RPRA Recycling Efficiency Rate Calculation and Verification Procedure for Batteries

Public Consultation

November 2, 2023

RPRA
Resource Productivity & Recovery Authority

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How to ask a question

To ask a question at any time during the presentation or for technical assistance, click on the Q&A tab, type your question in the text box and click "send".

About this consultation

- RPRA has retained Dillon Consulting Limited (Dillon) to develop Recycling Efficiency Rate (RER) Calculation and Verification Procedures for batteries, ITT/AV, lighting, and hazardous and special products (HSP)
- Phase one took place from March 7 to April 14, 2023
- Phase two will take place from October 26 to November 24, 2023

Agenda

1. Overview of the consultation and next steps
2. Principles for the development of the RER procedure
3. Part 1: Key consideration from interviews
4. Part 2: Proposed procedure

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What has been done?

Initial Research

- SME consultation
- Review RER reports
- Desktop research

Interviews

Stakeholder interview sessions with processor and PROs

Draft and Revise Procedures

SME and RPRA feedback and revisions

Public Consultation

- Webinars on **Nov 2,6,8 2023**
- Written feedback to be submitted by **Nov 24, 2023**

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What will happen next?

Public Consultation

- Webinars on **Nov 2,6,8 2023**
- Written feedback to be submitted by **Nov 24, 2023**

Review Feedback

Consultation Report to be finalized **Early 2024**

Final Procedures

To be posted to RPRA website **Early 2024**

RER Reporting

Processors report their 2023 RER to RPRA by **April 30, 2024.**

We look forward to receiving your input!

How to submit your input:

During the meeting

Post-meeting email survey (anonymously or not)

Direct email to consulations@rpra.ca

All feedback must be received by Nov 24, 2023

Principles: RER Calculations

RER calculations should be:

- **Reliable**
  - Reflective of actual resource recovery as defined in the regulation
  - Accurate within reason
    - **Reasonability** considers the level of effort required to obtain accurate information in view of
      - the impact/risk of inaccuracy
      - the processor's potential influence over the source
- **Verifiable and auditable**
  - Standardized
  - Comparable
  - Reproducible
  - Fair

Principles: RER Verifications

RER verification should be:

- **Transparent**
  - Both positive and negative findings should be reported
- **Constructive**
  - Identifying any information gaps or areas for improvement in data collection and/or processes

Consultation feedback

- **When providing feedback, please consider how it <u>aligns with the presented principles</u> for the RER calculation and verification.**

Part 1

Key Consideration from interviews

What we've heard so far

Through earlier consultation with stakeholders, the following key themes were raised as considerations for the development of the procedure:

- RER reporting responsibility
- Balancing administrative burden with risk and impact
- Recovered resources definition
- Access to downstream performance information

Key consideration: RER reporting responsibility

- Battery processors are held responsible for the performance of the full recycling supply chain, including downstream processors
- The RER is also influenced by product design and collection
- Processors that are currently registered and reporting do not all play the same role in their respective recycling supply chains

How does the proposed procedure address this?

- The regulation requires battery processors to report on their RER
  - Changes to this requirement are out of scope for the procedure review
- The procedure does include language clarifying to whom the procedure applies by providing definitions for:
  - Processing
  - Preparing for processing
  - Primary processor
  - Downstream processor

Proposed: additional definitions for the purpose of the procedure

"**processing**" means activities that alter the characteristics of materials derived from batteries for the purpose of resource recovery.

"**preparing for processing**" means activities that are carried out prior to processing batteries, including sorting, blending, mixing, and repackaging. A person who only prepares materials for processing is not considered a battery processor.

"**primary processor**" is the first person or facility that receives batteries used and collected in Ontario and processes these.

"**downstream processor**" is a person or facility that receives recoverable resources that were generated from batteries used and collected in Ontario from a battery processor for the purpose of further processing. All processing activities are considered in scope of this definition, until the resources can be considered a recovered resource.

Key consideration: balancing administrative burden with risk and impact

- RER verification represents a high cost and resource burden for processors
  - This burden needs to be *reasonable*
- Audit/verification scopes sometimes overlap

Considered:

- Reduce RER verification frequency for low-risk processors
- Reduce the overall effort of the calculation and verification
  - Proposed

Principle of reliability:

- *Reflective of actual resource recovery as defined in the regulation*
- *Accurate within reason*
  - ***Reasonability** considers the level of effort required to obtain accurate information in view of*
    - *the impact/risk of inaccuracy*
    - *the processor's potential influence over the source*

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Option: reducing the overall effort of the calculation and verification

We have included the following in the proposed procedure:

- The verifier may be a first party
- The sampling procedure allows the verifier to reduce the sample size based on other similar audits that have been undertaken
- Reducing the timeframe over which RER mass balance is to be calculated
    - In the proposed batteries procedure, the timeframe is reduced to two consecutive quarters

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Consultation question: RER timeframe

- **Based on what timeframe should a processor's RER be determined?**

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Key consideration: recovered resource definition

The RRCEA defines “resource recovery” as the extraction of useful materials, or other resources, from things that might otherwise be waste, including through reuse, recycling, reintegration, regeneration or other activities.

