



Extended Battery Producer Responsibility Framework Virtual Roundtable Discussion: Collection Models and Transportation Considerations

August 26, 2025

Hosted by:

U.S. Environmental Protection Agency (EPA)

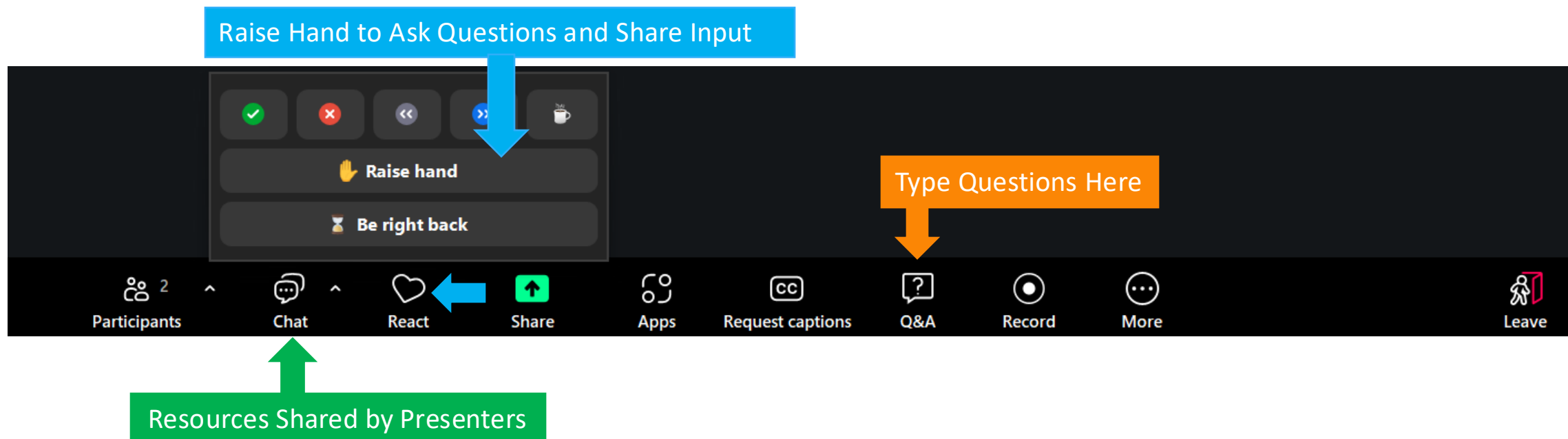
U.S. Department of Energy (DOE)

Logistics and Agenda Review

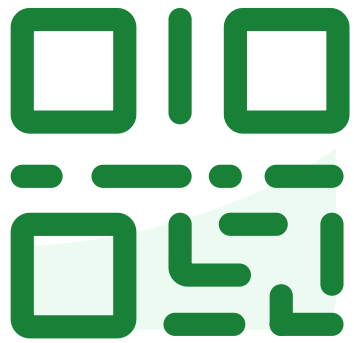
Pat Tallarico, Facilitator, ERG Support Team



Meeting Logistics



- **To ask a question or provide a comment during discussions:** Click on "Raise Hand" in the toolbar or click the "React" icon and select "Raise Hand" to ask your questions directly and take yourself off mute when recognized.
- **To ask a question if you can't participate live:** Type your questions/contributions in the Q&A box if you are unable to participate directly.
- **Technical difficulties:** If you are having technical difficulties, please send a message to Hannah.Rosenberg@erg.com



**Join at slido.com
#3658909**

Agenda

- Overview of EPA and DOE's Battery EPR Framework Initiative
 - **Kim Cochran**, U.S. Environmental Protection Agency
- Federal Support for Battery Collection
 - **Amanda McAlpin**, U.S. Department of Energy
- Setting the Scene: Introduction to Current Collection Models
 - **Carl Smith**, ERG Support Team
- Perspectives on Battery Collection Models and Transportation
 - **Kate Kitchener**, NYC Department of Sanitation (DSNY)
 - **Josh Kelly and Todd Ellis**, Vermont Department of Environmental Conservation with Call2Recycle
 - **Julia Mangin**, Recology
- Group Conversation
- Wrap-Up and Next Steps

