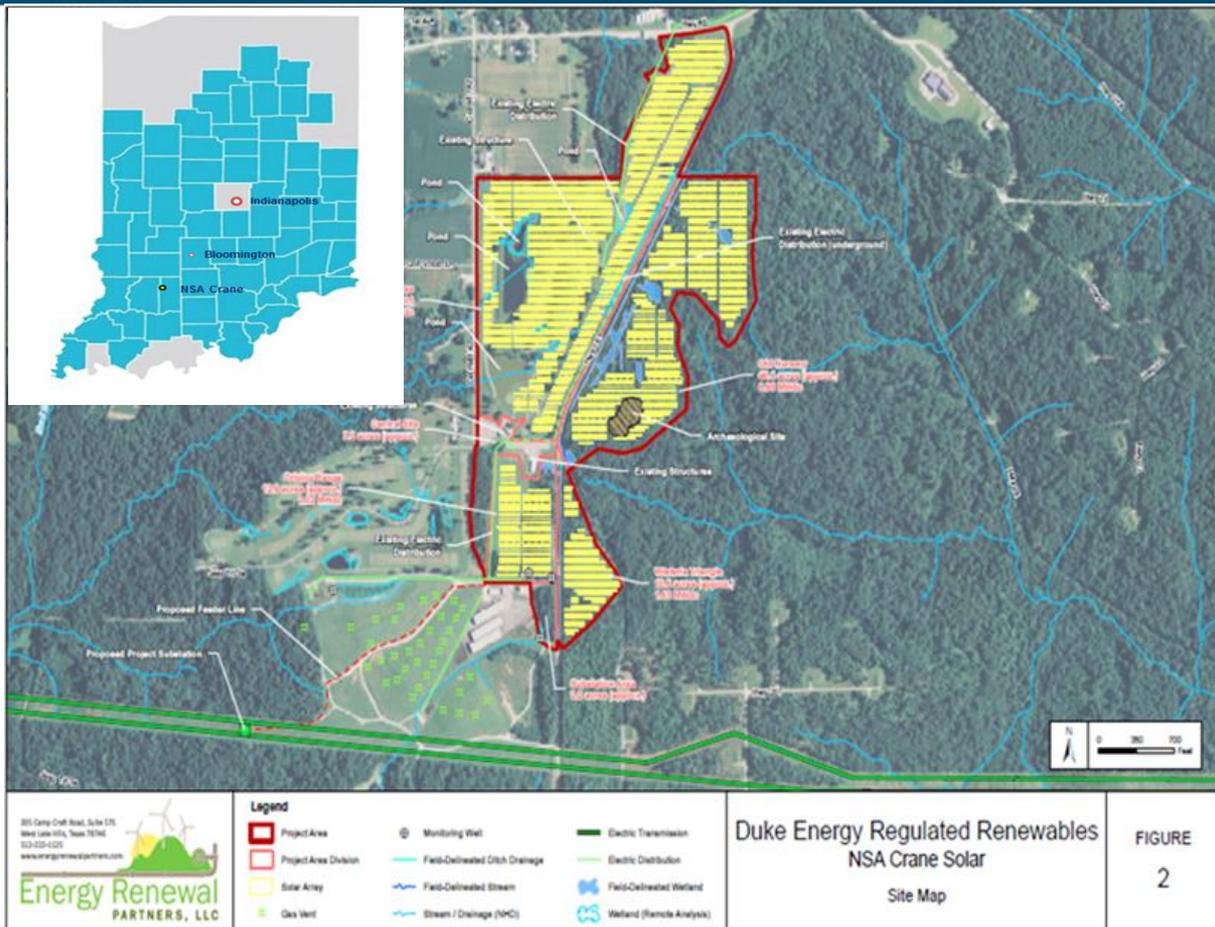
Regulatory
Requirements

Lease



Overview of Project

- Leased Area: ~ 140 acres on base
- DC Capacity: 24.35 MW
- AC Capacity: 17.25 MW
- Interconnected on Duke 69kV line
- Placed in Service - 12/16
- Final Completion - 3/17



Duke Energy Regulated Renewables
NSA Crane Solar
Site Map

FIGURE
2