This definition is very broad and leads to a potential for inconsistency in calculating and reporting of the RER.

Options considered

- Providing a list of which products/commodities can be considered as recovered or not
  - Rejected as this may vary depending on the processor's supply chain
  - Conflicts with the principle of reliability
- Improved guidance providing clarity on how to determine whether a resource can be considered recovered or not
  - Proposed

Proposed way forward: additional guidance

1. Additional definitions for the purpose of the procedure

"**recoverable resource**" is understood as a resource derived from batteries that are sent downstream to be further processed.

"**recovered resource**" is understood as a resource derived from batteries that will not undergo further refining and is used to displace virgin material in the manufacturing of a new product.

2. Calculation guidance, including guidance on determining the downstream RER

3. Examples

Examples of Recoverable Resources	Examples of Recovered Resources
Black mass	Fertilizer (Zinc and Manganese sulphate hydrates and oxide) Coating ingredient Metal production additive
Contaminated or mixed metals sent to a smelter	Steel sent to a smelter for steel production
Shredded plastics sent for further processing	Plastic pellets sent for manufacturing of new products

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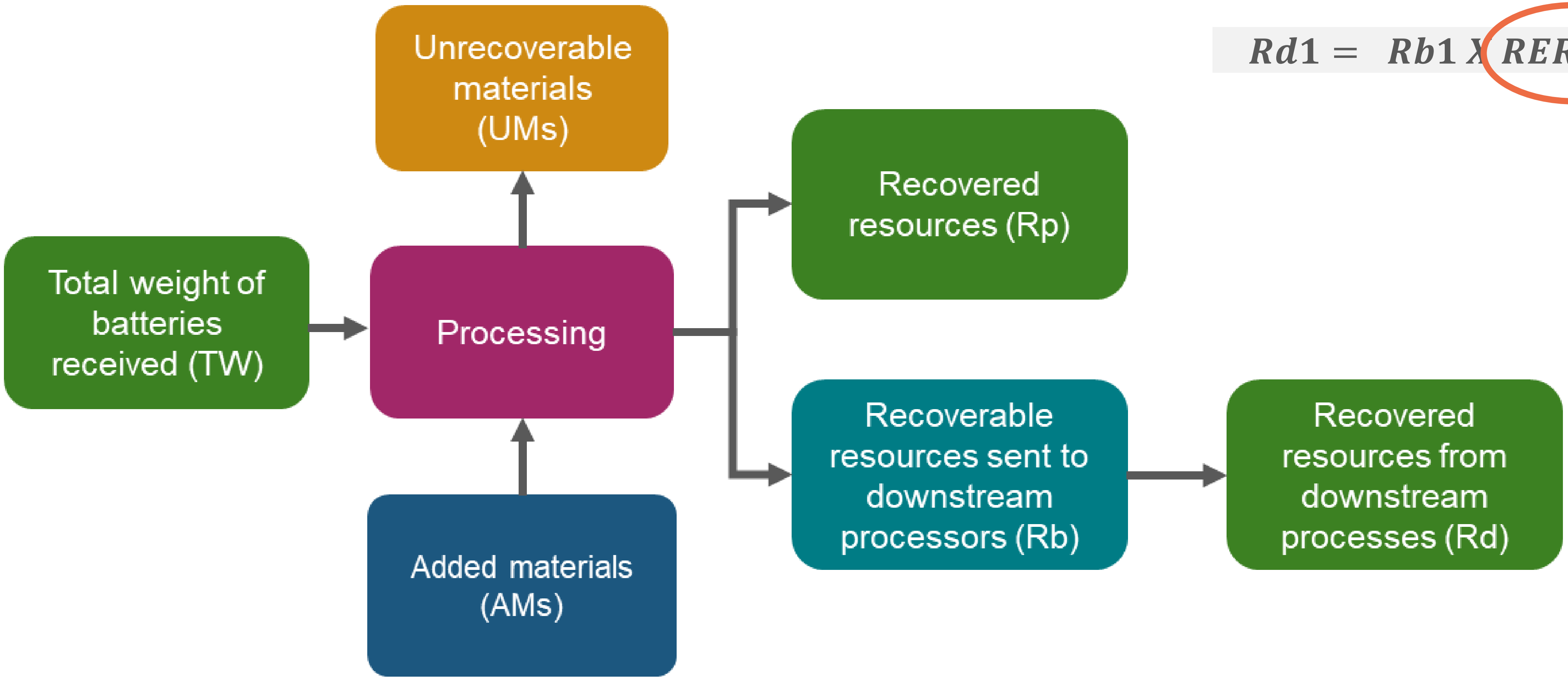
Calculation guidance proposed (snapshot – more details later)

$$RER = \frac{R}{TW + AM} \times 100\%$$

$$R = Rp + Rd$$

$$Rd = Rd1 + Rd2 + Rd3 \ldots$$

$$Rd1 = Rb1 \ X \ RERds1$$



Key consideration: access to downstream performance information

- Yield, or resource recovery performance, information may be considered commercially sensitive information not passed on willingly in a supply chain
- Processors may not be given access to downstream performance information and may be unable to verify the information provided

