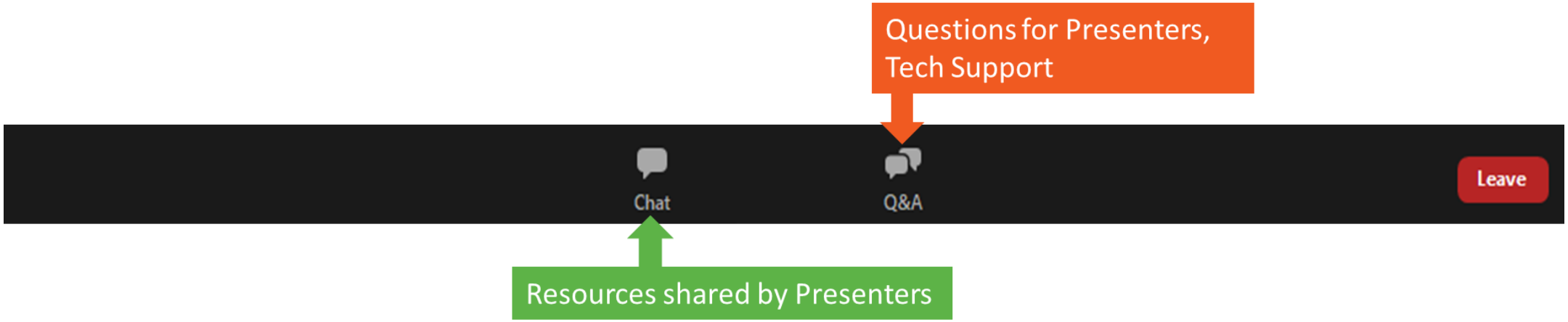
Small Format Battery Labeling Working Session

July 16, 2024

U.S. Environmental Protection Agency

Webinar Logistics



- **To ask a question:** Type your questions for presenters in the Q&A box.
- **Technical difficulties:** If you are having technical difficulties, please send a message through the Q&A box or email Kyra.Hall@erg.com.

Polling Logistics

- Two ways to join:
  - Go to slido.com and enter the code #3214 321
  - Scan the QR code on the screen

