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# **The Copper Mark: Sector Decarbonization Approach**

6 May 2024

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In particular, at meetings which the Copper Mark convenes or presides over, it does not permit any participants to discuss or share confidential proprietary or otherwise commercially sensitive information including:

- current or future pricing practices;
- terms and conditions of sale;
- outputs and quotas;
- market shares;
- product or marketing plans;
- business relations with suppliers and customers; or
- any other matter on which participants compete.

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To be clear, the Copper Mark supports responsible production practices in the copper industry as a whole and does not engage with matters relating to individual or generic pricing, terms or conditions of sale, production or sales levels, salaries, customers or suppliers. It makes no commercial recommendations of any kind.



# Agenda

Agenda Item	Time	Speaker
Housekeeping: <ul style="list-style-type: none"><li>• Anti-trust Statement</li><li>• Introduction to the speakers</li></ul>	4.00 – 4.05pm	<i>Copper Mark</i>
Phase 1: “Decarbonizing the Copper Sector: Discussion Topics and Considerations for a 1.5°C-aligned Trajectory and Target-setting Methodology”	4.05 – 4.20pm	<i>RMI</i>
Phase 2 & 3: Project Overview	4.20 – 4.35pm	<i>Copper Mark</i>
Opportunities for engagement	4.35 – 4.50pm	<i>RMI and Copper Mark</i>
Q&A	4.50 – 5.00pm	<i>RMI and Copper Mark</i>



# Copper SDA – Phase 1

## Information Session

May 2024



# RMI and Copper

## Industrial Decarbonisation

As a founding member of MPP RMI has worked on broader elements of industrial decarbonisation including roadmaps, target-setting and finance

## Net-Zero Roadmap

RMI worked with partners and IFC to develop a net-zero roadmap for mining focused on copper and nickel

RMI – Energy. Transformed.



RMI is an independent, nonprofit organization of experts accelerating the clean energy transition.

## Sunshine for Mines

RMI's has previously worked directly with mines to analyse opportunities for onsite RE and extending to zero emissions haulage and other technology solutions

# SDA Project Overview and Rationale

# What is the sectoral decarbonisation approach (SDA) to target-setting?

1 **SECTOR SPECIFIC EMISSION INTENSITY TRAJECTORY**

Reflects unique technology requirements/costs and accounts for growth by using an intensity basis



+

2 **METHODOLOGY FOR COMPANY-LEVEL TARGETS**

How the trajectory is used to set targets at the company-level



## EXAMPLES

An SDA approach has been defined in other sectors including by **SBTi** for **steel** and **cement** and **ASI** for **aluminium**

# Project Plan

## PROJECT PHASE

## ACTIVITIES/OUTPUT

### 1. Stakeholder Engagement and Scoping Jan-24 – May-24



- Review of **existing roadmaps** and **interviews** with **expert stakeholders** to confirm the need for a copper SDA and identify key issues for development
- **Project plan** for Phase 2 & 3

### 2. Target-Setting Method (SDA) Development From May-24



- Supplementing previous roadmaps with any **further analysis** needed to support target-setting
- Development of **proposed methodology** tackling each of the key issues
- **Convening** of key expert stakeholders to review proposals and provide feedback

### 3. Publication and Implementation



- **Publishing** of the SDA (and any associated tools) following a public consultation and approval of the methodology by the Copper Mark
- **Integration** with the Copper Mark framework and **sharing lessons** with the wider ISEAL community



# Copper

Why consider a sector specific target-setting methodology?

**To support the energy transition copper producers must both:**



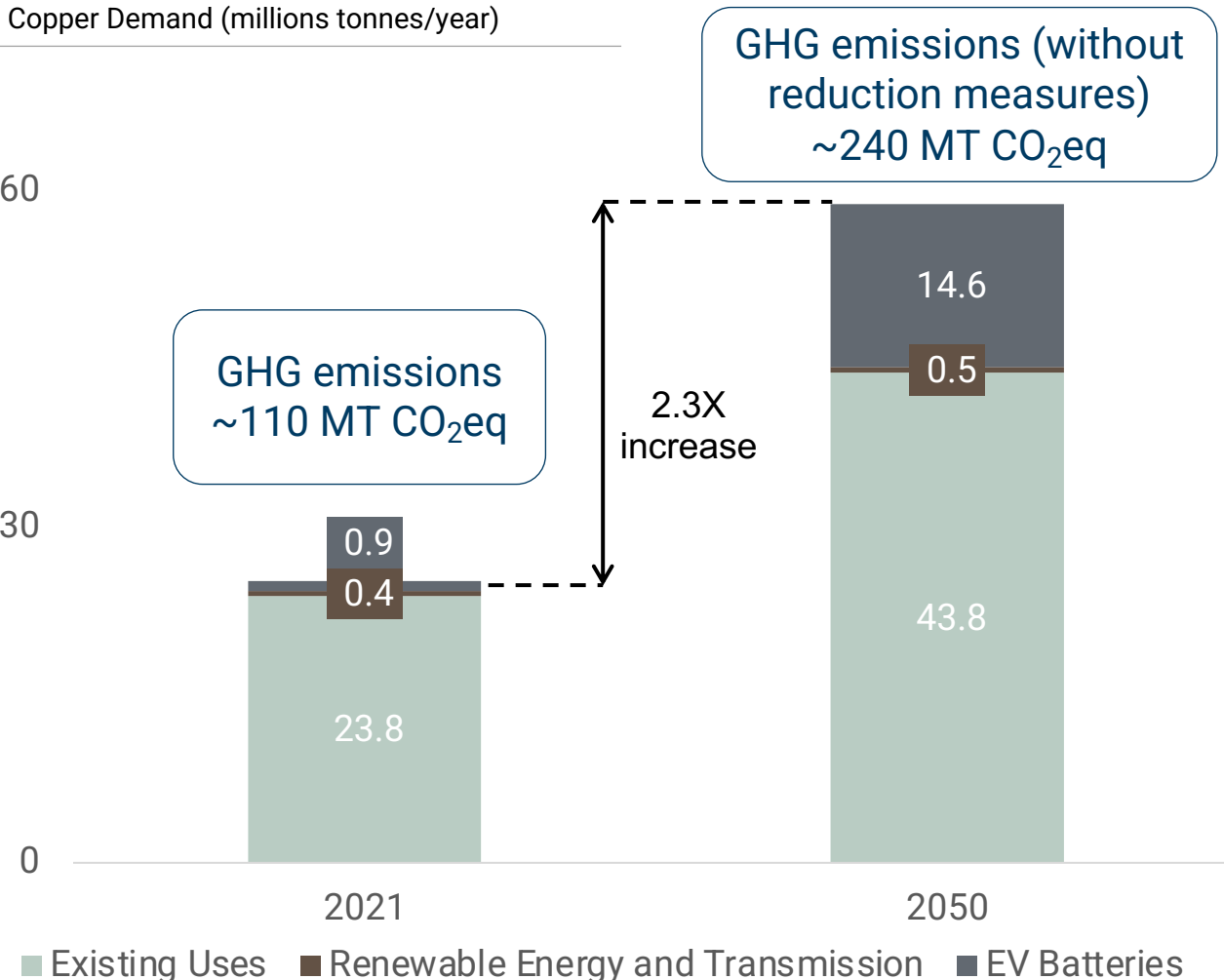
**Increase production** significantly from both recycling and mining to meet the additional demand stemming from energy transition technologies including solar PV, wind, transmission and EVs