Considered:

1. Setting standard downstream RERs for standard commodities
2. Processors to obtain an RER statement from downstream processors, who self-declare their RER in line with the calculation guidance provided in the procedure
   - This option is included in the proposed procedure
3. Allowing the downstream RER to be estimated by the processor based on a thermodynamic analysis

No option discussed or brought forward during the interview process received broad support

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Considerations: standard downstream RERs

Advantages

- Lowest administrative burden

Disadvantages

- This will ignore differences between processor downstream supply chains
- Lack of standardized specifications for recoverable resources

Proposed: downstream processor RER self-declaration

Advantages

- Aligns with existing practice in some supply chains

Disadvantages

- Downstream processors may not be responsive to processors representing an insignificant amount of their feedstock
- The RER may be difficult to determine for a downstream processor receiving a wide variety of feedstocks

Thermodynamic analysis

Advantages

- Theoretical analysis could be a reasonable way to calculate the yield of a recoverable resource stream, especially in cases where this stream represents only a small portion of a total, diverse feedstock
- Lower administrative burden in subsequent years

Disadvantages

- Theoretical analysis results in a higher RER than is achievable operationally
- Processors may not have sufficient information on the downstream process to estimate the RER

Consultation question: determination of recovered resources

- **Do all the proposed options sufficiently increase clarity on how to determine the weight of recovered resources?**
- **Do all the proposed options represent the best approach to reflecting the principle of "Accurate within Reason"?**

REMINDER: consultation question for all key considerations

- **To address these considerations, were any alternatives options overlooked?**
- **For the proposed options, were any considerations overlooked?**
- **Please explain the specific challenges you anticipate with the approaches presented.**

Part 2

Proposed procedure

Procedure elements:

Definitions
Calculation of the RER
Verification of the RER
Appendix A: Sampling Methodology
Appendix B: Methodology Verification

Procedure elements

Calculation of the RER

- Methods for Determining the RER
- General Calculation Guidance
- Recycling Efficiency Rate (RER) calculation formula
- Determination of the weight of batteries received for processing (TW)
- Determination of the weight of recovered resources (R)
    - Determination of the downstream RER

Methods for RER Calculation

1. Mass Balance Calculation

- A calculation based on the total weight of materials received and processed in a specified timeframe of two quarters
- Must be verified by someone meeting the requirements in the procedure
- Must be completed annually

2. Field Test

- Determine RER based on test data set
- Can only be done if the mass balancing option is not possible
- Must be done under the supervision of a person meeting the requirements in the procedure
- Must be completed on an interval that is the lowest of the following:
  - Once every three years; or
  - When material changes are made to the recycling process; or
  - When material changes occur in the feedstock.

General Calculation Guidance

- RER
  - calculated for each facility.
- Calibration Weights
  - based on scales measurements
  - uses National Institute of Technology (NIST) calibration standards.
- For non-designated materials **identical** in composition to designated batteries
  - may be included in the weight used to determine the RER.
- For non-designated materials **not identical** in composition to designated batteries:
  - weight must be removed from the total weight received and recovered, and
  - not included in the RER calculation.

Recycling Efficiency Rate formula

$$RER = \frac{R}{TW + AM} \times 100\%$$

For the **mass balancing** approach:

R: the weight of the recovered resources derived from all batteries received by the processor in the specified timeframe.

TW: the total weight of all batteries received by the processor in the specified timeframe.

AM: the weight of any materials added during processing

For the **field test** approach:

R: the weight of the recovered resources derived from all batteries processed through the field test

TW: the total weight of all batteries processed during through the field test

AM: the weight of any materials added during processing

Determination of the weight of batteries received for processing (TW): Mass Balance Approach

Definitions:

"**preparing for processing**" are activities that are carried out prior to processing batteries, including sorting, blending, mixing, and repackaging. A person who only prepares materials for processing would not be considered a battery processor.

"**processing**" are activities that alter the characteristics of materials derived from batteries for the purpose of resource recovery.

- TW is determined **after** the preparation for processing phase.