Welcome & Background

Ellen Meyer, U.S. EPA

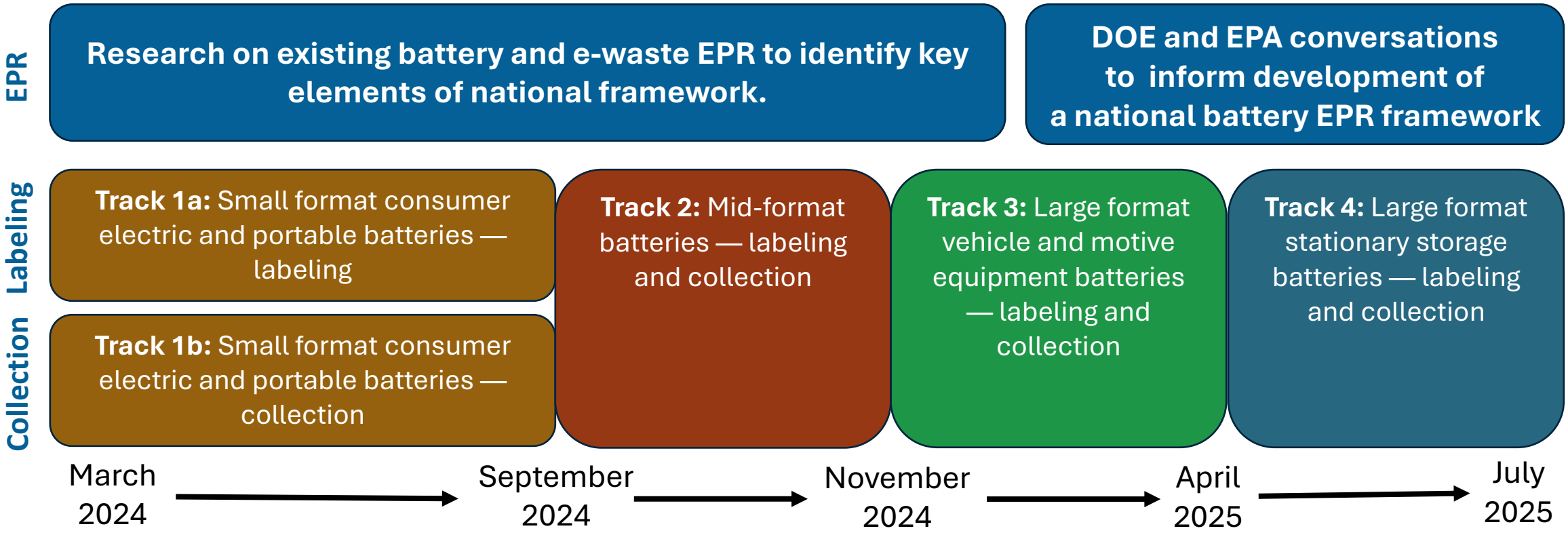
Agenda

- Background on the EPA's voluntary guidelines
- Overview of in-person working sessions
- Key takeaways from the working sessions
  - Information needs for each audience
  - Opportunities for conveying this information
    - Physical versus virtual labels
    - Innovations in labeling
    - Collaboration across public and private sector at all points in battery life cycle
  - Structure and format of the guidelines

EPA's Ongoing Battery-Related Projects

- Separate but complementary requirements in the Bipartisan Infrastructure Law (BIL):
  - **Battery Collection Best Practices** to identify and increase accessibility to battery collection locations, promote consumer education, and reduce hazards from improper disposal [Sec. 70401(b)]
  - **Voluntary Battery Labeling Guidelines** to improve battery collection and reduce battery waste by promoting consumer education and reducing safety concerns related to improper disposal. [Sec. 70401(c)]
  - **National Battery Extended Producer Responsibility (EPR) Framework** to address recycling goals, collection models, reporting requirements, and outline pathways for effective recycling [Sec. 40207(f)]

Timeline of Battery-Related Conversations



The When, Where, Who, and What: In-Person Labeling Working Session

- **When?** June 12-14, 2024
- **Where?** Arlington, VA
- **Who?** 49 attendees
