



WORLD
RESOURCES
INSTITUTE



UTILITY ELECTRIC SCHOOL BUS (ESB) WORKING GROUP

KICK OFF MEETING | FEBRUARY 3RD, 2022

WHAT INTERESTS YOU IN A UTILITY ESB WORKING GROUP?

Please change your name in Zoom to your first name, last name initial and your company name/affiliation. Then submit your answer in the chat box.

KICK-OFF MEETING GOALS

- Launch a collaborative working group aimed at influencing, supporting and driving the equitable transition to ESBs
- Collectively identify key ESB topics to explore in subsequent meetings and the related resources and support required

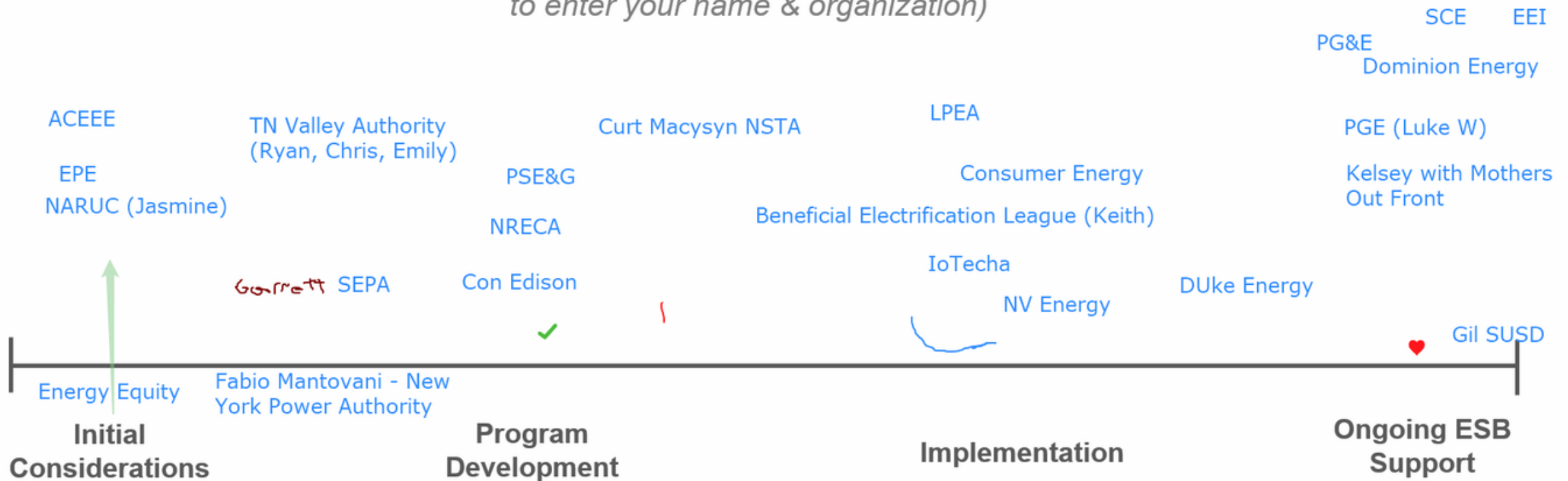
AGENDA

2:00 – 2:10	Welcome
2:10 – 2:20	Member Introduction
2:20 – 2:35	WRI Electric School Bus (ESB) Initiative Overview
2:35 – 2:40	Utility ESB Working Group Overview
2:40 – 3:15	Working Group Priority ESB Topics (<i>Group Brainstorm</i>)
3:15 – 3:50	Planning for the Future of ESBs (<i>Small Group Brainstorm</i>)
3:50 – 4:00	Wrap-Up

MEMBER INTRODUCTION

WHERE ARE YOU IN THE PURSUIT OF SUPPORTING ELECTRIC SCHOOL BUSES?

(Use the Zoom annotation tool at the top of your screen – “View Options” > “Annotate” > “Stamp” – to enter your name & organization)



WRI ESB INITIATIVE OVERVIEW



WRI is a global research organization that turns big ideas into action at the nexus of environment, economic opportunity and human well-being.