Overview of the EPR Framework Initiative

Kim Cochran, U.S. EPA



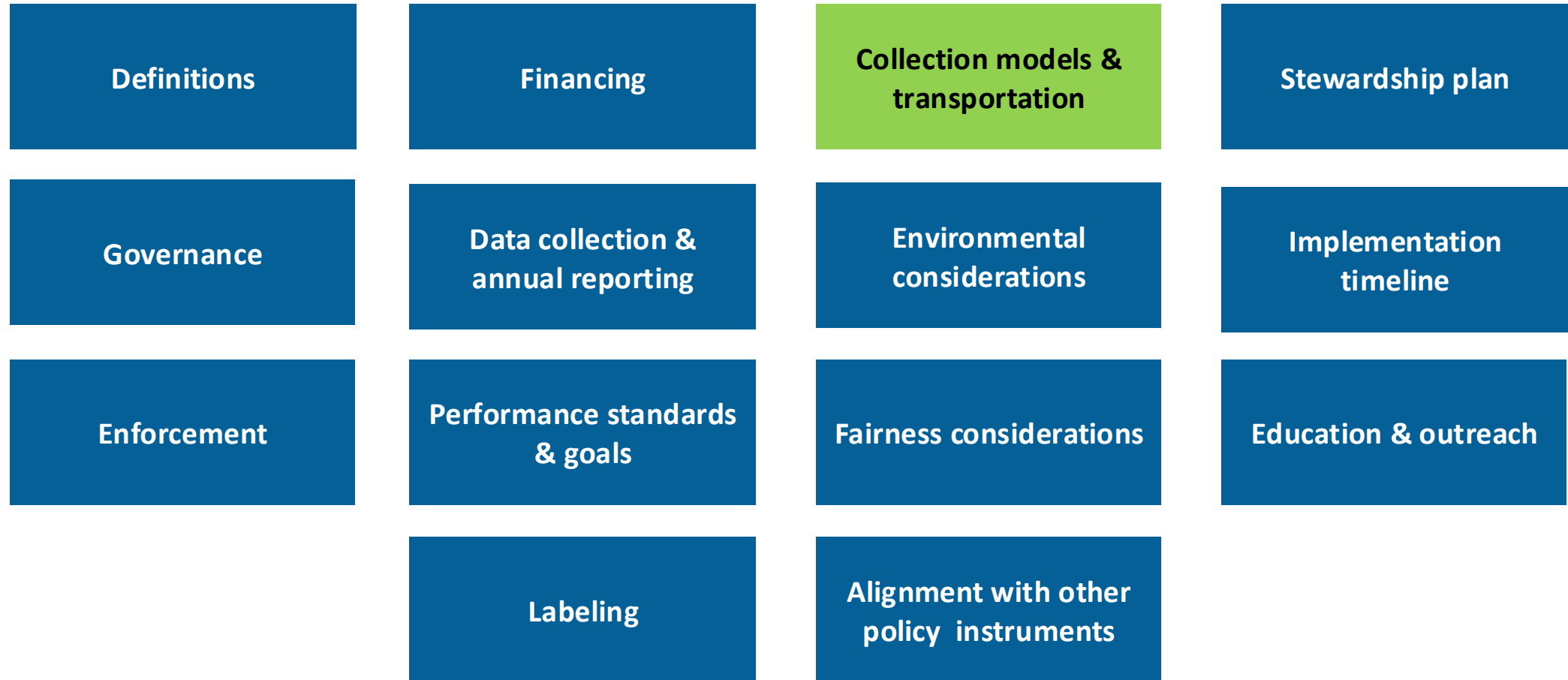
Vision for an Extended Battery Producer Responsibility Framework

- A voluntary EPR framework, not meant to be a model bill, that provides current practices and related options, challenges, and considerations
- Aimed at achieving national goals in recovering critical minerals and supporting states in battery collection and recycling
- The framework is consistent with current administration priorities and will address, at a minimum, the key elements specified in the IIJA:
 - Battery recycling goals
 - Reporting requirements
 - Cost structures for mandatory recycling
 - Product design
 - **Collection models**
 - **Transportation of collected materials, including safely storing and handling**

Scope of Batteries

Category	Small format consumer electric and portable batteries		Mid-format batteries	Large format batteries
Type	Single use (Primary)	Rechargeable (Secondary)	Rechargeable	Rechargeable
Use	Removable or embedded in electronics and electric devices, such as watches, hearing aids, cameras, key fobs, toys, portable radios, flashlights.	Removable or embedded in electronics and electric devices, such as phones, computers, appliances, small uninterruptable power supplies (UPS), power tools, power banks.	E-mobility including e-bikes, e-scooters. Outdoor power equipment. Portable power stations.	All scales of automotive starting and motive vehicle batteries. Materials handling equipment (forklift, crane, etc.) Recreational (golf carts, marine equipment, recreational vehicles, etc.)

Elements for an EPR Framework



Focus of Today's Conversation

- Topics
 - Current collection models and transportation
 - Considerations for remote rural or island communities, suburban, and urban areas
- Outcomes
 - Determine aspects of collection models that are important to do consistently within and across states
 - Gather individual input on how collection models and transportation could be reflected in the framework

Federal Support for Battery Collection

Amanda McAlpin, U.S. DOE



The Office of Manufacturing and Energy Supply Chains

Amanda McAlpin

Batteries and Critical Materials Supply Chain Deployment Manager

August 26, 2025



U.S. DEPARTMENT
of **ENERGY**

Office of Manufacturing
and Energy Supply Chains

Unleashing America's Energy Dominance

MESC's three-pronged approach drives technological breakthroughs, ignites American energy innovation, identifies unfair burdens on industry, and reduces cost for American families.

MESC



MANUFACTURING

Revitalizing American energy materials processing and manufacturing by reshoring production and enabling the U.S. to compete and win in the global energy marketplace.



WORKFORCE

Reinvigorating our manufacturing workforce by investing in American workers and families, creating pathways to good paying jobs and building a more resilient energy future.