  - Sectors represented: federal, state, and local governments; non-profits; manufacturers and brands; industry organizations.
- **What?** Presentations, plenary, and breakout discussions focused on small-format battery labels as they relate to the following audiences:
  - Consumers
  - Collection sites
  - MRFs and sorters
  - Manufacturers

EPA

The Why: Context for Guidelines

- Battery collection and recycling can pose environmental health and safety hazards in:
  - Municipal solid waste operations
  - Battery collection and transport
  - Sorting
  - Recycling
- Clear and consistent battery labeling aims to:
  - Bolster best practices for battery collection and recycling
  - Help with the identification, collection, handling, and management of end-of-life batteries

Per BIL Section 70401(c), the guidelines should:

- Identify battery collection locations
- Educate consumers about battery collection and recycling
- Reduce safety concerns from improper disposal

The What: Vision and Scope for the Guidelines

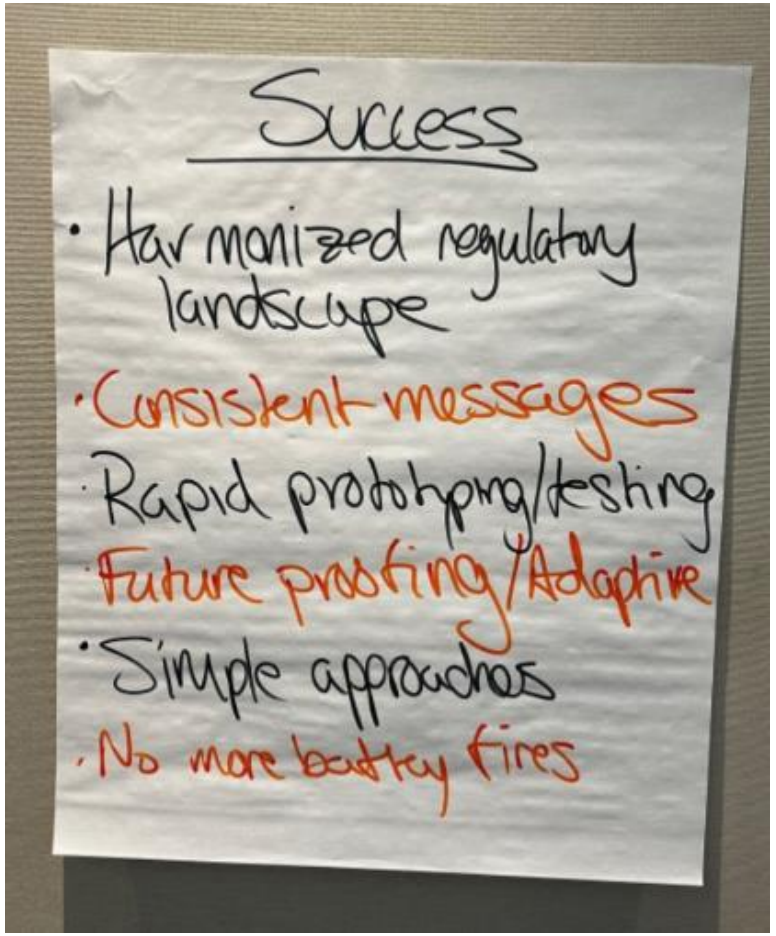
- All battery types and formats
- Build on existing standards, emphasize good ideas, and address inconsistencies
- Compliment ongoing work (EPR and best collection practices)
- Focus on messages related to:
  - End-of-life/next life management
  - Safety and risk information associated with disposal and recycling
  - Battery identification information, including identifying embedded batteries in products and battery chemistry (e.g., color coding, element name)

