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ELECTRIC SCHOOL BUS INITIATIVE UTILITY WORKING GROUP

UWG 6TH CONVENING | AUGUST 17, 2023

MEETING GOALS

- Launch a collaborative working group aimed at influencing, supporting and driving the equitable transition to ESBs
- Learn about various ESB-related activities, issues and ideas particularly as they pertain to electric utility interactions, requirements and programs.
- Collectively identify key ESB topics to explore in subsequent meetings and the related resources and support required

WE KINDLY ASK…

- Please rename your ZOOM title with your name and organization
- Please mute yourself during presentations and when not talking
- Please put your questions in the chat box
- Please participate in the surveys to help inform the topics and provide feedback on the value of the materials being presented
- Please be respectful of the meeting participants and the space allowed for input
- The meeting will be recorded and made available to all participants

AGENDA

Welcome (Goals, Requests and Agenda)

Important News and Updates

Learning session: ESB Initiative Equity Framework

Small Group Breakout Room Exercise

Wrap-Up

EQUITY SPOTLIGHT

Internal updates:

- June-September: drafting and finalizing next year's Pillar Work Plans (FY24)
  - Newest addition: incorporating Equity Strategy Plans for each pillar
- New P5 Equity research: FY23 Advocacy Stakeholder Analysis
  - Held regional focus groups interviewing Clean Cities Coalition Directors and staff

External update:

Berkeley Lab just published this report: Developing an Equity Framework for State Regulatory Decision-Making

GENERAL UPDATES

- **1 Year Anniversary of the Inflation Reduction Act – WRI's take can be found here:** One Year of the Inflation Reduction Act: A conversation with Ali Zaidi, White House National Climate Advisor | World Resources Institute (wri.org)
- **Combined Charging System (CCS) and North American Charging Standard (NACS)– what does this mean for charging?**
- **Clean School Bus Program Grant funding deadline 8/22 – new utility engagement template:** fy23-csb-util-partner-template-2023-04_0.docx (live.com)

Electric School Bus INITIATIVE

WRI'S ESB INITIATIVE EQUITY FRAMEWORK

8/17/2023 Utility Working Group

ELIZABETH MOSES

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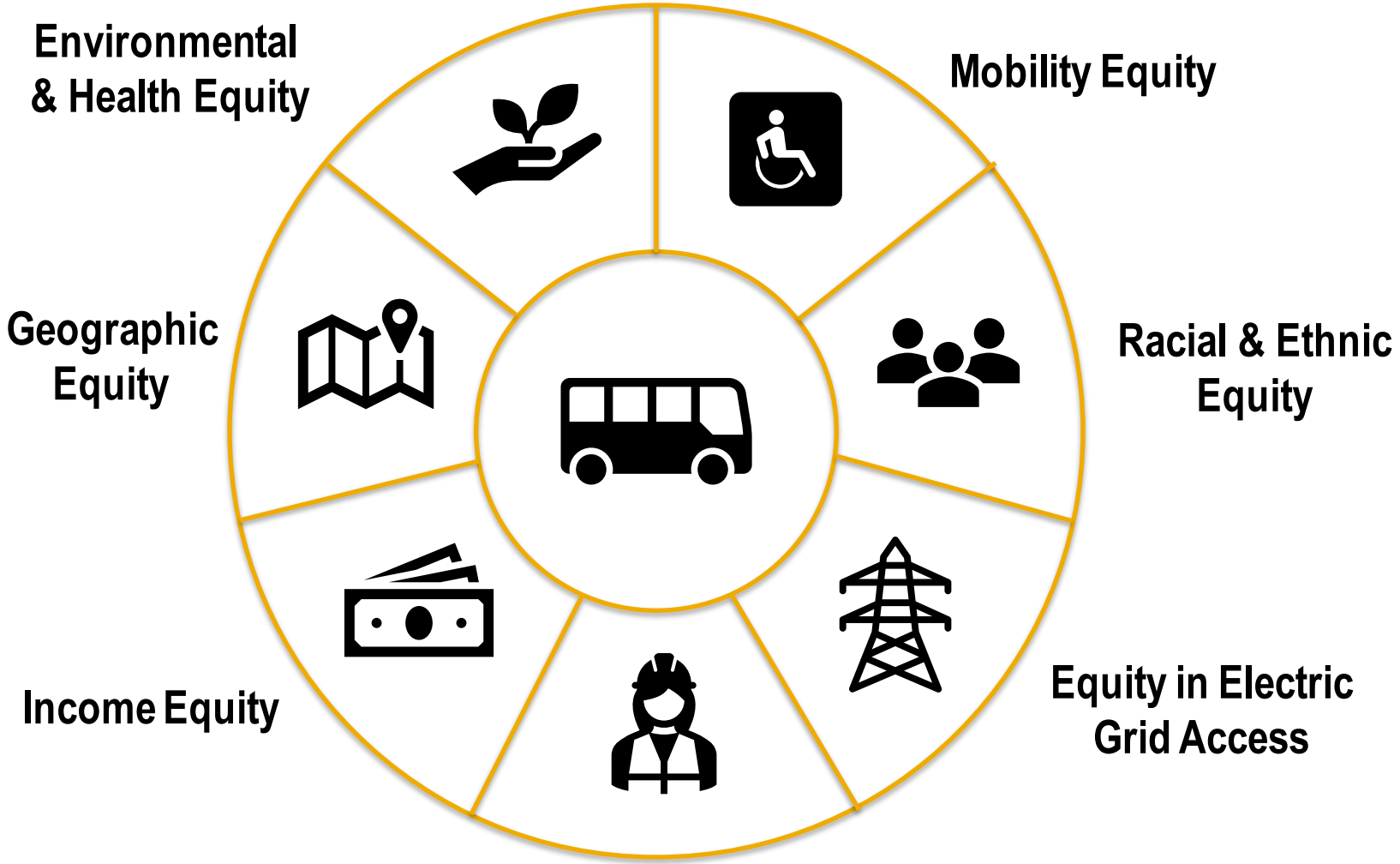
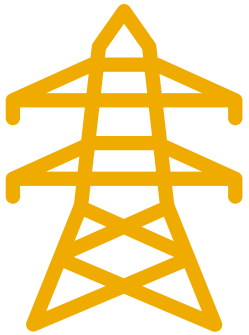
TRANSITION IS NOT WITHOUT RISK