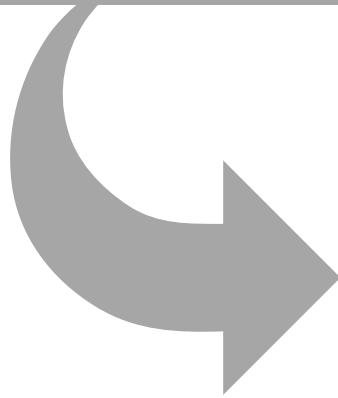
OUR AIM: ELECTRIFY THE ENTIRE U.S. FLEET BY 2030

- Partner with communities, school districts, industry experts, manufacturers, utilities, and policy makers to **transform and electrify** the school bus market.
- Together, build unstoppable momentum to **electrify** 480,000 school buses in the U.S. by 2030.
- Ensure an **equitable transition** by focusing on underserved communities.

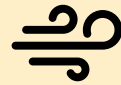


WHY ELECTRIFY THE U.S. SCHOOL BUS FLEET?

Electrification can accelerate decarbonization while bringing direct, tangible benefits to every community



Improved health and cognitive outcomes for children



Cleaner air, especially in high-pollution corridors and communities of color



Reduced operating expenses for school districts



New jobs in green manufacturing



A **tipping point** for MHD + electrification

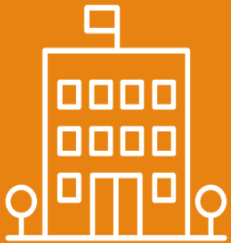


Enhanced **resiliency** and **renewables integration** with V2G

OUR VISION INVOLVES MULTIPLE STAKEHOLDERS

Goal: An Equitable Transition to Electric School Buses

School
Districts



Pillar 1

Manufacturers



Pillar 2

Utilities



Pillar 3

Federal & State
Policymakers



Pillar 4

Local
Communities



Pillar 5

Foundation: **Equity, Communications, Engagement**

PROJECT WIDE ADVISORY COUNCIL MEMBERS | * = CO-CHAIR



Maria S. Bocanegra*
*Commissioner,
Illinois Commerce
Commission*



Solyana Mesfin*
*High school student &
Student Member, Kentucky
Board of Education*



Harold Wimmer*
*National President &
CEO, American Lung
Association*



Maia D. Bellon,
*Partner, Cascadia
Law Group*



Curt Macysyn
*Executive Director,
National School
Transportation Association*



Mari McClure
*President & CEO,
Green Mountain
Power*



Melissa Miles
*Executive Director,
New Jersey Environmental
Justice Alliance*



Patty Monahan
*Commissioner,
California Energy
Commission*



Michael A. Nutter
*Former Mayor of
Philadelphia*



Andre Perry
*Senior Fellow,
Metropolitan Policy
Program, Brookings*



Gil C. Quiniones
CEO, ComEd



Victor A. Rojas
*Senior Vice President,
Sustainable Capital
Advisors*



Gilbert Rosas
*Energy Education Specialist,
Stockton Unified School District*



Nathaniel Smith
*Founder & Chief Equity
Officer, Partnership for
Southern Equity*



Erica Swinney Staley,
*Executive Director,
Manufacturing
Renaissance*



Carol Tyson *Government
Affairs Liaison, Disability
Rights Education & Defense
Fund*



Johana Vicente
*Chispa National Senior
Director, League of
Conservation Voters*



Karen Wayland
*CEO,
GridWise Alliance*



Randi Weingarten
*President,
American Federation
of Teachers*



Kelsey Wirth
*Co-founder & Chair,
Mothers Out Front*



Curtis Wynn
CEO, SECO Energy

EQUITY CENTERED APPROACH

- The **Equity Framework** guides overall project decision-making to **ensure justice and fairness** are driving project outcomes
- Team **capacity-building activities** provide tools to deliver on the framework
- Our partnership guide **fosters and cultivates inclusive stakeholder** relationships
- Equity **Points of Contact** work with each Pillar to achieve equity goals and craft strategies

WRI ESB PILLAR 3 OVERVIEW

Utilities



Pillar 3

P3 TEAM



Gregg Kresge
*Senior Manager, Utility Engagement
& Transportation Electrification*



Michelle Levinson
*Manager, eMobility Financial
Solutions*



Celina Bonugli
*Associate, Clean Energy
Innovation*



Norma Hutchinson
Research Analyst



Hamilton Steimer
Research Intern



Haley Minter
Grants & Finance Specialist



Caitlin Macomber
*Research Analyst,
Environmental Justice &
Equity*



Erika Myers
*Global Senior Manager, Electric
Vehicles*



Lori Bird
Director, US Energy Program





P3 EFFORTS & GOALS

- Address ESB finance barriers
- Identify and support utility ESB design and regulatory approval
 - Including V2X
- Provide utility and regulatory education and outreach
 - Working collaboratively with school districts, manufacturers and key policy makers



