



### **SCRREEN3**

#### *Coordination and Support Action (CSA)*

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them.

Start date : 2024-01-01 Duration : 36 Months

---

#### **Status of the expert network**

---

Authors : Mrs. Roberta DE CAROLIS (ENEA), Rovena Preka (ENEA); Gaétan Lefebvre (BGRM)

SCREEN3 - Contract Number: 101138060

Project officer: Victoria Leroy

Document title	Status of the expert network
Author(s)	Mrs. Roberta DE CAROLIS, Rovena Preka (ENEA); Gaétan Lefebvre (BGRM)
Number of pages	20
Document type	Deliverable
Work Package	WP1
Document number	D1.1
Issued by	ENEA
Date of completion	2024-04-05 11:10:25
Dissemination level	Public

Summary

Analysis of the current composition of the network & data and axes of improvement

Approval

Date	By
2024-04-08 21:57:07	Mr. Gaetan LEFEBVRE (BRGM)
2024-04-08 21:58:09	Mr. Gaetan LEFEBVRE (BRGM)



## **STATUS OF THE EXPERT NETWORK**

---

### **DELIVERABLE 1.1**

---

**WP1 Network**



**Funded by  
the European Union**

**DOCUMENT TITLE:** STATUS OF EXPERT NETWORK (D1.1)

**DUE DELIVERY DATE:** March 31<sup>st</sup>, 2024

**NATURE:** Public

**PROJECT TITLE:** Solutions for CRITICAL Raw materials - a European Expert Network 3

**PROJECT ACRONYM:** SCRREEN3

**INSTRUMENT:** CSA

**CALL IDENTIFIER:** HORIZON-CL4-2023-RESILIENCE-01

**TOPIC:** HORIZON-CL4-2023-RESILIENCE-01-07 Expert network on Critical raw materials (CSA)

**GRANT AGREEMENT:** 101138060

Organisation name of lead contractor for this deliverable:

**ENEA**

DELIVERABLE TYPE		
R	Document, report	
DISSEMINATION LEVEL		
PU	Public (fully open)	

Proprietary rights statement

This document contains information proprietary to the SCRREEN3 consortium. Neither this document, nor the information contained herein, shall be used, duplicated or communicated by any means to any third party, in whole or in parts, except prior written consent of the SCRREEN3 consortium.

## DISCLAIMER OF WARRANTIES

---

This document has been prepared by SCRREEN3 project partners as an account of work carried out within the framework of the GA contract N° 101138060.

Neither Project Coordinator, nor any signatory party of SCRREEN3 Project Consortium Agreement, nor any person acting on behalf of any of them:

- makes any warranty or representation whatsoever, express or implied,
- with respect to the use of any information, apparatus, method, process, or similar item disclosed in this document, including merchantability and fitness for a particular purpose, or
- that such use does not infringe on or interfere with privately owned rights, including any party's intellectual property, or
- that this document is suitable to any particular user's circumstance; or
- assumes responsibility for any damages or other liability whatsoever (including any consequential damages, even if Project Coordinator or any representative of a signatory party of the SCRREEN3 Project Consortium Agreement has been advised of the possibility of such damages) resulting from your selection or use of this document or any information, apparatus, method, process, or similar item disclosed in this document.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. The European Union cannot be held responsible for them.

HISTORY			
Version	Name (Partner)	Modifications	Date
<b>V1</b>	<b>ENEA</b>	<b>First version</b>	<b>22.03.2024</b>
<b>V2</b>	<b>ENEA</b>	<b>Document in correct template</b>	<b>28.03.2024</b>
<b>V3</b>	<b>ENEA</b>	<b>Final version submitted to Flexxi</b>	<b>03.04.2024</b>
<b>V4</b>	<b>ENEA</b>	<b>Final version under coordinator review</b>	<b>05.04.2024</b>

VALIDATION	
AUTHORS	REVIEWERS
<b>ENEA – Roberta De Carolis</b>	<b>Reviewer 1: BGRM</b>

