NARUC Summer Policy Summit

Committee on Energy Resources and the Environment

Monday, July 15th, 2:00 – 3:00 pm ET

NARUC Summer Policy Summit

Preparing the Grid to Meet the EV Transition

Moderator: Hon. David Veleta, Indiana

Panelists:

Kang-Ching (Jean) Chu, Analyst, The Joint Office of Energy of Transportation

Cole Jermyn, Attorney, Energy Transition, Environmental Defense Fund

Ben Shapiro, Manager, RMI

Joint Office of
Energy and
Transportation

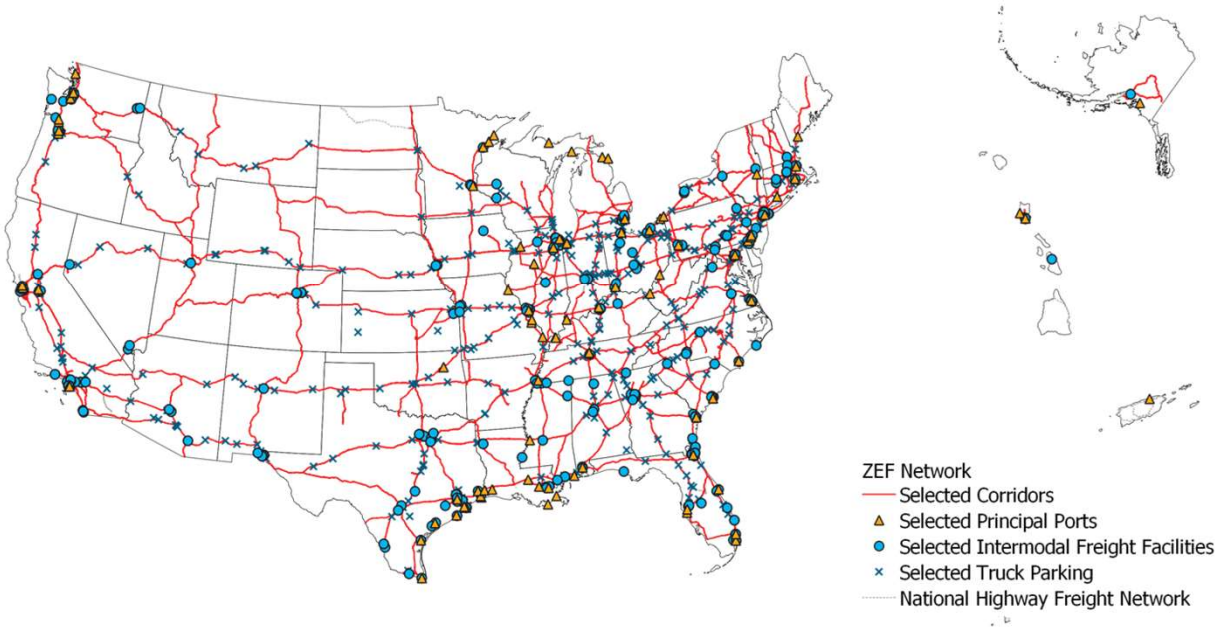
Discover the National Zero-Emission Freight Corridor Strategy

Kang-Ching (Jean) Chu
7/15/2024

driveelectric.gov

Goal

The *National Zero-Emission Freight Corridor Strategy* seeks to **align and accelerate cross-sector investments** in zero-emission medium- and heavy-duty vehicle (ZE-MHDV) infrastructure and **clearly signal the need to bolster electric grid and hydrogen planning** to achieve a zero-emission freight network by 2040.



Approach

To catalyze public and private investment in zero-emission freight (ZEF) and fully build out a ZEF corridor network by 2040, we will **prioritize** and **sequence** federal investments:

PRIORITIZE

APPROACH

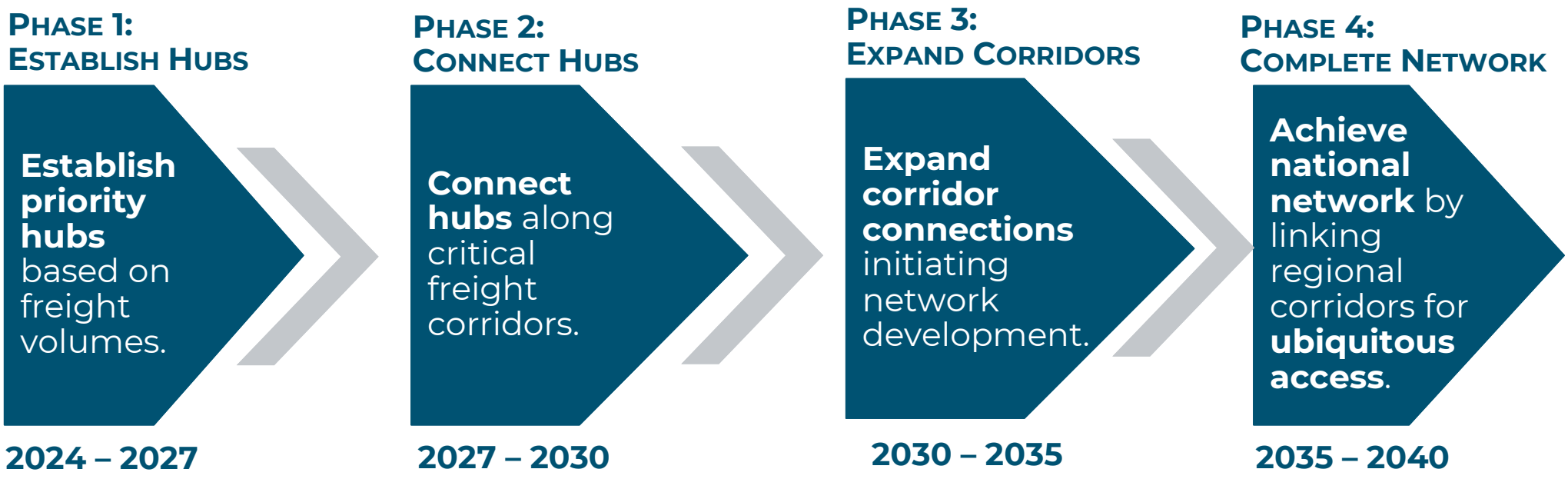
- Determine deployment factors.
- Apply factors to map.
- Establish focus and cadence of a multi-phase corridor plan to scale growth along freight corridors by 2040 for a fully built out national network.