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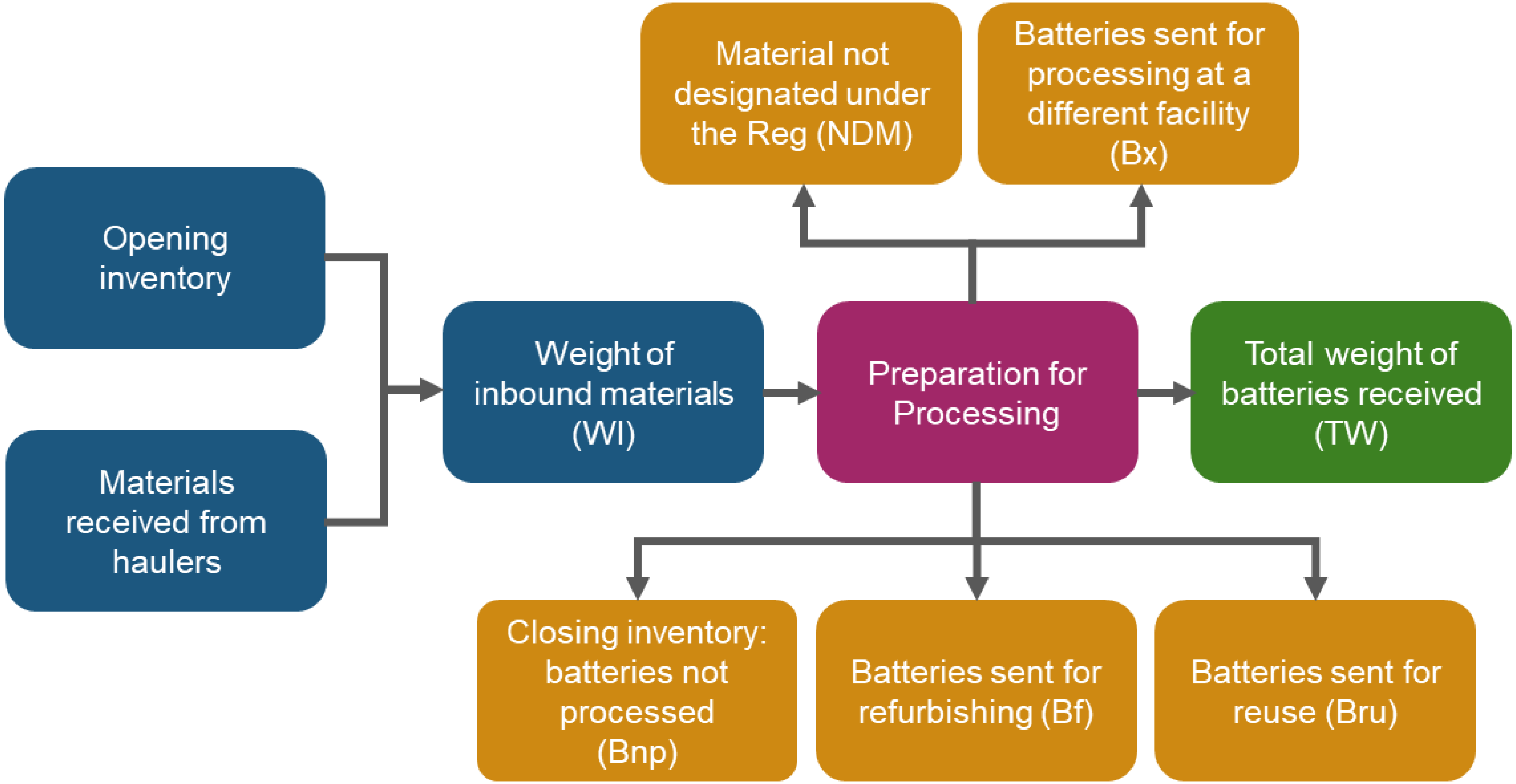
Determination of the weight of batteries received for processing (TW): Mass Balance Approach

TW = weight of received and processed materials = WI – NDM – Bx – Bnp – Bru – Bf



Mass Balance Template

Calendar Year		20XX	Item ID
All Weights in Kilograms (kg)		kg	
Step 1 - Opening Product Inventory Carried Over from Prior Year			
Opening Product Inventory	Unsorted Products		a
Opening Processed Materials Inventory	Material A (e.g. copper, aluminium, plastics)		
	Material B (e.g. copper, aluminium, plastics)		
	Material C (e.g. copper, aluminium, plastics)		
	add more lines above as needed		
Total Opening Processed Materials Inventory		-	b
Opening Non-Designated Materials Inventory	Non-Designated Material (e.g. garbage)		c
Total Opening Inventory		-	a + b + c
Step 2 - Determination of Weight Sent for Preparation for Processing in Calendar Year			
Total Weight Received from Haulers	Inbound unsorted products		d
Total Weight Sent for Preparation for Processing (WI)	All unsorted products	-	a + d
Step 3 - Preparation for Processing - Determination of Total Weight of Eligible EEE			
Non-Designated Materials (NDM)	Non-Designated Material (e.g. garbage)		e
EEE of a Different Category (Ex)	EEE excluded from processing		f
EEE Not Processed within the Timeframe (Enp)	EEE not processed with the timeframe		g
Batteries removed from EEEE (ExBatt)	Batteries		h
Weight of EEE sent for Reuse (Eru)	Reuse EEE		i
Weight of EEE sent for Refurbishing (Ef)	Refurbished EEE		j
Eligible Weight of HSP (TW)	Calculated TW	-	(a + d) - (e + f + g + h + i + j)
	Actual TW from Weighing Materials		
		-	k
Added Materials (AM)	Material added during processing		l

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Determination of the weight of batteries received for processing (TW): Field Test Approach

- Total weight (TW)
  - will be the weight of the feedstock used to run the test.

