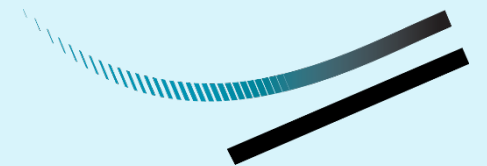


# RPRA Recycling Efficiency Rate Calculation and Verification Procedure for HSP

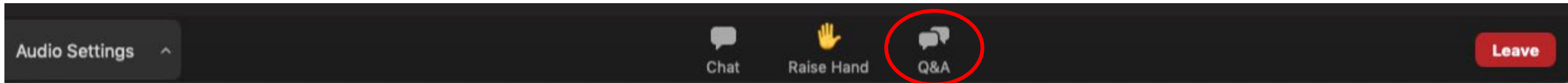
Public Consultation

Nov 8, 2023



**DILLON**  
CONSULTING

# 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”.

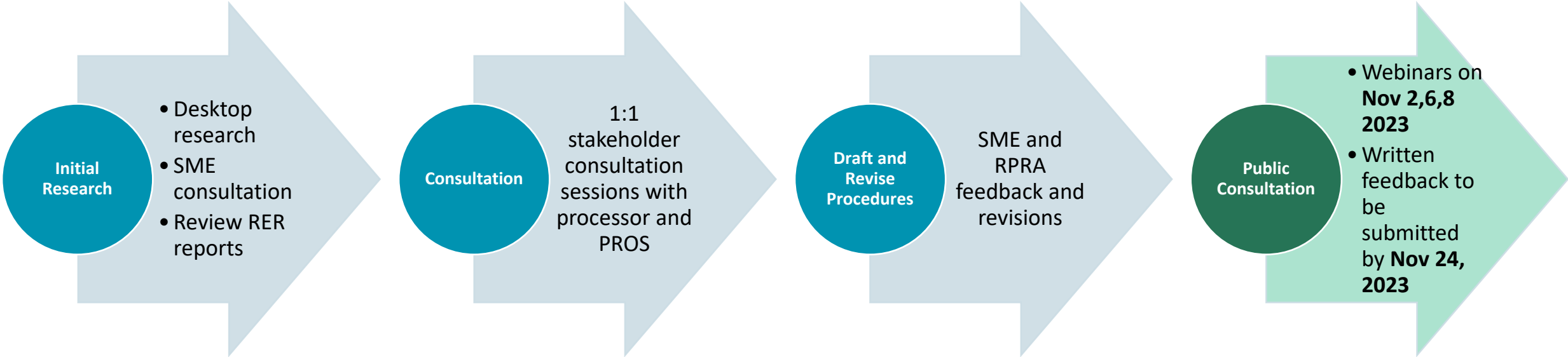
# About this consultation

- 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

# What has been done?



# What will happen next?



**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 [consultations@rpra.ca](mailto:consultations@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 aligns with the presented principles 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

- HSP 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**” are activities that **alter the characteristics of materials** derived from HSP for the purpose of resource recovery. This includes, but is not limited to, distillation of solvents and antifreeze, filtration of antifreeze, creating pellets of oil containers, and crushing metal. Processing includes the removal of non-designated hazardous content from the designated materials.

“**preparing for processing**” are **activities that are carried out prior to processing HSP**, including sorting, cleaning, blending, mixing, and repackaging. A person who only prepares materials for processing would not be considered an HSP processor. The removal of non-designated hazardous content from the designated materials is considered as processing.

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

“**downstream processor**” is a **person or facility that receives recoverable resources** that were generated from HSP used and collected in Ontario from an HSP 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*



# Key Consideration: Balancing Administrative Burden with Risk and Impact

- Many processors experience a high cost and administrative burden relating to verification or the RER and other data reporting requirements;
- Audit/verification scopes sometimes overlap;
- The administrative burden needs to be reasonable, in view of the risk of inaccurate reporting, the need for a level playing field and the impact on the system performance

## Considered:

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

# Option: Reduce 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 weight audits that have been undertaken
- The timeframe over which RER mass balance is to be calculated
  - In the proposed HSP procedure, the timeframe is reduced to two consecutive quarters

# Consultation Question: Determination of Recovered Resources



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

# 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 inconsistency in 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 downstream 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 resources**” is understood as a resource derived from HSP that is sent downstream to be further processed.

