

# STATEMENT OF CAPABILITIES



Collaborative Partners in Project Engineering

# About FastGrid

We are an Arizona based company founded in 2016 and are a leader in solar energy, battery storage, and greater renewable energy! Our team has decades of experience in traditional and renewable power generation; including project development, engineering, procurement and construction, operations and maintenance, financing, and M&A.

# 10GW

Solar Gigawatts Designed and Engineered by FastGrid's Team

# 5GWh

BESS Designed and Engineered by FastGrid's Team

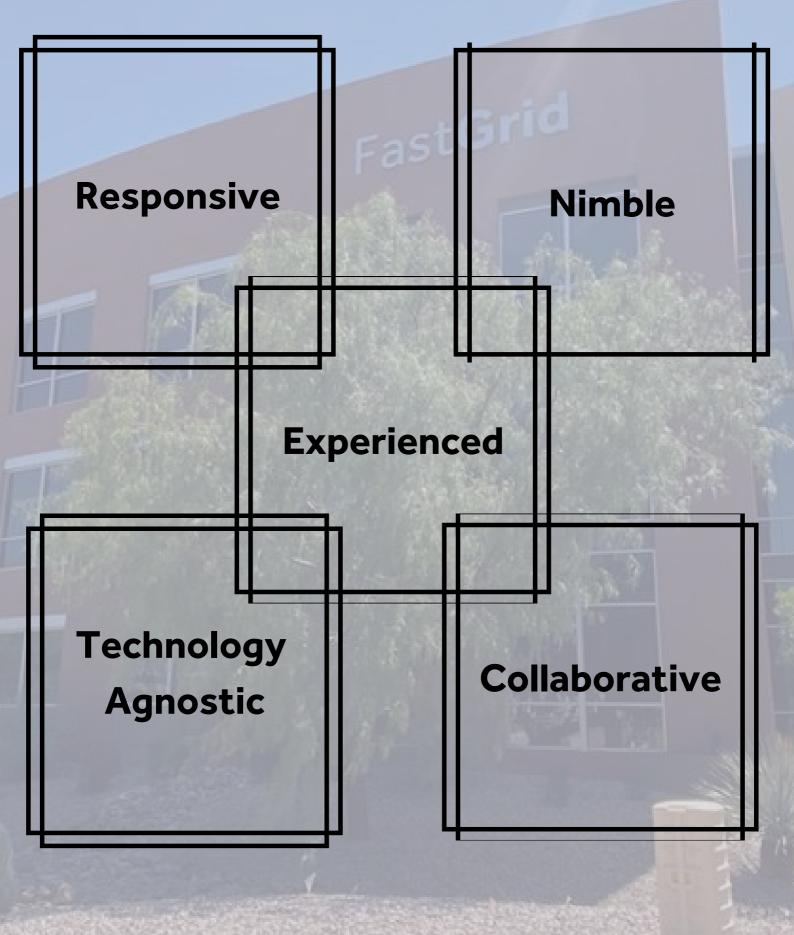
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## **States Currently Licensed**



# Why FastGrid?

Leaders in Renewables & Energy Storage



# **BESS Services:**

### Preliminary:

- Identification of Key Suppliers & Configurations
- Integrator Coordination & Pricing Market
- Knowledge
- Indicative Cost Estimates
- Indicative EPC & BOP Budgets
- Risk Matrix
- •Level II EPC & BOP Budgets

### System Optimization:

- Optimal Design Scenario Charts
- Advanced Optimization & Simulation Modeling
- Annual BESS Energy & Performance Profile

### **BESS Retrofit:**

- Incremental Revenue
- Incremental Costs
- Multiple Use Cases

## **Detailed Financial Analysis:**

Modeling Methodology:

- •ESS Operational Logic & Sensitivity
- •Time Series Revenue, Delivered Energy, COS Expected Revenue
- •Capacity Value (RA, ICAP, CP, or other)
- •Net Energy Value (Arbitrage at Nodal Level)
- •Reserve Values
- •Regulation Values
- Expected Project Costs
- •Demand Charges
- Charging Limits
- Charging Energy
- Augmentation
- •O&M
- Warranty
- Use Case Profile Creation