Determination of the weight of recovered resources (R)

- Applies to both approaches.

Definitions: Recoverable vs Recovered

“**recoverable resource**”

- a resource derived from batteries
- sent downstream to be further processed.

“**recovered resource**”

- a resource derived from batteries
- will not undergo further refining
- used to displace virgin material in the manufacturing of a new product.

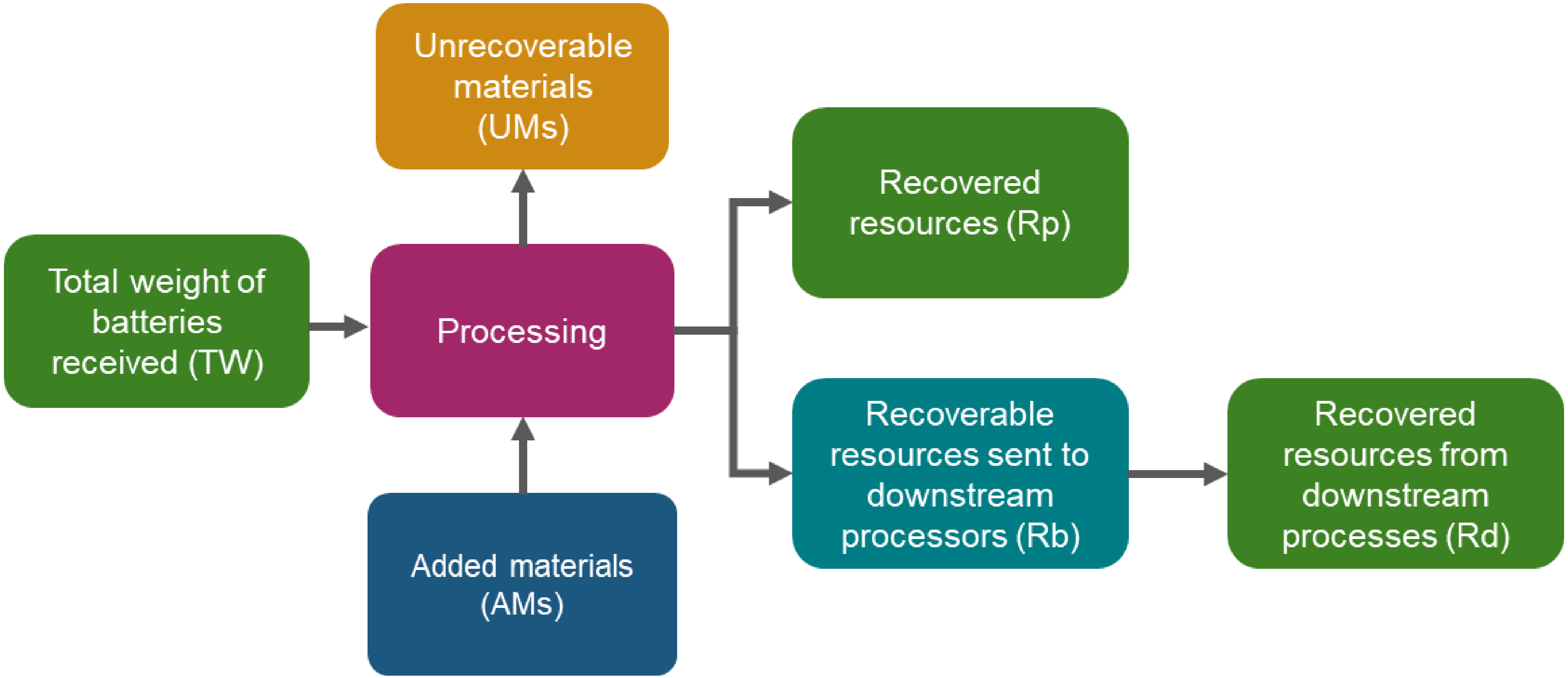
Examples of Recovered and Recoverable Resources

Recoverable Resources	Recovered Resources
Black mass	Fertilizer (Zinc and Manganese sulphate hydrates and oxide) Coating ingredient Metal production additive
Contaminated or mixed metals sent to a smelter	Steel sent to a smelter for steel production
Shredded plastics sent for further processing	Plastic pellets sent for manufacturing of new products

Consultation Question: Recovered and Recoverable Resources

- **Are there any additional examples of recovered or recoverable resources that you feel should be added to the procedure?**
- **If yes, please identify the recovered or recoverable resources, and what designated materials and processes led to those materials.**

Determination of the Weight of Recovered Resources (R)



AMs are materials used in the process and incorporated into the outbound resources. The weight of these material must also be accounted for in the outbound materials.

