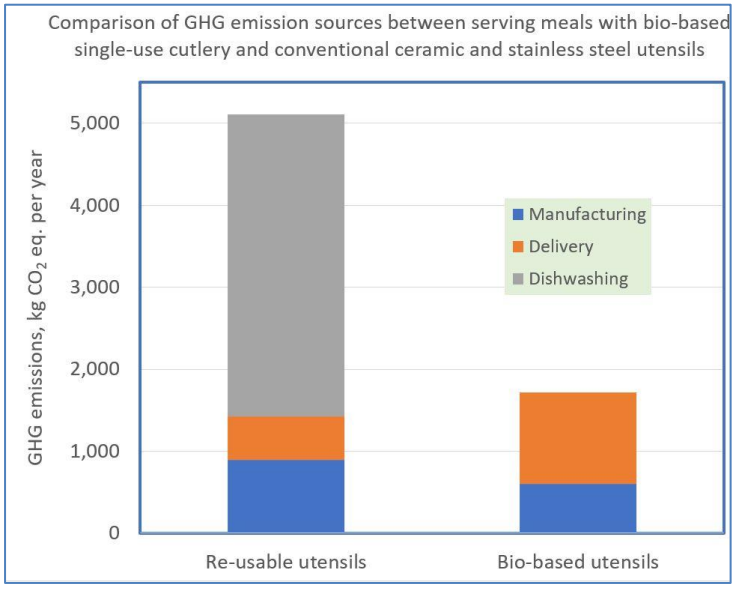
Comparing the sustainability of ceramic crockery and stainless-steel (SS) cutlery with single-use, bio-based utensils.

A Cranfield University team made the comparison using Life Cycle Assessment (LCA), which quantifies environmental impacts from raw materials through manufacturing and use to final disposal. The study focussed on Venus's operations, based on annual servings of 22,000 main meals. Several environmental impacts were assessed, but we focus on climate change.

The bio-based utensils were *Areca* palm plates from India and birchwood cutlery from China, with all waste collected and managed by a contractor. Ceramic and SS utensils are washed by machine after every serving. Some are lost or broken every year and replaced with new.



Using bio-based utensils reduced the carbon footprint from manufacturing to use by about two thirds. Manufacturing and delivery were similar between, but the big difference was in energy and water used in dishwashing.

Landfilling all waste arisings increases emissions from bio-based utensils by 400 kg CO_2 Eq. more than from re-usables. In contrast, energy from waste with resource recovery creates a GHG "credit" from bio-based utensils of 750 kg CO_2 Eq., based on offsetting a contemporary electricity mix.

Future expansion of single-use, bio-based utensils must be viewed with caution. If demand exceeds current supply of biomass streams, negative changes in native ecosystem carbon stocks could occur. Decarbonising the electricity supply would reduce the impacts of washing up.