## TABLE OF CONTENTS

<b>DISCLAIMER OF WARRANTIES .....</b>	<b>3</b>
<b>TABLE OF CONTENTS .....</b>	<b>5</b>
<b>LIST OF ABBREVIATIONS AND ACRONYMS.....</b>	<b>6</b>
<b>INDEX OF FIGURES .....</b>	<b>7</b>
<b>INDEX OF TABLES .....</b>	<b>8</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>9</b>
<b>SCRREN2 DATABASE: EXPERT DISTRIBUTION AT THE END OF SCRREN2.....</b>	<b>10</b>
<b>1.1 ORGANIZATION TYPOLOGY .....</b>	<b>10</b>
<b>1.2 COMMODITY .....</b>	<b>10</b>
<b>1.3 FIELD OF EXPERTISE .....</b>	<b>13</b>
<b>1.4 VALUE CHAIN .....</b>	<b>13</b>
<b>SCRREEN3 .....</b>	<b>14</b>
<b>2.1 THE CURRENT EU CRM ASSET .....</b>	<b>14</b>
<b>2.2 THE EXPERT DATABASE GAPS AND THE SCREEN 3 PLANNING .....</b>	<b>15</b>
<b>CONCLUSIONS.....</b>	<b>20</b>

## LIST OF ABBREVIATIONS AND ACRONYMS

---

D – Deliverable

EU – European Union

H2020 – Horizon 2020 The 8th EU Framework Programme for Research and Innovation.

HEU – Horizon Europe – the 9th framework Programme of the EC for research, technological development and innovation activities.

SME – Small and Medium Enterprise

WP – Work package

CRM(s) – Critical Raw Material(s)

SRM(s) – Strategic Raw Material(s)



## INDEX OF FIGURES

FIGURE 1 DATABASE EXPERT DISTRIBUTION PER ORGANIZATION TYPOLOGY .....	10
FIGURE 2 DATABASE EXPERT DISTRIBUTION PER COMMODITY – MATERIAL GROUPS .....	12
FIGURE 3 DATABASE EXPERT DISTRIBUTION PER COMMODITY – SINGLE MATERIALS.....	12
FIGURE 4 DATABASE EXPERT DISTRIBUTION PER FIELD OF EXPERTISE .....	13
FIGURE 5 DATABASE EXPERT DISTRIBUTION PER VALUE CHAIN.....	13
FIGURE 6 CRITICAL AND STRATEGIC RAW MATERIAL LIST 2023 (SOURCE: EU REPORT) .....	14
FIGURE 7 COMPARISON CRITICAL RAW MATERIAL LIST 2020 VS CRITICAL RAW MATERIAL LIST 2023 (SOURCE: EU REPORT).....	14

## INDEX OF TABLES

TABLE 1 EXPERT DATABASE MATERIAL LIST .....	10
TABLE 2 EXPERT NUMBER PER COMMODITY (MARKED IN YELLOW COMMODITIES WITH NUMBER OF EXPERTS UNTIL 5) .....	15
TABLE 3 TARGET COMMODITY EXPERT WITH FOCUS ON INDUSTRY SIDE .....	18
TABLE 4 COMMODITY WITH N. OF EXPERT UNTIL 5 WITH FOCUS ON INDUSTRY SIDE .....	18

## EXECUTIVE SUMMARY

---

SCRREEN3, officially launched on January 1<sup>st</sup>, aims to continue developing and animating an Expert Network which will contribute to give expert advice in support of decision-making at the EU level covering all the raw materials and their value chains screened in the CRM assessment of 2020, and additional raw materials screened in 2023 assessment. This will be done taking into account not only the CRM list 2023 but also the new CRM regulatory assessment, in particular CRM Act.