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Determination of the weight of recovered resources (R)

$$R = Rp + Rd1 + Rd2 + Rd3 + Rd4$$

Where,

R: Total weight of recovered resources associated with the weight of batteries received for processing (TW) and any added materials (AM)

Rp: weight of recovered resources from the battery processor

Rdi (i=1,2,3,4,...): Weight of recovered resources per downstream processor

$$Rdi = Rbi \times RERdsi \ (i=1,2,3,4,...)$$

Where,

Rbi (i=1,2,3,4,…): Weight of recoverable resources sent to the downstream processor

RERdsi (i=1,2,3,4,...): The RER of the downstream processor

Outbound Materials

- Outbound materials may be recovered resources, recoverable resources or unrecoverable materials.
- Outbound materials should be summed in groups corresponding to their next processing/disposal destination.
- For a material to be considered a recovered or recoverable resource, the processor must be able to demonstrate a basis for the allocation of that material into one of these categories.
  - For example, they must have a proof of sale either to a manufacturer to replace a virgin material or to a downstream processor.

Determination of the Downstream RER

- Determined following the same procedure
- The downstream processor is to provide a letter including:
  - A statement of:
    - The RER of the facility to which the materials from the processor were sent
    - A list of products or materials that were targeted for recovery
    - A statement of the average yield per targeted material
  - A signature of the site manager or equivalent.

- The downstream RER (RERds) factor is to be determined by each downstream processor using the mass balance approach or field test approach as laid out in this procedure.
- Where a downstream processor sends materials to a further downstream processor, this section should also be followed for determining the RER of the further downstream processor.

Who is a downstream processor?

Definitions:

“**battery processor**” as defined in the regulation, means a person who processes, for the purpose of resource recovery, primary and/or rechargeable batteries used by a consumer in Ontario.

“**primary processor**” is the first person/facility that receives batteries used and collected in Ontario and processes these.

“**downstream processor**” is a person or facility that receives recoverable resources that were generated from batteries used and collected in Ontario from a battery processor for the purpose of further processing. All processing activities are considered in scope of this definition, until the resources can be considered a recovered resource.

Mass Balance Template

Step 4 - Processing - Determination of Weight of Recovered Resource (R)			
Recoverable Resources sent to Downstream Processor	Downstream Processor 1 (Rb1)		l1
	Downstream Processor 2 (Rb2)		l2
	Downstream Processor 3 (Rb3)		l3
	add more lines above as needed		li
		-	l
Recycling Efficiency Rate (RER) of Downstream Processors	RER of Downstream Processor 1 (RERds1)		m1
(RER is a percentage expressed as a decimal, e.g. 90% = 0.9)	RER of Downstream Processor 2 (RERds2)		m2
	RER of Downstream Processor 3 (RERds3)		m3
	add more lines above as needed		mi
Recovered Resources from Downstream Processors	Calculated Weight Recovered by Processor 1 (Rd1)		n1 = l1 x m1
	Calculated Weight Recovered by Processor 2 (Rd2)		n2 = l2 x m2
	Calculated Weight Recovered by Processor 3 (Rd3)		n3 = l3 x m3
	add more lines above as needed		ni = li x mi
		-	n
Recovered Resources from the Processor (Rp)	Material A (e.g. aluminium, fertilizer, coating ingredient)		
	Material B (e.g. aluminium, fertilizer, coating ingredient)		
	Material C (e.g. aluminium, fertilizer, coating ingredient)		
	add more lines above as needed		
		-	o
Total Recovered Resources from Processing		-	n + o
Step 5 - Recycling Efficiency Rate			
Processor Recycling Efficiency Rate		#DIV/0!	[(n + o) / (j + k)] x 100%
(Total Recovered Resources/(Eligible Weight of HSP + Added Materials)) x 100%			

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Procedure elements

Verification of the RER

- General Guidance for the Verification of RER
  - Verifier/Field Test Supervisor Credentials
  - Material Error Thresholds
- Verification of the Mass Balance Calculation
  - Verification Execution Procedure
    - General
    - Data and calculation verification
    - Evaluation and conclusion
    - Verification reporting
- Verification of the Field Test Approach
  - Field Test Plan
  - Field Test Verification Report

Verifier/Field Test Verifier Credentials

- Facility in Canada needs licensed engineering practitioner who holds a license, limited license or temporary license under the Professional Engineers Act or equivalent in other Canadian provinces.