“**recovered resource**” is understood as a material derived from HSP that will not undergo any further refining, and is used as a new product, or as a material in the manufacturing of a new product.

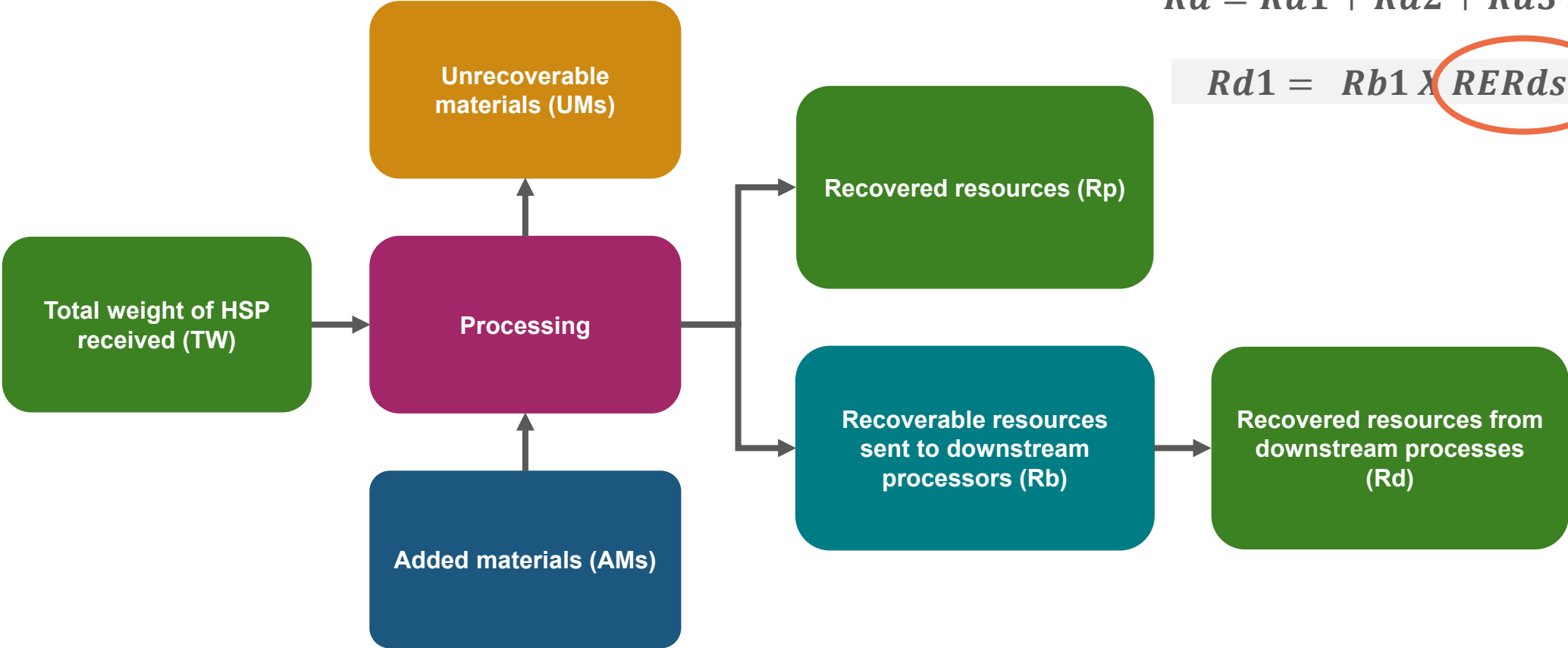
## 2. Calculation guidance, including guidance on determining the downstream RER

## 3. Examples

<b>Examples of Recoverable Resources</b>	<b>Examples of Recovered Resources</b>
	Commercial grade ethylene glycol
Paint that is sent for further processing	Paint that is blended into paint sold to end users
Shredded plastics sent for further processing	Plastic pellets sent for manufacturing of new products (e.g. garden furniture)

# Calculation Guidance Proposed (snapshot – more details later)

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



$$R = Rp + Rd$$

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

$$Rd1 = Rb1 \times RERds1$$

# 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 are unable to verify the information provided.

## Considered:

1. Setting standard downstream RERs for commodities;
2. Processors to obtain an RER statement from downstream processors, who can 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.



