

FULL



22Q1 Stakeholder Dinner

Optimizing Transmission and Distribution for Equity & Resilience

March 30th | 6:00pm – 8:30pm

Special Guest



**DIGAUNTO
CHATTERJEE**

Co-Host



**BILL
WHITE**

Co-Host



**STEPHANIE
BADR**

EVERSOURCE

CTC GLOBAL



Welcome to the AEG Boston Stakeholder Dinner!



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FULL



MARK KALPIN

Holland & Knight

March 31, 2022
22Q1 Stakeholder Challenge
Critical Infrastructure, Equity & Resilience
Holland & Knight | 8:00am – 12:30pm EST



JAMES GOUDREAU



RUTH GEORGES



JASON D'ANTONA



JULIETA GIRALDEZ



TOMORROW



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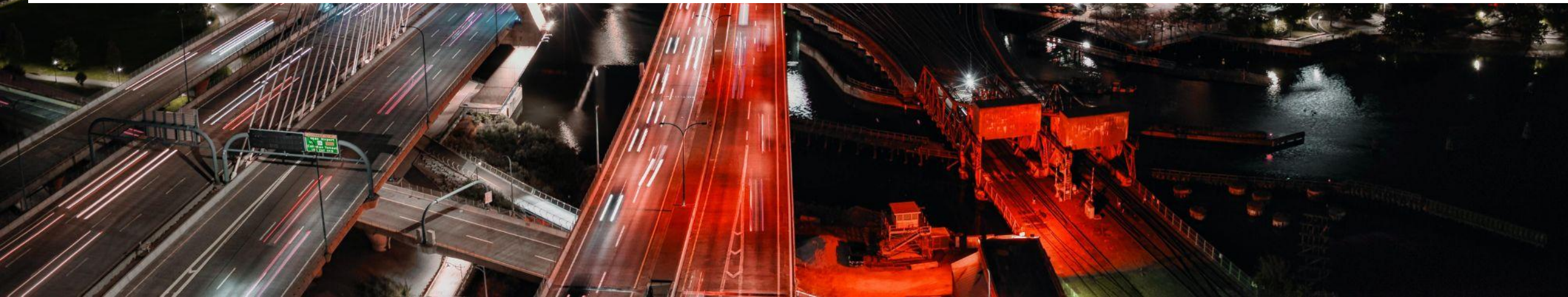
Thank You to our Co-Hosts:



CTC GLOBAL



ELECTRIC POWER ENGINEERS
ENERGY ENGINEERING EXPERTS
GENERATION | TRANSMISSION | DISTRIBUTION





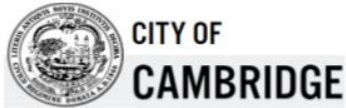
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Holland & Knight



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WELCOME



H.G. Chissell
Founder/CEO
Advanced Energy Group



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SPECIAL GUEST



Digaunto Chatterjee
Vice President - System Planning
Eversource Energy

EVERSOURCE



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CO-HOST



CTC GLOBAL

Bill White
Director, Business Development, Northeast United States
CTC Global

A promotional graphic for an event. It features a background image of a city at night with light trails from traffic. Overlaid on this is a semi-transparent white box containing the text "Join at slido.com #BAE22Q1". To the right of this box is a large QR code.



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Introduction: ACCC – Proven Product for the New Grid



Trapezoidal Wire

28% more aluminum content without a weight penalty

2X the Capacity

Carbon Fiber Core

70% lighter and 50+% stronger than steel

Problem: High Line Losses of Overhead Transmission Lines

New England 2019 T&D losses = 6.2M MWh*

*2019 EIA Data



Equivalent to adding a
531 MW* renewable
generating plant

(*at 40% Efficiency)