**Reduce emissions** from their own operations including through deployment of new technologies such as electrified haul trucks, hydrogen burners, etc.

# Copper Production Growth in the Transition

- By 2050 demand in 2050 is expected to **more than double** in a 1.5°C aligned scenario
- This requires **mining to double** and **recycling to triple**
- Much of the growth is due to the energy transition particularly EVs



# Technology Needed to Reduce Emissions

Copper sector will have to deploy unique decarbonization technologies to close mitigation gap



**Alternative Fuels:** Includes biofuels/green hydrogen for high temperature processes



**Equipment Electrification:** Electrified haulage and furnaces

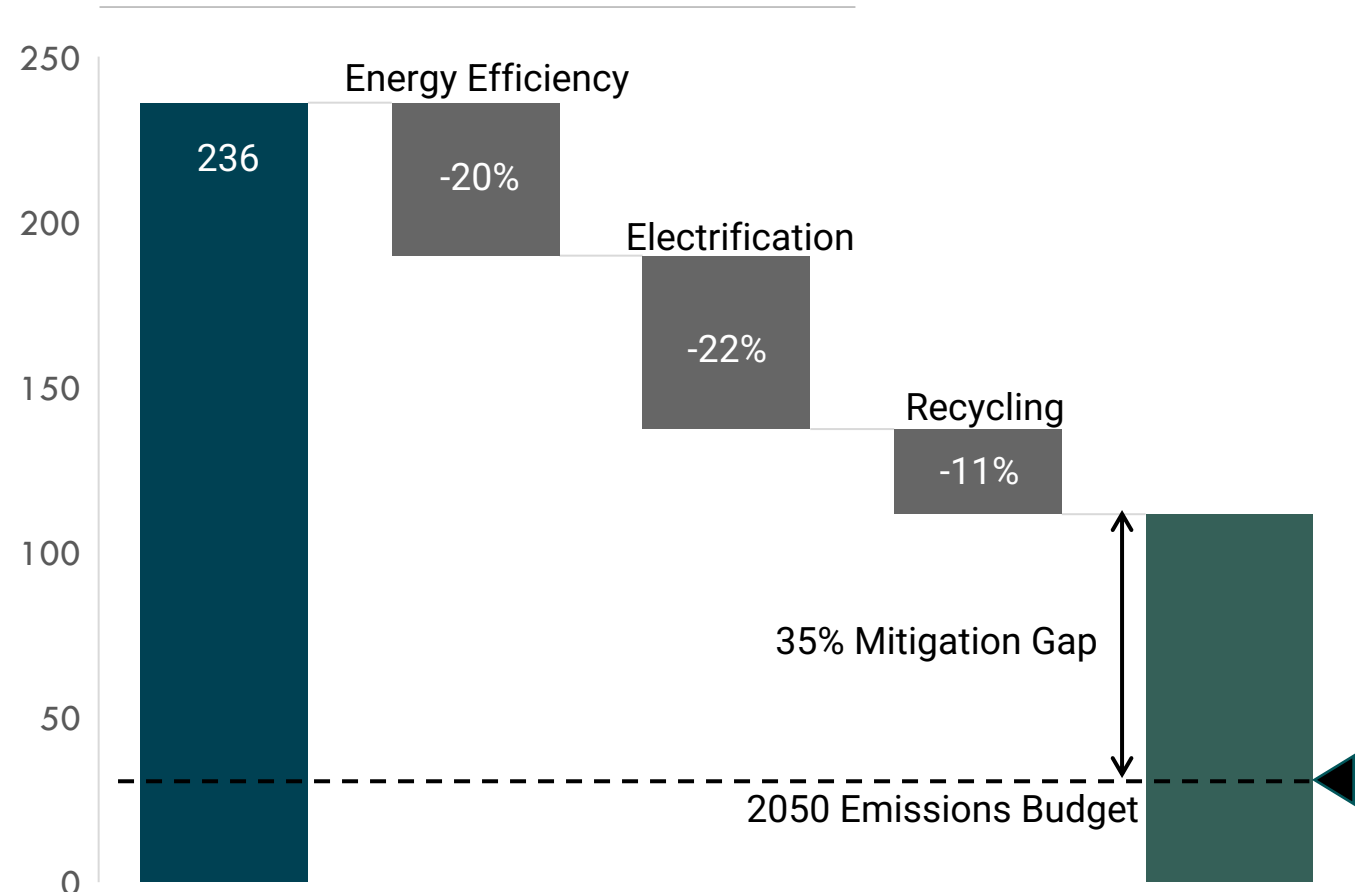


**Decarbonized Electricity:** Onsite renewable energy or clean energy from grid



**Process Optimisation:** Such as ore sorting, coarse flotation or selective blasting

Annual GHG Emissions (Mt CO<sub>2</sub>eq/year)



