Electrifying Community Transportation: Electric School Buses, Electric Fleets and Public Charging

GPCOG
GREATER PORTLAND COUNCIL OF GOVERNMENTS

MAINE CLEAN COMMUNITIES

SMPDC
SOUTHERN MAINE PLANNING & DEVELOPMENT COMMISSION

veic

Agenda

Planning for Public Charging in Your Community

- Types of Public Charging
- Planning For and Expanding Public Charging
- Successful Community Public Charging Efforts

Fleet Electrification

- Municipal vs Private Fleets
- The Fleet Electrification Process
- Useful Tools

School Bus Electrification

- Cost of Operation and Why Electric
- Electric School Bus Programs
- Next Steps

Breakout Groups

Questions

Public Charging

Two Kinds of Public Charging

Municipally Owned

City of Portland, Belfast, Augusta, etc.

Business Owned

Hannaford, LL Bean, hotels, etc.

How to Plan For Expanding Public Charging

Zoning and Ordinances

Permitting and Inspections

Planning and Leadership

Zoning and Ordinances

- Identifying EV Charging Stations as a permitted use in zoning districts
- Requiring EV charging stations in parking facilities
- Setting general requirements for EV infrastructure standards
- Promoting EV charging station accessibility
- Clarifying regulations for EV parking spaces

Permitting and Inspections

- Create separate permit for EV Charging Stations
- Make permitting process clear & transparent
- Standardize permit review & inspection
- Offer options to submit permit applications electronically
- Reduce & standardize permitting & inspection fees

Planning & Leadership

- Incorporate EVs into relevant local plans
- Ensure equitable access to public EV charging infrastructure
- Manage municipal programs to encourage EVs & EV infrastructure
- Participate in EV stakeholder groups
- Partner with other municipalities on EV infrastructure development

Community Examples

Portland – EVGo Partnership	South Portland Workplace Charging Grant	Kittery – CMP make ready grant
A public-private partnership to deploy 8 DCFC and up to 44 Level 2 chargers across Portland.	A grant available to businesses who want to install Level 2 chargers with 2-6 plugs. Up to $5k or 50% of project costs available.	Received grant to install 4 Level 2 charging stations at Kittery Town Hall

Municipal and Private Fleet Electrification

Electrifying Fleets in Maine

Transit, Municipal, Fire and Police!

Fleet Electrification Process

Source: Bangor Daily News

1. Find champions for the process!
2. Update fleet purchasing policies
3. Create an inventory of fleet vehicles, their duty cycles, cost information, and replacement cycles
4. Scan inventory of available EVs, purchasing mechanisms, and state/federal funding
5. Use fleet planning tools to understand payback and total investment
6. Install adequate charging infrastructure to meet demand

Fleet Electrification Tools

- **Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET)**

  Helps fleets understand transition cost impacts and resulting return on investment

- **Future Automotive Systems Technology Simulator (FASTSim)**

  Provides a simple way to compare powertrains and estimate the impact of technology improvements

- **Fleet Procurement Analysis Tool**

  Equips users with decision-relevant information on the financial viability and environmental impact

Resources in Maine for Public Charging & Fleet Electrification

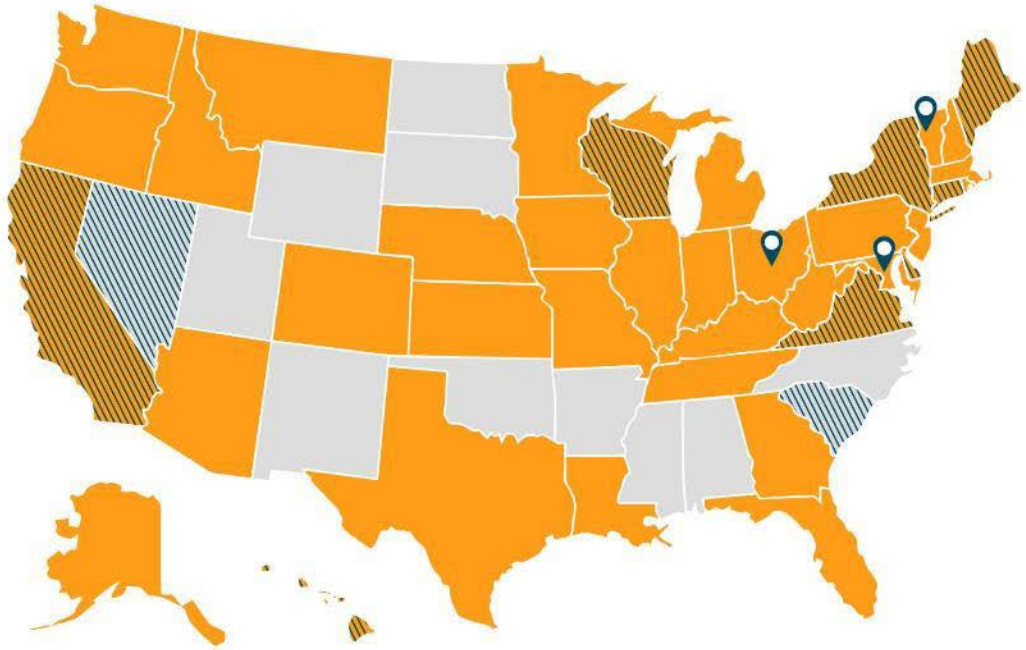
- Maine Clean Communities
- Efficiency Maine
- Central Maine Power
- Maine Department of Environmental Protection
- EPA Clean School Bus Programs
- National EV Infrastructure (NEVI) Charging Discretionary Funds
- Community Action Grants through GOPIF