The How: How the Working Session Informs the Guidelines

- Identified options to convey necessary information to key audiences about small format batteries
- Talked through how the voluntary guidelines could be structured
- Heard from key parties in the battery life cycle about buy-in and adoption of the voluntary guidelines

Defining Success

- What success would look like?
  - Harmonized regulatory landscape
  - Consistent messages
  - Rapid prototyping/testing
  - Future proofing/adaptive approaches
  - Simple approaches
  - No more battery fires



Polling Logistics

- Two ways to join:
  - Go to slido.com and enter the code #3214 321
  - Scan the QR code on the screen

slido

Please download and install the Slido app on all computers you use

What else would you include as success (that was not already listed)?

ⓘ Start presenting to display the poll results on this slide.

Session Overview & Outcomes

Pat Tallarico, ERG support team

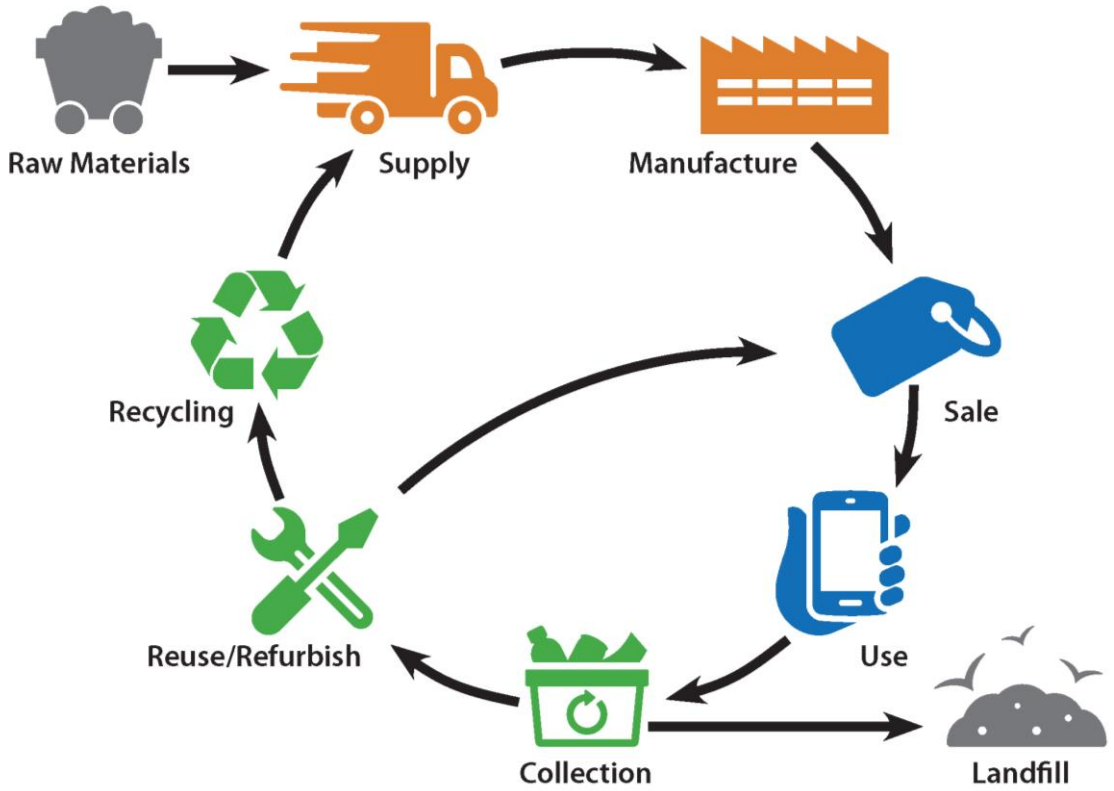
Working Session Discussions Included…

- **Level setting**
  - Who are the audiences for the voluntary guidelines?
  - What are the current challenges and opportunities for labeling?
- **Messaging and conveyance**
  - What is the message for each audience and how should that message be conveyed to each audience?
  - Physical and virtual conveyance
- **Developing the guidelines**
  - Continued research
  - Drafting the voluntary guidelines
  - Adoption of voluntary guidelines

Level Setting

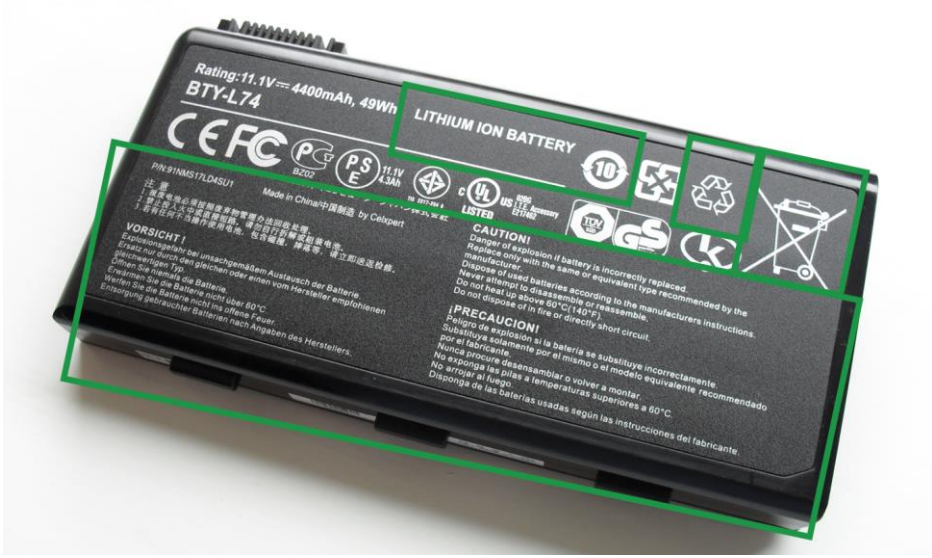
Level Setting: Audiences

- Manufacturers and integrators of batteries and battery containing products
- Retailers
- Users and consumers
- Collection sites
- MRFs, sorting, and removal
- Reuse and refurbish
- Battery recycling industry, including treatment and processing



Level Setting: Challenges with Battery Labeling

- Increasing number of marking requirements and standards (>20 on a single product label and its packaging)
  - Redundancy of labels and markings
  - Limited space due to markings and smaller product sizes
  - End of life management/disposal markings not standardized, potentially confusing to consumer
  - Difficulties complying with new marking requirements faced by manufacturers
- Label information must reach multiple audiences
- Increasing emphasis on aesthetics and design