- Communities of color and low-income communities are often the **last to benefit** from transport innovations
- **Structural barriers** foster inequities in education & school bus transport
- Without careful attention, school bus electrification can either **address inequities**, or further **perpetuate them**

WHY EQUITY


Environmental & Health Equity
Mobility Equity
Geographic Equity
Racial & Ethnic Equity
Income Equity
Equity in Electric Grid Access
Workplace Equity

EQUITY INTERSECTIONS: ACCESS TO ELECTRIC GRID



- **Historic and current inequities:**
  - Historical energy underinvestment in communities of color
  - Black and disadvantaged census groups have less access to solar capacity
- **Implications for ESB transition:**
  - Underinvestment impacts perception of readiness for and feasibility of ESBs within disadvantaged communities, which can result in benefits of ESBs bypassing these communities

Sources: Brockway et al. 2021; Lukanov and Krieger 2019

EQUITY INTERSECTIONS: ACCESS TO FINANCIAL RESOURCES

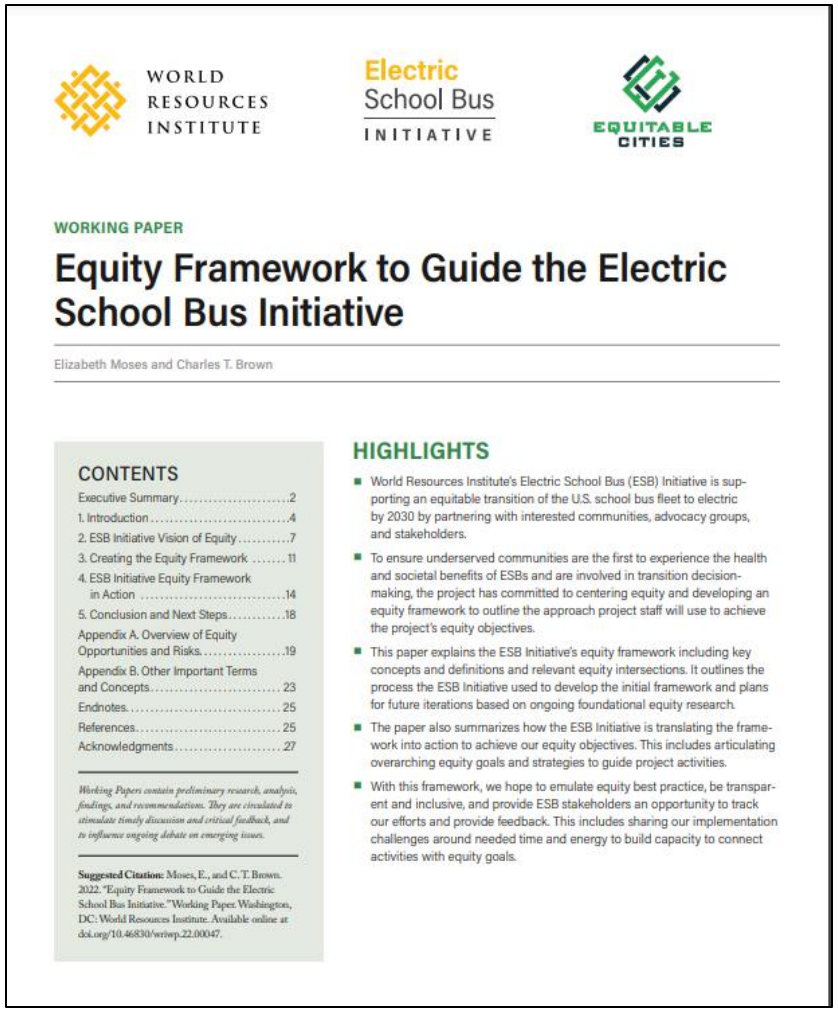
- **Historic and current inequities:**
  - Underserved districts often face higher costs to borrow have smaller tax bases
  - Predominantly non-white school districts receive billions less in total funding, despite serving the same number of students
- **Implications for ESB transition:**
  - Access to funding is necessary to acquire ESBs
  - Need to ensure underserved and disproportionately impacts have access to benefits of ESBs

Source: edbuild

WHY CENTER EQUITY?

