ELECTRIC POWER ENGINEERS

ENERGY ENGINEERING EXPERTS
GENERATION | TRANSMISSION | DISTRIBUTION

GRID MODERNIZATION STAKEHOLDER CHALLENGE

AUGUST 18, 2021

ENGINEERING. POWER. EVERYWHERE.™

WHO WE ARE

Electric Power Engineers, Inc.

- Headquartered in Austin, TX
- Leading global power system engineering & consulting firm
- Unparalleled capabilities in electric power system studies, planning, engineering design, & grid integration
- Comprehensive services covering transmission, generation, and distribution in U.S. and international energy markets

Our Vision

To be the leader & innovator in the application of a holistic approach to study, design, & implement an infrastructure that enables an integrated grid of the future.

certified WBENC WOMEN'S BUSINESS ENTERPRISE

Supplier Clearinghouse Pursuant to CPUC General Order 156 Est. 1989

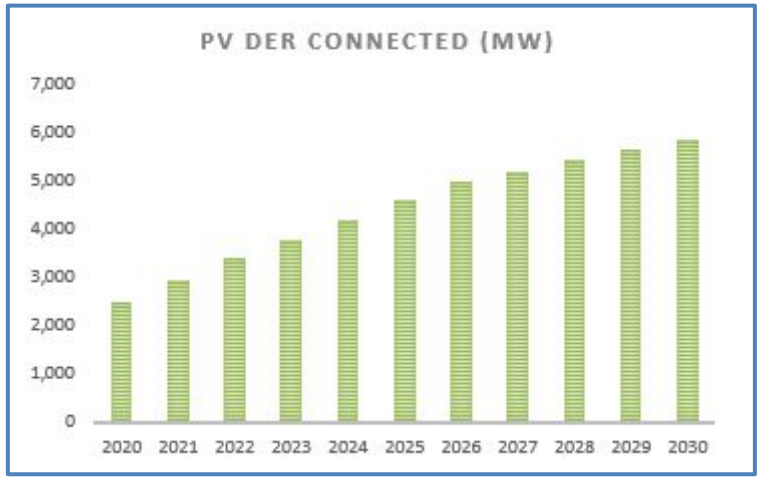
SBA Women-Owned Small Businesses (WOSB)

WHY GRID MODERNIZATION

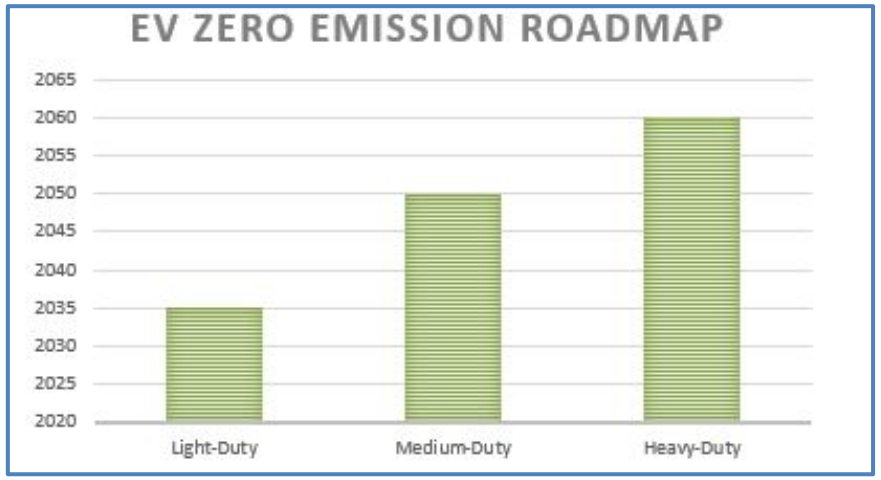
- **Replace Aging infrastructure**.
- **Improve Reliability & Resiliency:** To withstand climate impacts and adversary attacks.
- **Achieve Decarbonization Goals**.
  - Support EV Revolution
  - Drive DER Growth

