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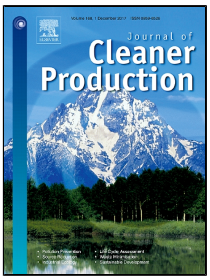

Assessment of full life-cycle air emissions of alternative shipping fuels

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- Alternative shipping fuels are needed to manage climate change and local pollutants
- LCA is used to quantify environmental impacts of current and future fuels
- There is no widely available fuel to manage climate change and local pollutants
- Hydrogen and biofuels have significant impacts upstream in the fuel life-cycle
- Minimising these impacts may reside beyond the scope of the shipping sector alone