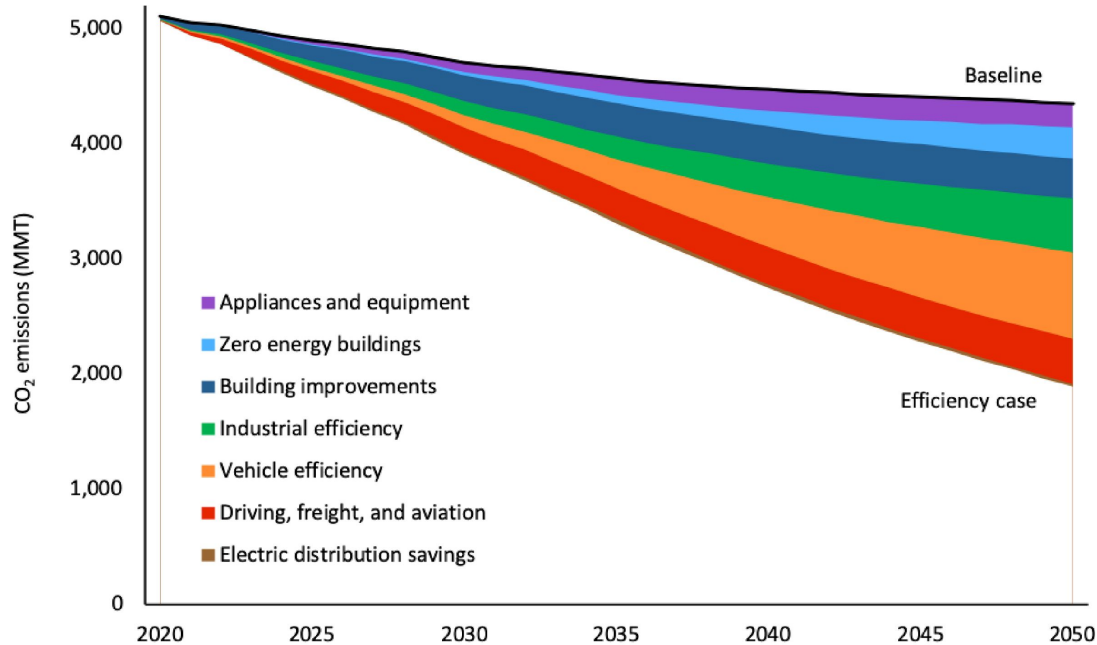


No Efficiency Standard, Means Power Costs More.
@\$40/MW hr = \$74.5M/yr Cost to Consumers

Key Obstacle: Lack of Efficiency Standard for Overhead Transmission Lines

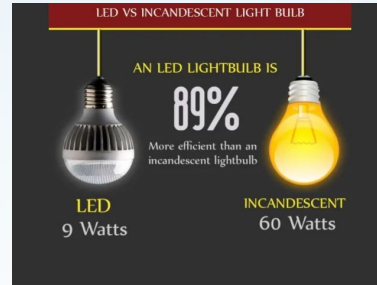
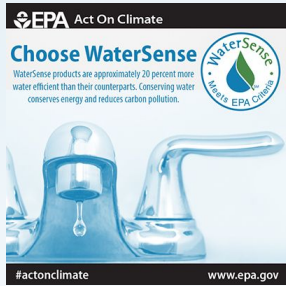
No Efficiency Standard.

Carbon dioxide emissions reductions relative to baseline energy-related emissions.



Today or Tomorrow

Benefits: An Efficiency Standard Will Yield Results



VEHICLE EMISSION CONTROL INFORMATION	
Conforms to regulations: 2011 MY	
U.S. EPA: T2B5 LDT1	
OBD: F II	Fuel: Gasoline
California: Not for sale in states with California emissions.	
OBD: N/A	Fuel: N/A
TWC/HO2S/EGR/SFI/HAFS	No adjustments needed.
2.5L-Group: BFMXT02.51EN	
Evap: BFMXR0125NBV	
▽BW7E-9C485- UAC	

A small Change Will Have a Huge Effect

SCSglobal
SERVICES

<https://www.sgs.com/>

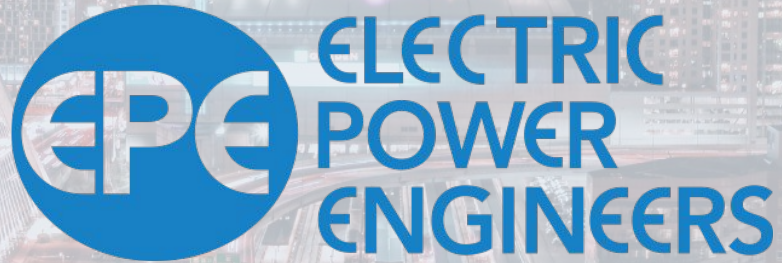
Regarding Critical Infrastructure, Equity & Resilience, to achieve Carbon & Equity goals, a critical obstacle for Us to overcome is the Lack of an Efficiency Standard for Overhead Transmission.