P3 DESIRED OUTCOMES

- 30 utilities finance EV school bus deployment by utilizing batteries as grid assets, mobilizing 30,000 new buses by 2025
- 75 large utilities in 25 focus states support charging infrastructure deployment and favorable rates for school buses
- New financing models developed, tested, and replicated, including battery leasing models, e-bus leasing, e-bus holding companies and e-bus bonds



P3 LOOKING AHEAD

Resources being developed:

- Clearinghouse of available funding and financing opportunities
- Taxonomy of business models and deal components
- School district and utility engagement guidance
- Outreach materials (blog, webinars, panel presentations) that include an overview of current V2G pilots and related goals
- Increasing connections and partnerships with leading industry associations



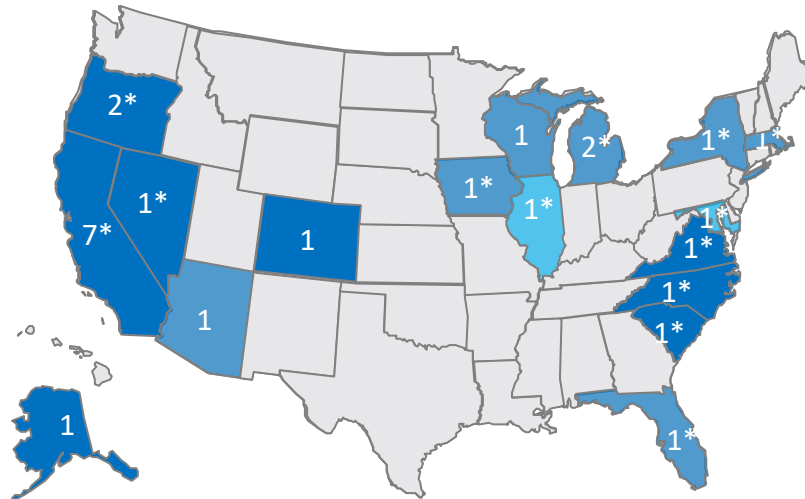
UTILITY ESB WORKING GROUP OVERVIEW



UTILITY ESB WORKING GROUP

Mission

Support an equitable ESB transition throughout the U.S. by influencing, supporting and driving the development and implementation of successful utility ESB programs, rates, models and other mechanisms



ESB Programs/Pilots



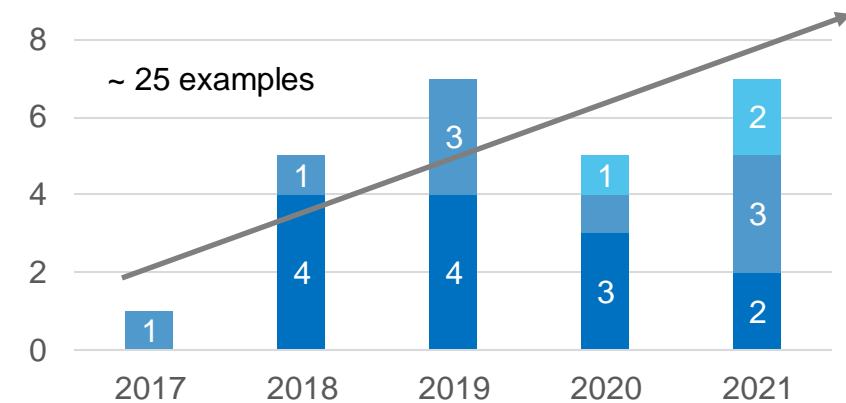
ESB One-off Solutions



Utility-Private Party Collaboration

* Vehicle-to-grid component

Utility ESB Solutions in the Past Five Years



UTILITY ESB WORKING GROUP

Members

- Electric utilities, both those leading the advancement of ESBs and those considering the opportunity
- Other key stakeholders such as, including trade organizations, non-profit organizations and other relevant service providers
- WRI's advisory teams