- To ensure underserved communities are **the first to experience the benefits** of electric school buses
- To avoid allowing ESB transition to **perpetuate ingrained systems of inequity**

EQUITY FRAMEWORK DOCUMENT



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Electric School Bus INITIATIVE

EQUITABLE CITIES

WORKING PAPER

Equity Framework to Guide the Electric School Bus Initiative

Elizabeth Moses and Charles T. Brown

CONTENTS

Working Papers contain preliminary research, analysis, findings, and recommendations. They are circulated to stimulate timely discussion and critical feedback, and to influence ongoing debate on emerging issues.

Suggested Citation: Moses, E., and C. T. Brown. 2022. "Equity Framework to Guide the Electric School Bus Initiative." Working Paper. Washington, DC: World Resources Institute. Available online at doi.org/10.46830/wriwp.22.00047.

HIGHLIGHTS

- World Resources Institute's Electric School Bus (ESB) Initiative is supporting an equitable transition of the U.S. school bus fleet to electric by 2030 by partnering with interested communities, advocacy groups, and stakeholders.
- To ensure underserved communities are the first to experience the health and societal benefits of ESBs and are involved in transition decision-making, the project has committed to centering equity and developing an equity framework to outline the approach project staff will use to achieve the project's equity objectives.
- This paper explains the ESB Initiative's equity framework including key concepts and definitions and relevant equity intersections. It outlines the process the ESB Initiative used to develop the initial framework and plans for future iterations based on ongoing foundational equity research.
- The paper also summarizes how the ESB Initiative is translating the framework into action to achieve our equity objectives. This includes articulating overarching equity goals and strategies to guide project activities.
- With this framework, we hope to emulate equity best practice, be transparent and inclusive, and provide ESB stakeholders an opportunity to track our efforts and provide feedback. This includes sharing our implementation challenges around needed time and energy to build capacity to connect activities with equity goals.

- Paper explaining:
  - *why* and *how* the ESB Initiative has committed to equity
  - the process being used to develop & implement equity framework
- Outlines how the ESB Initiative will be **leading with equity** and **centering intersectionality**

TRANSLATING OUR VISION INTO ACTION

VISION AND DEFINITIONS

Project Vision: Lead with equity, center intersectionality

Equity

- The guarantee of fair treatment, access, opportunity and advancement while striving to identify and eliminate barriers preventing full participation of some groups
- Acknowledges historically underserved and underrepresented populations
- Both a process and an outcome

Intersectionality

- An analytical framework for understanding how aspects of a person's social and political identities combine to create different modes of discrimination and privilege
- Intersecting and overlapping social identities may be both empowering and oppressing

PROJECT PARTNERS

American Lung Association

GREENLATINOS
Luchando por la Liberación Ambiental

CHISPA
CLEAN BUSES | HEALTHY NIÑOS
LEAGUE OF CONSERVATION VOTERS

NYLCV
NEW YORK LEAGUE OF CONSERVATION VOTERS

CALSTART

Electrification Coalition

MOTHERS OUT FRONT

ELECTRIFYNY

RESILIENT CITIES CATALYST

SIERRA CLUB
NEW JERSEY CHAPTER

NEW JERSEY ENVIRONMENTAL JUSTICE ALLIANCE
NJEJA

CLEAN ENERGY WORKS

U.S. PIRG
Education Fund

cte

NCSL
NATIONAL CONFERENCE OF STATE LEGISLATURES

EQUITABLE CITIES

Alliance for Transportation Electrification

CHISPA MD
IGNITING THE MOVEMENT. PROTECTING THE ENVIRONMENT.
MARYLAND LEAGUE OF CONSERVATION VOTERS

BENEFICIAL ELECTRIFICATION
ELECTRIFY!
LEAGUE

ENVIRONMENT NEW JERSEY

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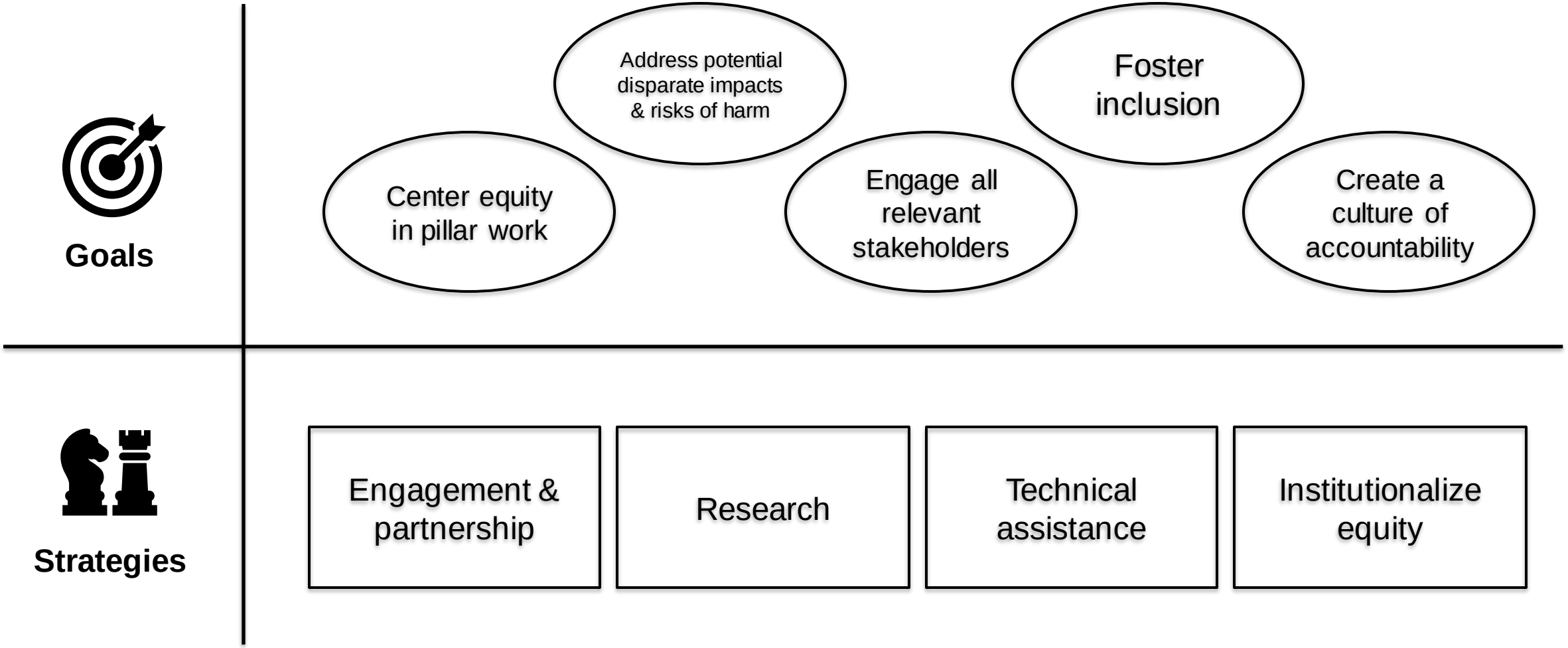
EQUITY GOALS AND STRATEGIES