slido

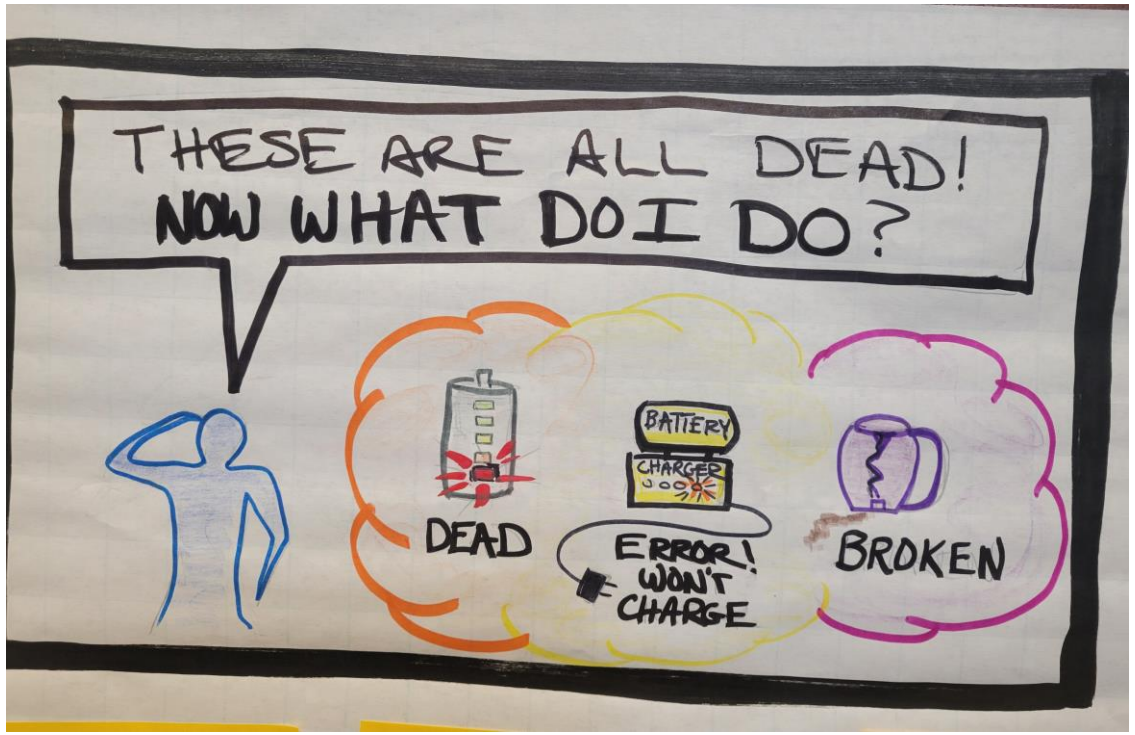
Please download and install the Slido app on all computers you use

What other challenges come to mind with labeling batteries for disposal/end of life management?

ⓘ Start presenting to display the poll results on this slide.

Messaging and Conveyance by Audience

Consumers



What do we need consumers to do?

- Properly store and recycle batteries
- Keep batteries out of trash and recycling bins

Consumers (cont'd)

How can labels help consumers recycle?

- Easy I.D. of batteries in products
  - Presence of battery
  - Chemistry
  - Do not remove/tamper with embedded batteries
- Keep batteries out of the bins
  - Are icons best message (chasing arrows or crossed out wheelie bin)?
  - Disposal and recycling instructions?
  - Safety messages– Avoid the Spark!
- Identify a locally appropriate disposal facility
- Repeat and reinforce key messages through multiple methods (product, packaging, websites)

slido

Please download and install the Slido app on all computers you use

To whom or to where should battery labels direct consumers?

ⓘ Start presenting to display the poll results on this slide.

Collection Sites

Discussion **for consumers to understand**:

- Underlying safety concerns and actions (protect battery terminal)
- Battery types accepted at the collection site
- How to easily identify presence of battery and type of battery on label
- Not to disassemble battery embedded products

Discussion **for collection sites**:

- Accessibility of information to consumer (eye level, placement in store)
- Answer consumer questions confidently
- Have collection site safety measures and training for staff (handling, sorting)
- Complete a battery training prior to site work
- Know the chemistry and state of the battery (EOL or DDR)
- Provide shippers with the mass and chemistries of the collected batteries

slido

Please download and install the Slido app on all computers you use

How would you recommend consumers separate their batteries for collection (i.e., alkaline and rechargeable; lithium chemistries and all other chemistries)

ⓘ Start presenting to display the poll results on this slide.

Manufacturers

Discussion Alignment:

- Labels should direct consumers to websites for product information.
- Color coding labels increases costs.
- Modifying existing labels (i.e. chasing arrows) takes time.
- Products have limited real estate.

Discussion Divergence:

- Whether label QR codes (or links) should lead consumers to the manufacturer website or third-party website for more information.

MRFs and Sorters

Discussion Alignment:

- Most important thing is to keep batteries and products with embedded batteries out of the MRF.
- Some batteries will always get through
  - Fire prevention technology can minimize the size and damage of battery fires.
  - Staff need to be trained on how to respond when they see something wrong.
- Size and shape of battery are most identifiable characteristics for optical sorters.
- RFID technology could present opportunities for identification of batteries, especially those in products.
  - Potential challenges with FCC requirements.

Key Issues

Chasing arrows and "recycling"

- Chasing arrows potentially misleading or non-compliant without additional context (e.g., Truth in Labeling law)
- Do arrows and recycling connect to a consumer action?

To color code or not?