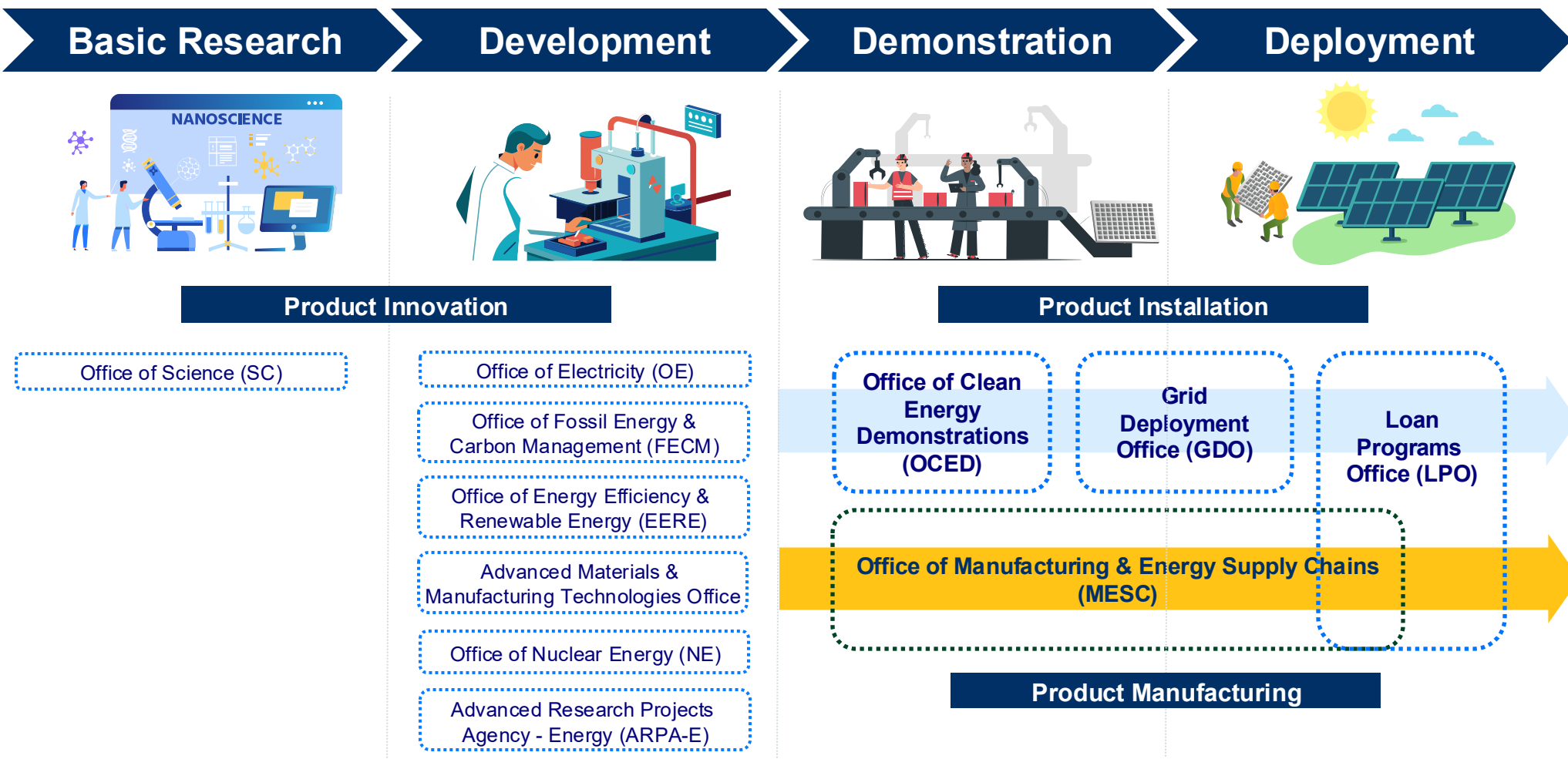
ANALYSIS

Identifying supply chain vulnerabilities, secure alternatives, and priorities for innovation and investment, to support American ingenuity through a data-driven, market focused approach that harnesses our national labs' exceptional analytical capabilities.

The Office of Manufacturing & Energy Supply Chains (MESC): De-Risking Energy Supply Chains Since 2022

MESC's mission is to enhance
economic and national security by
eliminating vulnerabilities
in the United States' energy supply chains.