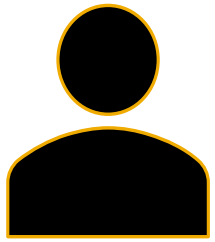
EXISTING CONDITIONS: LITERATURE REVIEW

EQUITY TYPE	INTERSECTION	ESB OPPORTUNITY	ESB RISK
Safety and health	Diesel pollution is hazardous to children's health and may even impact academic performance. Diesel buses are a known source of residential pollution especially in overburdened communities and for those living near bus depots. School buses must also comply with multiple laws and regulations with a range of safety features—many of which are state specific.	Could help address the disproportionate risk and improve the environmental health of students and communities disproportionately exposed to air pollution Could improve safety features and engage stakeholders on holistic approaches to student transportation safety issues	Perpetuate harm, discrimination, and disproportionate exposure to pollution
Employment	Manufacturing jobs have historically excluded women, people of color, and people who were formerly incarcerated. Automotive manufacturing job quality has fallen as companies pursue anti-union and low-wage strategies. EV batteries and electronic components are more likely to be produced outside of the United States than diesel engine components, and are more likely to be produced by new, non-union companies. The transition to ESBs has job retention and appropriate training implications for current diesel bus mechanics. Electric vehicle supply equipment installation is a major growth area for electrical workers.	Could improve job security and quality and address historic job discrimination of women and people of color Could create good green jobs and help develop a high-road U.S. domestic supply chain for medium- and heavy-duty EVs Provide new ESB and EV skilled high-paying jobs to mitigate lower number of bus maintenance jobs needed Could create opportunities for upskilling of school bus technicians, manufacturing workers, and electrical workers	Could perpetuate historic discrimination and job insecurity and poor training Could lead to job losses and lower wages in school bus manufacturing and maintenance
Electric utilities	Utilities provide the source of charging energy for ESBs, while ESBs, in turn, can serve as an energy storage mechanism for electric utilities.	ESBs could provide services to vulnerable areas, including emergency services Could spur improved charging infrastructure in neglected areas A new source of finance for procurement, depot, and bus charging infrastructure	Perpetuate harm and discrimination if utilities don't support school districts that struggle to fund or finance buses or infrastructure, such as through rates/tariffs, charging infrastructure maintenance, or investment in grid capacity Extra cost burden on communities if increased rates due to ESB investments
ESB costs and funding options	High upfront costs can make ESBs less accessible for lower-income school districts or create difficult trade-offs between upfront costs and other investments at the school district level. Lower maintenance and fuel costs might not cover the difference in upfront costs for early adopters.	Creation of innovative financing through green banking Development of vehicle-to-grid infrastructure that helps offset costs and funding	May perpetuate the inequitable distribution of wealth Unequal access to lending due to different credit ratings may also impact financing

- ESB Initiative conducted an extensive literature review of:
  - Case studies
  - Toolkits
  - Discussion of equity concepts and terms related to:
    - Environmental justice
    - Mobility justice
    - Just transition
    - Historic inequities in the United States

DIALOGUE AND SUPPORT

Equity Happy Hour series



Equity points of contact

Let's Break to Educate

Shared resources

EQUITY FRAMEWORK IN ACTION

Embedding throughout the ESB Initiative's five pillars:

School Districts

Identify and prioritize underserved school districts for technical assistance

Manufacturers

Host discussions between ESB manufacturers and non-profits that work with disadvantaged communities

Utilities & Funding/ Financing

Support utilities' role in equitable charging infrastructure planning and ESB deployment

Federal & State Policymakers

Collaborate with environmental justice leaders to inform state and federal policy

Local Communities

Showcase how equity intersects with the ESB transition on ESB Initiative website

EQUITY FRAMEWORK: UTILITY TEAM

- Utility Working Group
- Targeted V2G and EV Make-Ready Programs
- Highlight strategies to prioritize disadvantaged communities in publications and webinars