# 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 Processors Self-Declaration

## Advantages

- Aligns with existing practice in some supply chains
- Lower administrative burden for downstream processors

## 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, and there is no strong incentive to report accurately

## 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 HSP 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 this procedure
- Must be completed annually.

## 2. Field Test

- Determine RER based on one data set
- Can only be done if mass balancing option not possible
- Must be done under the supervision of a person meeting the requirement 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 and type of HSP.
- Calibration Weights
  - based on scales measurements
  - uses National Institute of Technology (NIST) calibration standards.
- For non-designated materials **identical** in composition to designated HSP
  - may be included in the weight used to determine the RER.
- For non-designated materials **not identical** in composition to designated HSP:
  - weight must be removed from the total weight received and recovered, and
  - not included in the RER calculation.

# Recycling Efficiency Rate formula – Mass Balance Approach

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

For the **mass balancing** approach for **oil filters**:

**R**: the weight of the recovered resources derived from all oil filters received by the processor at a facility in the two quarters from which they are calculating their RER, net the weight of oil which is captured, recaptured, extracted, collected or diverted during processing.

**TW**: the total weight of all oil filters received by the processor at that facility in the two quarters from which they are calculating their RER, net the weight of oil which is captured, recaptured, extracted, collected or diverted during processing.

**AM**: the weight of any materials added during processing

For the **mass balancing** approach for all other types of HSP:

**R**: the weight of the recovered resources derived from all HSP received by the processor in the two quarters from which they are calculating their RER

**TW**: the total weight of all HSP received by the processor in the two quarters from which they are calculating their RER

**AM**: the weight of any materials added during processing

# Recycling Efficiency Rate formula – Field Test Approach

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

For the **field test** approach for **oil filters**:

**R:** the weight of the recovered resources derived from all oil filters run through the field test, net the weight of oil which is captured, recaptured, extracted, collected or diverted during processing.

**TW:** the total weight of all oil filters run through the field test, net the weight of oil which is captured, recaptured, extracted, collected or diverted during processing.

**AM:** the weight of any materials added during processing

For the **field test** approach for all other types of HSP:

**R:** the weight of the recovered resources derived from all HSP run through the field test

**TW:** the total weight of all HSP run through the field test

**AM:** the weight of any materials added during processing

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

## Definitions:

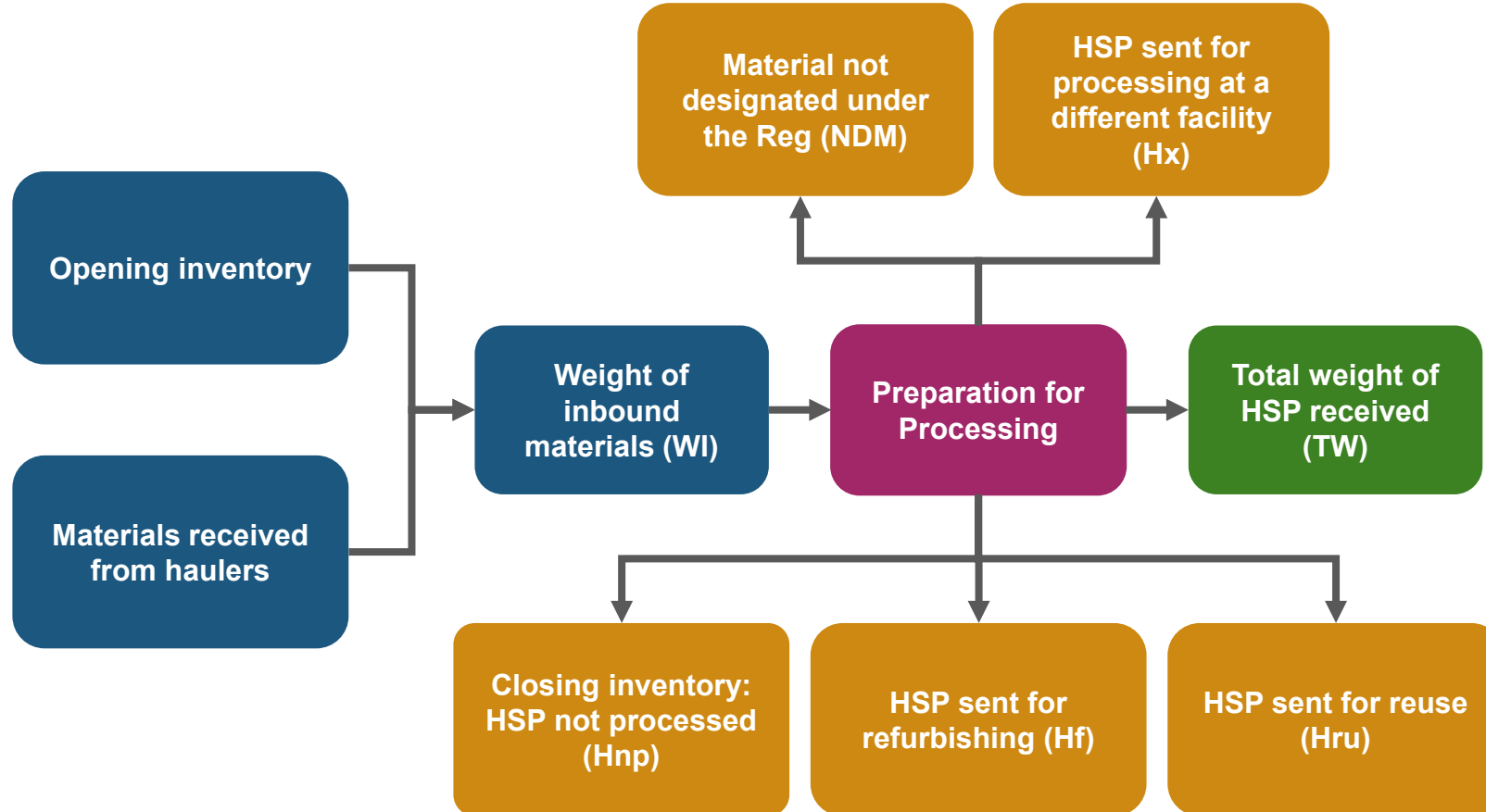
“**preparing for processing**” are activities that are carried out prior to processing HSP, including sorting, blending, mixing, and repackaging. A person who only prepares materials for processing would not be considered a HSP processor. The removal of non-designated hazardous content from the designated materials is considered as processing. A person who only prepares materials for processing would not be considered an HSP processor.

“**processing**” are activities that alter the characteristics of materials derived from HSP for the purpose of resource recovery. This includes, but is not limited to, distillation of solvents and antifreeze, filtration of antifreeze, creating pellets of oil containers, and crushing metal. Processing includes the removal of non-designated hazardous content from the designated materials.

- TW is determined after the preparation for processing phase.

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

$TW = \text{weight of received and processed materials} = WI - NDM - Hx - Hnp - Hru - Hf$



# Mass Balance Template

Calendar Year	20XX	Item ID
All Weights in Kilograms (kg)		kg
<b>Step 1 - Opening Product Inventory Carried Over from Prior Year</b>		
Opening Product Inventory	Unsorted Products	a
Opening Processed Materials Inventory	Material A (e.g. aluminium, brass, plastic)	
	Material B (e.g. aluminium, brass, plastic)	
	Material C (e.g. aluminium, brass, plastic)	
	<i>add more lines above as needed</i>	
<b>Total Opening Processed Materials Inventory</b>		b
Opening Non-Designated Materials Inventory	Non-Designated Material (e.g. garbage)	c
<b>Total Opening Inventory</b>		a + b + c
<b>Step 2 - Determination of Weight Sent for Preparation for Processing in Calendar Year</b>		
Total Weight Received from Haulers and Other Persons	Inbound unsorted products	d
<b>Total Weight Sent for Preparation for Processing (WI)</b>	All unsorted products	a + d
<b>Step 3 - Preparation for Processing - Determinization of Total Weight of Eligible HSP</b>		
Non-Designated Materials (NDM)	Non-Designated Material (e.g. garbage)	e
HSP of a Different Category (Hx)	HSP excluded from processing	f
HSP Not Processed within the Timeframe (Hnp)	HSP Not processed within the timeframe	g
Weight of HSP sent for Reuse (Hru)	Reuse HSP	h
Weight of HSP sent for Refurbishing (Hf)	Refurbished HSP	i
Eligible Weight of HSP (TW)	Calculated TW	(a + d) - (e + f + g + h + i)
	Actual TW from Weighing Materials	
		j
Added Materials (AM)	Material added during processing	k

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

- The total weight (TW) used to calculate the RER 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 HSP
- sent downstream to be further processed.