# Phase 1 Results



# Phase 1 Summary

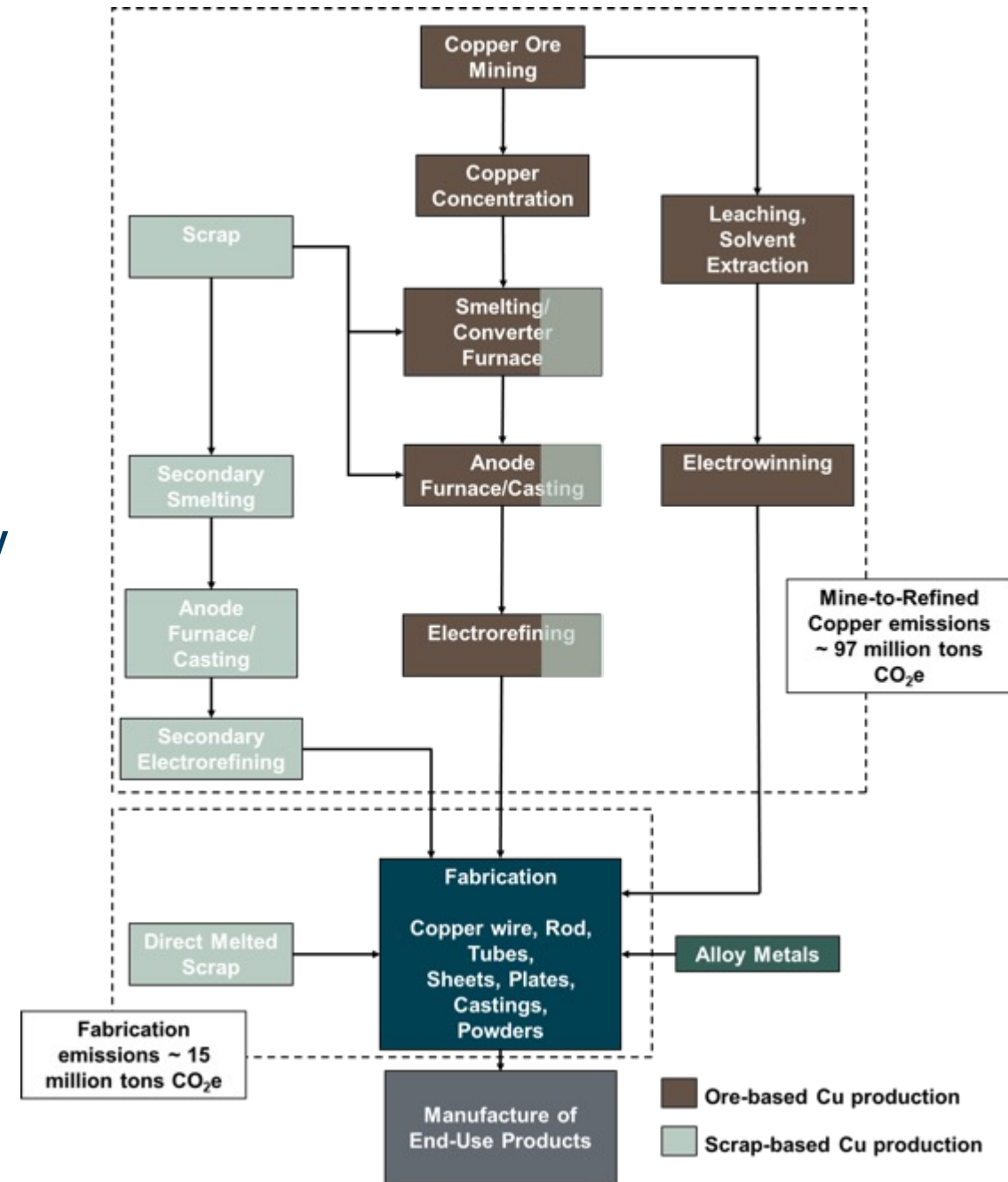
In our review of **existing roadmaps** and **interviews** with **expert stakeholders** identified these issues to be resolved in the target-setting methodology:

1. Setting a **consistent scope & boundary**
2. Differences between **production routes**
3. Accounting for **recycled material**
4. Handling the impact of **co-products**
5. Consideration of **regional/policy** impacts
6. Uncertainty on decarbonization **technology**

The following provides an overview of each issue, full details are included in the published Phase 1 report.