OUTCOMES

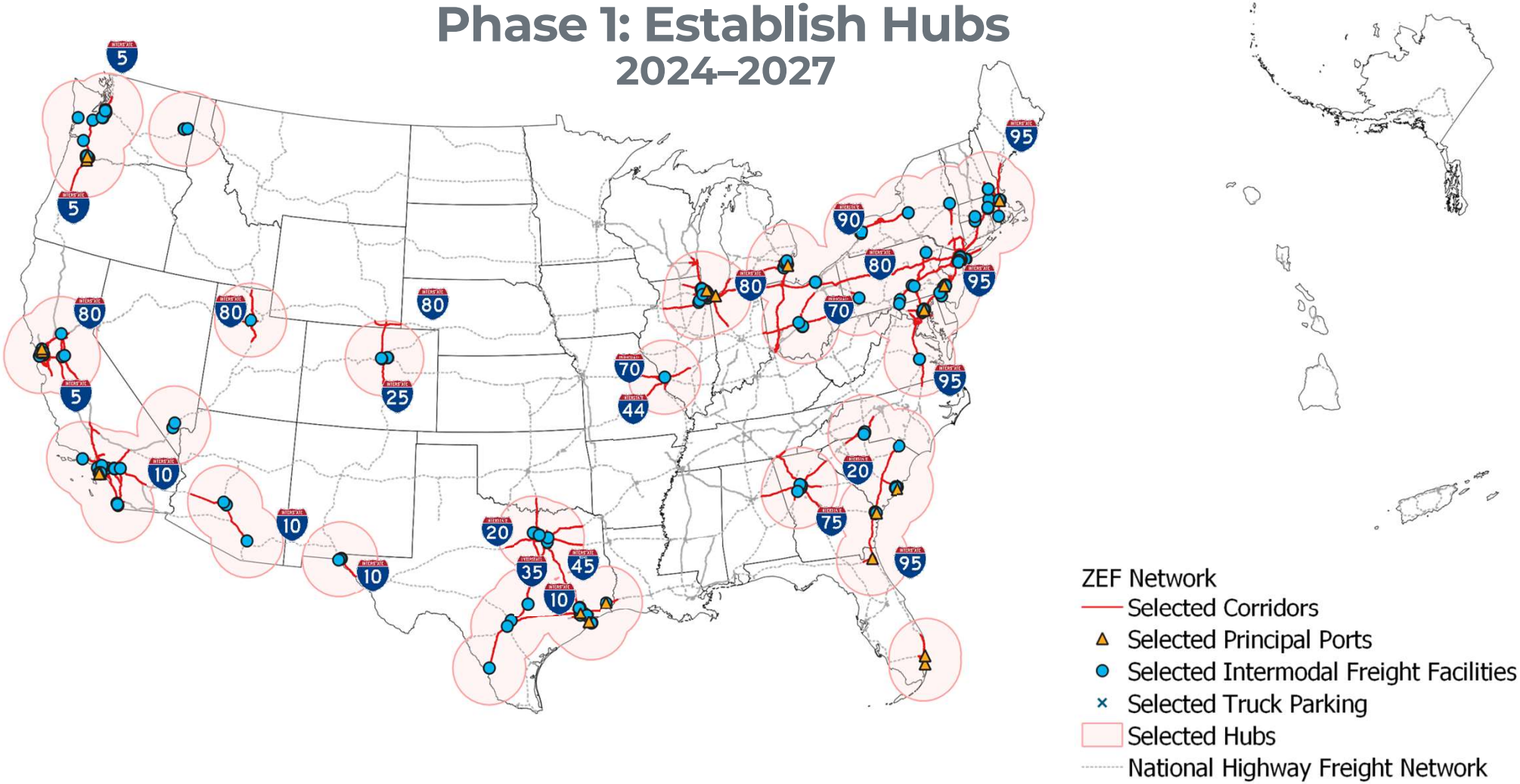
- Allows federal grant program administrators to prioritize applications by assigning criteria/bonus points to projects in priority locations.
- Enables utilities & regulators to plan and approve infrastructure investments.
- Aligns policy across jurisdictions, sequences public & private action, ensures hubs and corridors support environmental justice.