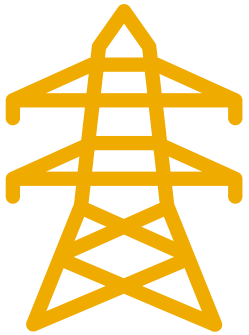
EQUITY FRAMEWORK: UTILITY FINANCE TEAM

- Business models resources highlighting challenges and opportunities for underserved communities
- Environmental justice opportunities defined in clearinghouse of financing and funding opportunities

KEY UTILITY INSIGHTS FROM ONGOING RESEARCH

- Needs assessment
- Stakeholder mapping
- ESB Baseline Study
- Bobit Survey/CALSTART & CEW Paper

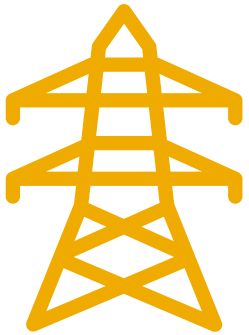
KEY INSIGHTS: UTILITY BARRIERS



- Upfront capital costs, infrastructure deployment challenges
- Impacts to power demand and need to support grid investments in their service areas (hosting capacity).
- Education demands: Unfamiliar new technology and need for workforce training and shifting maintenance, cost and energy management practices.
- Scaling quickly and the reality of a changing technological landscape.

underserved communities lack technical and administrative capacity, financial resources, and up-to-date electrical infrastructure

KEY INSIGHTS: UTILITY BARRIERS

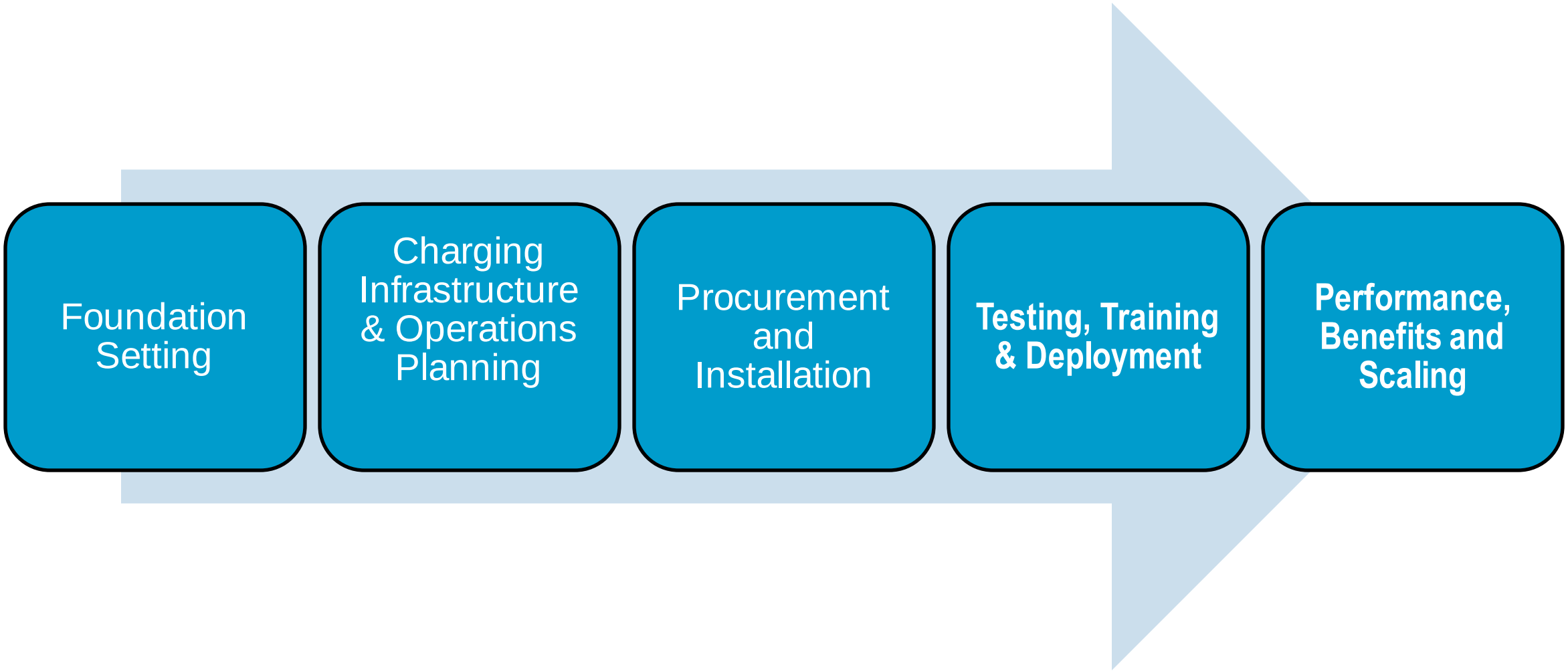


For over half of pupil transportation professionals surveyed who do NOT currently have ESB in their fleets,

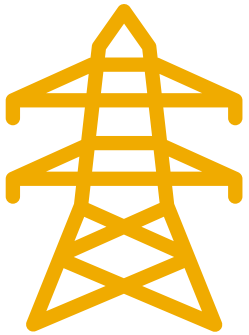
- the primary hurdle to pursuing ESB adoption was building out infrastructure and working with utility authorities.
- Costs, funding, terrain and location were additional barriers to adopting electric school buses mentioned by pupil transportation professionals

Partners have told us SD have difficulty identifying right Utility POC

KEY UTILITY INSIGHTS: OPPORTUNITIES



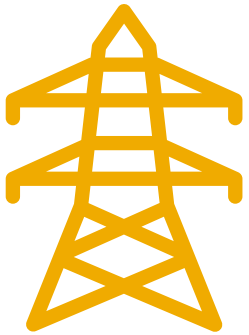
KEY UTILITY INSIGHTS: OPPORTUNITIES



- Encouraging SD engagement: Of those with electric school buses, 86% communicated (n=18) with their local electric utility before ordering
- Policy Enablers
- Facilitate, strategic, diverse partnerships and stakeholder engagement.
- Resilience

Bobit Survey, unpublished CEW white paper, WRI research.