# Scope and Boundary

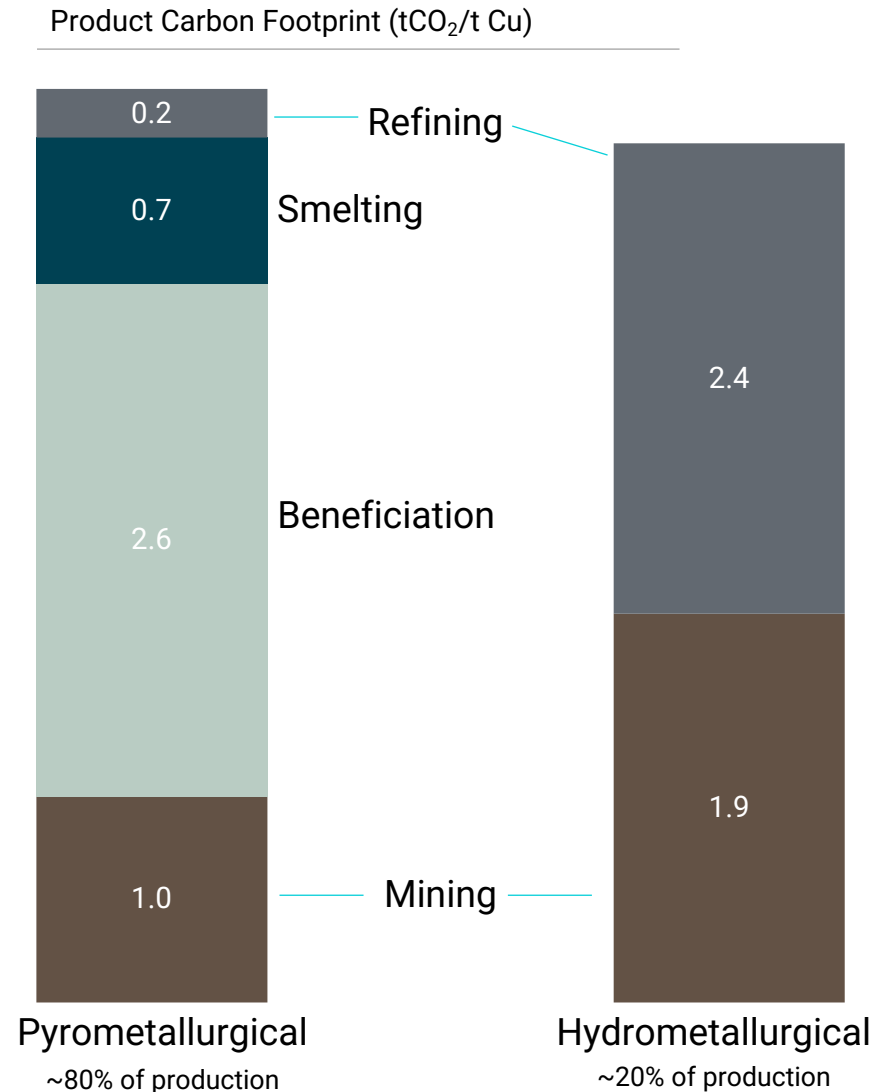
- SDA uses a **fixed boundary** (to compare with the trajectory) which may cross company scopes (1, 2 & 3)
- Trade-off between coverage & commonality
- Most emissions occur from mine-to-cathode but fabrication is still significant
- Options to be considered
  - Mine-to-cathode (simple and includes most of the emissions)
  - Semi-finished products (more coverage on emissions and recycled inputs)
  - Hybrid approach – multiple boundary options depending on company





# Production Route

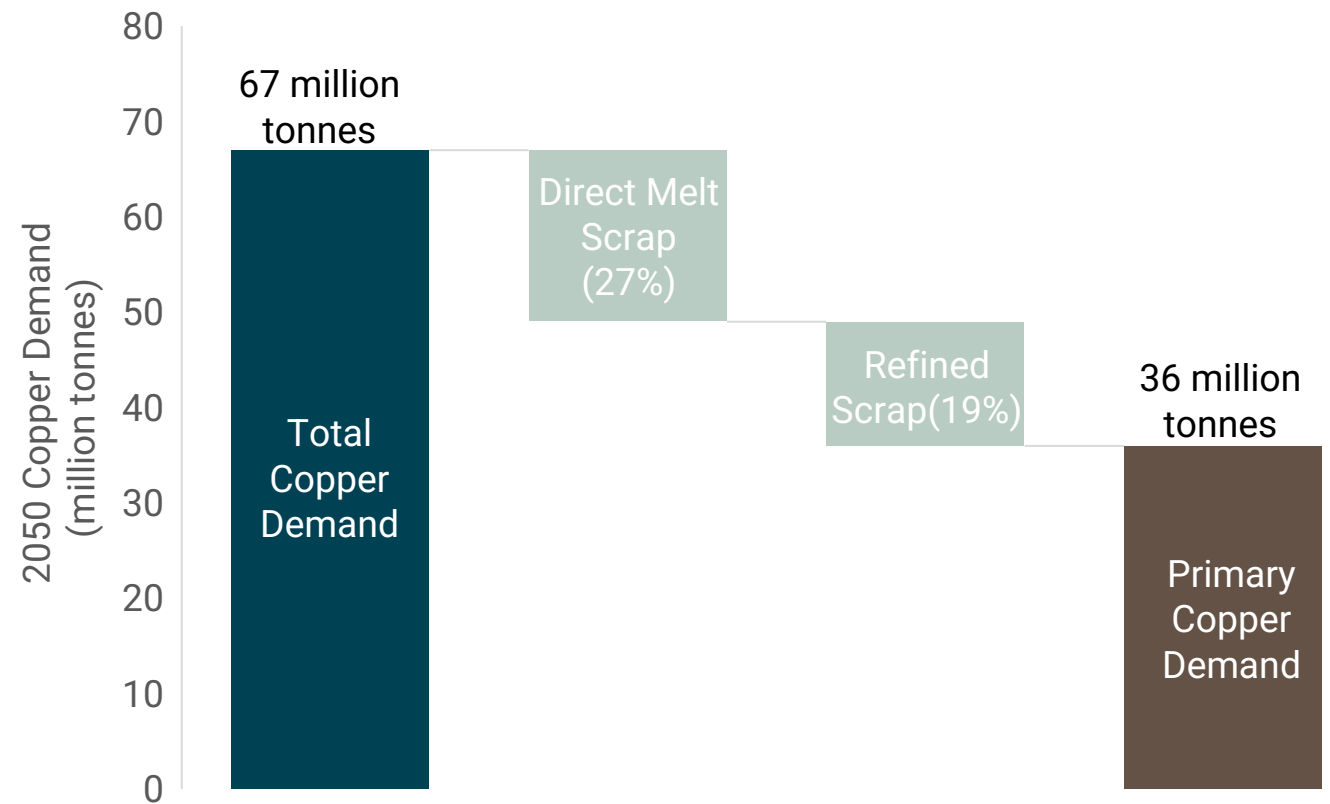
- Significant differences in **emissions intensities** and **sources** between the main production routes
- SDA to consider whether these differences **warrant separate trajectories** for each route
- Separation can help companies focused on either route to **engage with target setting** but may miss opportunities to focus on a pathway as an emissions reduction strategy