- Facility Abroad needs at least:
  - An M.Eng. or M.Sc. degree in a relevant engineering discipline with three years of demonstrated engineering experience in an operational setting;
  - A B.Eng. or B.Sc. degree in a relevant engineering discipline with five years of demonstrated engineering experience in an operational setting; or
  - A verification certification from an accredited body relating to national or international environmental standards.

Verifier/Field Test Verifier Credentials continued

Verifier/Field Test Verifier must have physically toured the facility and possesses the technical expertise and ability to assess the following:

- The processes within the boundary of the RER, the modelling approach and assumptions, as well as the magnitude of potential errors, omissions, and misrepresentations.
- Internal information systems for gathering and reporting data, including quality control procedures

Material Error Thresholds

- Material errors may be qualitative and quantitative in nature.
- From a quantitative perspective, an error is considered to be materially misleading if its value exceeds 5% of the total weight processed (TW).
- Qualitative materiality refers to intangible issues that affect the RER statement. Examples include:
  - control issues that erode the verifier’s confidence in the reported data;
  - difficulty in locating requested information; and
  - non-compliance with regulations indirectly related to RER.

Verification Execution Procedure - General

The verification process shall involve:

1. Assessing the relevance, completeness, consistency, transparency, and accuracy of the data/information provided, as well as the reliability and credibility of data sources
2. Where multiple methodological choices, equations, or parameters are available to the user, determining whether adequate justification for the selected choice has been provided
3. Checking whether all the assumptions and data used are clearly disclosed along with references and sources as well as whether justifications are provided (where required) that are reasonable and supported by evidence
4. Identifying issues that require further elaboration, research, or analysis

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Verification Execution Procedure

- Step A: Data and calculation verification
- Step B: Evaluation and conclusion
- Step C: Verification reporting

Verification Execution Procedure – Step A: Data and calculation verification

1. The weight of all inbound materials
    - Select a sample of inbound shipments in accordance with the sampling procedure in Appendix A
    - Verify the weight of each sample through comparison with bill of ladings or manifests
2. The weight of materials to exclude from the total inbound weight, being: material not designated under the Regulation (packaging, garbage, moisture, etc.) and batteries of different chemistry.
3. The weight of all outbound materials
4. The weight of unprocessed batteries
5. The weight of recoverable materials (Rb)
6. The downstream RER
    a) Verify the downstream RER used with the RER stated by the downstream processor
7. The mass balance
    a) Verify that the weight of all inbound materials equals the weight of all outbound materials minus the weight of unprocessed batteries
8. Recalculate the RER

Verification Execution Procedure – Step A: Data and calculation verification

2. The weight of materials to exclude from the total inbound weight, being: material not designated under the Regulation (packaging, garbage, moisture, etc.) and batteries of different chemistry.
    a) Obtain one or multiple lists of statements of weights of material not designated under the Regulation
    b) Verify the inputs.
        i. If these are estimated, for example through a composition study or tracking system assessment, assess the methodology to determine the inputs in accordance with Appendix B.
        ii. If they are measured, verify the calibration log of the scale
    c) Verify the total weight of material not designated under the Regulation by recalculating the sum
    d) If non-designated materials were deemed to be identical in composition to designated materials and included in the mass balance for RER, verify that non-designated materials are identical

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Verification Execution Procedure – Step A: Data and calculation verification

3. The weight of all outbound materials
   a) Obtain a list of all outbound loads that make up the total weight of materials shipped to a third party, including materials sent for disposal, for reuse, and for (further) treatment by other (downstream) processors
   b) Verify the total weight of outbound loads by recalculating the sum
   c) Select a sample of outbound shipments in accordance with the sampling procedure in Appendix A
   d) Verify the following data points through comparison with bill of ladings or manifests, focusing on:
      i. Weight of each sample
      ii. Categorization in the dataset (recoverable or unrecoverable materials). In case of hazardous waste, the categorization should align with mentioned disposal code.
      iii. Destination (business legitimacy and, management type, for hazardous materials ensure the destination is licensed to receive those materials)

Verification Execution Procedure – Step B: Evaluation and conclusion

The verifier shall evaluate the RER statement, considering:

- sufficiency and appropriateness of evidence
- material misstatements
- conformity with the calculation guidance requirements
- changes compared to prior reporting periods

Verification Execution Procedure – Step C: Verification reporting

The verifier shall develop a verification report that contains the following sections:

1. A description of the verifier and their competencies related to the required credentials described in this procedure
2. Scope of verification
3. Sampling methodology
4. Assessment of data management systems and controls
5. Summary of verified RER calculation inputs and outputs using the International System of Units (SI units)
6. Summary of assumptions or other data considerations
   - Including a description of any estimation methodologies used.
7. Summary of errors meeting the materiality threshold and recommended corrective action
8. Verification Statement
   - Statement of the RER and other key findings from the verifier
9. Review declaration
   - Statement of acknowledgement by the site manager

The report must be no more than 5000 words in length.