A Four-Phased Strategy for a National ZEF Network

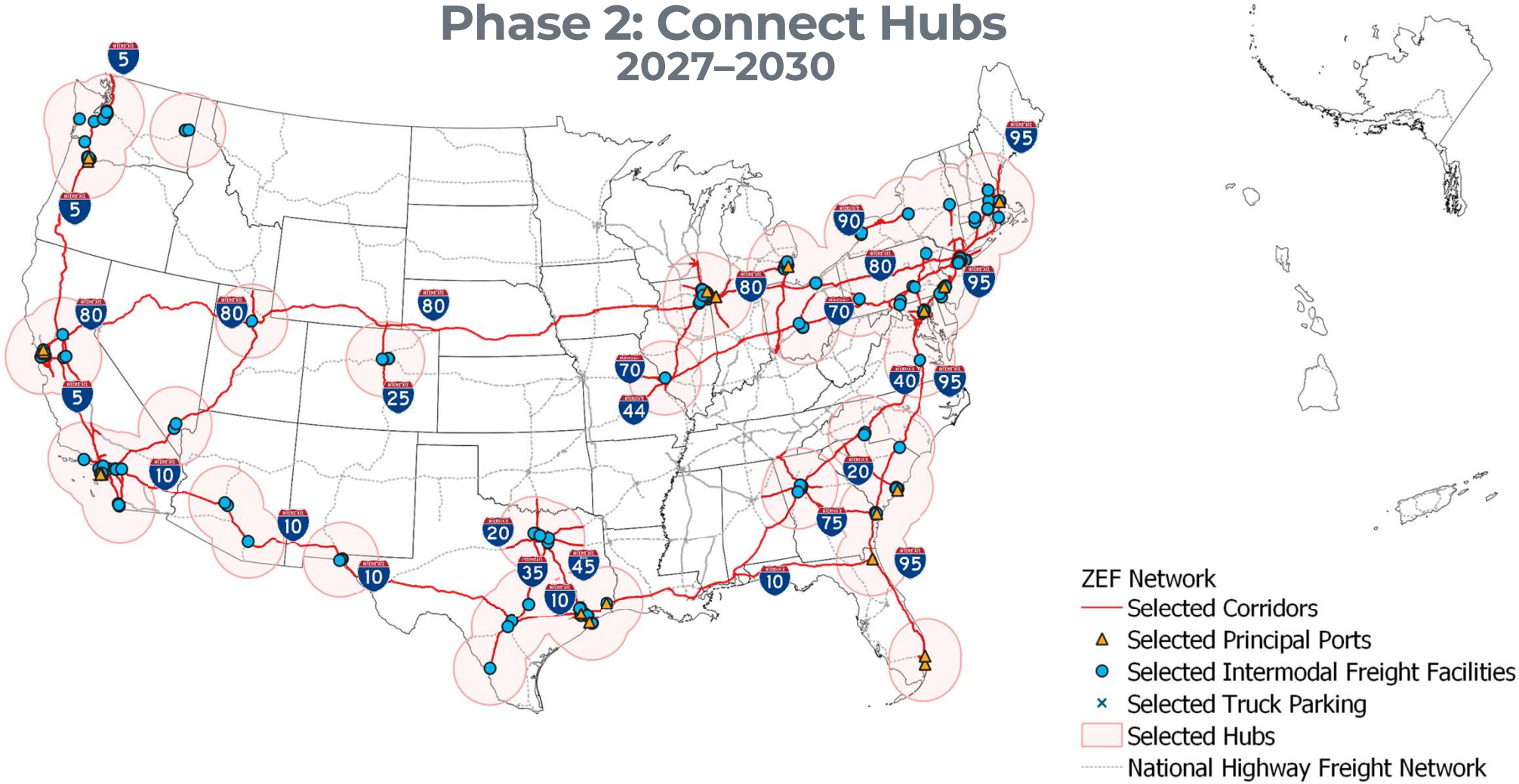
The **ZEF Corridor Strategy will accelerate infrastructure deployment** along key corridors and hubs in four phases to achieve a **national ZEF network by 2040**.