- Currently not mandatory
- Increased costs
- Useful if the battery is DDR?

Message for battery embedded products

- QR codes on item or packaging can lead consumers to a website with more product information (think holistically)
- Phone numbers on labels
- Trade-in model (bring back to manufacturer for a discount or new product)

The Future of Labeling

- **Display non-critical product information** in an alternative, accessible way, such as QR codes or e-labels
- Benefits of e-labels:
  - Exist with a traditional product label
  - Increase information accessibility
  - Simplify regulatory enforcement through electronic databases
  - Centralized information for consumers
  - Easier and less expensive to update
- Considerations:
  - How will this technology reach consumers in the U.S. who are without WiFi?

Information gathered from the ITI Position Paper: E-labeling: https://www.itic.org/dotAsset/cb33d5b7-f7a7-46d6-999a-242899e54bb3.pdf

Traditional label crowded with difficult-to-read and potentially confusing information.

Smaller hybrid traditional/e-label with scannable QR code that links to a website with clear and legible regulatory and consumer information in various languages.

Reminder: Reference to and discussion of innovations and proposed solutions is not an endorsement by EPA, but is intended to facilitate discussion.

Opportunities for Innovation

- **Augmented reality** labels that break accessibility barriers
  - 19 Crimes Labels by Tactic
- **RFID** (Radio-Frequency Identification) – uses electromagnetic fields to identify and track tags attached to objects
- **Near-field Communication (NFC)** Technologies – similar to RFID, open possibilities for interactive experience – just tap

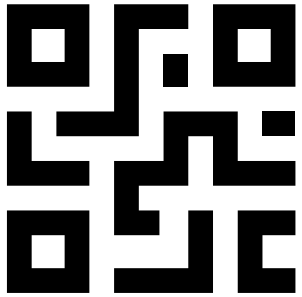
Image from Avery Denison Website

Image from Gototags Website

Reminder: Reference to and discussion of innovations and proposed solutions is not an endorsement by EPA, but is intended to facilitate discussion.

Opportunities for Innovation (cont'd)

- **QR Codes** – can link to digital content, such as product information, user manuals, end of life management
- **Data embedded bar codes** – include product information, batch information, expiration (e.g., GS1-128 barcodes)



Reminder: Reference to and discussion of innovations and proposed solutions is not an endorsement by EPA, but is intended to facilitate discussion.

slido

Please download and install the Slido app on all computers you use

What other technologies are you seeing or trying?

ⓘ Start presenting to display the poll results on this slide.

Developing the Guidelines

Developing the Voluntary Labeling Guidelines

Challenges *The voluntary guidelines may not…*	Opportunities *The voluntary guidelines may…*
• Help MRFs identify small, embedded batteries that enter the waste stream. • Reduce the number of defective or counterfeit batteries. • Deter DIY battery replacement. • Change how batteries are stored.	• Inform consumers that batteries can (and perhaps, should) be managed differently than other recyclables or waste. • Direct consumers how to safely manage batteries. • Stop consumers from placing batteries in the normal waste or recycling streams. • Support and reinforce other messaging on the appropriate ways to handle, store, use and dispose of batteries.

Informing the Voluntary Guidelines

- *How will consumers identify if the device is or has a battery?*
- *How will consumers know to not throw the battery/device in the trash or recycling?*
- *Where and how can consumers be directed to properly manage the battery/device?*
- *What can be done to simplify the battery/device return or recycle process for consumers?*

slido

Please download and install the Slido app on all computers you use

Are you currently working on any policies or programs that may have an impact on battery labeling or battery recycling - position papers, education campaigns, new standards, etc.?

ⓘ Start presenting to display the poll results on this slide.

Continued research

- Continued exploration and research
  - Research on general consumer battery/battery recycling knowledge
  - General effectiveness of labels
  - Existing education campaigns and their message variation
  - Using donation sites as collection sites
  - How to convey message to recapture materials
    - Chasing arrows symbol versus "recycling" text?
    - Do not dispose in bin?

Upcoming Battery Working Sessions

Meeting Focus	Meeting Topic	Meeting Date	Meeting Time	Format
Labeling and Collection	Track 2: Mid-Format Current Standards and Practices	September 2024	TBD	Virtual
Labeling and Collection	Track 2: Mid-Format Gaps, Challenges, and Safety Concerns	October 2024	TBD	Virtual
Labeling and Collection	Track 2: Mid-Format Messaging/Training	November 2024	TBD	TBD