MESC is focused on Government-Enabled, Private Sector-Led Energy Manufacturing



MESC By The Numbers

Securing U.S. Supply Chains

\$21.5B Combined federal and private investment to-date

45K+ Jobs created or retained

\$7.8B
Deployed to transform energy supply chains and create high-quality jobs

\$13.6B
Catalyzed in private sector investment

\$174M
Direct investments in energy workforce

2,600+
Skilled workers trained in MESC-funded programs annually

84 Manufacturing projects at **112 sites** across **31 states** supporting batteries, buildings and energy efficiency, energy generation, critical minerals processing and recycling, grid, materials, and transportation

147
Skilling institutions including non-traditional, community colleges, and vocational schools

\$100M State and local partnerships supporting advanced manufacturing, consumer batteries recycling, and EV component production

Critical minerals recovery – a high-yield, essential domestic resource

- Development of mining domestically is a slower, more cost-intensive process than the establishment of localized battery recycling facilities which can recover high yields of U.S. critical minerals
- The U.S. has **limited raw mineral reserves** available for much of our needed critical minerals (e.g. less than 1 year of nickel demand covered by known reserves)¹
- Domestic recycling can prevent critical mineral leakage and loss to other countries
- Recycling offers a **secure resource** for critical minerals streams that is **faster to deploy** in the U.S. than virgin extraction and processing
- In total for 2030 and beyond – MESC recycling projects are expected to feed (2, 3, 4):
 - 23% of nickel demand annually
 - 34% of cobalt demand annually
 - 4% of manganese demand annually
 - 5% of graphite demand annually
 - 3% of lithium demand annually



MESC is strategically investing in virgin critical minerals processing, minerals processing from waste tailings/unconventional sources, and mineral recovery from recycling

1. Data Source: Internal MESC analysis
2. Mineral Commodity Summaries 2024
3. Does not include speculated resources (Smackover and Salton Sea)
4. Does not include speculated resources (Alaska and Alabama sources)



Administration's Minerals Focus

Executive Order 14213: Establishing the National Energy Dominance Council

February 14, 2025

By utilizing our amazing national assets, including... uranium... and **critical minerals**, we will preserve and protect our most beautiful places, **reduce our dependency** on foreign imports, and grow our economy... The Secretary of Energy shall serve as Vice Chair of the Council.

Executive Order 14154: Unleashing American Energy

January 20, 2025

It is the policy of the United States to establish our position as the **leading producer and processor non-fuel minerals, including rare earth minerals**, which will create jobs and prosperity at home, strengthen supply chains for the United States and its allies, and reduce the global influence of malign and adversarial states.

Executive Order 13953: Addressing the Threat to the Domestic Supply Chain From Reliance on Critical Minerals From Foreign Adversaries

September 30, 2020

Our dependence on one country, the People's Republic of China (China), for multiple critical minerals is particularly concerning...our Nation's **undue reliance on critical minerals, in processed or unprocessed form, from foreign adversaries** constitutes an unusual and extraordinary threat.

Consumer Electronics Battery Recycling, Reprocessing, and Battery Collection for State and Local Governments and Retailers

Appropriations of \$65 million to assist States and units of local government, and retailers with battery collection and recycling

Grants to establish or enhance battery collection, recycling, and reprocessing programs.

- Programs can focus on any or all recycling steps such as collecting, handling, sorting, storing, and transporting spent and discarded batteries and electronics containing batteries up to the physical recycling process.

Up to \$10M per grant, proposal must include a 50% cost share.

Promoting National Security by Reducing Reliance on Covered Nations

Foreign Entity of Concern (FEOC) monitoring in battery component and critical minerals supply chains

- FEOCs include entities owned by, controlled by, or subject to the jurisdiction or direction of governments of covered nations (i.e., China, North Korea, Russia, Iran).
- MESC's FEOC compliance monitoring strategy for grant awardees and 30D tax credit recipients leverages a robust MESC-developed methodology primarily focused on anti-China economic statecraft.
- A master list of supply chain company names will be routinely researched to identify changes that may impact FEOC compliance. Our strategy includes direct engagement with awardees and recipients to address any compliance concerns.



STAY PLUGGED IN

energy.gov/mesc



MESC@hq.doe.gov



Office of Manufacturing and Energy Supply
Chains, U.S. Department of Energy



U.S. DEPARTMENT
of **ENERGY**

Office of Manufacturing
and Energy Supply Chains

Setting the Scene: Introduction to Current Collection Models

Carl Smith, ERG Support Team



Collection Models & Transportation

Drop-Off

- Most common collection model
- 95% of collection sites are big box retailers and municipal/HHW sites
- Special collection events



Collection site at Wegmans
(Source: OCRRA)



Battery Shed Drop Off
(Source: Chittenden Solid Waste District, Vermont)

Mail Back

- Less common and more expensive than drop-off
- Smaller envelopes can capture smaller quantities of batteries and devices
- 40 lb. boxes (below) can be used by small sites & rural communities



Mail Back Kits (Source: Call2Recycle (left)
Cirba Solutions (right))

Curbside

- Limited implementation to date due to safety risk
- Convenient way for consumers to recycle batteries



Curbside Battery Collection (Source: South
Bayside Waste Management Authority)

Collection Models & Transportation

Drop-Off

- Batteries collected varies by site, but typically includes:
 - Single-use and rechargeable small format batteries
 - Small electronic devices with batteries, e.g., phones
 - Select locations accept e-bikes
- Transportation
 - Transfer stations/consolidation points
 - Backhaul from centralized locations support rural, island and Tribal areas
 - Shipped via U.S. DOT Special Permit 14849 bulk or collection kit containers

Mail Back

- Batteries collected in kits available for purchase:
 - Dry cell single-use or rechargeable batteries and cellphones
 - DDR lithium-ion batteries
- Transportation
 - Shipping materials provided for bulk or collection kit containers
 - Shipped via U.S. DOT Special Permit 14849 containers sent through UPS or other shippers