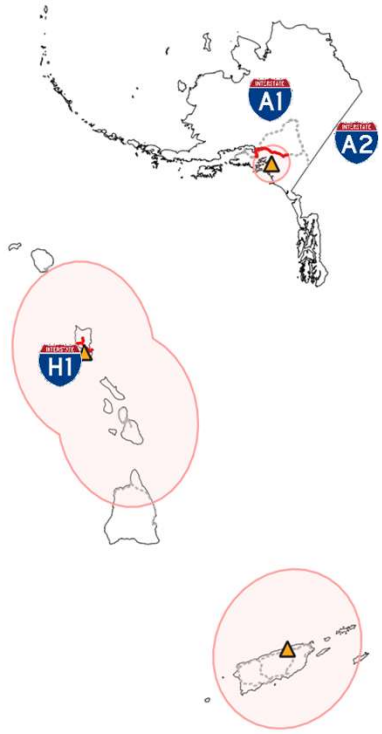
Phase 1: Establish Hubs
2024–2027



Phase 2: Connect Hubs
2027–2030

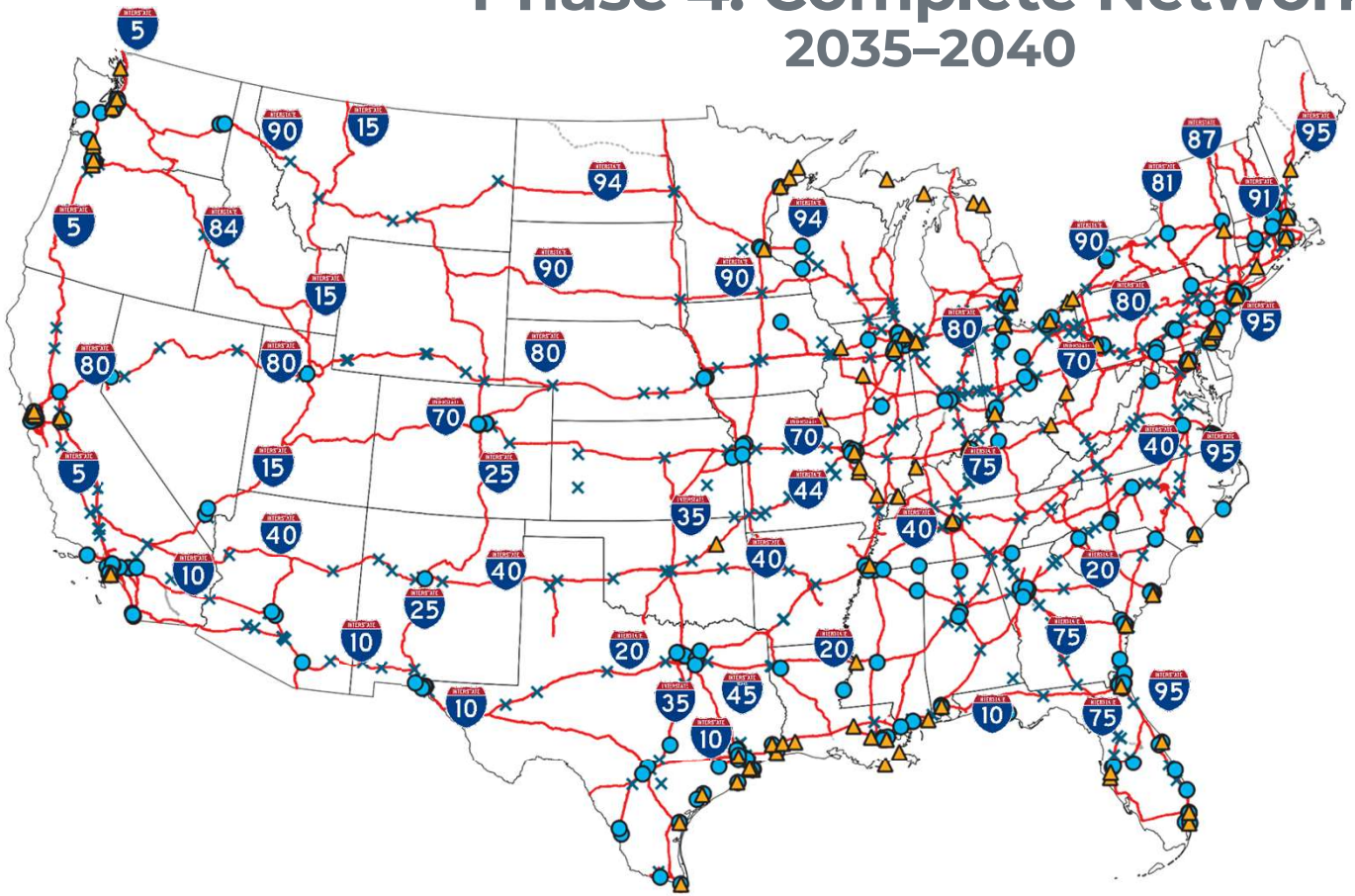


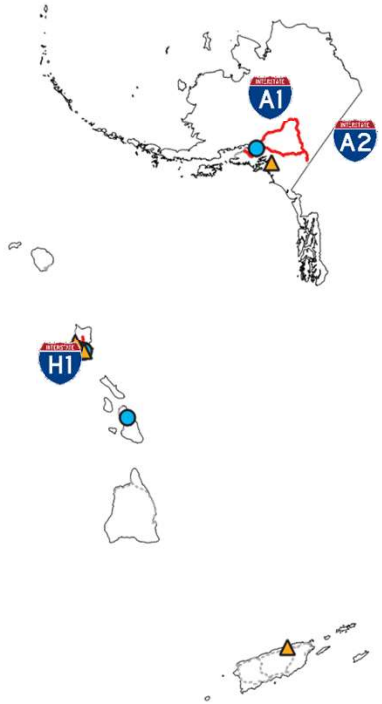
Phase 3: Expand Network
2030–2035



ZEF Network
- Selected Corridors
- Selected Principal Ports
- Selected Intermodal Freight Facilities
- Selected Truck Parking
- Selected Hubs
- National Highway Freight Network

Phase 4: Complete Network
2035–2040





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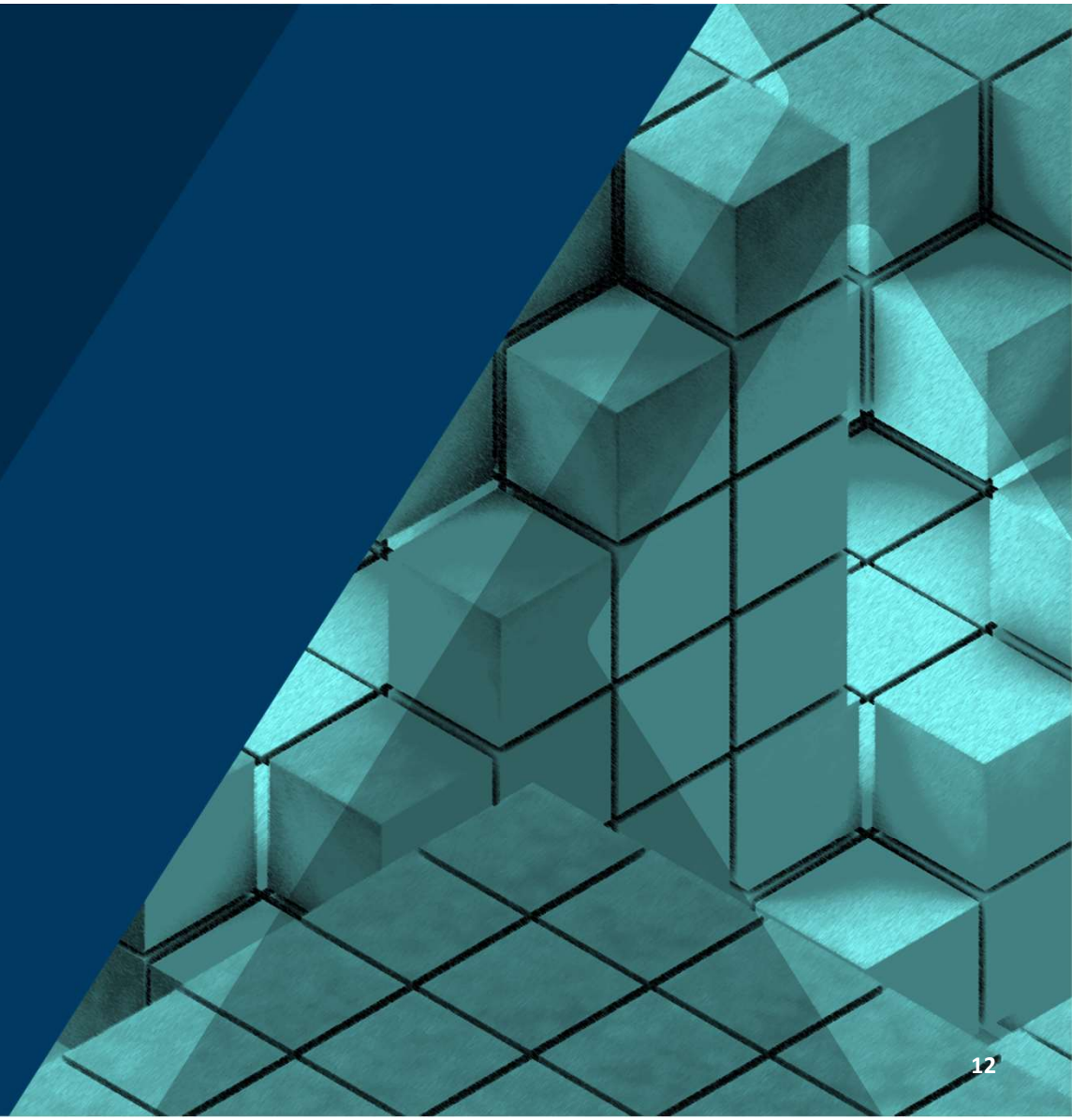
Preparing the Grid for Rapid EV Load Growth