KEY UTILITY INSIGHTS: OPPORTUNITIES



- Electric utilities have a suite of solutions at their disposal to facilitate the equitable adoption of ESBs and resolve lingering challenges
  - Vehicle & EVSE Rebates and Incentives
  - Make-Ready Programs
  - Utility Financing and Alternative Business Models
  - Favorable & EV-Specific Rates
  - Fleet Advisory Services
  - Distribution System Planning Process
  - Education & Outreach
- Proactively seek opportunities to provide services including site assessments, rate review and contractor suggestions.

KEY UTILITY RECOMMENDATIONS

CLEAN ENERGY WORKS

- Conduct research on a zip-code or census tract level to determine if there are disparities to be addressed (rates of disconnection, grid failures, line & infrastructure upgrades, etc.)
- Think through multiple methods for receiving and incorporating community input such as community-led needs assessments for ESB planning and deployment
- Maximize investments based on equity considerations for ESBs (e.g route selection, siting, and leveraging charging infrastructure and grid upgrades)
- Provide training to utility personnel who will lead ESBs initiatives

KEY UTILITY RECOMMENDATIONS

CLEAN ENERGY WORKS

- Provide resources and programs for training local school district staff and personnel
- Implement measures to employ local workforce including employing and contracting minority, women, LGBTQ, etc. - owned businesses.
- Partner and fund community anchors and innovate on partnerships.
- Investigate and assess different investments and cost recovery mechanisms that are inclusive, affordable and scalable.

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THANK YOU

Elizabeth.Moses@wri.org

Website:ESchoolBus4Kids

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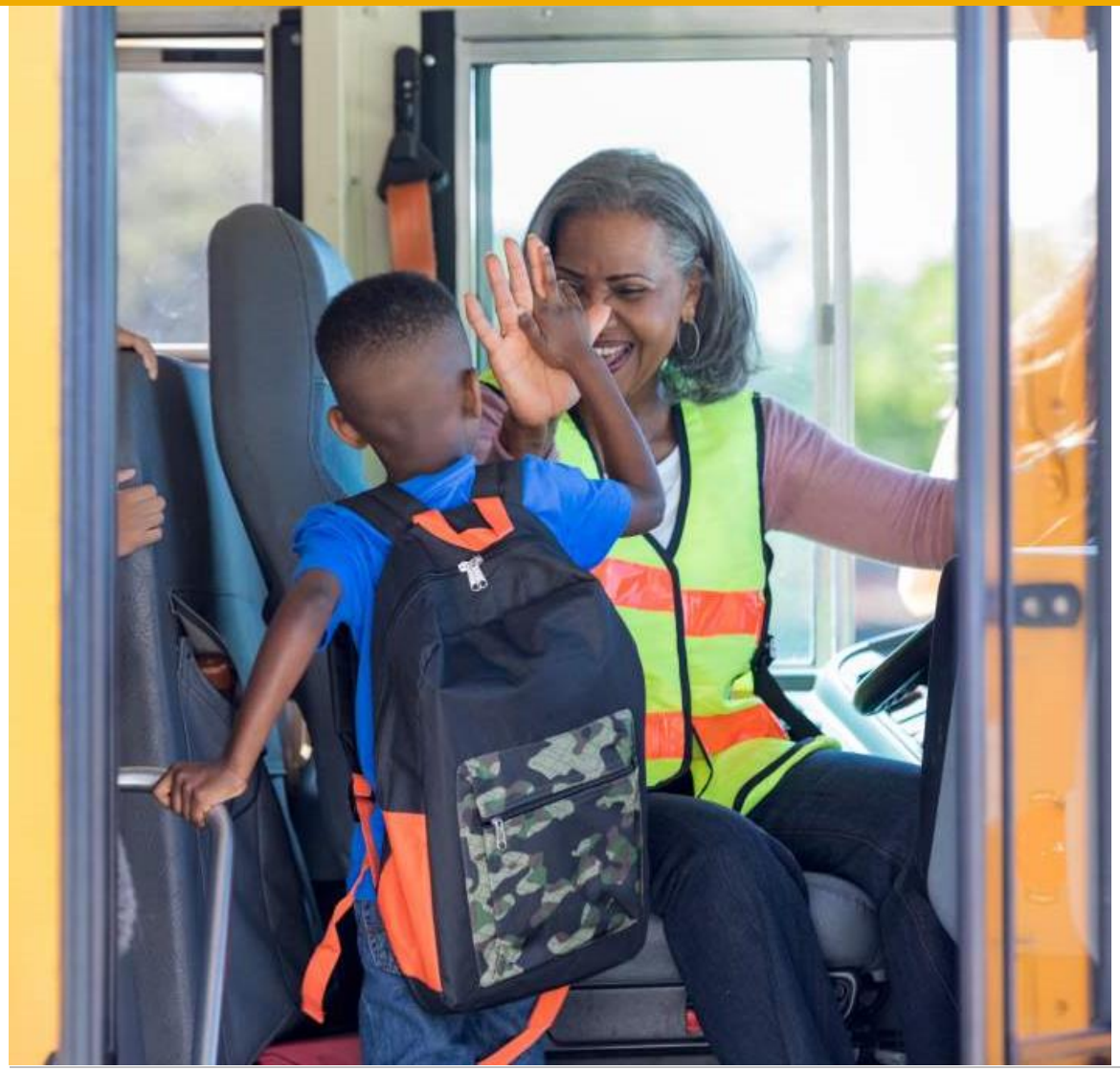
UTILITY ENGAGEMENTS WITH EQUITY