The way to solve this is not difficult. Working together, we could put together a powerful position paper that could impact Boston, New England, and possibly the Nation

CO-HOST



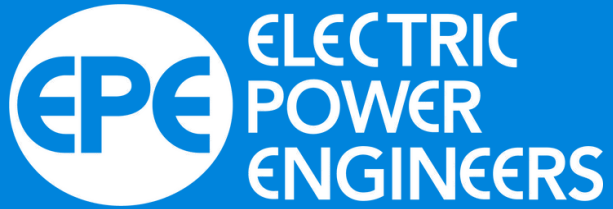
Stephanie Badr
Vice President of Operations
Electric Power Engineers, Inc.



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Optimizing T&D for Equity and Resilience Stakeholder Challenge

Stephanie Badr, VP of Operations | March 30, 2022



About EPE

Electric Power Engineers, LLC (EPE) is a leading consulting engineering firm focused on the energy transition, providing power systems engineering services to a diverse client base.

Mission

To build a platform to connect our teams and harness the synergies and expertise among all services, therefore, fueling innovation to enable our vision.

Vision

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

Why Optimizing T&D

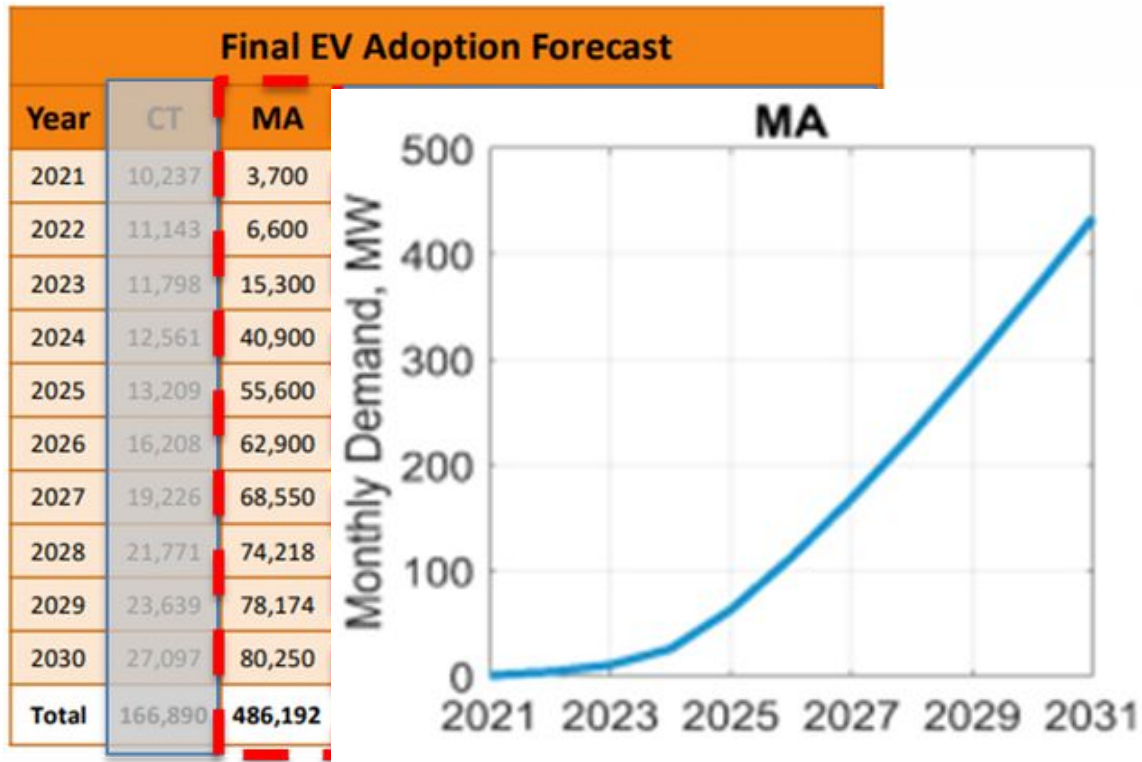
- Replace Aging Infrastructure.
- More Efficient Delivery of Energy.
- Achieve Decarbonization Goals.
 - Support EV Revolution
 - Drive DER Growth