NARUC Summer Policy Summit

Ben Shapiro | July 15, 2024

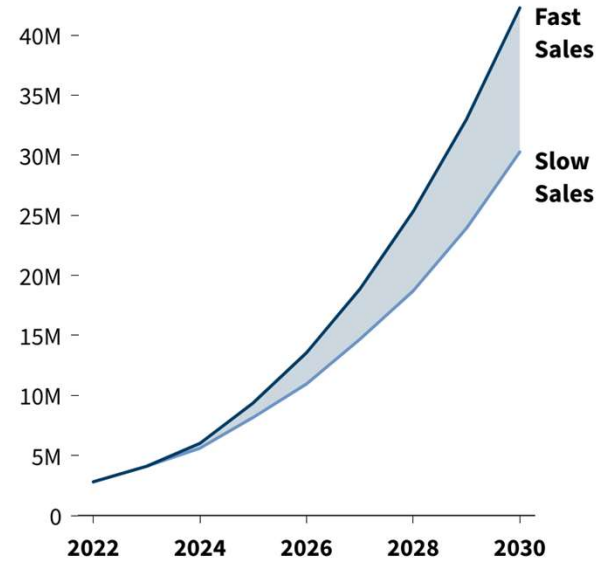
Understanding the Challenge



All signs point to rapid EV load growth.

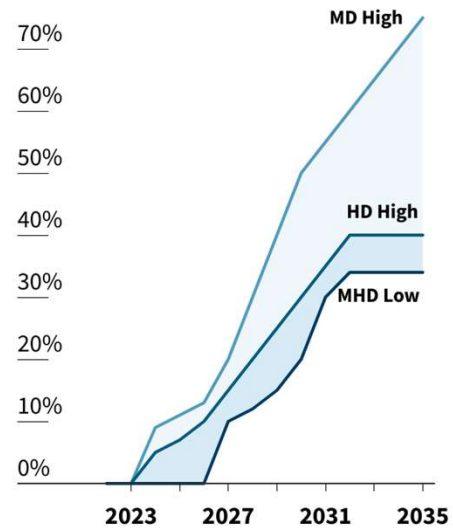
Even lower-end estimates of EV adoption signal dramatic growth…

Light-Duty EVs on US Roads



Source: NREL: "The 2030 National Charging Network"

US Zero Emission Truck Sales Share

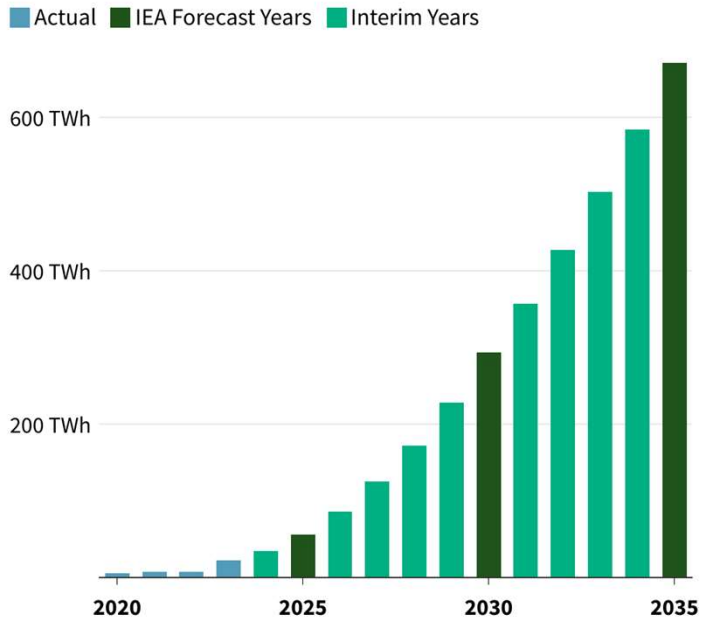


Source: RMI analysis

***MD**: Medium-duty | **HD**: Heavy-duty | **MHD**: Medium-/heavy-duty*

…with corresponding growth in energy and power needs.

Electricity Demand for On Road EV Charging in the US



Data from the International Energy Agency (IEA) Announced Policies Scenario.

Source: IEA Global EV Data Explorer

Why does this present a challenge?