# Recycled Material

- Explore need for separate decarbonization trajectories for primary and recycled copper
- Split overall copper sectoral emissions budget between primary and recycled production routes
- Clear guidelines on how to estimate recycled copper emissions intensity

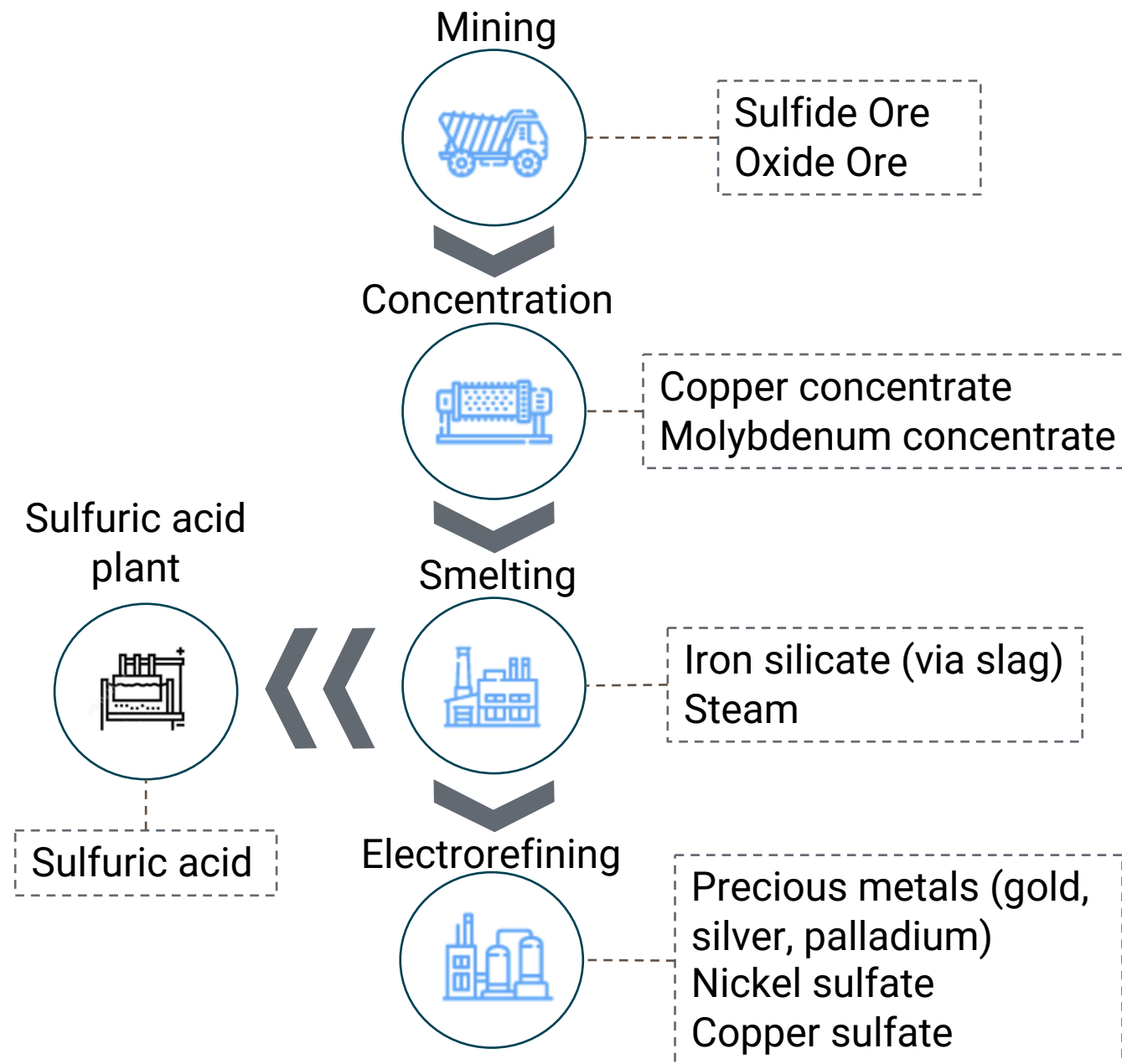
Even in a high scrap supply scenario, ~ 54% of copper demand in 2050 will come from ore-based production



Source: The Pathway to Net Zero, 2023.