CRITICAL PROBLEM

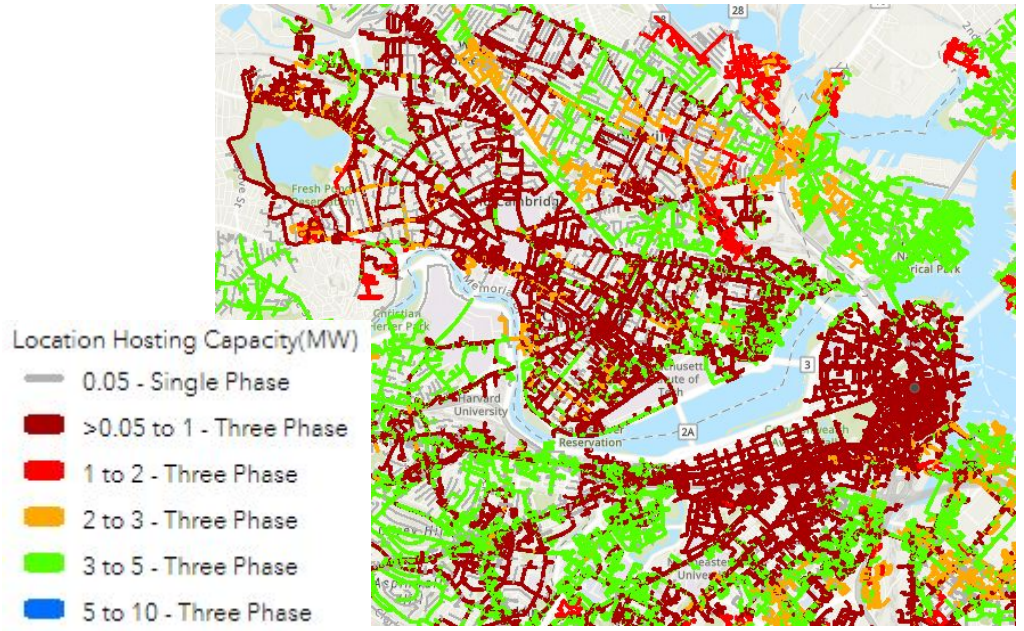
PV DER Growth:



Electrification and Electric Vehicles:



Location Hosting Capacity (MW) in Boston:



The Challenge:

DER & EV Growth Exceeding T&D Infrastructure Capacity.

KEY OBSTACLES TO OVERCOME

- Timing mismatch between PV Output and EV Charging.
- Upgrading T&D Infrastructure in a cost-effective manner ensuring a design of the grid that is sustainable and futuristic while making sure it is equitable to residents in all areas.
  - With long lead times, T&D infrastructure must be in-place before it is needed to limit adoption bottlenecks.
  - Potential for stranded investments if growth doesn't materialize as planned.

WHAT ARE THE BENEFITS & CONSEQUENCES OF ADDRESSING OR NOT ADDRESSING THIS OBSTACLE?

Benefits:

- Reduce excess and unnecessary spend on T&D infrastructure upgrades
- Optimal alignment of upcoming loads/generation at the right location and time promoting therefore the growth of EVs and DERs

Consequences:

- Failure to meet Boston's decarbonization and Zero-Emission Goals
- Excessive overspend on T&D upgrades
- Higher rates and a detriment to affordability
- Customer dissatisfaction

FINAL STATEMENT

Regarding Grid Modernization, to achieve Boston's Carbon & Equity goals, a critical obstacle we must work to overcome is "the time and locational misalignment between customer side plans for DER and EV projects and utility plans for capital investment and infrastructure upgrades ".

STEPHANIE BADR,
VP OF OPERATIONS
ELECTRIC POWER ENGINEERS, INC.
SBADR@EPECONSULTING.COM
512-886-2122