

Peer Review Report

Review Report on Metal sourcing for a sustainable future

Review, Earth Sci. Syst. Soc.

Reviewer: Larry Meinert

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Article DOI: 10.3389/esss.2022.10049

EVALUATION

Q 1 Please summarize the main theme of the review.

Sustainability of mineral resources

Q 2 Please highlight the limitations and strengths.

The main strength is in introducing the topic to a new audience. The main limitation is that the authors do not rise above generalizations and platitudes to provide concrete examples.

Q 3 Does the review include a balanced, comprehensive and critical view of the research area?

No

Q 4 Check List

Is the English language of sufficient quality?

Yes.

Is the quality of the figures and/or tables satisfactory?

Yes.

Does this manuscript refer predominantly to published research? (unpublished or original research is non-standard for a review article, and should be properly contextualised by the author)

Yes.

Does the manuscript cover the topic in an objective and analytical manner

No.

Does the reference list cover the relevant literature adequately and in an unbiased manner?

Yes.

Does the manuscript include recent developments?

Yes.

Does the review add new insights to the scholarly literature with respect to previously published reviews?

No.

Q 5 Please provide your detailed review report to the editor and authors (including any comments on the Q4 Check List):

Renn et al review

Metal sourcing for a sustainable future

This paper deals in such sweeping generalizations and platitudes that it is difficult to see real value in it. For example, line 52 states: "Drastic measures are required to respect the Paris Agreement" Drastic is not a useful scientific term and has no defined meaning. Another example of imprecision bordering on misunderstanding is line 67 which states: "The extraction of mineral raw materials will inevitably lead to a reduction of primary resources over time". This is simply not true and illustrates a gross misunderstanding of mineral resources. See (Meinert, L.D., Robinson, Jr., G.R., and Nassar, N.T., 2016, Mineral Resources: Reserves, Peak Production, and the Future: Resources, v. 5, 14; doi:10.3390/resources5010014) for a detailed explanation. As a matter of fact, defined reserves of most mineral resources INCREASE with time as a function of population growth and rising standards of living. One might as well argue that the use of solar energy "will inevitably lead to a reduction of primary (solar) resources over time" because the Sun will eventually explode in a supernovae and thus, the amount of solar energy is limited.

The five final conclusions, listed below, are true enough but basically can be restated as "aim to do good". This does not provide a concrete path forward. The paper would be greatly improved by providing concrete examples of what companies have done or could do to meet sustainability goals.

- 1) Companies and investors should be responsible for incorporating sustainability indicators into their decision-making and controlling activities.
- 2) Regulations should be guided by the three dimensions of sustainability.
- 3) The business models should include sustainability benchmarks with clear provisions for measurement, monitoring and compliance management.
- 4) Regional and national sustainability regulations need harmonization.
- 5) The financial sector should include sustainability indicators in their ratings.

QUALITY ASSESSMENT

Q 6	Quality of generalization and summary	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Q 7	Significance to the field	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Q 8	Interest to a general audience	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
Q 9	Quality of the writing	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

REVISION LEVEL

Q 10 What is the level of revision required based on your comments:

Substantial revisions.