# Co-Products

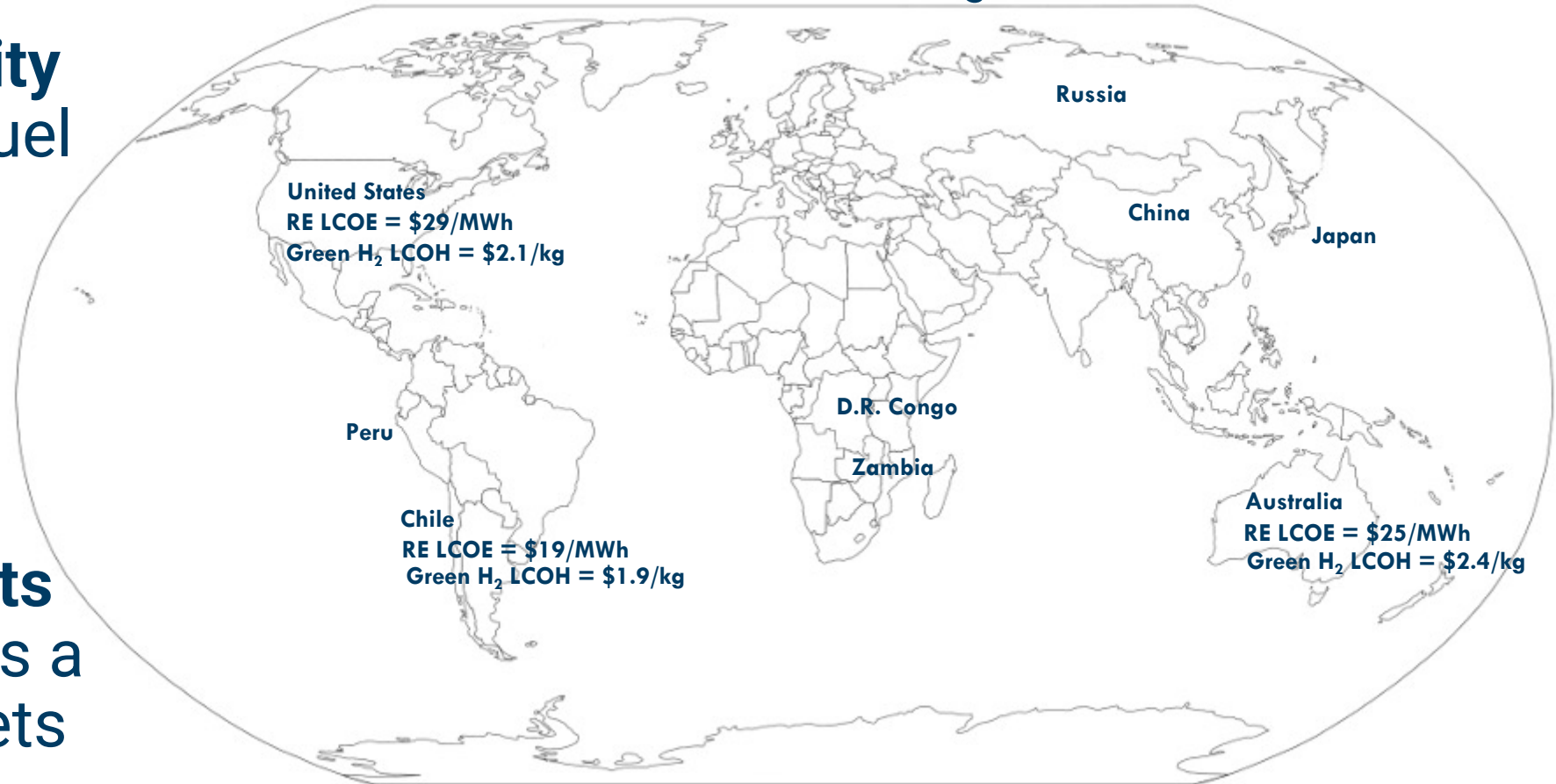
- Explore how the target-setting method can **align** with **allocation methods** for different co-products
- Explore if **emissions credits** resulting from the use of co-products in other industries should be included



# Regional and Policy Impacts




























Costs of decarbonization technologies in 2030

- **Cost and availability of existing fossil fuel energy sources** compared with renewable resources
- In some regions **policy requirements** were highlighted as a key driver for targets



# Decarbonization Technology Uncertainty

- Uncertainty around **technology deployment** (e.g., novel in-haul charging solutions for large electric vehicles)
- **Constraints** surrounding **availability** (e.g., battery supply for electric haul truck solutions)
- Consider technology uncertainty should be factored into SDA and trajectory timeline

Low-carbon technology	Technology readiness	Cost competitive	Available at Scale
 Efficient Equipment			Now
 Process Optimization			<5 years
 Digitization & Automation			<5 years
 Renewable Energy			Now
 Energy Storage			<5 years
 Sustainable Biofuels			Now
 Green Hydrogen			5-10 years
 Battery Electric Vehicles			Underground: Now Open Pit: 5-10 years
 Conveyors & Trolley Assist			Now

# | Project Overview



# Copper Sector Decarbonization Approach (SDA) Project: Objectives

- Support science-based emissions target setting for copper producers that focuses on reducing emissions intensity rather than an absolute contraction approach.
- Support end-users to procure inputs with lower embodied emissions to achieve their own supply chain emissions reduction targets.
- Allow for the consistent implementation and verification of performance against the Copper Mark's standards.

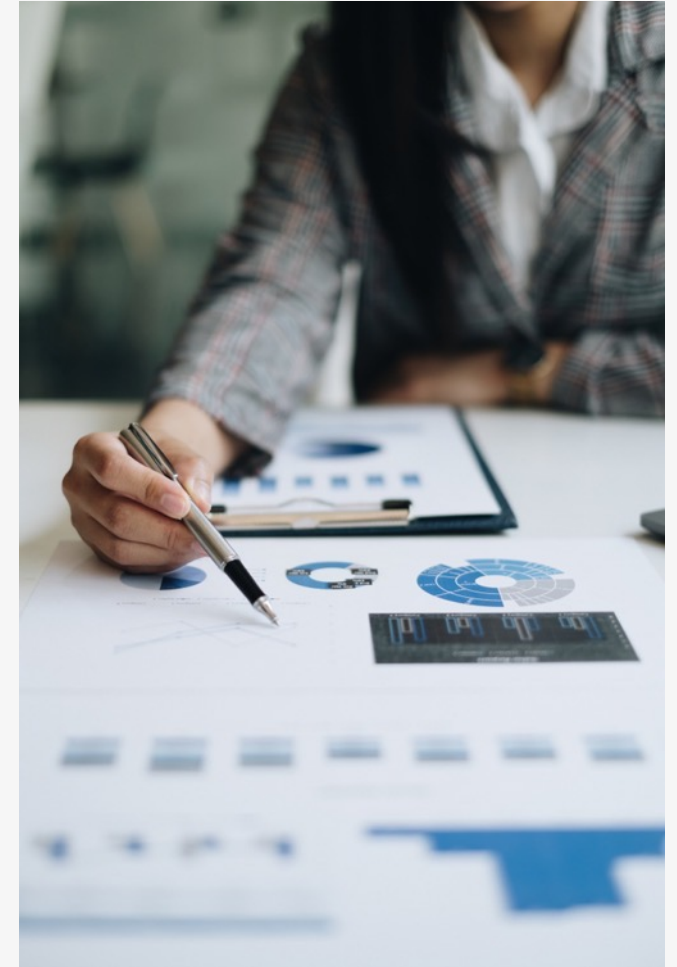


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## Phase 2: Analysis

Building on existing copper roadmaps and taking account of lessons learned in the development of roadmaps in other sectors, we will:

1. Undertake **demand-side analysis** to forecast copper demand by region aligned to the 1.5° scenario
2. Undertake **supply-side analysis** to develop a cost optimized and emissions constrained transition model for copper production at an asset-level
3. Establish an **emissions trajectory**, by combining 1 and 2 to develop a cost optimized and emissions constrained transition model for copper production at an asset-level
4. **Propose an SDA roadmap** by developing a methodology for how to apply the emissions trajectory to set emissions reductions targets at the company level



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## Phase 2: Convening and engagement

Aim is to ensure that all interested stakeholders have an opportunity to provide input and that subject-matter experts can rigorously test and interrogate the roadmap and methodology prior to finalization.

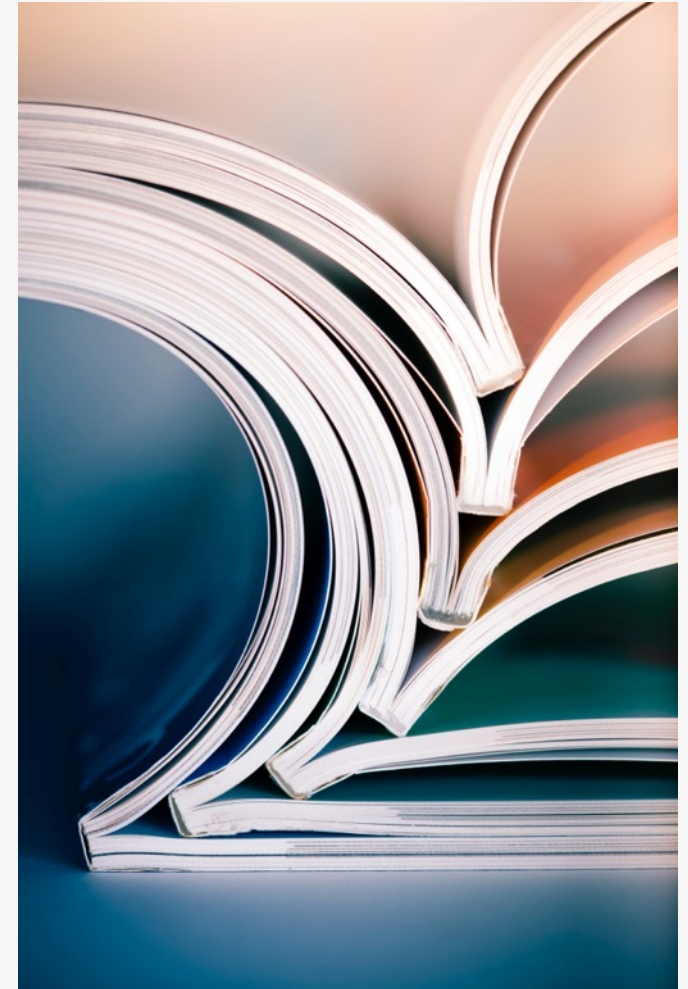
1. Establish a **technical working group** with representatives from copper products as well as relevant academic and civil society partners to provide technical input, review and validation of the analysis
2. Establish a **wider group of interested stakeholders** which will have the ability to provide feedback on the draft target-setting methodology at regular intervals
3. Hold a **public consultation** on the roadmap to gather feedback from any interested stakeholder group
4. **Finalization and adoption** of the roadmap and target setting methodology through a review by the Copper Mark Advisory Council and submission for adoption by the Copper Mark Board of Directors



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## Phase 3: Publication and Implementation

1. **Publication of the final roadmap** and promotion of the final roadmap document, which summarizes the outcomes from the phase 2 analysis and stakeholder engagement and consultation.
2. **Present the SDA roadmap to SBTi** with a view for SBTi to use these as Copper Sector Guidance (pathway to be confirmed with SBTi). Note: this activity may be adjusted if the project is able to apply for and implement a hybrid model that is under consideration by SBTi.
3. **Outreach to the wider ISEAL community** to share the experience, results and learning points of this project. Also, engagement with ASI and Responsible Steel to explore opportunities for joint activities to share learnings.
4. **Integration of the SDA roadmap into the Copper Mark assurance framework** to support conformance with the Copper Mark requirements on GHG emissions reduction





# Timeline of Implementation

Activity	Month																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>Phase 2: Development of the SDA Roadmap</b>																								
<b>1. Analysis</b>																								
1.1. Demand-Side Analysis	█	█	█	█																				
1.2. Supply-side analysis		█	█	█	█	█	█	█																
1.3. Emissions Trajectory						█	█	█	█															
1.4. Proposed Sectoral Decarbonisation Approach roadmap									█	█	█													
<b>2. Convening</b>																								
2.1. Technical working group		█	█	█	█	█	█	█	█	█														
2.2. Interested stakeholders group						█	█	█	█	█	█	█	█											
2.3. Public consultation															█	█								
2.4. Finalization and Adoption by the Copper Mark															█	█	█							
<b>Phase 3: Publication, Implementation and Sharing of Learnings</b>																								
<b>3. Publication &amp; Implementation</b>																	█	█						
3.1. Publication of the final roadmap																	█	█						
3.2. Present the SDA roadmap to SBTi																			█	█	█	█	█	█
3.3. Outreach to the wider ISEAL community																					█	█	█	
3.4. Integration in the Copper Mark assurance framework																			█	█	█	█	█	█

# Opportunities for engagement



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# Technical Working Group: Objectives

To ensure the robustness of the target-setting methodology a technical working group will be established to ensure the methodology:

- Receives critique, review and input from external experts;
- Is based on a balanced input from a diverse range of stakeholder groups;
- Contains sufficient technical detail to be successfully applied, and
- Receives buy-in from the key actors especially those who will need to deploy methodology in practice.



