

- 1) Format of the abstract

## **Current review and activities of LCA for carbon mineralization**

Shinichirou Morimoto  
sh-morimoto@aist.go.jp

In 2015 Paris Agreement, the participating countries pledged to limit the average global temperature rise by 2°C above pre-industrial levels, while aiming for 1.5°C. To achieve this goal, various carbon dioxide (CO<sub>2</sub>) removal technologies have been proposed and evaluated by life cycle assessment (LCA) in order to mitigate CO<sub>2</sub> emissions in large scale. However, there are many recommendations in LCA for CDR, including data uncertainty, system boundaries, functional units, and temporal perspective. Now, a part of technical guideline for CDR assessment is discussed in IPCC/UNFCCC when countries report their GHG emission. There are also several guidelines studied in country level in USA, Germany, and Sweden. But there are no general guidelines authorized in global scale.

In this presentation, the general recommendation and current trend of LCA for CDRs are summarized, as well as the current situation of guidelines and criteria developed to resolve these recommendations. Furthermore, the results of an LCA case study of a specific mineralization technology called SUICOM will be presented. Through the presentation of this LCA case study, it will be explained how data uncertainty and temporal perspectives were addressed. The results of the analysis of the relationship between detailed LCA conditions and CO<sub>2</sub> reductions from mineralization will also be presented. We hope that this presentation will serve as an opportunity for building international collaboration on LCA for CDR.

### **Reference**

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