Electric School Bus 101

A better way forward

About VEIC

National reach, local approach



VEIC offices

Where we work

Boots on the ground

Rich history

Established in 1986

Celebrating over 30 years of delivering impactful energy solutions to the market.

Experts that move us forward

Over 300 employees

Consultants, engineers, behavior and data specialists, analysts, program implementers, account managers, project managers, marketing, graphics and public relations experts.

ESB 101

Useful Terms

- **Electrification**: process of converting from internal combustion vehicles to electric vehicles (vehicles with a plug).
- **EVSE**: electric vehicle supply equipment or the equipment used to charge a vehicle. Also called a **charger** or **charging station**.
- **ESB**: Electric School Bus
- **Vehicle fleet:** the group of vehicles owned or used by an organization.
- **AC & DC:** Alternating current is what comes out of an outlet. Direct current is what comes out of a battery.

The high cost of diesel

- Pollution levels **inside** older diesel buses can exceed surrounding areas by 5 – 10 times.
- Children spend between 20 minutes to several **hours** a day on school buses.
- Exposure to diesel emissions has been shown to impact **cognitive and respiratory health** in children.
- Diesel fuel costs are **volatile** and diesel vehicles require **costly** maintenance.

Why schools are going electric

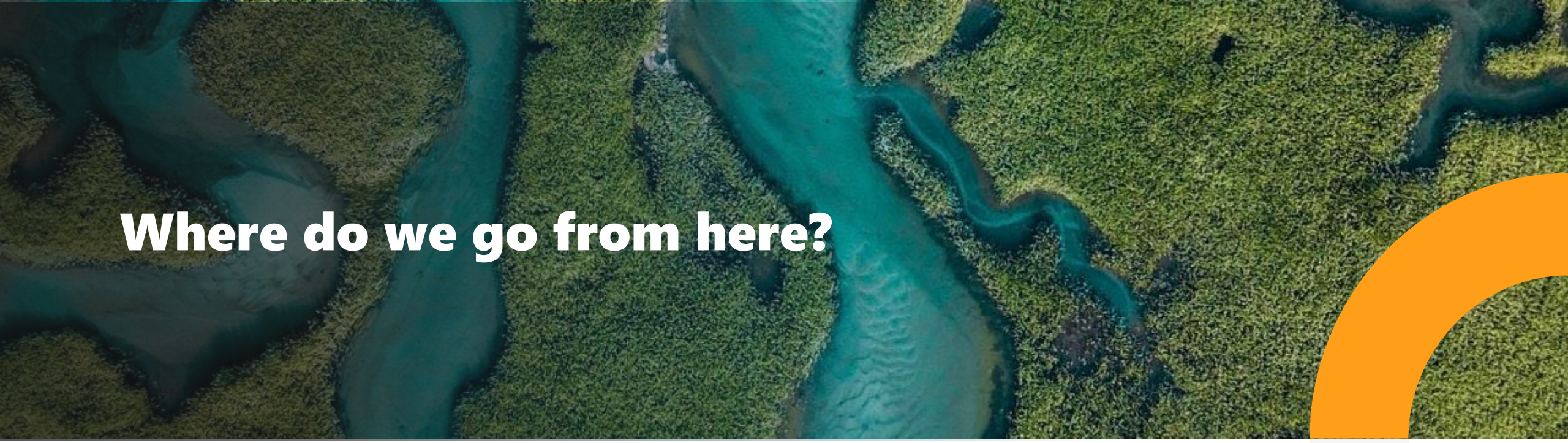
- Charging costs compared to fueling **costs are reduced** by 40 – 75%.
- **Stable electric prices** make fueling and operational costs more predictable for school districts.
- **Maintenance savings** of up to 60% over diesel school buses.
- Using electricity **reduces GHGs by 65-97%,** depending on local generating mix.