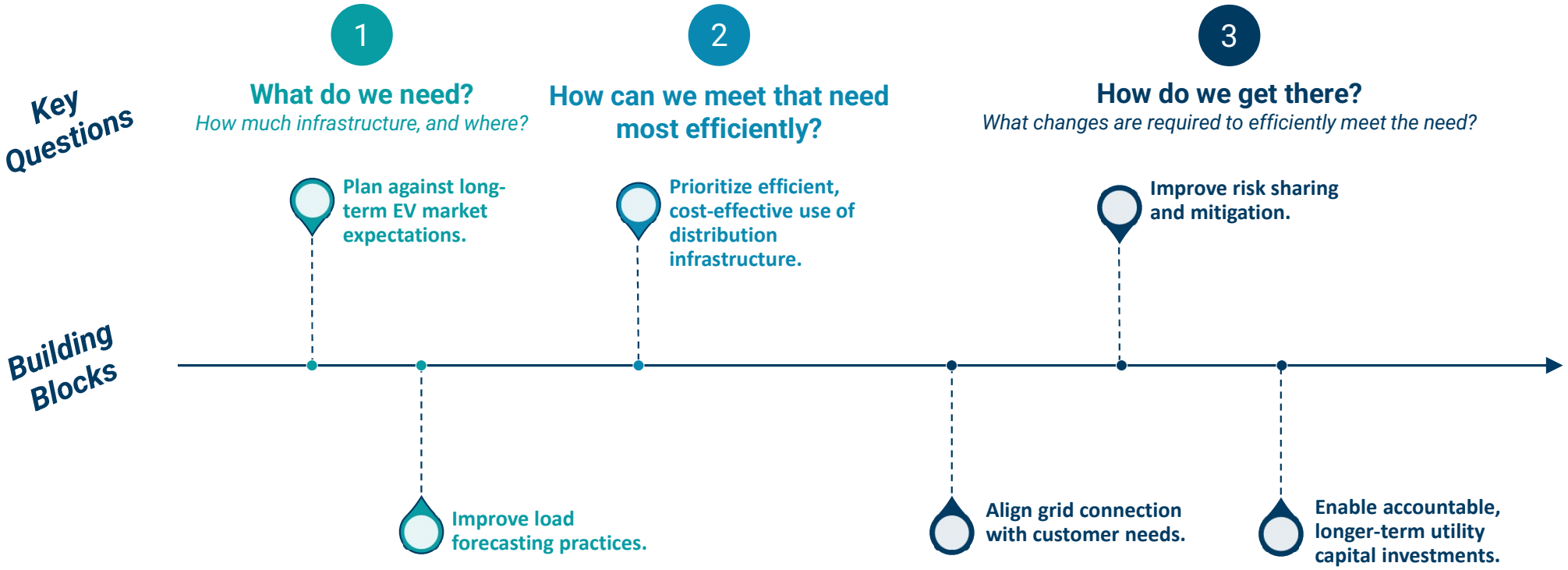
The current planning and investment paradigm is too slow to provide electric service based on market expectations of EV load growth.

What are the root causes of this issue? What are the implications?

Root Cause
1. Significant Uncertainty 
2. Existing Regulatory Paradigm 
3. Utility & Regulator Risk Aversion 

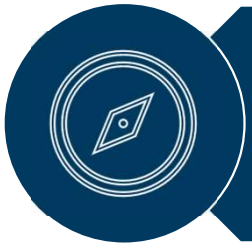
Meeting the Moment

Regulators and utilities must answer three critical questions to plan for EV load growth.



Three key areas regulators can focus on to support strong utility practices.

Leveraging existing tools in targeted ways can enable forward-looking EV planning and investment.

