DRIVING RESILIENCY THROUGH SUSTAINABLE SOLUTIONS

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Topic for Discussion

I. Technology and Trends
II. Defining Risk
III. Leading the Way, California Municipalities
IV. Key Drivers and Opportunities
V. Funding Options, and Features
Additionally noted in the report, California led the nation in power outages for 9 years in a row, totaling over 400 power outages.

Moving towards a new local distributed energy cloud often leads to lower cost and a more sustainable and resilient grid.
Municipal microgrids are defined as serving local government critical facilities and services. They may or may not involve local utilities.

**DEFINING RISK**

- **What is a Microgrid?**
  - A distribution network incorporating a variety of Distributed Energy Resources (DER) optimized and aggregated into a single system balancing loads/generation and capable of islanding from the utility power grid.

- **What is a “Critical Facility”?**
  - “Buildings or structures where loss of electric service would result in the disruption of a critical public safety life sustaining function.”

Understanding your Organization’s **Mission**, **Risk** to that mission, considering current **Infrastructure**, and the organizations **Long-term Plans**.

- Mission
- Risk
- Current Infrastructure
- Long-Term Plans
DEFINING RISK AND INVESTMENT - RESILIENCY

<table>
<thead>
<tr>
<th>No Resiliency</th>
<th>Partially Resilient Not Seamless</th>
<th>Partially Resilient Seamless</th>
<th>Fully Resilient Seamless</th>
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<tbody>
<tr>
<td>1</td>
<td>• Nearly full loss of power during LOU *&lt;br&gt;• Power does not return until utility connection restored</td>
<td>• Nearly full loss of power during LOU *&lt;br&gt;• On-site emergency generators support a portion of critical loads, but temporary outage until they can come online</td>
<td>• Microgrid provides seamless transition to critical facility loads during LOU&lt;br&gt;• Remainder of non-critical loads are not supported until utility connection restored, or stand-by generators come online</td>
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Note: Stages 1-4: stage 1, (least risk), Stage 4, (most risk)

DEFINING RISK AND INVESTMENT – RESILIENCY

RESILIENCY (Stages 1-4)

FUNDING<br>(Revenue and/or savings opportunities, including grants/incentives, financing, or P3 offerings)

ENVIRONMENTAL POLLUTANT REDUCTION GOALS<br>(Green House Gas, (GHG)/Carbon reduction by Technology or Process)
**KEY DRIVERS AND OPPORTUNITIES:**

**FY 2019 DOE ESPC IDIQ**

$819 Million Record Investment by Federal Agencies in Support of Increased Resilience

- **Leadership:** Government Efficiency
- **Focus:** Benefits for Resilience
- **Investments:** Strengthen Infrastructure
- **Impact:** Jobs

- **7 Agencies**
- **$150 Billion of Deferred Maintenance**
- **$1.6 Billion in Energy & Water Savings**
- **6,553 Job Years Created**

**Note:** Department of Energy, (DOE), Energy Savings Performance Contract, (ESPC), Indefinite-Delivery, Indefinite-Quality, (IDIQ)

- Parris Island
- Portsmouth Naval Shipyard
- Philadelphia Navy Yard

**FUNDING, PROJECT DELIVERY AND SERVICES**


ENCOURAGES PUBLIC AGENCIES TO CONTRACT FOR ENERGY CONSERVATION SERVICES, PROVIDING FLEXIBILITY IN PROCURING, SECTION 25008 OF THE PUBLIC RESOURCES CODE

- Public-Private-Partnership
  - Energy Conservation, Generation and/or Infrastructure
    - Energy Efficiency as a Service, (E/EaaS)
  - Energy Generation
    - Power Purchase Agreement (PPA)
  - Energy Conservation Generation and/or Infrastructure
    - Energy Service Agreement, (ESA)
    - Energy Performance Contracting, (EPC)
PROCUREMENT STEPS

I. Conceptual Presentations

II. Feasibility Energy & Engineering Assessment
   - Operational Savings
   - Grants, Incentives & Rebates

III. Acceptance of Procurement Process
   - California Gov’t. Code 4217, (Energy Services enabling legislation)

IV. Project Scope, Design & Financial Confirmation
   - Application of Grants and Incentive
   - Develop, Design, & Secure Pricing, by Task/Trade
   - Confirm Modeling & Calcs. of Measures (Performance/Savings)
   - Confirm Financial Feasibility, (Scope, Cost, Savings, Service, etc.)

V. Delivery of Proposed Project, (Co-authored consensus)

VI. Final Proposal & Contract Approval

Thank you!