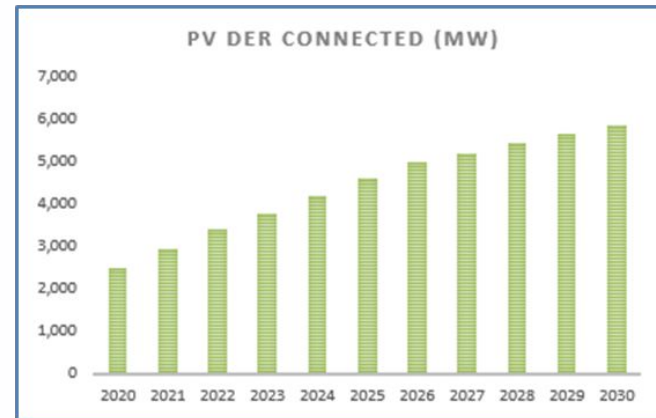
Accommodate Rapid Growth Across
Generation | Transmission | Distribution | Consumers | DERs

Critical Problem

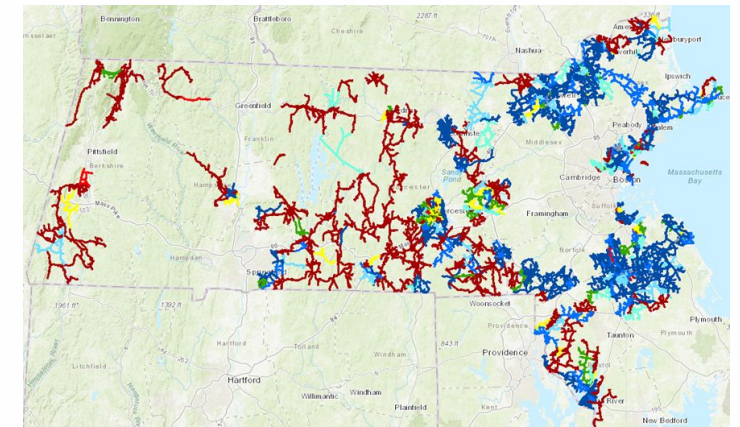
Electric Vehicles Growth



PV DER Growth



MA Hosting Capacity Map



DER & EV Growth Exceeding T&D Infrastructure Capacity

Key Obstacles to Overcome



Access to Advanced Data

Lack of advanced data and flexible models that allows us to study holistically transmission and distribution needed upgrades.



Timing Mismatch

Timing mismatch between PV Output and EV Charging.

Alignment often requires energy storage or changes in customer behavior that may impact EV adoption as well as customer satisfaction



Locational Mismatch

Locational mismatch in the identified T&D needed Infrastructure upgrades that would not allow a cost-effective design of the grid that is sustainable, equitable and futuristic

What are the benefits & consequences of 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 decarbonization and Zero-Emission Goals
- Excessive overspend on T&D upgrades
- Higher rates and a detriment to affordability
- Customer dissatisfaction

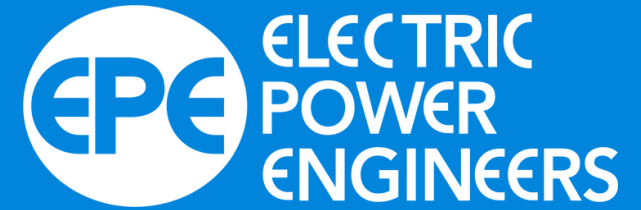


Final Statement

Regarding Optimizing Transmission and Distribution for Equity and Resilience, a critical obstacle to overcome is “the temporal and locational misalignment in T&D infrastructure upgrades.”



Thank you!



Stephanie Badr

Vice President of Operations

Electric Power Engineers

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512-886-2122



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DEVELOP 12 MONTH SOLUTIONS - INPUT SLIDO Q&A



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THANK YOU

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