BACKGROUND

- Through our Equity Framework, we highlighted several examples of utilities already engaging with equity through their programs/activities.

IMPORTANT CONSIDERATIONS



- Factors to consider when envisioning equitable outcomes:
  - Education & Outreach
  - Removing Barriers
  - Community Engagement

SACRAMENTO MUNICIPAL UTILITY DISTRICT (SMUD)

- SMUD has an umbrella project called Sustainable Communities that holds their equity programs for their customers
- Energy Assistance Program Rate (EAPR) program offers discounts and incentives for eligible low-income customers
  - Customers enrolled in EAPR automatically receive discounts of 48% on all electricity usage (link)
  - EAPR customers are eligible to receive a free EV charger ($0 before tax) and free installation (up to $2,500) (link)
    - For those not enrolled in EAPR, customers can receive a free quote through SMUD's professional installation partner, Qmerit, and receive an incentive of up to $500 with their partnership.
- Energy Careers Pathways Program
  - Through this program, SMUD is partnering with local leaders to bring clean energy jobs to underserved communities. (link)
  - The SMUD Energy Careers Pathways program educates adults 18+ in the technical skills needed for the solar energy field. Students receive classroom education, hands-on training in the installation of solar arrays and, upon graduation, opportunities to interview with industry employers.
- Community Partnerships
  - SMUD's partnership with nonprofit, Green Tech, and the Sacramento Metro Air District is starting a new clean energy ride sharing "mobility hub" project, (link) bringing together in one facility clean modes of transportation including shared zero emissions vehicles (ZEV), an electric shuttle, and e-bikes that will all be accessible to the community.
  - SMUD will access the data on EV usage, community impact, viability of ZEV ride sharing, and other information to provide insight on whether the mobility hub would be beneficial to other communities as well.
- Education Programs
  - SMUD has free online classes/webinars open to the public community to be able to learn about electrification opportunities (link)
  - They also have online videos and host free classroom visits to teach students and faculty more about energy and electrification

Sources: SMUD Sustainable Communities Programs

PUBLIC SERVICE COMPANY OF NEW MEXICO (PNM)

- PNM has an "authorized contractor" network that is trained in installation services and can apply the rebates to charger procurement costs.
- Types of EV Charger Rebates
  - Residential (Single-Family)
    - Residential Single-Family households can receive a $500 rebate for installing a networked Level 2 residential charger
    - Qualified low-income residents can receive an additional rebate up to $2,000 to cover purchasing and installation costs ($2,500 total)
      - (Residents that self-identify as at or below 200% of the Federal Poverty Level)
  - Non-Residential
    - Entities broadly can receive $2,500 for installing Level 2 chargers and $25,000 for installing DC Fast chargers.
    - Income-qualified facilities (for public or commercial usage) can receive a rebate up to $2,500 per charger port
      - (Facility is located within the Low-Income Population of 80-90 Percentile or Greater per EPA EJScreen Mapping Tool)
  - Multifamily
    - Residents that live in these dwellings can receive a $2,500 rebate for installing a Level 2 charger
    - Qualified low-income residents can receive a rebate of up to $5,000 per charger port
      - (Residents that self-identify as at or below 200% of the Federal Poverty Level)

Source: PNM EV Charger Rebates by Building Type, PNM EV Income Qualified

LA PLATA ELECTRIC ASSOCIATION (LPEA)

- La Plata offers a wide list of rebates through their 2023 LPEA's Rebate Programs
  - A non-exhaustive list of rebates includes LEDs, Electric Heat Pump Systems, Heap Pump Water Heaters, Induction Cooktops, E-bikes, Electrical Outdoor Equipment (EX: lawn mower), EV Chargers, etc.
- EV Charger Rebates Specific
  - Residential
    - Up to two free Level 2 plug-in home chargers ($700 value each) per member
    - Up to $500 (not to exceed 50% of costs) for charger installation costs
    - Up to $500 (not to exceed 50% of costs) for the independent purchase and installation of a Level 2 charger
  - Public or Commercial
    - Public Level 2 Charger – up to $2,000 (not to exceed 50% of cost)
    - Public Level 3 DCFC Charger – $3,000-$7,500 (not to exceed 50% of cost)
    - EV chargers not available for public use and/or do not have the ability to collect data and fees are eligible for up to $500 rebate (not to exceed 50% of cost)

Sources: 2023 LPEA Rebate Flyer

TENNESSEE VALLEY AUTHORITY (TVA)

