



# Making green steel from red mud

Slide by Neil Goalby. Available from [rsc.li/3HVs03k](https://rsc.li/3HVs03k)

Red mud is a waste product made in huge quantities from aluminium production. It originates from a chemical reaction used for ore refinement for aluminium extraction. Its distinct red colour comes from the presence of iron compounds.

Scientists have developed new method to obtain purer iron from red mud compared to traditional blast furnace methods. The method reacts red mud with hydrogen in an electric furnace using a high current. By using electricity and hydrogen from renewable sources, the process could have a zero-carbon footprint.



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*Red mud can poison groundwater and contaminate waterways*

## Questions

1. What process extracts aluminium from aluminium oxide?
2. Suggest why extracting iron by reacting iron oxide and carbon in a blast furnace has a high carbon footprint.
3. Why might the new process be more sustainable?