Future is now

24 states will have deployed electric school buses by the end of 2021. But with 90 – 95% of buses still being diesel, now is the time to be delivering this innovation to our schools.

All major school bus manufacturers are now making electric school buses.

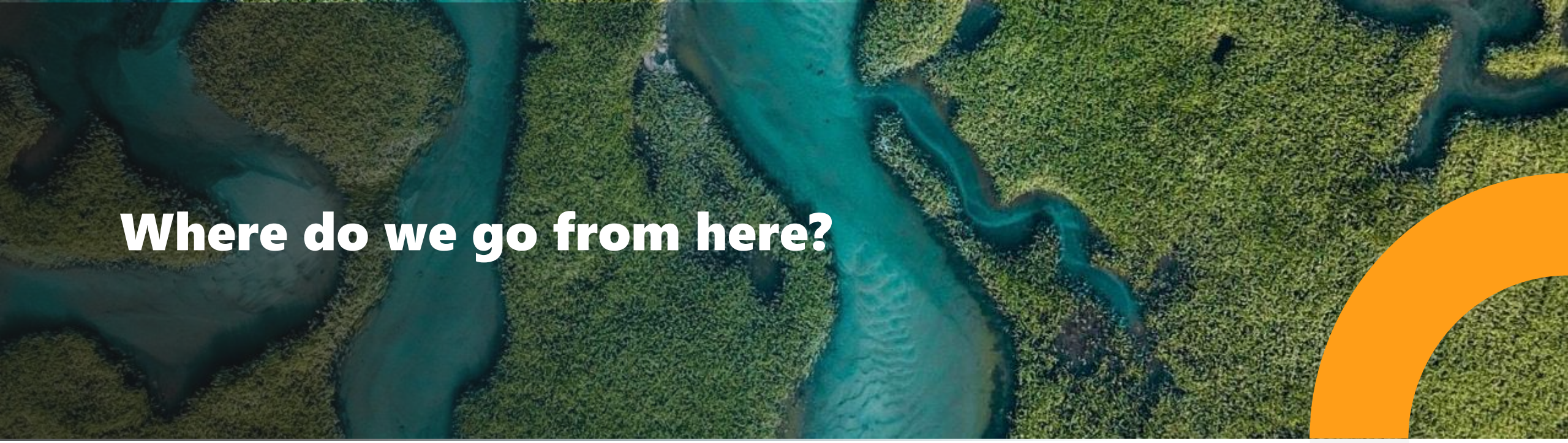
> Leading school districts are moving toward electric school buses.



Where do we go from here?

Tip: These steps are applicable to any fleet transition

1. Get community support
2. Make connections
3. Secure Funding
4. Stick with it



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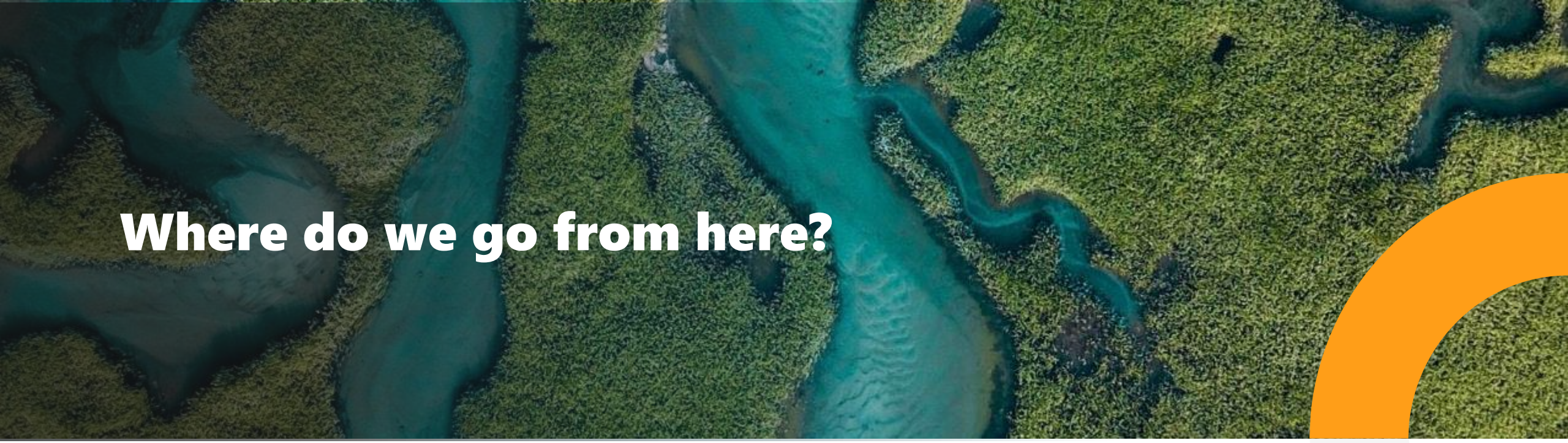
Current Programs