### “recovered resource”

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

# Examples of Recovered and Recoverable Resources

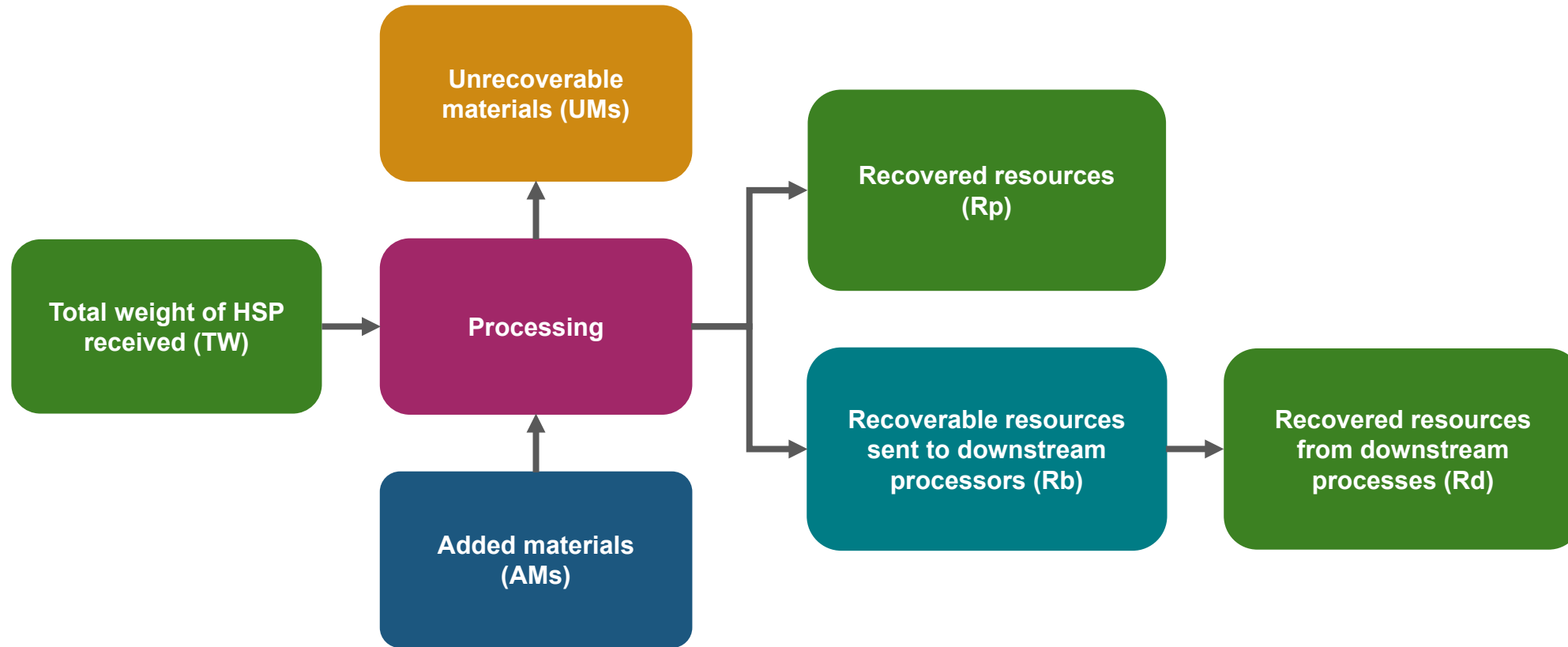
Recoverable Resources	Recovered Resources
	Commercial grade ethylene glycol
Paint that is send for further processing	Paint that is blended into paint sold to end users
Shredded plastics send for further processing	Plastic pellets sent for manufacturing of new products (e.g. garden furniture)