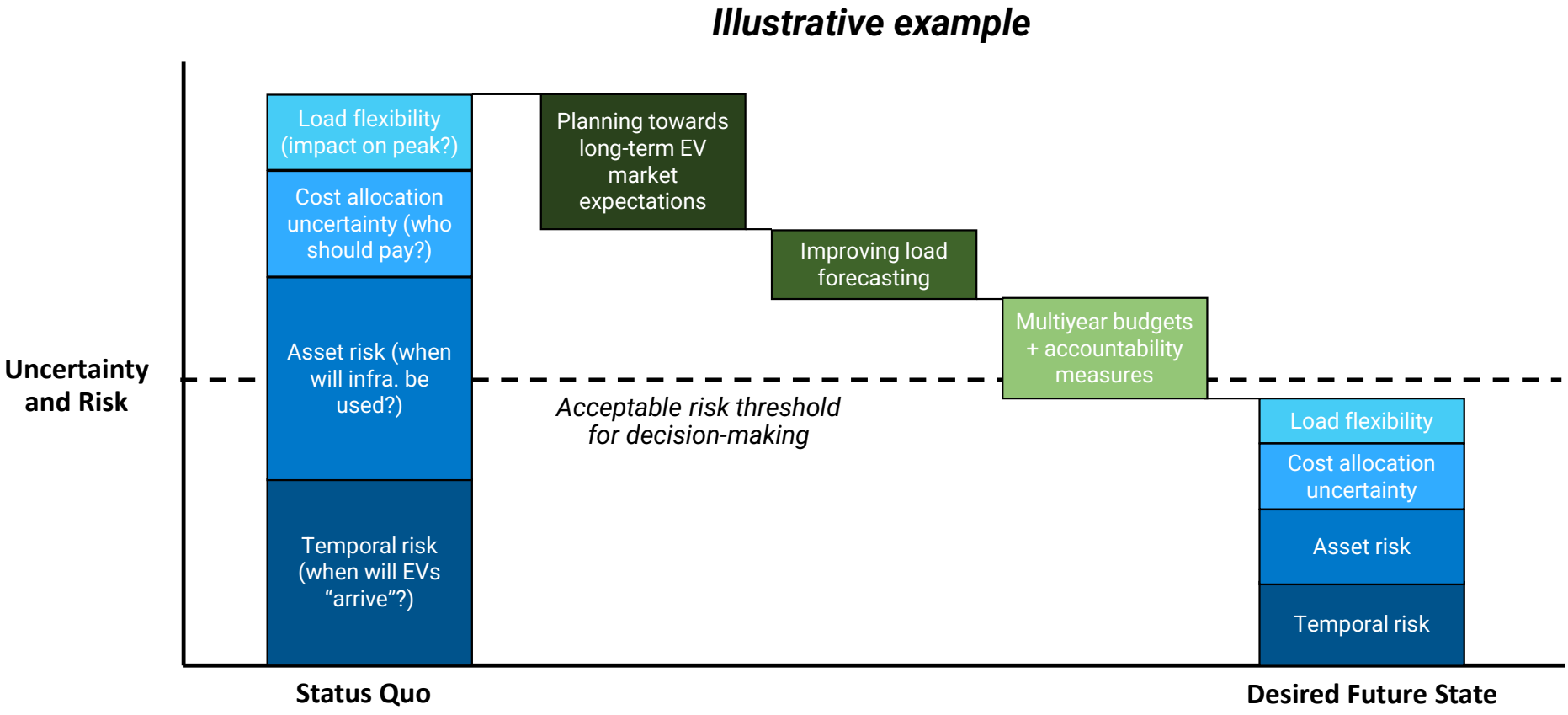


Set Grid Planning Guidance

Establish and Track Desired Outcomes

Approve Appropriate Proactive Investment

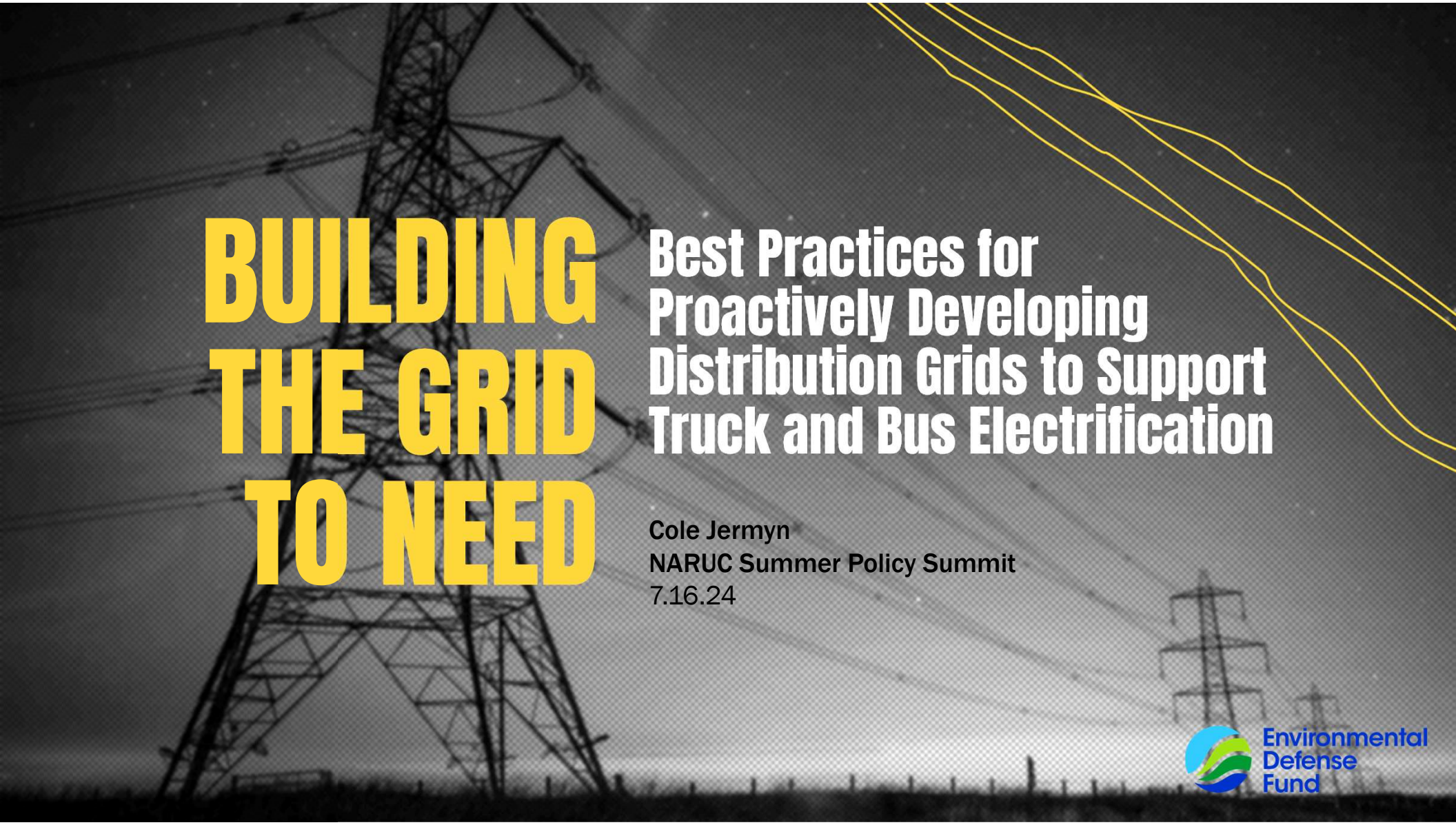
Working together, regulators, utilities, and other stakeholders can reduce risk and uncertainty to acceptable levels.



Thank You!