### Electrical:

- Preliminary Site Design
- •Site Design & Site Design Optimization
- •EOL Optimization
- •Economic Dispatch Modeling
- •Beginning of Life Optimization
- •System Integration Support
- •System Design for Tolling, Market
- Participation, and Reliability Services
- •DC Block, PCS, MV AC, and LV AC Electrical Design
- •Gas Peaker Hybrid Plant Design with Battery
- Storage. Market Participation and/or
- Blackstart/Reliability Services
- •Solar Wind Hybrid Plant Design with Battery
- Storage. Market Participation and/or
- Blackstart/Reliability Services

# Development Engineering and Owner's Engineering Services:

### **Electrical:**

- •Site Assessments and Layouts
- •Sensitivity Analysis
- •RFP Support
- •Energy Yield Modeling/Analysis
- •Energy Yield Mapping
- Advanced Energy Storage Simulation and
- Optimization
- •PVSyst Shading Scene

## <u>Civil:</u>

- •Constraints Map/Buildable Area
- Development
- •Hydrology/Stormwater Study Analysis
- •Prelim Drainage and Flow Control Design
- •Traffic Engineering
- •Wetland Delineation, Reporting, Permitting, and Mitigation
- Shadow Analysis

## Structural:

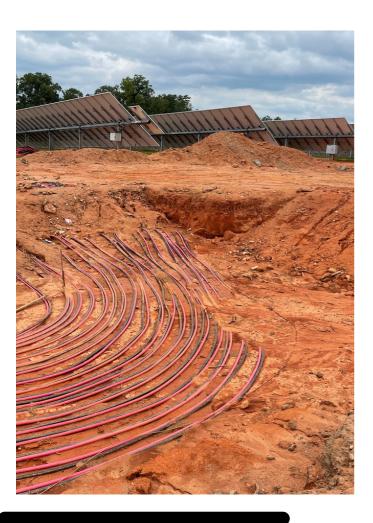
- Prelim Pile Design
- •Prelim Foundation Design for Inverters
- Pile Information Review
- •Grading vs. Steel Analysis
- Prelim Geotech Report Review

## Geotech:

- •Foundation Suitability
- Pile Testing
- Corrosion
- Thermal Resistivity
- Prelim Geotech Report
- •Review Soiling Boring Logs, Lab Testing Results and historic resistivity data
- •Provide expected subsurface conditions
- Fatal Flaw Review
- Geotech SOW



# **Preconstruction Services:**





- •Site Assessments and Layouts
- •Feasibility Studies/Constraint Analysis
- •RFP Bid Design Package Development
- •Energy Yield Modeling/Analysis
- •Energy Storage Retrofit
- •Advanced Energy Storage Simulation and Optimization
- •PVSyst Shading Scene

#### Civil:

- •Wildlife/Habitat Studies
- •Environmental Site Assessment
- •Prelim Drainage and Flow Control Design
- Traffic Engineering
- •Wetland Delineation, Reporting, Permitting, and Mitigation
- Landscape Design





#### Structural:

- Pile Design
- •Foundation Design for Inverters
- •Foundation Quantities
- •Grading vs. Steel Analysis

#### Geotech:

- •Foundation Suitability
- Pile Testing
- Thermal Resistivity
- •Geotech Report
- Investigation Location Plan
- Local Utility Coordination

#### LiDAR/Topographic Survey:

- Aerial Imagery/LiDAR Survey
- •Ground Control and Truthing
- Topographic Survey

# **Detailed Engineering Services:**

### Electrical:

- •30/60/90/IFC Design Drawing Sets
- Permitting Support
- •Electrical Engineering Studies
- •Peer Review
- •As-Builts
- •CA/RFI Management

### <u>Civil:</u>

- •SWPPP
- •Storm Water Management Analysis
- Calculation/Report
- SPCC Plan
- •Hydraulic and Hydraulic Assessment
- Erosion Control
- •Site, Grading, and Drainage Plan
- •Landscape Buffer/Restoration Plan

### Structural:

- •Balance of System Equipment
- Tracker Foundations
- •Fence Foundations Calculations
- •Pile Location Plan

### Geotech:

- •Foundation Suitability
- •Geotech Report
- Corrosion
- Thermal Resistivity
- •Fatal Flaw Review

