



The Journey to Develop a New Standard for the Industry

Next Steps

Chris Welsh – ETDX Workgroup Chair

Aug 2021

Feb 2023

Mar 2023

Sep 2023

Dec 2023

Define Proof
of Concept
for Data
Exchange

Run POC

Evaluate
Results and
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Define
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Publication

POC BETWEEN OPERATOR AND SERVICE CO.

Column C	UoM	Attribute #					Notes
		14	17	18	19	20	
		KG CO2e per KG of product	+/- %	Emission Methodology	Emission Verification & Validity	Scope & Category	
BARITE 4,1	not provided	0.180	84%	IPCC 2007 (AR4)	None	Scope 3 Category 1	
BENTONITE EXTENDER	not provided	0.279	89%	IPCC 2007 (AR4)	None	Scope 3 Category 1	
CALCIUM CARBONATE D151-10	not provided		N/A	GWP: IPCC 2013	According to ISO 14025:2006. PCR: Micronized stone from quarry-UN CPC 15200, 15320	Scope 3 Category 1	Proxy used: micronized limestone with selected granulometry lower than 200 µm.(CA150, CA40, CA150SMP)
LIME	20 KG & 400KG		N/A	EN15804:2012+A1:2013	According to ISO 14025. PCR 2012:01 Construction Products and Construction Services, Version 2.33, 2020-09-18. PCR 2012:01-Sub-PCR-H, Product category rules Cement and Building Lime, version 2.31, 2020-09-18	Scope 3 Category 1	
CLASS C CEMENT	not provided		N/A	GWP100, EN 15804. Version: August 2021	as per ISO 14025 and EN 15804+A2	Scope 3 Category 1	Proxy used: Class C acc. to API Spec 10A
CEMENT, CLASS A	not provided		N/A	U.S EPA TRACI v2.1 IPCC 2013 (AR 5)	According to ISO 14025:2006, ISO 21930:2017 (the core PCR) and the NSF product category rules for Portland, Blended, Masonry, Mortar and Plastic (Stucco) Cements (subcategory PCR)	Scope 3 Category 1	Proxy used: Portland Type III ASTM C150

Data source comments:

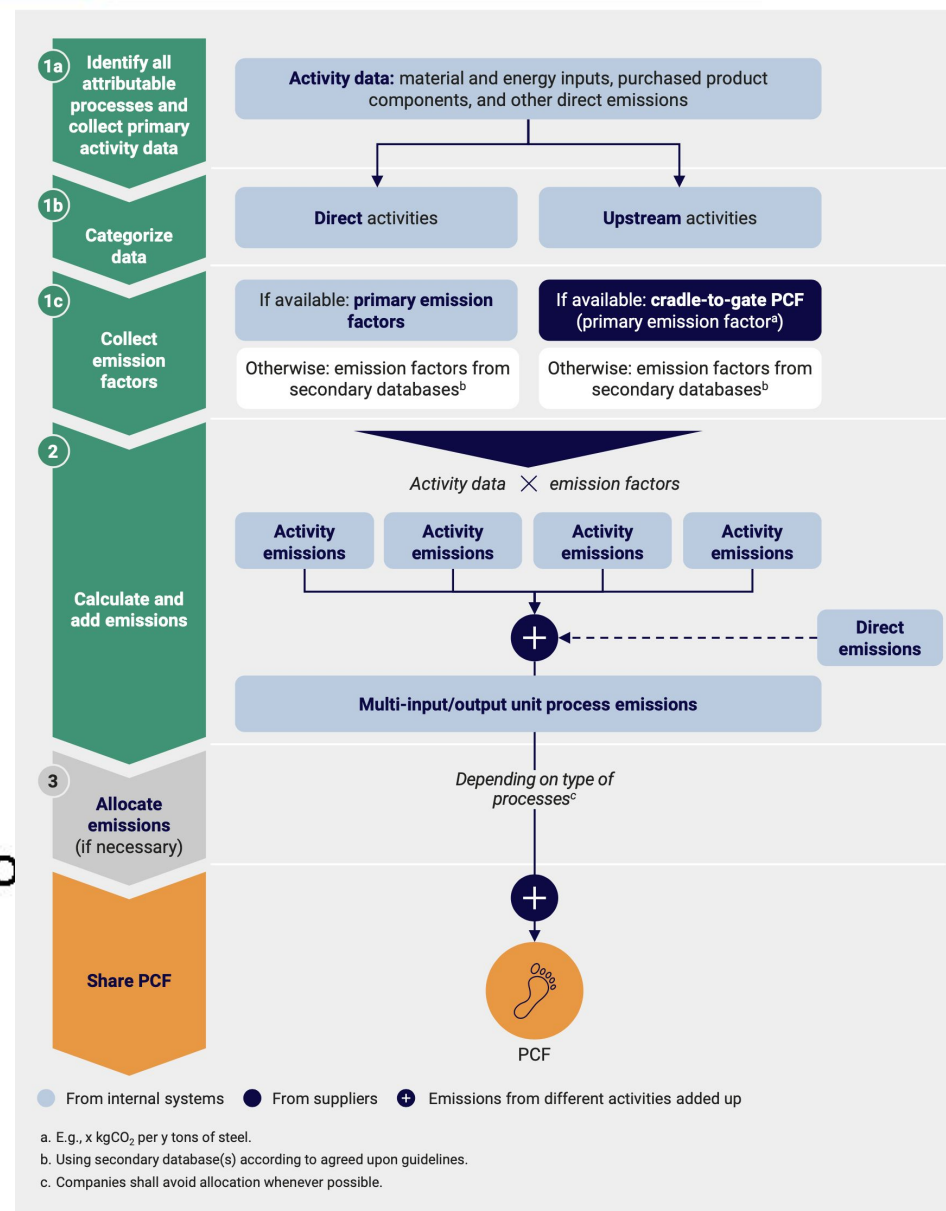
Cement Class A is supplier's data (single supplier - single plant - US location)
 Cement Class C are supplier's data (single supplier - single plant - Germany location)
 Lime is supplier's data (single supplier - single plant - Australia location)
 Calcium Carbonate is supplier's data (single supplier - single plant - Italy location)
 Product packagin not included in CO2e factor