Scope

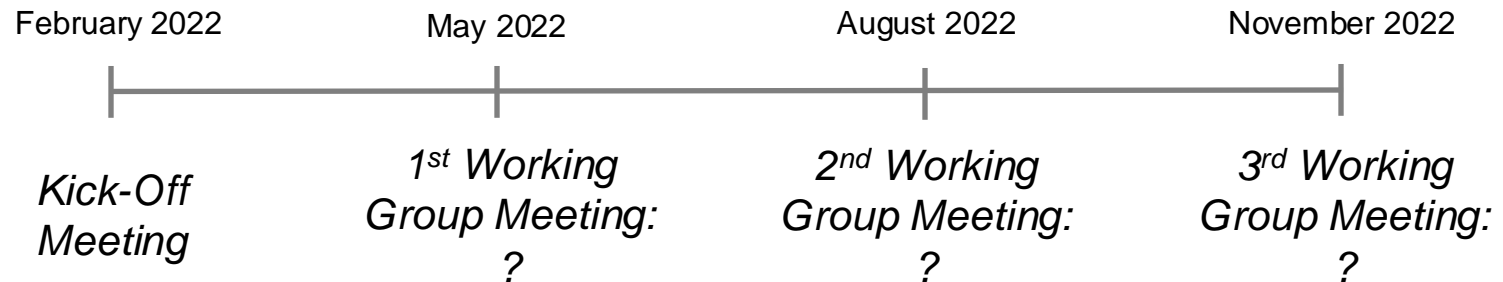
- ESB topics, resources and related efforts driven by member interest and collaboratively identified
- Range: utility ESB program design, regulatory approval, implementation or connecting ESBs to the grid, opportunities for utilizing ESBs as grid assets, etc.
- Initial topics of interest based on initial conversations:

	<i>Make-Ready Programs and Investments</i>	<i>Funding/Financing</i>	
<i>Vehicle-to-Grid Integration</i>		<i>Disaster and Emergency Response /Resiliency</i>	<i>Interconnection Applications</i>

UTILITY ESB WORKING GROUP

Participation

- 1-2 hour, virtual quarterly meetings
 - Ad hoc topic specific
 - Participants may vary to ensure the right team members are included
 - Equity will be integrated in each meeting
- Voluntary, topic-specific committees or sub-working groups as helpful
- Collaborative development of resources
- In-person meetings alongside relevant events
- Utility ESB network to communicate news, seek advice, etc.



UTILITY ESB WORKING GROUP GUIDELINES

1. **Actively contribute** to Working Group discussions and coordinated efforts through participation in conversations, resources and leadership.
2. **Co-create resources**, developed by the Working Group or WRI, by providing input to guide and influence content or taking the lead in building and crafting resources.
3. **Take action** by developing or contributing to others' development of utility ESB programs, rates or other support deployable in the near term. Going beyond just a "talk shop."
4. **Amplify collective impact** by scaling and distributing members' successes or wins, key lessons and insights, etc. to utility peers, regulators, school districts.
5. **Maintain confidences** as required to respect and honor peer contributions.
6. Across all of these, **prioritize an inclusive, equitable, and just ESB transition** that values, incorporates and benefits the voices, experiences, and aspirations of underserved communities, especially those of color, disproportionately impacted by air pollution, barriers to fair wages, and working conditions stemmed from inequitable systems.