# 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.

# Determination of the weight of recovered resources (R)

$$R = R_p + R_{d1} + R_{d2} + R_{d3} + R_{d4}$$

Where,

R: Total weight of recovered resources

$R_p$ : weight of recovered resources from the HSP processor

$R_{di}$  ( $i=1,2,3,4,\dots$ ): Weight of recovered resources per downstream processor

$$R_{di} = R_{bi} \times RER_{dsi} \quad (i=1,2,3,4,\dots)$$

Where,

$R_{bi}$  ( $i=1,2,3,4,\dots$ ): Weight of recoverable resources sent to the downstream processor

$RER_{dsi}$  ( $i=1,2,3,4,\dots$ ): 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

- 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.
- 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.
- 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:

“**HSP processor**” as defined in the regulation, means a person who processes, for the purpose of resource recovery, HSP used by a consumer in Ontario.

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

“**downstream processor**” is a person or facility that receives recoverable resources that were generated from HSP used and collected in Ontario from an HSP 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)			
<b>Recoverable Resources sent to Downstream Processor</b>	Downstream Processor 1 (Rb1)		l1
	Downstream Processor 2 (Rb2)		l2
	Downstream Processor 3 (Rb3)		l3
	<i>add more lines above as needed</i>		li
		-	l
<b>Recycling Efficiency Rate (RER) of Downstream Processors</b> <i>(RER is a percentage expressed as a decimal, e.g. 90% = 0.9)</i>	RER of Downstream Processor 1 (RERds1)		m1
	RER of Downstream Processor 2 (RERds2)		m2
	RER of Downstream Processor 3 (RERds3)		m3
	<i>add more lines above as needed</i>		mi
<b>Recovered Resources from Downstream Processors</b>	Calculated Weight Recovered by Processor 1 (Rd1)		$n1 = l1 \times m1$
	Calculated Weight Recovered by Processor 2 (Rd2)		$n2 = l2 \times m2$
	Calculated Weight Recovered by Processor 3 (Rd3)		$n3 = l3 \times m3$
	<i>add more lines above as needed</i>		$ni = li \times mi$
		-	n
<b>Recovered Resources from the Processor (Rp)</b>	Material A (e.g. aluminium, brass, plastic)		
	Material B (e.g. aluminium, brass, plastic)		
	Material C (e.g. aluminium, brass, plastic)		
	<i>add more lines above as needed</i>		
		-	o
<b>Total Recovered Resources from Processing</b>		-	$n + o$
Step 5 - Recycling Efficiency Rate			
<b>Processor Recycling Efficiency Rate</b>		#DIV/0!	$[(n + o) / (j + k)] \times 100\%$
<i>(Total Recovered Resources / (Eligible Weight of HSP + Added Materials)) x 100%</i>			

# Procedure elements

## Verification of the RER

- General Guidance for the Verification of RER
  - Verifier/Field Test Verifier Credentials
  - Material Error Thresholds
- Verification of the Mass Balance Calculation
  - Objectives/Scope
  - Verification Execution Procedure
- 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 technical expertise and ability to assess the following:

- The processes within the boundary of the RER, the modeling 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

# 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.)
3. The weight of all outbound materials
4. The weight of unprocessed HSP
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 HSP
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 HSP 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

# 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.

# 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 Verifier.
- 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

1. An explanation for why the processors cannot verify their RER using the mass balance method;
2. A description of the Field Test Verifier and their competencies as related to the required credentials described in the procedure;
3. A **description of the field test process**, including a statement of the feedstock and products targeted in the design of the test and how the feedstock was determined to be representative of an average sample;
4. A **summary the RER calculation inputs and outputs generated through the field test** using the International System of Units (SI units);
5. A **list of the outbound materials from the processing facility and all corresponding destinations**, including destinations to which materials 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.
6. The Field Test Plan as an appendix; and
7. Verification Statement
  - Statement of the RER and other key findings from the verifier
8. Review declaration
  - Statement of acknowledgement by the 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);
  - Chains of custody.
  - 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 processor 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 Verifier 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.

A close-up photograph of a person's hands typing on a silver laptop keyboard. The laptop screen is dark and mostly obscured by a semi-transparent grey horizontal band. The background is a blurred indoor setting with a window and some greenery. The overall lighting is soft and natural.

**Help us improve  
our consultations**

# 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 [consultations@rpra.ca](mailto:consultations@rpra.ca)

**All feedback must be received by Nov 24, 2023**