## LiDAR/Topographic Survey:

- Aerial Imagery/LiDAR Survey
- •Ground Control and Truthing
- Topographic Survey



# BESS Commissioning Oversight & Testing Services:



- •3rd Party Walkthrough and Inspection of Equipment
- •Witness Test and Review
- Test Plan Preparation
- •Safety Systems, Alarms, and Fire Functional Test
- •HVAC Functional and Performance Test
- •BESS and PCS Integration Test
- Energization Test
- •Manual Charge and Discharge Test
- •Manual MVAR and P vs. Q Capability Test
- •Round Trip Efficiency Test
- Capacity Test
- •Ramp Rate Test
- Availability Test
- •Daily Reports

- SCADA and System Integration Design,
  Commissioning, and Troubleshooting support
  Site Controller, String/Inverter Controller,
- BESS Application Layer, GIA and Project Site Controller Design, DD, Commissioning and
- **Troubleshooting Support**
- •Compile, Organize, Run and Witness Site Acceptance and Performance Tests
- •Pre-Parallel Utility Witness Testing
- •Safety Compliance Support
- •COD Testing with ISO or Market Entity
- Metering and Telemetry Review
- •Blackstart Testing per ISO Requirements and Procedures



# **RECENT SOLAR PROJECTS**

A summary of FastGrid's most recent projects, both in progress and completed

<u>Alabama-</u> 100MW Solar PV Service: Engineer of Record

Arizona -396MW Solar PV Service: Development Engineer Client: IPP

<u>Arkansas -</u> 271MW Solar PV Service: Engineer of Record Client: IPP

95MW Solar PV Service: Engineer of Record

<u>California -</u> 20MW Solar PV Service: Development Engineer Client: Developer

225MW Solar PV Service: Engineer of Record

Illinois -275MW Solar PV Service: Development Engineer Client: Developer

10MW Solar PV Service: Engineer of Record Client: EPC

Florida -79MW Solar PV Service: Engineer of Record Client: EPC <u>Indiana -</u> 242MW Solar PV Service: Engineer of Record Client: EPC

<u>Louisiana -</u> 50MW Solar PV Service: Development Engineer Client: IPP

80MW Solar PV Service: Engineer of Record Client: IPP

300MW Solar PV Service: Engineer of Record Client: IPP

200MW Solar PV Service: Engineer of Record Client: EPC

145MW Solar PV Service: Engineer of Record

<u>Michigan -</u> 170MW Solar PV Service: Development Engineer

<u>Montana -</u> 100MW Solar PV Service: Engineer of Record Client: EPC

<u>Nevada -</u> (2) 300MW Solar PV Service: Engineer of Record <u>Oklahoma –</u> 62MW Solar PV Service: Development Engineer Client: Developer

<u>Tennessee -</u> 104MW Solar PV Service: Development Engineering

<u>Texas -</u> 60MW Solar PV Service: Development Engineer Client: Developer

540MW Solar PV Service: Development Engineer

530mw Solar PV Service: Engineer of Record

514 MW Solar PV Service: Engineer of Record Client: EPC

85MW Solar PV Service: Engineer of Record Client: Developer

<u>Virginia -</u> 85MW Solar PV Service: Engineer of Record Client: EPC

# OUR RECENT BESS PROJECTS

<u>California -</u> 100MW/400MWh Saticoy Energy Storage Facility Service: Owner's Engineering, Electrical Engineering

200MW/400MWh BESS Black Start Service: Electrical Engineering

90MW plus 70MW/280MWh BESS Service: Development Engineering, Engineer of Record

60MW/240MWh BESS Service: Testing and Commissioning

100MW/400MWh BESS Service: Development Engineering, Testing and Commissioning

200MW NGT plus 40MWh BESS Service: Engineer of Record

25 MW Bess Standalone Service: Electrical Engineering

80MW Battery Storage Service: BESS Client: Developer/Owner

<u>Texas -</u> (2) 200MW/400MWh BESS Service: Owner's Engineering, Engineer of Record

(10) 10MW/20MWh BESS Service: Engineer of Record (50 Site Portfolio)

(2) 200MW/300MWh BESS Service: Electrical Engineering

(3) 100MW/150MWh Service: Electrical Engineering



# **Contact Us**

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