This work follows SCRREEN (2016 – 2019) and SCRREEN 2 (2020 - 2023). In particular, an expert database has been created in SCRREEN, containing about 300 entries among them 150 were identified as relevant. For each material to be screened, it identifies the expertise through two axes: the materials production chains (from exploration to recycling) and the sectoral approach. However, the coverage was not optimal yet and new materials were added for the 2020 list assessment.

During SCRREEN2 the database was updated for different factors:

- New experts identified for specific actions
- DG-GROW requests
- Expert meetings and their organization

This deliverable describes the definitive assess of expert database at the end of 2023 ad delivered in SCRREEN2 and updates done in the first 3 months of SCRREEN3. Furthermore, the identified gaps with particular reference to industry sides are detailed, with insights for possible solutions.

## SCRREEN2 DATABASE: EXPERT DISTRIBUTION AT THE END OF SCRREEN2

A new expert dataset was created in SCRREEN2 updated during the project. The tool allows any potential expert to describe his/her expertise but also to submit documents, links or any piece of information on the materials to be screened.

Different searching key is included, making easier to find possible gaps. In the following paragraphs, the expert distribution at the end of SCRREEN2 (December 2023) is described.

### 1.1 ORGANIZATION TYPOLOGY

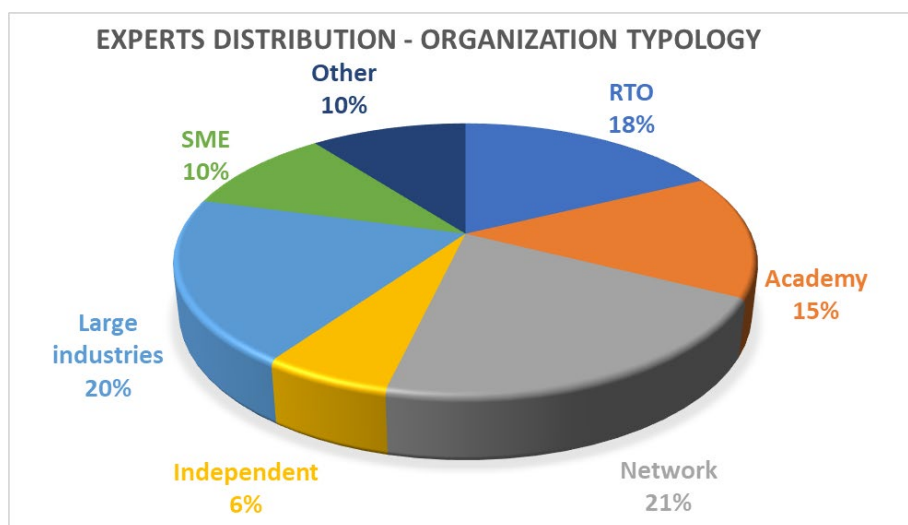


Figure 1 Database expert distribution per organization typology

Every knowledge society helix is covered, including also independent experts and non-standard organization. Maybe SMEs participation should be encouraged.

### 1.2 COMMODITY

The database requests to registered expert to indicate single materials of expertise. However also materials groups could be indicated, as detailed here below.

Table 1 Expert database material list

Expert database material list				
Industrial and construction materials	Iron and ferro-alloy metals	Precious metals	Other ferrous metals	Bio and other materials
Aggregates	Chromium	Gold	Aluminum bauxite	Natural cork
Baryte	Cobalt	Silver	Antimony	Natural rubber
Bentonite	Manganese	Platinum groups metals	Arsenic	Natural teak wood

Borates	Molybdenum	Rare earths	Berillium	Sapele wood
Diatomite	Nickel	<i>Cerium</i>	Bismuth	Coaking coal
Feldspar	Niobium	<i>Dysprosium</i>	Cadmium	Hydrogen
Fluorspar	Tantalum	<i>Erbium</i>	Copper	Helium
Gypsum	Titanium	<i>Europium</i>	Gallium	
Kaolin clay	Tungsten	<i>Gadolinium</i>	Germanium	
Limestone	Vanadium	<i>Holmium</i>	Hafnium	
Magnesite		<i>Lanthanum</i>	Indium	
Natural graphite		<i>Lutetium</i>	Lead	
Perlite		<i>Neodymium</i>	Lithium	
Phosphate rock		<i>Praseodymium</i>	Magnesium	
Phosphorus		<i>Samarium</i>	Rhenium	
Potash		<i>Terbium</i>	Selenium	
Silica sand		<i>Ytterbium</i>	Silicon metal	
Sulphur		<i>Yttrium</i>	Strontium	
Talc		<i>Scandium</i>	Tellurium	
			Tin	
			Zinc	
			Zirconium	