Other findings:

List provided has line-items without UoM
 List provided contain fluids (product blends) without fluid density reference

Challenges

- Carbon footprint information is complex
 - UOMs
 - different facilities
- **Need more Product Category Rules for O&G**
- Sensitive information
- Some companies may not have the platform to



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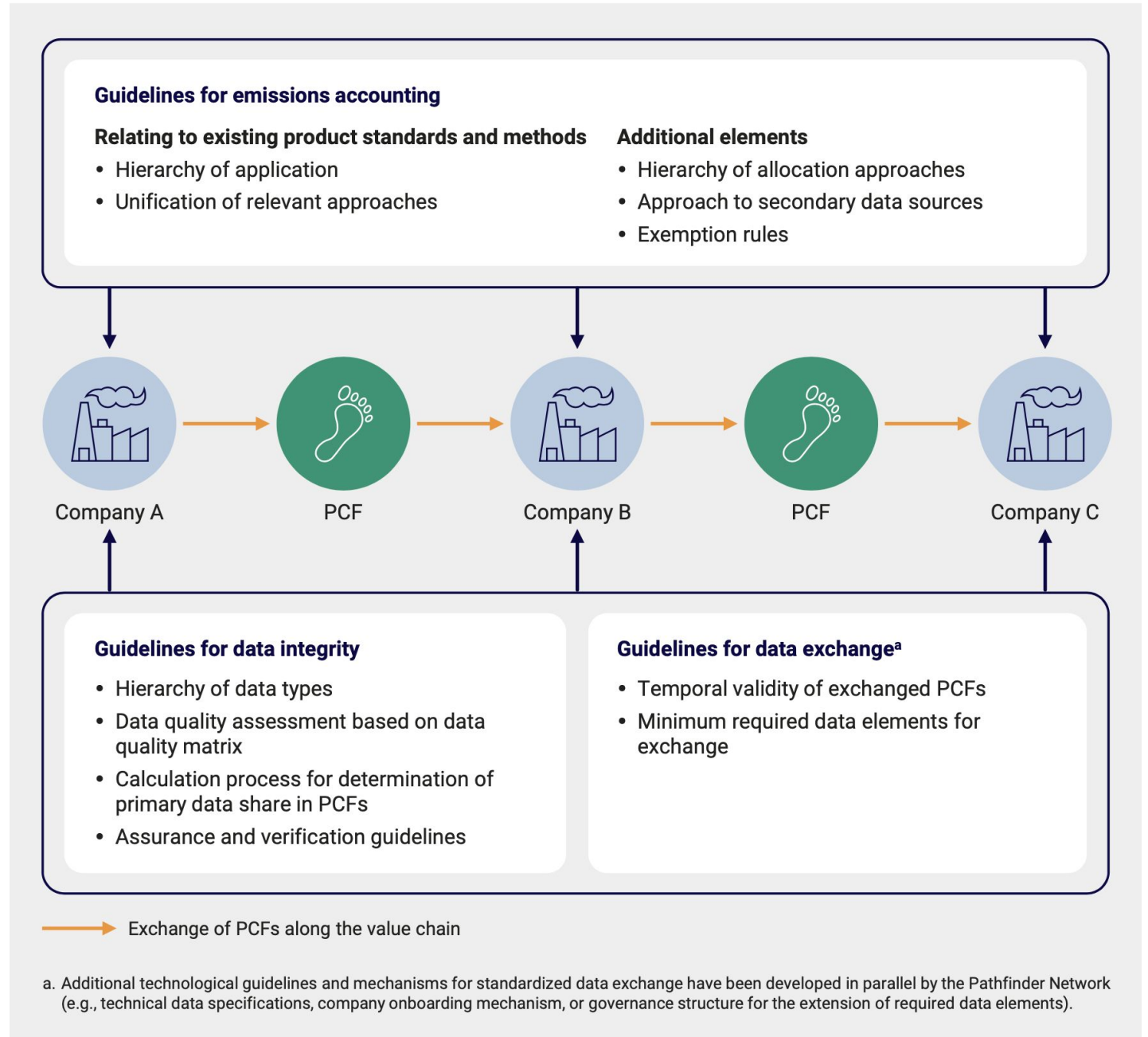
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Change Management Log:

Version	Person	Date	Description
Sep2007	Original	2007-09-15	From Sep2007 release
1.51	PIDX BMWG	2012-01-11	Transfer to PIDX, Inc.
1.61	PIDX BMWG	2014-09-09	Creation of new Pidx Schema PriceSheet
1.61	PIDX BMWG	2015-08-03	Update to PIDX v1.61.
1.62	C. Welsh	2020-07-20	Fixed missing ParameterValue in Parameters
1.7	C. Welsh	2020-11-12	Added EmissionsData complex type and namespace upgrade to V1.7

SUPPLY CHAIN SCHEMA ADDITIONS - SCOPE 3



Emissions Data for Products and Services (Scope 3 Category 1)

#	Attribute	Unit	Notes / References
14	Product GHG Emission (cradle-to-gate)	kg CO ₂ e	Upon purchase of the product, this attribute is expected to become part of the purchasing company's upstream scope 3 emissions.
15	Operational GHG Emission	kg CO ₂ e / [time]	This attribute is a guide to the expected emissions in the use of the product. This could be a URL, provided for reference – detail of ranges, real case studies, etc.
16	Service GHG Emission	e.g., kg CO ₂ e / hour	This attribute expected for services. What are emissions for this service? Per day, per hour, per whatever unit the service is provided.
17	Emission Uncertainty	%	An estimate of how certain the company is of the value in Attribute #14 / #16
18	Emission Methodology	String	A description of/reference to the methodologies used to quantify emissions in Attribute #14 / #16, and a description of the data sources used (including emission factors and GWP values), e.g., ARS ⁵ .
19	Emission Verification & Validity	String	Entity that has verified and/or validated emissions, based on ISO 14064-3:2019
20	Scope & Category	Limited List	To give a suggestion to the buyer as to which scope and scope category of the emission, e.g., Scope 3, Category 1 – Goods and Services.

```

</documentation>
</annotation>
<include schemaLocation="PIDXCodeLists.xsd"/>
<element name="AccompanyingSampleCode" type="pidx:AccompanyingSampleCodeType">
  <annotation>
    <documentation>Indicator whether or not a product sample should accompany shipment.</documentation>
  </annotation>
</element>

<element name="EmissionsData">
  <annotation>
    <documentation>GHG Emissions data defined for the Scope 3 Emissions Supply Chain Use</documentation>
  </annotation>
  <complexType>
    <sequence>
      <choice>
        <element ref="pidx:EmissionProductGHGQuantity"/>
        <element ref="pidx:EmissionOperationalGHGQuantity"/>
        <element ref="pidx:EmissionServiceGHGQuantity"/>
      </choice>
      <element ref="pidx:EmissionScope"/>
      <element ref="pidx:EmissionScopeCategory" minOccurs="0"/>
      <element ref="pidx:EmissionUncertainty" minOccurs="0"/>
      <element ref="pidx:EmissionMethodology" minOccurs="0"/>
      <element ref="pidx:EmissionVerificationValidity" minOccurs="0"/>
    </sequence>
  </complexType>
</element>

<element name="EmissionProductGHGQuantity" type="pidx:QuantityType"/>
<element name="EmissionOperationalGHGQuantity" type="pidx:QuantityType"/>
<element name="EmissionServiceGHGQuantity" type="pidx:QuantityType"/>
<element name="EmissionScope" type="pidx:EmissionsScopeType"/>
<element name="EmissionScopeCategory" type="string"/>
<element name="EmissionUncertainty" type="string"/>
<element name="EmissionMethodology" type="string"/>
<element name="EmissionVerificationValidity" type="string"/>

```


Technical Specifications for PCF Data Exchange (Version 2.0.0)

Living Document, 21 February 2023

This version:

<https://wbcasd.github.io/tr/2023/data-exchange-protocol-20230221/>

Latest published version:

<http://wbcasd.github.io/data-exchange-protocol/v2/>

Feedback:

public-dev@pathfinder.sine.dev with subject line “[data-exchange-protocol] ... message topic ...”