Ben Shapiro
Manager, Transportation
bshapiro@rmi.org

Scan here for a digital copy and feedback form on RMI's concept note, *Transportation Electrification Building Blocks*



BUILDING THE GRID TO NEED

Best Practices for Proactively Developing Distribution Grids to Support Truck and Bus Electrification

Cole Jermyn

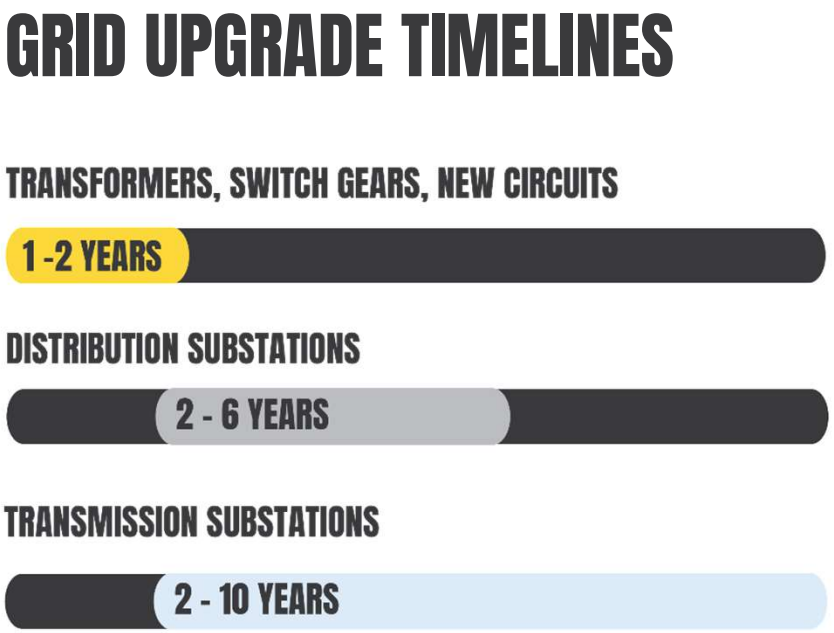
NARUC Summer Policy Summit

7.16.24

Environmental Defense Fund

Challenges for Utilities

- The Rapid Pace of Electrification
- Fleet Clustering
- Alignment with Regulators

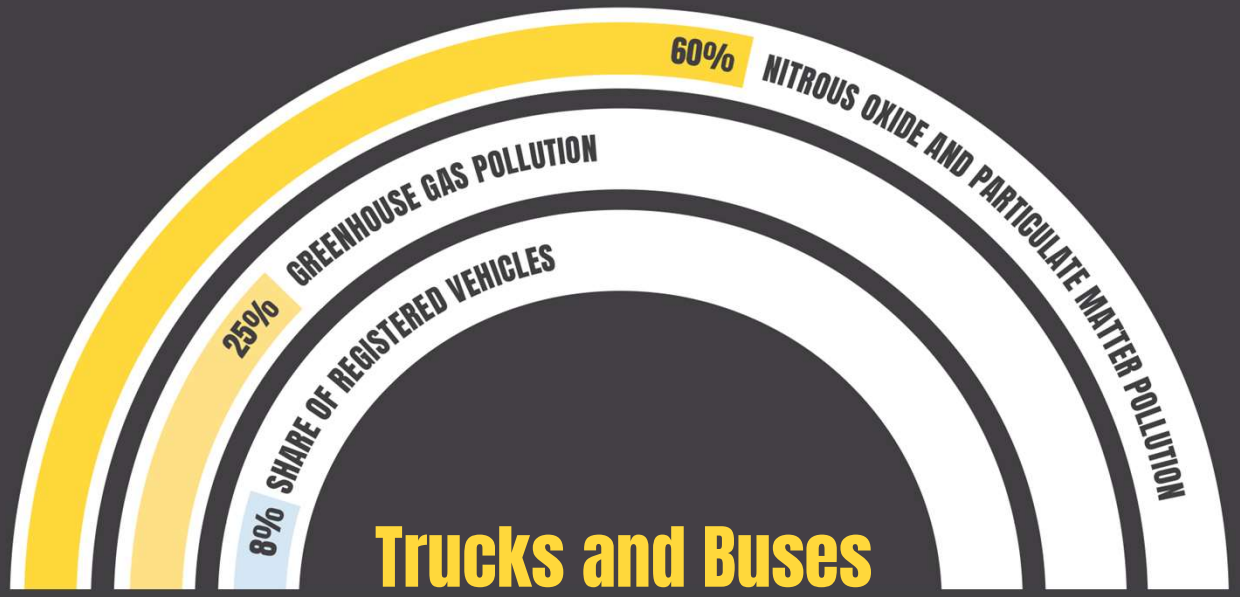


Benefits of Truck and Bus Electrification

The Transportation sector causes the largest share of GHG emissions in the U.S.

Trucks and buses are responsible for an *outsized share of these emissions*, and of local air pollution

The air pollution from these vehicles is particularly harmful to *low-income communities and communities of color*.



Mitigating Risks

Forecasting and Planning

Updating forecasting methods

- Leveraging best available data
- State agency collaboration
- Bottom-up forecasting
- Ground-truthing with fleets

Accounting for upside and downside risks of grid buildout

Mitigating Risks

Innovative Technologies and Policies

Leveraging non-wires alternatives

- Distributed energy resources
- Automated Load Management (ALM) tools

Interconnection reforms

- Flexible
- Hybrid
- Ramped

Accountability and Incentives

Clear targets, metrics, and reporting requirements

Performance incentive mechanisms

- Both upside and downside incentives
- Target incentives to areas of utility control or influence

Existing incentives for capital investment

- Balance incentives to avoid over- or under-building

Conclusions

Proactive grid buildout speeds truck electrification

Several tools exist to minimize costs and protect ratepayers

This work responds to broader trends in customers' changing energy usage

Thank you

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Q&A

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NARUC EV State Working Group and EV Resources

- All Commissioners and Commission staff are invited to join NARUC's EV State Working Group
  - Monthly webinars + peer exchange discussions
  - Highlights of EV-related news & NARUC events
- NARUC EV Website:
  - www.naruc.org/core-sectors/energy-resources-and-the-environment/energy-customers/electric-vehicles/

NARUC NEVI Formula Program Brief for PUCs

NARUC Summer Policy Summit

ERE Meetings will resume at 11:15am on Tuesday. Check App for sessions and room names

General Session, 3:30pm ET Today