Curbside

- Collection varies:
 - [San Mateo County \(CA\)](#) accepts rechargeable and single-use small format batteries and cell phones
 - [Onondaga County \(NY\)](#) accepts only alkaline
 - [Portland \(OR\)](#) accepts only loose rechargeable and single-use small format batteries in a 1-quart bag in the glass recycling container
- Transportation
 - Collected batteries consolidated and shipped for processing and recycling

Collection Models & Transportation – Geographic Considerations

Drop-off collection is the primary model in all geographies, but implementation and challenges vary by community

- **Suburban**

- Large retailers (i.e., big box stores) and municipal recycling/HHW sites populate suburban areas and are the most likely to participate in takeback programs
- Transporters find it easier to drive in and support suburban areas efficiently

- **Urban**

- Curbside is rarely an option, particularly for multi-family buildings
- Limited transportation options for residents to access drop-off sites
- Limited footprint to support takeback programs in small retailers
- Limited common space and access in multi-family buildings
- Increased risks of recycling hazardous waste (e.g., mid-format, DDR batteries)

- **Rural & Island Communities**

- Limited recycling infrastructure from transport to physical locations for drop-off
- Prohibitive collection and transportation costs
- Options for backhauling

Collection Models – Accessibility

- The extent of collection site accessibility is a key determinant of the success of a battery EPR program.
- State laws include accessibility, but approaches vary.
- Three options to determine accessibility:
 - **Sites per jurisdiction.** Particularly useful in rural areas. Vermont requires a minimum of two collection facilities in each county that provide year-round collection.
 - **Sites per population.** Particularly useful in urban areas that are densely populated. District of Columbia requires a minimum of one collection site per 10,000 people in the District.
 - **X percent of public has access to collection site within X miles.** Particularly useful across large jurisdictions but not for dense urban areas. The state of Washington aims for 95% of residents to have one permanent collection site within 15 miles.

What Do State EPR Laws Require?

- **Most state battery EPR laws address collection models by:**

- Allowing flexibility for PRO to determine the best methods to collect batteries
- Including accessibility requirements
- Leveraging existing battery collection infrastructure
- Requiring PRO to offer collection site safety training and public education materials

- **Most state battery EPR laws do not:**

- Require retailers to be collection sites
- Mention independent collection

District of Columbia

- Minimum 1 collection site per 10,000 people
- Must evenly distribute sites across all 8 wards
- Retailers can opt in, but are not required
- Access to public transport and offer battery pickup for neighborhoods without access to a site

Vermont

- Retailers can opt in, but are not required
- At least two collection facilities in each county
- Collection facilities must accept up to 100 batteries per visit
- Collection sites must accept damaged and defective lithium-ion batteries

Washington

- Retailers can opt in, but are not required
- Considerations for overburdened and vulnerable communities
- 95% of residents must have 1 permanent collection site within 15 miles
- 1 additional site for every 30,000 residents in an urban area

Framework Considerations

Consideration	Opportunities for Discussion
Definition of collection sites	Broaden the definition of collection sites to encourage PROs to establish special events, private sites, curbside, mail back, back hauling and EPR coordination to increase collection footprint and accessibility.
Collection site participation	Consider requiring retailer participation to increase accessibility.
Collection site compensation	Consider formalizing fair compensation to collection sites in laws to bolster collection footprints, particularly in urban areas.
Collection site requirements	Require specific collection containers and placement for batteries posing the greatest risks.
Non-PRO collections	Acknowledge independent collectors and properly coordinate their activities with the PRO (e.g., reporting).
EPR program coordination	Encourage EPR program coordination (e.g., messaging, transport, collection) among programs like electronics and small appliances to reduce cost and increase effectiveness.

QUESTIONS

(we will revisit the Framework Considerations later)

Setting the Scene: Introduction to Current Collection Models

Carl Smith, ERG Support Team





Any feedback on ways to improve collection approaches in different types of communities (rural, suburban, urban, island)?



If not through example models, what other guidance or information would be helpful to provide states and local governments designing collection systems?



What collection network elements are most important to make consistent across states, if any?