WORKING GROUP PRIORITY ESB TOPICS

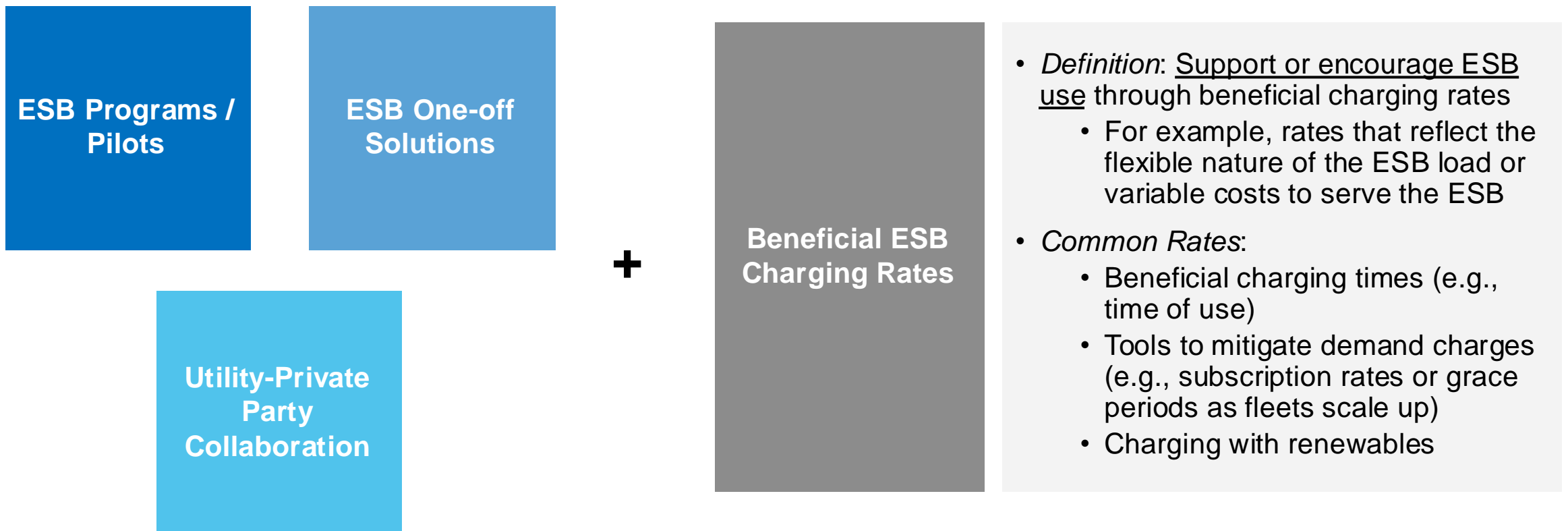


COMMON UTILITY ESB SOLUTIONS

<i>ESB Solution Approach</i>	<i>Definition</i>	<i>Common Utility Role</i>	<i>Examples</i>
Programs/Pilots	Enable access to or facilitate the use of ESBs through utility programs/pilots available to a <u>class of customers</u>	<ul style="list-style-type: none"> • ESB funding (e.g., fund ESB transition costs or infrastructure, rebates) • Advisory services (e.g., education & training) • Infrastructure support (e.g., make ready, charger, battery) • Grid integration management (e.g., charging, V2X) 	<ul style="list-style-type: none"> • CA – San Diego Gas & Electric – Power Your Drive for Schools Program – no cost installation of charging infrastructure • VA – Dominion Energy – Electric School Bus Program – 16 school districts can apply for Dominions’ funding & support (covers the incremental cost of ESBs, the installation & costs of the batteries)
One-Off Solutions	Enable access to or facilitate the use of ESBs through utility programs/pilots available to <u>an individual or multiple customers on an ad hoc or one-off basis</u>	Same as the above	<ul style="list-style-type: none"> • FL – Florida Power & Light – supporting West Palm Beach by paying a portion of ESB cost & managing the charging for V2X learnings
Utility-Private Party Collaboration	Enable <u>external</u> ESB program/pilots granting access to or the use of ESBs	<ul style="list-style-type: none"> • Advisory services (e.g., technical assistance with infrastructure implementation) • Grid integration management (e.g., interconnection of 3rd party enabled ESBs) 	<ul style="list-style-type: none"> • MD – PepCo – Highland Electric Transportation will help with ESB transition & managing the charging, PepCo will support the interconnection



COUPLING UTILITY ESB SOLUTIONS WITH BENEFICIAL CHARGING RATES



Please join us in Mural:

<https://app.mural.co/t/worldresourcesinstitute7926/m/worldresourcesinstitute7926/1643082411037/4355806184a7cd282149a809851cbbeaa4554664?sender=uc714d2586a1fe78a25f49898>

When joining, please enter your name and organization.

PLANNING FOR THE FUTURE OF ESBS



CONCLUSION

NEXT STEPS

- Stay tuned for an invite to the first working group meeting on V2X anticipated in May
 - Proactively consider who should join this topic-specific conversation; feel free to share their contact information with us or forward the calendar invite!
- Other
 - Invite your peers or other stakeholders to join the working group
 - Any other initial thoughts / needs?

WHAT ARE YOU INSPIRED TO DO FROM THIS CONVERSATION?

For example, learn more about X topic, reach out to X, connect with internal colleagues.

THANK YOU

Please contact Celina Bonugli at
Celina.Bonugli@wri.org