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Product Emissions Comparison for Ecoburner vs. Industry Standard Chafing Heaters

Dear Sir/Madam,

Ecoburner Products Ltd has commissioned Carbon Footprint Ltd to undertake a product comparison calculation, comparing the emissions from using their Ecoburner chafing heater, to emissions from using two industry standard chafing heaters.

Calculation Scope and Scenario

The scope of the product comparison covers only the usage and the disposal of both the Ecoburner and industry standard products. Emissions from the manufacture and import of the products are not included within this calculation. Emissions have been calculated using current emissions factors published by Defra¹ (June 2015) and the United States EPA².

Both industry standard and Ecoburner products have been compared using an example catering scenario. The example scenario is a catering event where each heater is used for three hours and then disposed of. The Ecoburner product was compared to heaters which use methanol and ethanol based gel fuels.

Emissions from Use

The following table details the emissions arising from the use of the chafing heaters during the example scenario.

| Product | Fuel Used (g) | Emissions (g CO ₂ e) |
|------------------------------|------------------|---------------------------------|
| Ecoburner | 40 | 119 |
| Industry Standard (Methanol) | 346 ³ | 375 |
| Industry Standard (Ethanol) | 346 | 526 |

During the example scenario, the Ecoburner heater will use approximately 40 grams of LPG (Liquefied Petroleum Gas) which is supplied from a pressurised container, and can be refilled when

¹ Department for Environment, Food and Rural Affairs

² Environmental Protection Agency

³ Amount used by two industry standard chafing heaters (173 grams of fuel in each) - Hollowick Inc (<http://doclibrary.com/MFR965/DOC/HOIChafingFuelBrochure094842.pdf>)

required. Industry standard heaters have a burn time of 2 hours, so for this example scenario two of these units will be used for a 3 hour event. Each industry standard heater contains 173g of methanol or ethanol gel, and is not refillable.

The difference in emissions during use is a reflection of the difference in the amount of fuel used by the heaters, rather than the type of fuel.

Emissions from Disposal

The following table details the emissions arising from the disposal of chafing heaters. As the Ecoburner is both reusable and refillable (has a life expectancy of up to 10,000 hours), it is not always disposed of at the end of at the each use. The weight of the Ecoburner in the calculation comprises the LPG canister and a proportion of the chafing burner weight.

It has been assumed for the example scenario that all products are disposed of through landfill, however it should be noted that the Ecoburner is recyclable and if recycled would result in less emissions

| Product | Weight (kg) | Typical Disposal Route | Emissions (gCO ₂ e) |
|------------------------------------|-------------------|------------------------|--------------------------------|
| Ecoburner (including LPG canister) | 0.27 ⁴ | Landfill | 6 |
| Industry Standard (Methanol fuel) | 8.4 ⁵ | Landfill | 179 |
| Industry Standard (Ethanol fuel) | 8.4 | Landfill | 179 |

The difference in emissions is related to the total weight of the products being disposed of. As two industry standard heaters are used over this example scenario's three hour event, these would collectively weigh more than an individual Ecoburner heater and empty LPG canister.

Comparison

Total emissions relating to the use and disposal of each product is listed in the table below.

| Product | Usage Emissions (gCO ₂ e) | Disposal Emissions (gCO ₂ e) | Total Emissions (gCO ₂ e) |
|-----------------------------------|--------------------------------------|-----------------------------------------|--------------------------------------|
| Ecoburner | 119 | 6 | 125 |
| Industry Standard (Methanol fuel) | 375 | 179 | 554 |
| Industry Standard (Ethanol fuel) | 526 | 179 | 704 |

Yours sincerely,



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⁴ Weight includes LPG canister (275g) and a proportion of chafing heater weight (3/10,000ths of 2.4 kilograms).

⁵ Weight of two industry standard chafing heaters (4.2 kg each) calculated using data from:

<http://www.sternocandlelamp.com/products-page/products-foodservice/20108-2-hr-ethanol-gel/>