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# Technical Working Group: Membership

Membership of the technical working group will comprise approximately 15-20 individuals from two main groups:

- **Expert stakeholders** from academia or civil society to provide insight on strategic, operational, technological, or financial aspects of the sectors transition.
- **Industry representatives** from companies involved in copper mining and production. **Industry participants are required to contribute, in equal parts, to the project costs.**

Participants in the technical working group are expected to:

- Engage with technical content and actively participate in TWG workshops
- Understand issues of climate change and ESG management
- Have a view of the cross-cutting issues and/or specific technical aspects that may impact the design of the target setting methodology.



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# Technical Working Group: Meetings, process, and terms

## Meetings

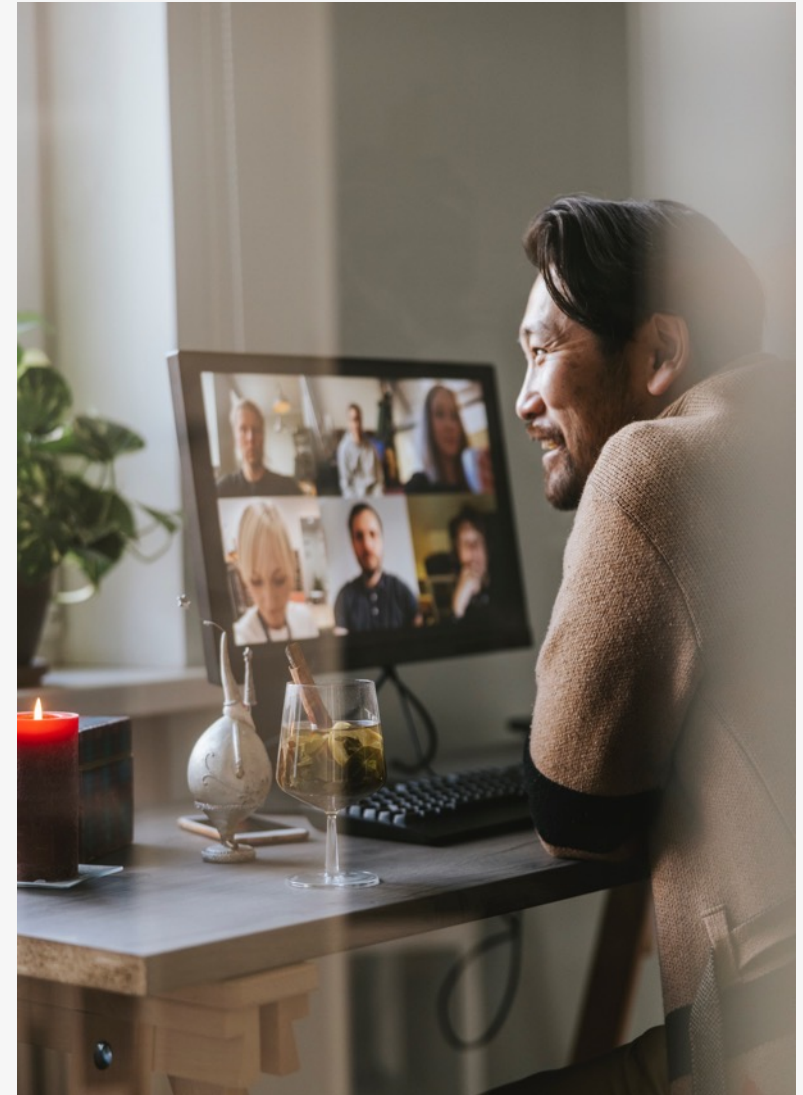
3-4 virtual interactive workshop sessions (1-2 hours each) at key milestones during the development of the target-setting methodology.

## Process

- Following input from the TWG, the draft target-setting methodology will be published for a period of public consultation.
- Input received in the public consultation will be processed by the Copper Mark and RMI and an updated draft target-setting methodology will be shared with TWG for review and discussion.

## Terms

- Non-industry participants (i.e., those from academia, civil society or other institutions) will be engaged on a volunteer basis.
- Industry participants (i.e., those from copper mining and production companies) are expected to contribute in equal parts to the project costs to be able to engage in the technical working group.





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# Group of interested stakeholders

## Objective

To ensure that interested stakeholders who are not part of the technical working group still can engage and provide views on an ongoing and regular basis, not just during the public consultation.

## Membership

Open to anyone, with no limit on numbers and with no time or financial expectations.

## Process

- Members will receive written updates on the draft target-setting methodology at regular intervals
- Members will be able to provide feedback on the draft methodology at any time. Feedback will be shared with both the Copper Mark/RMI and the technical working group.



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# Public Consultation

The public consultation on the the draft target-setting methodology will be:

- Based on [The Copper Mark Standard Setting Procedure](#)
- Accessible to all
- Open for a period of not less than 30 days
- Widely advertised through email invitations, The Copper Mark Newsflash, the Copper Mark website, partner organizations, and social media as appropriate.

Input received in the public consultation will be processed by the Copper Mark and RMI and an updated draft target-setting methodology will be shared with TWG for review and discussion.





# Interested to join?

Contact us at [info@coppermark.org](mailto:info@coppermark.org)







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**Questions?**

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