- **US EPA Clean School Bus Program** provides rebates to school districts for bus replacement cost. **August 19th deadline.**
- **Rural Development Funding (USDA)** programs have opportunities for ESB and charger grants and loans.
- **Clean Cities Coalitions (DOE)** provide technical assistance for alt-fuels. **Maine Clean Communities**
- **Local Incentives** may apply to ESB projects as well. Contact your local utility and Efficiency Maine to explore potential options.

ESB 101

EPA Clean School Bus Program

- High-need and rural districts are prioritized
- Applications close August 19th
- Technical assistance from Dept. of Ed.
- Maine Clean School Bus Program
- **pat.hinckley@maine.gov**



Where do we go from here?

Don't miss out on EPA funding: applications close August 19th!

1. Get community support
2. Make connections
3. Secure Funding
4. Stick with it

State Funding for Electrification

	Who Can Access	How To Access
Community Action Grants	-Municipal and tribal governments -Projects that reduce energy use/costs, make community more resilient to climate change	-Summer deadline is Sept 20th -Next round of funding becomes available in August 2022
Diesel Emissions Reduction Act (DERA)	projects that achieve significant reductions in diesel emissions from older diesel engines and vehicles: including ports, school yards/bus depots, rail yards, and construction sites to submit proposals	Contact Lynne Cayting at 207-287-7599
EV Rebates through Efficiency Maine	-Individuals, businesses, organizations, governmental entities, tribes, non-profits, business fleets -Up to $7,500 for governmental and tribal entities	Applications open on Efficiency Maine website

Federal Funding for Electrification

	Who Can Access	How To Access
EPA Clean School Bus Program	-State and local government entities that provide bus service -Eligible contractors and nonprofit school transport associations -Native tribes, organizations, and schools	Applications now open on EPA.gov
Federal Qualified Plug-In Electric Vehicle Tax Credit	-Individuals and businesses -Passenger vehicles and light trucks	IRS Form 30(d)
Diesel Emissions Reduction Act (DERA) Program	-A state and federal program -Regional, state, local or tribal agencies with jurisdiction over transportation or air quality -Noneligible agencies can partner w eligible agencies	-Federal – 22' request for applications coming soon
EV Rebates through Efficiency Maine	-Individuals, businesses, organizations, governmental entities, tribes, non-profits, business fleets -Up to $7,500 for governmental and tribal entities	Applications open on Efficiency Maine website

Break Out Group Scenarios

You've just joined your small town's sustainability committee and have been tasked with the following...

Increasing EV Ownership and Charging in Your Community

- The committee has been working on a plan to increase electric vehicle ownership and provide public charging stations to the community. There are a few local EV owners and no existing public chargers. What key pieces of information should you consider throughout this process?

Buying an Electric School Bus

- The local school district is getting ready to replace an old diesel bus. They've reached out to the town's sustainability committee to receive some guidance on purchasing an electric school bus. What key pieces of information should you consider throughout this process?

Breakout Group Questions

Public Charging and Municipal Fleets

- How many chargers currently exist in your town? Where would you like to see a new charger installed?
- What are two of the largest barriers to EV adoption in Maine? What are two of the biggest benefits?
- Does your town currently have EVs in their fleet?

School Bus

- Do you think you want to explore switching to ESBs? Why or why not?
- How is school transportation managed in your community? Is it run by the school or a 3rd party?
- What is the name of your school superintendent? Do you think they would consider a transition to ESBs?

Discussion

What data do you think you need to gather?

What funding could you access?

What stakeholders in your community did you decide to engage?

What challenges did you face?