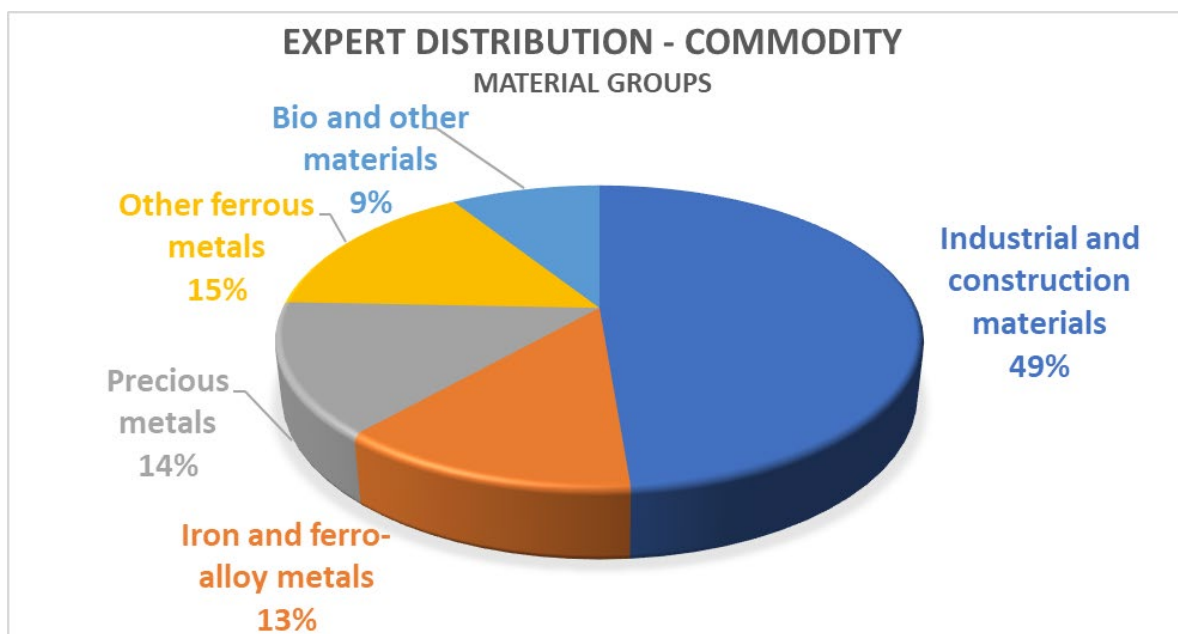


Figure 2 Database expert distribution per commodity – material groups



Figure 3 Database expert distribution per commodity – single materials

### 1.3 FIELD OF EXPERTISE

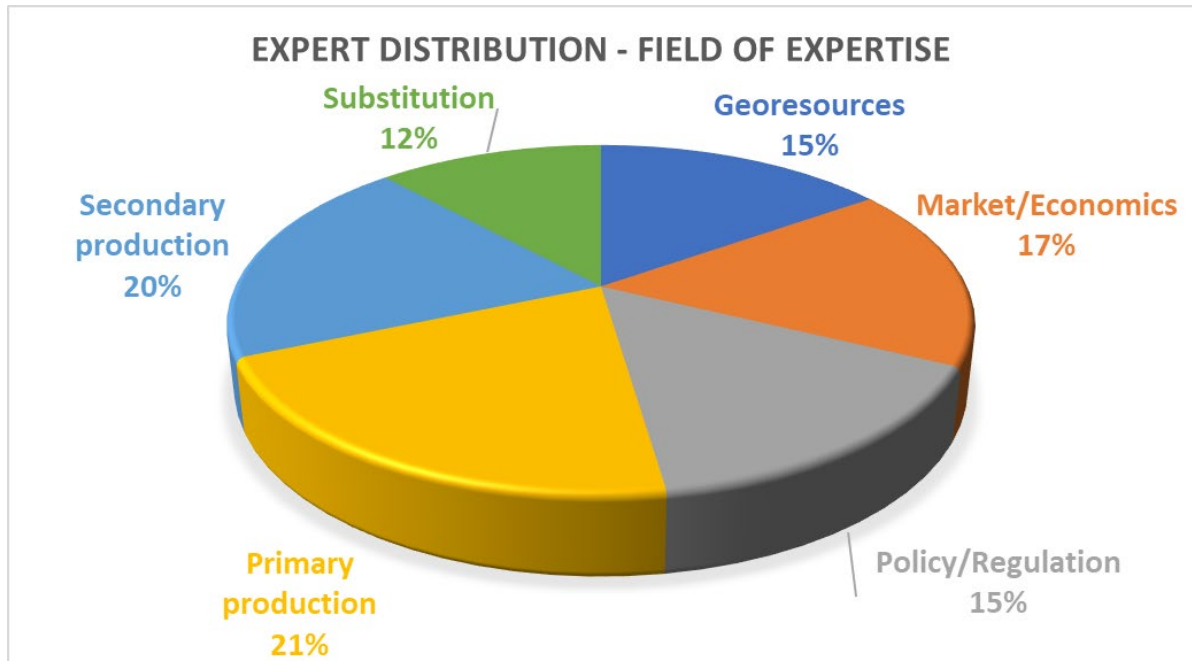


Figure 4 Database expert distribution per field of expertise

### 1.4 VALUE CHAIN

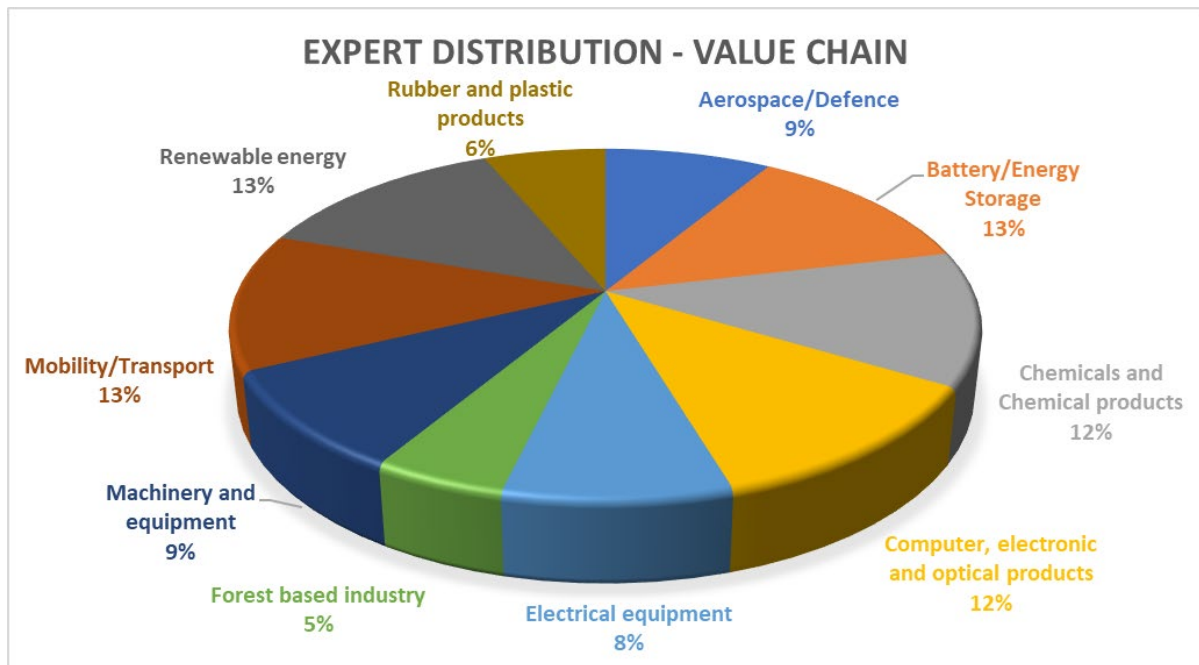


Figure 5 Database expert distribution per value chain

## SCRREEN3

### 2.1 THE CURRENT EU CRM ASSET

SCRREEN2 has contributed to the Critical Raw Material (CRMs) List 2023, published by European Commission on March 16<sup>th</sup>, 2023<sup>1</sup>. In addition, the Commission listed the Strategic Raw Materials (SRMs), defined as raw materials crucial to technologies important to Europe's green and digital ambitions and for defence and space applications, while being subject to potential supply risks in the future, as here below.

Figure 6 Critical and Strategic Raw Material List 2023 (source: EU report)

