



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

PUBLIC UTILITIES COMMISSION

OFFICE OF ENERGY RESOURCES

DIVISION OF PUBLIC UTILITIES AND CARRIERS

Power Sector Transformation: Technical Session and Inquiry into Transportation Electrification

May, 31st 2017



RI Power Sector Transformation Initiative

Will shape the ongoing transformation of the electric grid to achieve three policy objectives:

- ◆ **System Efficiency:** Control the long-term costs of the electric system
- ◆ **System Flexibility:** Build a flexible grid to integrate more clean energy generation
- ◆ **Customer Choice:** Give customers more energy choices

Four Work Streams

- Utility Business Model
- Grid Connectivity and Functionality
- Distribution System Planning
- **Beneficial Electrification**



Electrification of What?

Vehicles



Heating



Electrification: When is it Beneficial?

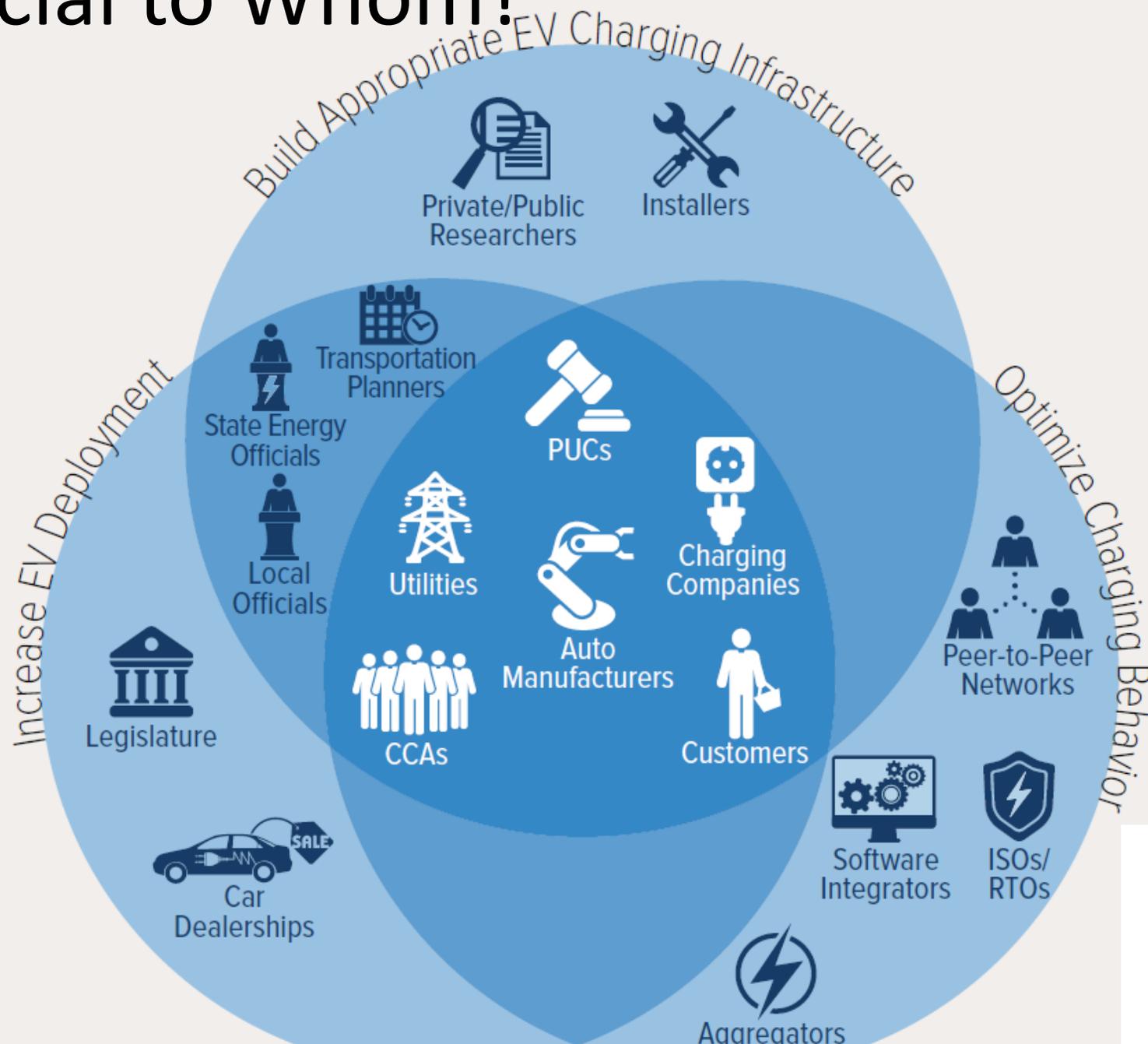
When, by some measurement, benefits > costs:

- Saves consumers money long-term
- Reduces environmental impacts
- Enables better grid management

Achieving GHG targets:

Heat pumps and EV's meet ~70-80% of heating and transportation needs in 2050

Beneficial to Whom?



Utility Practices that Influence Electrification

- Integrating EVs into distribution system planning and operation
- Rate design to influence consumer behavior and manage grid impacts
- Outreach and education programs
- Investments in charging infrastructure

Key Questions for RI

- What is the role of the utility in enabling EV integration or deployment?
- What factors will regulators have to consider when evaluating a utility's EV proposal?
- What does it mean to optimize load growth on the grid, and how can regulators and the utility encourage that optimization?
- Should the utility own, operate, and/or maintain charging stations?
- Should ratepayer-backed incentives be used to encourage EV deployment?
- What processes can we use to ensure that the role of the utility and program regulation is adaptive to (presumably) dynamic EV products?

Relation to Other Work Streams

Utility Business Model (Lead: Jonathan Schrag, Dep. Administrator DPUC)

- What is the utility business model that makes sense for the entire utility system, and how does an EV business model match and fit into that larger model?

Distribution System Planning (Lead: Danny Musher, Chief Prog. Devel. OER)

- How can a new model for distribution system planning be used to accommodate and optimize new load from electrification of vehicles and heating?

Grid Connectivity and Functionality (Lead: Macky McCleary, Administrator DPUC)

- What functions will the utility and other parties require to make their business models for electrification work, and what new technologies might be necessary for those functionalities?

Beneficial Electrification Next Steps

Tentatively:

- **June 9, 2017: Questions document for public response issued (focus will be on EVs)**
- **Jun 30, 2017: End of response period**
- **Submit responses to dpuc.powersectortransformation@dpuc.ri.gov**
- **Straw document released in July**