Urban Perspectives on Collection Models and Transportation

Kate Kitchener, New York Department of Sanitation



Battery EPR in New York

August 26, 2025



Javier Lojan
Acting Commissioner

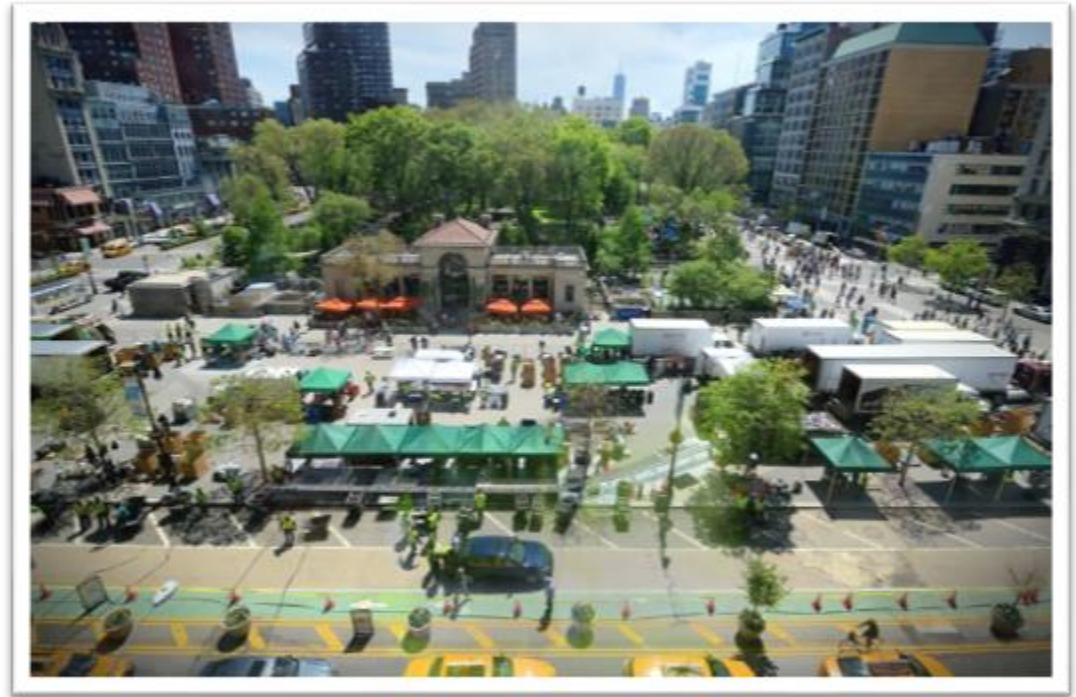
New York State Rechargeable Battery Law

- NYS Rechargeable Battery Law (2010)
 - Disposal Ban
 - Retailers must take back rechargeable batteries from consumers
 - Covers nickel-cadmium, sealed lead, lithium-ion, nickel metal hydride
 - Call2Recycle is the PRO
- 2025: S73A (Kavanaugh) /A4641A (Glick)
 - Amends the NYS Rechargeable Battery Law to include e-bike batteries and gives NYC local enforcement authority
 - Passed both houses, *awaiting Governor's signature*



Disposal Options for Residents

- Retailer takeback
- Special Waste Sites
- SAFE Disposal Events



Battery Fires

Fires in NYC

- Over 200 fires a year caused by Lithium-Ion Batteries

Fires in our trucks and facilities

- Daily fires in our recycling facilities

Avoid Fires!

Lithium-ion Batteries in **Electronic Bikes** and **Scooters** Can Cause Serious Fires

Safe Usage

- Check that devices meet fire safety standards – look for the [UL] trademark.
- Do not block doorways and windows with devices.

Safe Charging

- Follow the manufacturer's instructions.
- Do not charge near beds and couches, or charge overnight or unattended.

Safe Storage

- Do not place devices in direct sunlight – keep at room temperature.
- Do not store near anything flammable or combustible.

Safe Disposal

- It is **illegal** to discard rechargeable batteries in the trash or recycling.
- Visit nyc.gov/batteries for disposal options.
- If you notice changes in the batteries of your electronic bikes, scooters, or hoverboards (odor, change in shape/color, leaking or odd noises), call 911 immediately.

In Case of Explosion or Fire

1. Evacuate immediately
2. Close the door behind you
3. Call 911



nyc.gov/batteries | call 311
NYCsanitation • NYCRecycle





When you throw batteries away, they don't just disappear.

They can put #NewYorkStrongest AND @FDNY at risk - and create truck fires like this, which are up 325% year over year.

Still think it doesn't matter?

Go to nyc.gov/batteries or see link in bio to learn how to do the right thing.

Kate Kitchener

Director, Resource Recovery
Solid Waste Management
NYC Department of Sanitation
kkitchener@dsny.nyc.gov



QUESTIONS

Urban Perspectives on Collection Models and Transportation

Kate Kitchener, New York Department of Sanitation



Rural Perspectives on Collection Models and Transportation

Josh Kelly, Vermont Department of Environmental Conservation and **Todd Ellis**,
Call2Recycle





call2recycle

Give your old batteries a new life, Vermont. **Recycle them!**



You can now recycle your single-use batteries in Vermont at no cost.

