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>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nearly full loss of power during LOU *</td>
<td>Nearly full loss of power during LOU *</td>
<td>Microgrid provides seamless transition to all facility loads during LOU</td>
</tr>
<tr>
<td></td>
<td>Power does not return until utility connection restored</td>
<td>On-site-emergency generators support a portion of critical loads, but temporary outage until they can come online</td>
<td>Facility can seamlessly reconnect to utility when safe</td>
</tr>
</tbody>
</table>

* LOU: Load Duration Unit

Note: Stages 1-4: stage 1, (least risk), Stage 4, (most risk)
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
6,553 Job Years

7 Agencies
$150 Billion of Deferred Maintenance

$1.6 Billion in Energy & Water Savings

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

Enabling Procurement Legislation:
CA Government Code 4217: An act relating to Energy Conservation. [Approved by the Governor, September 15, 1983. Filed with the Secretary of State, September 16, 1983.]

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
   3 Years Utility Data
   • 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!