

Chain of Custody Standard Key Metrics Calculation Guide

Input and Output Percentages Across Entity
Certification Scope

June 2024



1. Introduction

ASI Chain of Custody certifying Entities are required to track CoC Material Inputs to and Outputs from their Certification Scope (as well as non-CoC Material), within a Material Accounting System (Section 8 of the [ASI Chain of Custody Standard v2 \(2022\)](#)). This is to ensure that the share of CoC Material leaving an Entity's Certification Scope does not exceed the share entering (avoiding the over-accounting of ASI Bauxite, Alumina, Aluminium or Eligible Scrap Mass Balance).

In order to assist ASI Members, in addition to the comprehensive [Guidance](#) available, the ASI Secretariat has developed the following short formulae sheet for the calculation of key metrics under ASI CoC Standard v2, which can be complex to understand for Entities with Certification Scopes that encompass multiple types of CoC Material.

This short document will assist Certifying Entities, expressing the functions that are embedded in the Microsoft Excel-based [ASI CoC Material Accounting Tool v4 \(June 2024\)](#).

Input % CoC Material Across Certification Scope

=

$$\frac{(M_c + S_e)}{(M + S)} \times 100$$

MC

CoC Material

M

CoC and Non-CoC Material

S_e

Eligible Scrap

S

Eligible and Non-Eligible Scrap

STEP 1

Input % CoC Material Across Certification Scope

=

$$\frac{B_c + A_c + S_e + AL_c}{B + A + S + AL} \times 100$$

B_c

Bauxite Production + Input ASI Bauxite *

A_c

Input ASI Alumina

S_e

Input Eligible Scrap

AL_c

Input ASI Aluminium

B

B_c + Inflow Non-ASI Bauxite *

A

A_c + Inflow Non-ASI Alumina

S

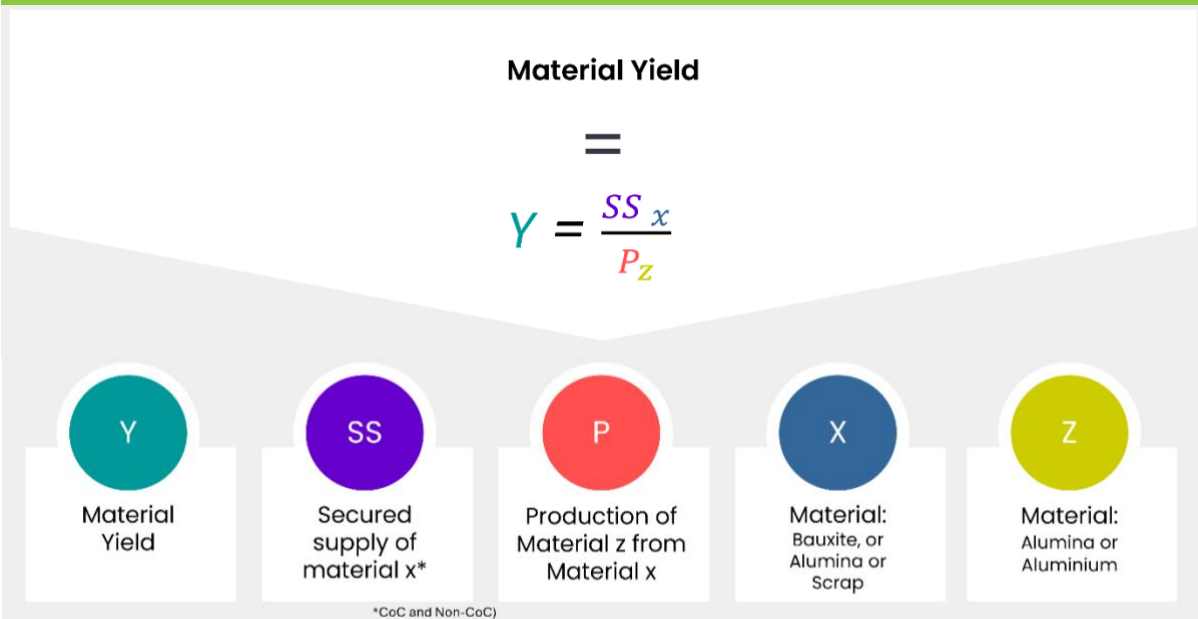
S_e + Inflow Non-Eligible Scrap

AL

AL_c + Inflow Non-ASI Aluminium

*Sum of Inputs at Bauxite Mines/Alumina Refineries

STEP 2: To find the common denominator, i.e. units of Aluminium, the equation must include different Material Yields: Bauxite to Alumina (Y1), Alumina to Aluminium (Y2), and Scrap to Aluminium (Y3). These are calculated as follows:



STEP 3: For Bauxite volumes, two distinct Yields need to be applied: Bauxite to Alumina (Y1), and Alumina to Aluminium (Y2):