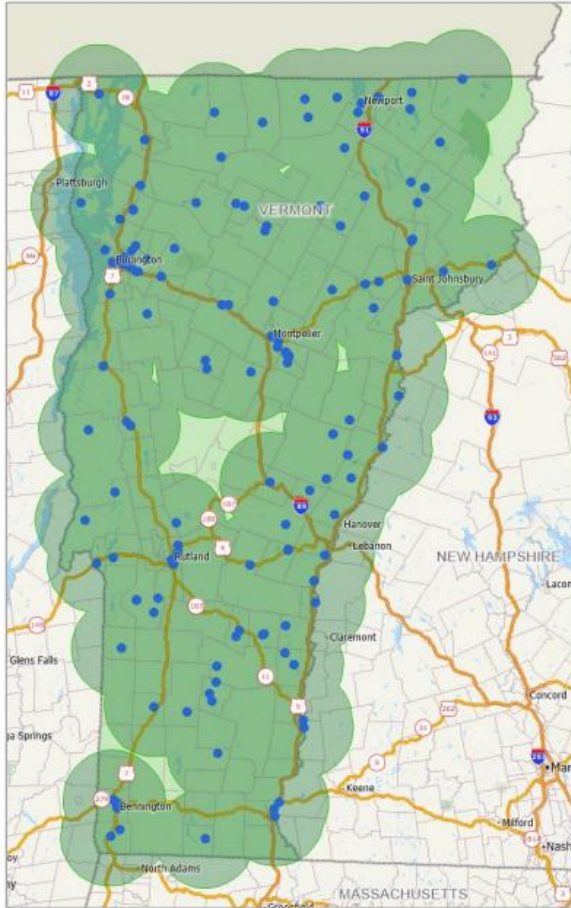
Simply bring your rechargeable and single-use batteries to any participating Call2Recycle® collection site.

Find one near you:
Visit call2recycle.org/vermont | Call 1-877-2-RECYCLE

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Vermont Battery Stewardship

Vermont Agency of Natural Resources (ANR)
And Call2Recycle, Inc.



Collection Site Accessibility

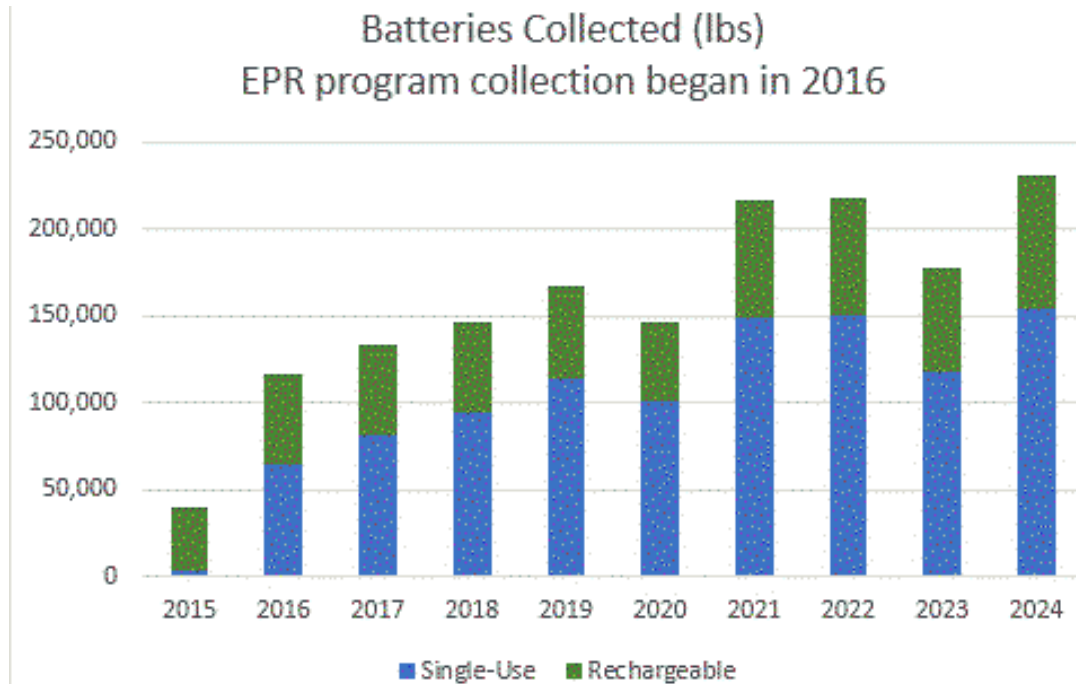
- ▶ The Stewardship Plan(s) must establish a collection program supported by producers for all covered batteries and provide a minimum of 2 collection sites in each county.
- ▶ Collection site participation completely voluntary.
- ▶ Currently over 180 drop off collection sites. Collection began January 1, 2016.
- ▶ 98% of Vermonters live within 10 miles of a battery drop off location.
- ▶ DD and over 300 watt lithium batteries collected at certified solid waste facilities.
- ▶ New all battery program to begin approximately January 2026.

Collection Materials



- ▶ Packaging, transportation, outreach and recycling are paid for by the producers.
- ▶ Flame Retardant Liner on all boxes and Cellblock in drums and DD Kits
- ▶ Consumers can recycle their batteries at no cost.
- ▶ Both primary and rechargeable batteries are collected in the same kit; allowing for convenience and increased recycling.
- ▶ Collection solutions for:
 - ▶ under 300 Wh (traditional boxes or OneDrum)
 - ▶ between 300 and 2,000 Wh (OneDrum)
 - ▶ Damaged and Defective

Vermont Collections



- ▶ 2020 dropped due to covid lock-down actions given less retail traffic
- ▶ 2026 - rechargeable weight likely to increase given expanded scope for batteries over 300 Wh.
- ▶ In all-battery collections, generally 65% primary and 35% recharge.

Questions?