- TVA established an Equity Action Plan developed by their Equity Team laying out their accomplishments and plans to remove barriers in the near and long-term
- Their School Uplift Program is a 12-month training program that helps public schools in the area reduce energy waste and improve learning environments.
  - TVA works with 100 public schools each year, providing energy efficiency training to help schools reduce energy consumption a nd impact decarbonization, lowering energy costs by 10% .
  - School Uplift allow provides need-based grants each year for underserved schools to invest in clean energy upgrades, such as LED lights or ventilated high-efficiency AC units.
  - Through this program, the first 160 participating schools are projected to save $8.1 million, and the energy efficiency upgrades are expected to enhance indoor air quality.
- Home Uplift Program
  - This program provides households at or below 200% of the federal poverty level with home energy improvements at no cost (an a verage of $10,000 per customer).
- Public and Community Engagement Team
  - Through their Equity Action Plan, TVA established this team to better outreach to local community -based organizations to further develop their relationship with the community and listen to their needs
  - They partnered with local CBO Centro Hispano to improve Latino participation in their Home Lift Program (especially considering there being less than 3% of Latino enrollment, while representing 23.6% of Tennessee's low-income population).

Sources: TVA Equity Action Plan

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OBJECTIVE:
DISCUSSION ON EQUITY AND ROLE OF UTILITIES

What can you do to support an equitable transition?

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QUESTIONS?

GROUP 1 NOTES

- Active role utility can do to help equitable deployment of ESBs
  - Help SDs learn more about ESBs in general; they are still wary of tech – education first step
    - Including roadmap and costs of electrification
  - Provide more detailed advisory services to SDs (charger provider, OEM, utility and electrician) x2
  - Utilites provide letters of support for funding applications
  - Supplement funding with make ready programs x2
  - Engage early and often in community
  - Exelon has filing for ESB funding program for underserved communities
  - Route planning consulting
  - Need for coordination between utility, telecom
- Barriers
  - SDs do not have education on electrification and don't know who to contact
  - Supply chain issues on utility side
  - Pressure of transition mandates
  - Gap in funding for infrastructure
  - Electrification project process takes time
  - Thinking of future proofing, think of what you need in long-term as well
- Other considerations
  - PUC rules on where grid infrastructure is going and what this means for underserved communities
  - Where do school bus contractors fit in this ecosystem?

QUICK INSTRUCTIONS

- Intent of exercise: share lessons learned and ideas for how to support an equitable transition
- 20-minute breakout groups
  - Randomly assigned to group
  - WRI facilitator will be present for notetaking
  - Conversations are to be led by participants
- 5-minute debrief
  - Assign a group member to give report-out

GROUP 2 NOTES

- Participants
  - Andre Gouin
  - James Odneal
  - Gregg Kresge
  - Sophie Young
  - Alison Kling
  - Linda Margison
  - Julie Dietrich
- ConEd -- Has program focused on impact of electrification of heavy-duty vehicles to impact health and wants to make sure for flexibility within the program
- Linda -- Starting pilot program of 6 ESB school receive, starting V2G pilot, want to know equity aspects
- Julie
  - Manage fleet electrification program, passion abt school bus segment
  - Serve Kansas and Missouri, engaged with 600 schools
- What is the role of utility to facilitate equitable deployment of ESBs?
  - Con Ed: All of NYC school bus contractors not just districts, trying to get as many SDs as they can
    - How do they make sure there's flexibility for program design? If receive CSBP, they can have flexbility to allocate resources
    - Working with stakeholders (NY state authority, NYSERDA), make sure to do the research
  - Xcel
    - Similar to PNM – have different rebates for income eligible communities
    - Minnesota State will provide rebates for ESBs
      - 25% of ESB or 95% of ESB for low-income
  - Julie
    - Has rebates for everyone
    - Wait for service request to come in and advocate on their behalf, or ahead of time?
    - Partnered with Highland Electric (Received Partnership Letter)
      - Want to connect SDs with resources to achieve their goal
  - James

GROUP 3 NOTES

- Participants: Mostly supportive organizations (ESBI, CEW, and SEEA)
  - Justin, SEEA
  - Lexie Lyng, CEW
  - Terea, CEW
  - Caitlin Macomber
  - Scott Higa
  - Cathy Davison – Roanoke Coop
  - Liz Moses
- What is the role of utility to facilitate equitable deployment of ESBs?
- What is your (participant) specific role in implementing equity?
- How is the work with utilities in the Southeast?
  - Majority utility commission are elected instead appointed
  - Sometimes they feel they need direction from legislature
  - They emphasize the role of utilities to access charging
  - Terea - in her space (CA and NV) they have more flexibility since they're appointed
- Non-regulated utilities- Southeast ?
  - There's a large amount on co-ops - they have taken the lead
  - They can center their work around what their community needs – other concern topics are cybersecurity and one person doing a job of 10 people – having to pay for something that only a portion of their community might use
  - They're trying to engage more w Puerto Rico
  - Huge conversation around resiliency – costs
- Cathy Davison -
  - NEVI plan work along w DOT
  - Deployed DC charger on interstate
  - Raise philantropic funds to help support the EV deployment – gave away an EV
  - Installed 10 chargers and electrician –
  - 5k rebate that goes to the dealer -
  - Emphasize don't be afraid of the EV -
  - It's important to communicate about the accessibility of chargers
- Planning and look at the route to charge in the middle of the day

THANK YOU

Please contact Gregg Kresge at
Gregg.Kresge @wri.org