2023 Critical Raw Materials ( <i>new CRMs in italics</i> )			
aluminium/bauxite	coking coal	lithium	phosphorus
antimony	<i>feldspar</i>	LREE	scandium
<i>arsenic</i>	fluorspar	magnesium	silicon metal
baryte	gallium	<i>manganese</i>	strontium
beryllium	germanium	natural graphite	tantalum
bismuth	hafnium	niobium	titanium metal
boron/borate	<i>helium</i>	PGM	tungsten
cobalt	HREE	phosphate rock	vanadium
		<i>copper*</i>	<i>nickel*</i>

2023 Critical Raw Materials ( <i>Strategic Raw Materials in italics</i> )			
aluminium/bauxite	coking coal	<i>lithium</i>	phosphorus
antimony	feldspar	<i>LREE</i>	scandium
arsenic	fluorspar	<i>magnesium</i>	<i>silicon metal</i>
baryte	<i>gallium</i>	<i>manganese</i>	strontium
beryllium	<i>germanium</i>	<i>natural graphite</i>	tantalum
<i>bismuth</i>	hafnium	niobium	<i>titanium metal</i>
boron/borate	helium	PGM	<i>tungsten</i>
cobalt	HREE	phosphate rock	vanadium
		<i>copper*</i>	<i>nickel*</i>

\* Copper and nickel do not meet the CRM thresholds, but are included as Strategic Raw Materials.

In the 2023 List overall number of CRMs is increased with just two strikes respect to 2020 List, as detailed here below.

Figure 7 Comparison Critical Raw Material List 2020 vs Critical Raw Material List 2023 (source: EU report)

2023 CRMs vs. 2020 CRMs			
aluminium/bauxite	germanium	PGM	<i>arsenic</i>
antimony	hafnium	scandium	<i>feldspar</i>
baryte	HREE	silicon metal	<i>helium</i>
beryllium	lithium	strontium	<i>manganese</i>
bismuth	LREE	tantalum	<i>copper</i>
boron	magnesium	titanium metal	<i>nickel</i>
cobalt	natural graphite	tungsten	
coking coal	niobium	vanadium	
fluorspar	phosphate rock	<i>indium</i>	
gallium	phosphorus	<i>natural rubber</i>	

**Legend:**  
 Black: CRMs in 2023 and 2020  
 Red: CRMs in 2023, non-CRMs in 2020  
 Green: CRMs assessed in 2023 that were not assessed in 2020  
*Strike*: Non-CRMs in 2023 that were critical in 2020

The CRM Act includes Aluminium/Bauxite as Strategic Raw Materials.