Josh Kelly

VT DEC Solid Waste Program Manager

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<https://dec.vermont.gov/single-use-and-rechargeable-batteries>

Todd Ellis

Call2Recycle, Inc.

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tellis#@call2recycle.org

www.call2recycle.org

QUESTIONS

Rural Perspectives on Collection Models and Transportation

Josh Kelly, Vermont Department of Environmental Conservation and **Todd Ellis**, Call2Recycle



Suburban Perspectives on Collection Models and Transportation

Julia Mangin, Recology





Extended Battery Producer Responsibility (EPR) Framework

EPA Virtual Roundtable Discussion: Collection Models & Transportation Considerations

AUGUST 26, 2025

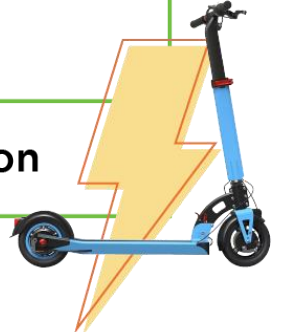


About Recology



Battery Management Overview

HOUSEHOLD		MID-FORMAT		LARGE-FORMAT	
✓	Curbside Collection	✗	Curbside Collection	✗	Curbside Collection
✓	Drop-off	✓	Drop-off	✓	Drop-off
✓	Special Collection	✓	Special Collection	✓	Special Collection



Curbside Collection

HOUSEHOLDS

Customers seal batteries in a plastic bag and place it on top of a cart (landfill or recycling) on collection day.



APARTMENTS AND BUSINESSES

Customers may have the option to drop batteries off in a designated bin (SF) or local drop-off location.



Batteries never belong in Recology carts or bins.

If damaged, punctured, or compressed, lithium-ion batteries can overheat and **ignite fires** that are difficult to extinguish.



Battery Collection Education

1

IDENTIFY LITHIUM-ION BATTERIES



2

PREPARE LITHIUM-ION BATTERIES



Learn more about local disposal options at [recology.com/batterysafety](https://www.recology.com/batterysafety)

Drop-off



LOCATION	ACCEPTED BATTERIES
Transfer Stations	Household batteries Mid-format (varies)
HHW Facilities	Household batteries Mid-format Large-format
Recology Stores	Household batteries

Safe Disposal, Safer Communities

Some Recology locations may offer special collection of batteries along with other HHW. Residents are encouraged to contact their local Recology operation for information.



Battery Safety

- Lithium-ion batteries are a **leading cause of fires** in waste and recycling facilities.
- All batteries can leach harmful chemicals into the environment.
- Proper disposal helps protect public safety, prevent facility fires, and reduce environmental harm.



Learn more about local disposal options at [recology.com/batterysafety](https://www.recology.com/batterysafety).

Framework Considerations

Haulers can support collection of certain battery types, but additional measures are needed to expand programs and mitigate risks.



Proper labeling



Training



Equipment



Financial support



Outreach and education

QUESTIONS

Suburban Perspectives on Collection Models and Transportation

Julia Mangin, Recology



Group Conversation

Framework Considerations

Consideration	Opportunities for Discussion
Definition of collection sites	Broaden the definition of collection sites to encourage PROs to establish special events, private sites, curbside, mail back, backhauling and EPR coordination to broaden collection footprint. (Does anyone oppose this or have any considerations that should be included?)
Collection site participation	Consider requiring retailer participation to increase accessibility. (Should retailers be required, if so, what type of retailers?)
Collection site compensation	Consider formalizing fair compensation to collection sites in laws to bolster collection footprints, particularly in urban areas. (How might this work?)
Collection site requirements	Require specific collection containers and placement for batteries posing the greatest risks. (Should laws be more prescriptive about this?)
Non-PRO collections	Acknowledge independent collectors and properly coordinate their activities with the PRO (e.g., reporting). (Should the framework include this? With what requirements/parameters?)
EPR program coordination	Encourage EPR program coordination (e.g., messaging, transport, collection) among programs like electronics and small appliances to reduce cost and increase effectiveness. (Reminder to make sure all things are captured.)

Discussion Questions – Batteries and Products

- Are there particular battery types or products that are more challenging to collect within a collection network and may deserve special consideration? What and why?
- How are states addressing the issues associated with damaged and defective batteries within their collection networks?
- What do you think is the most effective way to address recalled batteries in an EPR context?

Discussion Questions

- How are states and others addressing transportation-related issues that they may face during implementation?
- What other challenges or lessons learned are there associated with collection systems we should be aware of?



EPA is working on:

- Web-based battery collection best practices toolkit, including state EPR case studies**
- EPR Framework and Practitioner's Guide to promote consistency in state battery EPR**

What additional resources would be most useful for states developing and implementing battery EPR programs?

Wrap-up and Next Steps

Kim Cochran, U.S. EPA



What's Next? – Rollout Timeline

Winter 2025: Web-based battery collection best practices toolkit, including state EPR case studies

- Case studies highlighting Vermont, California, and Illinois battery EPR program development and implementation

Summer 2026: EPR Framework

- High-level framework outlining key EPR elements
- Additional best practices/case studies for developing and implementing battery EPR