

## Peer Review Report

# Review Report on Evaluating the Economic Potential for Geological Hydrogen Storage in Australia

Original Research, Earth Sci. Syst. Soc.

Reviewer: Adnan Aftab

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### EVALUATION

#### **Q 1** Please summarize the main findings of the study.

This is a very interesting and novel work. This study identifies the potential of various location for hydrogen production and storage in Australia. This paper seems to be more review work rather than a technical article. It lacks in potential data and does not include methodology section. Unfortunately, topic is very interesting however author pays very little attention towards technical writing and literature.

#### **Q 2** Please highlight the limitations and strengths.

Why author used term blue hydrogen in the keywords. I think we can use term green hydrogen too. What are the limitations.

On Page 2 Line 32: I think you can write as "Hydrogen is clean and sustainable fuel/energy...."

On Page 2 Line 35: could you please mention Governments names which are currently working on global hydrogen industry.

On Page 2 Line 39: can you change word ambitions with ambition. This sentence is repeating. I would suggest please delete it.

On Page 2 Line 44: This sentence is very poor sentence and completely miss lead the accurate meaning.

Could you please cite a reference which must include link for HEFT?

I think there is need to add more potential literature in the introduction.

Actually, introduction does not contain and explain research gap properly.

Following sentence or paragraph is very important. However, you have emphasized and more focused on Bluecap modelling software. I would suggest please add factors, novelty attributes of your work and research gap in this paragraph. "This paper describes how the Bluecap modelling software has been extended to identify regions in Australia..."

#### **Q 3** Please comment on the methods, results and data interpretation. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

Unfortunately, methodology section is missing from the manuscript. It is very important to mention that what factors have been selected. How the different values and important data points have been used. I think Author should add complete methodology.

#### **Q 4** Check List

Is the English language of sufficient quality?

No.

Is the quality of the figures and tables satisfactory?

No.

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

Yes.

Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)

Not Applicable.

If relevant, are the methods sufficiently documented to allow replication studies?

No.

Are the data underlying the study available in either the article, supplement, or deposited in a repository? (Sequence/expression data, protein/molecule characterizations, annotations, and taxonomy data are required to be deposited in public repositories prior to publication)

No.

Does the study adhere to ethical standards including ethics committee approval and consent procedure?

Yes.

If relevant, have standard biosecurity and institutional safety procedures been adhered to?

No.

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

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Figure 3 labels are not properly cited. Figure 3 is very poor and unclear. Could you please label x-axis, and y-axis.

On Page 13 line 378: author discussed the 2030 CCS 2030. There is need to properly rewrite this section.

References are not cited with some important claims.

## QUALITY ASSESSMENT

<b>Q 6</b> → Originality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Q 7</b> → Rigor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q 8</b> → Significance to the field	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Q 9</b> → Interest to a general audience	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Q 10</b> → Quality of the writing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q 11</b> → Overall quality of the study	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>