Editors:

[Martin Pompéry \(SINE Foundation\) martin@sine.foundation](mailto:martin@sine.foundation)

[Cecilia Valeri \(WBCSD\) valeri@wbcasd.org](mailto:valeri@wbcasd.org)

Abstract

This document specifies a data model for GHG emission data at product level based on the Pathfinder Framework Version 2, and a protocol for interoperable exchange of GHG emission data at product level.

JSON Data Format

Exchange Using REST Web Services

```
{
  "data": [
    {
      "id": "d9be4477-e351-45b3-acd9-e1da05e6f633",
      "specVersion": "2.0.0",
      "version": 1,
      "created": "2022-05-22T21:47:32Z",
      "status": "Active",
      "companyName": "My Corp",
      "companyIds": [
        "urn:uuid:51131FB5-42A2-4267-A402-0ECFEFAD1619",
        "urn:epc:id:sgln:4063973.00000.8"
      ],
      "productDescription": "Cote'd Or Ethanol",
      "productIds": [
        "urn:gtin:4712345060507"
      ],
      "productCategoryCpc": "3342",
      "productNameCompany": "Green Ethanol",
      "comment": "",
      "pcf": {
        "declaredUnit": "liter",
        "unitaryProductAmount": "12.0",
        "pCfExcludingBiogenic": "0.0",
        "fossilGhgEmissions": "0.123",
        "fossilCarbonContent": "0.0",
        "biogenicCarbonContent": "0.0",
        "landManagementGhgEmissions": "0.01",
        "characterizationFactors": "AR5",
        "crossSectoralStandardsUsed": [
          "GHG Protocol Product standard"
        ],
        "productOrSectorSpecificRules": [
          {
            "operator": "EPD International",
            "ruleNames": [
              "ABC 2021"
            ]
          }
        ],
        "boundaryProcessesDescription": "End-of-life included",
        "referencePeriodStart": "2021-01-01T00:00:00Z",
        "referencePeriodEnd": "2022-01-01T00:00:00Z",
      }
    }
  ]
}
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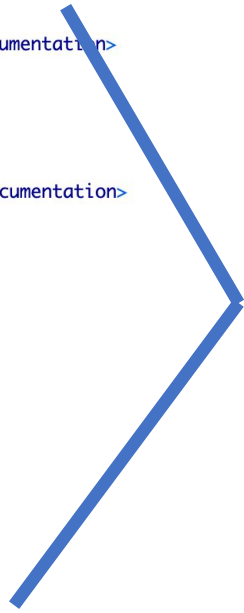
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        <element ref="pidx:EmissionServiceGHGQuantity"/>
      </choice>
      <element ref="pidx:EmissionScope"/>
      <element ref="pidx:EmissionScopeCategory" minOccurs="0"/>
      <element ref="pidx:EmissionUncertainty" minOccurs="0"/>
      <element ref="pidx:EmissionMethodology" minOccurs="0"/>
      <element ref="pidx:EmissionVerificationValidity" minOccurs="0"/>
    </sequence>
  </complexType>
</element>

<element name="EmissionProductGHGQuantity" type="pidx:QuantityType"/>
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<element name="EmissionScope" type="pidx:EmissionsScopeType"/>
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      "status": "Active",
      "companyName": "My Corp",
      "companyIds": [
        "urn:uuid:51131FB5-42A2-4267-A402-0ECFEFAD1619",
        "urn:epc:id:sgln:4063973.00000.8"
      ],
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      "productIds": [
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      ],
      "productCategoryCpc": "3342",
      "productNameCompany": "Green Ethanol",
      "comment": "",
      "pcf": {
        "declaredUnit": "liter",
        "unitaryProductAmount": "12.0",
        "pCfExcludingBiogenic": "0.0",
        "fossilGhgEmissions": "0.123",
        "fossilCarbonContent": "0.0",
        "biogenicCarbonContent": "0.0",
        "landManagementGhgEmissions": "0.01",
        "characterizationFactors": "AR5",
        "crossSectoralStandardsUsed": [
          "GHG Protocol Product standard"
        ],
        "productOrSectorSpecificRules": [
          {
            "operator": "EPD International",
            "ruleNames": [
              "ABC 2021"
            ]
          }
        ]
      },
      "boundaryProcessesDescription": "End-of-life included",
      "referencePeriodStart": "2021-01-01T00:00:00Z",
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