$$\frac{(B_c \div Y_1 \div Y_2) + (A_c \div Y_2) + (S_e \times Y_3) + AL_c}{(B \div Y_1 \div Y_2) + (A \div Y_2) + (S \times Y_3) + AL} \times 100$$

STEP 4: In cases where an Entity does not handle all types of materials, the equations should be adjusted accordingly by removing elements related to those specific materials.

Attention should be paid to application of Yields. If an Entity is handling only one type of Material, Yields should not be applied.

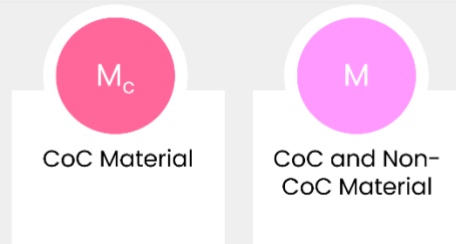
For Entities operating Bauxite Mines, Alumina Refineries, and Aluminium Smelters only, the common denominator in Yield calculations is Alumina, therefore only one Yield needs to be applied, as illustrated below:

$$\frac{(B_c \div Y_1) + A_c}{(B \div Y_1) + A} \times 100$$

Output % CoC Material Across Certification Scope

=

$$\frac{M_c}{M} \times 100$$



STEP 1

Output % CoC Material Across Certification Scope

=

$$\frac{B_c + A_c + AL_c}{B + A + AL} \times 100$$



STEP 2: To find the common denominator, i.e. units of Aluminium, the equation must include different Material Yields: Bauxite to Alumina (Y1), Alumina to Aluminium (Y2). These are calculated as follows:

$$Y = \frac{SS_x}{P_z}$$



Material Yield



Secured supply of material x*



Production of Material z from Material x*



Material: Bauxite, or Alumina



Material: Alumina or Aluminium

*CoC and Non-CoC)

STEP 3: For Bauxite volumes, two distinct Yields need to be applied: Bauxite to Alumina (Y1), and Alumina to Aluminium (Y2):

$$\frac{(B_c \div Y_1 \div Y_2) + (A_c \div Y_2) + AL_c}{(B \div Y_1 \div Y_2) + (A \div Y_2) + AL} \times 100$$

STEP 4: In cases where an Entity does not handle all types of materials, the equations should be adjusted accordingly by removing elements related to those specific materials.

Attention should be paid to application of Yields. If an Entity is handling only one type of Material, Yields should not be applied.

For Entities operating Bauxite Mines and Alumina Refineries only, the common denominator in Yield calculations is Alumina, therefore only one Yield needs to be applied, as illustrated below:

$$\frac{(B_c \div Y_1) + A_c}{(B \div Y_1) + A} \times 100$$

Output % Eligible Scrap Across Certification Scope

=

$$\frac{S_e}{S} \times 100$$



Output Eligible
Scrap



Output Eligible
and Outflow Non-
Eligible Scrap