<sup>1</sup> European Commission, Study on the Critical Raw Materials for the EU 2023 - Final Report



## 2.2 THE EXPERT DATABASE GAPS AND THE SCRREEN 3 PLANNING

SCRREEN2 has significantly improved the expert database compared with SCRREEN version. However, some gaps were identified analysing the current database as described in the previous paragraph, in particular on two axes:

1. Commodity
2. Organization typology

Currently the database includes:

*Table 2 Expert number per commodity (marked in yellow commodities with number of experts until 5)*

Expert number per commodity	
Commodity (group)	n. expert
<b>Industrial and construction materials</b>	<b>39</b>
Aggregates	13
Baryte	9
Bentonite	8
Borates	7
Diatomite	7
Feldspar	8
Fluorspar	6
Gypsum	7
Kaolin clay	8
Limestone	9
Magnesite	10
Natural graphite	9
Perlite	6
Phosphate rock	8
Phosphorus	15
Potash	15
Silica sand	4

Sulphur	5
Talc	6
<b>Iron and ferro-alloy metals</b>	<b>10</b>
Chromium	16
Cobalt	22
Manganese	11
Molybdenum	11
Nickel	18
Niobium	15
Tantalum	14
Titanium	9
Tungsten	14
Vanadium	10
<b>Precious metals</b>	<b>11</b>
Gold	20
Silver	13
Platinum groups metals	12
Rare earths	27
<b>Other ferrous metals</b>	<b>12</b>
Aluminum bauxite	23
Antimony	12
Arsenic	1
Berillium	8
Bismuth	7
Cadmium	3
Copper	26
Gallium	6
Germanium	10

Hafnium	3
Indium	14
Lead	14
Lithium	20
Magnesium	12
Rhenium	4
Selenium	4
Silicon metal	12
Strontium	1
Tellurium	8
Tin	11
Zinc	22
Zirconium	0
<b>Bio and other materials</b>	<b>7</b>
Natural cork	3
Natural rubber	12
Natural teak wood	11
Sapele wood	11
Coaking coal	6
Hydrogen	6
Helium	5

The database will be in general updated and reinforced, paying attention to commodities market in yellow but also to expert for new CRMs and SRMs:

- Arsenic
- Feldspar
- Helium
- Manganese
- Copper
- Nickel

In particular, Copper and Nickel have an expert number not low, but they are now Strategic Raw Materials for Europe (“new” EU list that SCRREEN3 has to take into account), so they need in any case special attention

Regarding organization typology, even if it is currently well balanced, industry side need to be reinforced, in particular SMEs voice, as detailed here below.

*Table 3 Target commodity expert with focus on industry side*

Target commodity expert			
Target commodity	n. large industry	n. SME	n. Association
Arsenic	1	0	0
Feldspar	0	2	3
Helium	1	1	2
Manganese	2	0	3
Copper	2	3	8
Nickel	2	1	6

*Table 4 Commodity with n. of expert until 5 with focus on industry side*

Target commodity expert			
Commodity with n. expert until 5	n. large industry	n. SME	n. Association
Silica sand	0	1	2
Sulphur	0	1	1
Arsenic	0	1	0
Cadmium	0	1	2
Rhenium	0	0	1
Selenium	0	0	2
Strontium	0	1	0
Natural cork	0	0	1
Helium	1	1	2



SCREEN3 officially started on January 1<sup>st</sup>, 2024: until now, it received three joining requests, in particular from International Chrome Development Association, Elektrowerk Weisweiler GmbH and from one independent expert.

## CONCLUSIONS

---

The database created in SCRREEN was successfully update in SCRREEN 2. The current database will be updated and reinforced, paying attention to commodities with number of experts not more than 5 and with experts for new CRMs and SRMs:

- Arsenic
- Feldspar
- Helium
- Manganese
- Copper
- Nickel

Regarding organization typology, even if it is currently well balanced, industry side need to be reinforced, in particular SMEs voice. Dedicated engagement strategy needs to be implemented in collaboration with WP17 and Coordination management.