Mass Balance Template

Step 5 - Recycling Efficiency Rate			
Processor Recycling Efficiency Rate		#DIV/0!	[(n + o) / (j + k)] x 100%
(Total Recovered Resources/(Eligible Weight of HSP + Added Materials)) x 100%			
Step 6 - Program material sent to an end market to be disposed of or stored in a manner that is not considered recycling			
Unrecoverable materials (UM)	Landfill		
	Incinerated		
	Used as a fuel or a fuel supplement		
	Stored, stockpiled or otherwise deposited on land		
	Unaccounted for losses (e.g. evaporated water)		
		-	p
Step 7 - Closing Inventory			
Closing Processed Materials Inventory	Material A (e.g. aluminium, fertilizer, coating ingredient)		
	Material B (e.g. aluminium, fertilizer, coating ingredient)		
	Material C (e.g. aluminium, fertilizer, coating ingredient)		
	add more lines above as needed		
		-	q
Closing Non-Designated Materials Inventory	Non-Designated Material (e.g. garbage)		r
Total Closing Inventory		-	g + q + r
Step 8 - Mass balance			
	Total Weight In	-	a + b + c + d + k
	Total Weight Out	-	e + f + h + i + l + o + p
	Total Weight Stored	-	g + q + r
Mass Balance	***Note:*** *Should equal zero*	**-**	(a + b + c + d + k) - (e + f + h + i + l + o + p) - (g + q + r)

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Field Test Plan

All field tests must be initiated with a Field Test Plan which includes the test run design consideration including:

- The feedstock composition.
  - The feedstock must have a composition representative of an average sample of obligated materials collected from consumers in Ontario in one year.
    - If the average material composition is identical regardless of the source then for the purpose of the field test, the feedstock may include materials sourced from outside Ontario. If the average material composition is not identical, then the feedstock must be Ontario materials only.
  - If a methodology is used for deriving the feedstock composition, it must be verified in accordance with Appendix B by the Field Test Supervisor.

Field Test Plan

- Operational settings that are representative of normal operating conditions considered based on average daily capacity.
- A batch size and test duration that allows for the test results to be representative of normal operating conditions.
- A data collection approach.

The Field Test Verifier and Facility Manager must sign off on the Field Test Plan.

Field Test Verification Report

All processors relying on the field test method must prepare a Field Test Verification Report.

The Field Test Verification Report must include the following:

- An explanation for why the processors cannot verify their RER using the mass balance method;
- A description of the Field Test Verifier and their competencies as related to the required credentials described in the procedure;
- A description of the field test process, including a statement of the feedstock and products targeted in the design of the process and how the feedstock was determined to be representative of an average sample;
- A summary of the RER calculation inputs and outputs generated through the field test outputs using the International System of Units (SI units);

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Field Test Verification Report

- A list of the outbound materials from the processing facility and all corresponding destinations, including destinations to which material from the field test were not sent, but where the processor has sent materials within the last 12 months. This list should include:
  - The weight of materials sent to each processor.
  - A proof of sale/bill of lading from each facility.
  - For recoverable materials, a statement of the downstream RER.
- The Field Test Plan as an appendix; and
- A verification statement of the Field Test Verifier, confirming the RER of the processor and the accuracy of the data submitted in the report.
- A review declaration from the facility/site manager

Procedure elements

Appendix A: Sampling methodology

Appendix B: Methodology verification

Appendix A: Sampling methodology

- When sampling inbound and outbound loads, samples equivalent to at least 50% of the total weight inbound/outbound from that facility must be reviewed.
- Samples must also be taken for each of the inbound source types, outbound material types and outbound destinations. This may mean that more than 50% by weight of the loads will need to be verified.
- This sample size is considered a recommended sample size. The sample size may be reduced at the discretion of the verifier. The following risk elements should be considered by the verifier:
  - Weight audits undertaken by other competent third parties, demonstrated through:
    - Audit report(s); or
    - Certification(s).
  - The verifier should ensure that the scope of such audits overlap with relevant parts of the verification execution scope, and the risk adjustment should only apply to the previously audited inputs.

Appendix B: Methodology verification

These factors should be considered when a processer relied on a methodology, such as a composition study, an allocation method or a tracking system.

In assessing the reasonableness of the methodology, the verifier or Field Test Supervisor shall consider the following factors:

1. The methodology is appropriate for the process being considered and is based in an understanding of the actual material flow of the facility.
2. The methodology should be reflective of the feedstock average composition and variation and total quantities received and processed.
3. Whether the inputs into the methodology were generated in the timeframe for which the RER is being calculated.
4. The methodology has been updated to reflect relevant process changes, if any.

We look forward to receiving your input!

How to submit your input:

During the meeting

Post-meeting email survey (anonymously or not)

Direct email to consulations@rpra.ca

All feedback must be received by Nov 24, 2023