



Introduction

St. Magnus International Festival recognises that it has an important role to play in contributing to the protection and development of the social, economic and environmental wellbeing of Orkney. The Festival is committed to understanding the impact of our energy consumption and resulting carbon emissions, and to developing a Carbon Management Plan (CMP) which will maximise the social and economic benefits of Festival activities, whilst minimising the environmental damage resulting from our use of energy and resources. As an organisation, we are committed to reducing our impact on the environment by addressing all areas of activity relating to the Festival's year-round operations and annual Festival events. We also recognise the need to ensure staff and service users understand the benefits and opportunities of energy efficiency and carbon reduction, and the importance of implementing information programmes to reinforce that message.

Within the context of major global concerns relating to climate change, there are several drivers which are encouraging the Festival to consider how our actions will have direct and indirect impacts on the environment, including local and national legislative and policy changes requiring the Festival to meet higher environmental standards. The impact of these changes will need to be considered when assessing future emissions against the baseline quantities and the Festival will be required to identify any changes in emissions.

As a direct result of the operation of the 2018 Festival, our total carbon emissions were **56,462.91** Kilograms of Carbon Dioxide Equivalent (Kg CO₂e).

Carbon Management Plan Objectives

We aim to reduce our year on year Kg CO₂e emissions by **10%** annually each year from 2019 to 2025.

The CMP will enable us to look at how we use energy in all aspects of our operations, and where possible identify alternative low carbon options.

The CMP will define baseline emissions for 2018 against which all subsequent emission reductions will be measured.

The CMP will identify strategies that could contribute to our aim of reducing year on year Kg CO₂e emissions by 10% annually.

The CMP will identify governance and accountability responsibilities relating to the data and projections used in the CMP.

Carbon Management Plan Strategies

The carbon emissions figures for the 2018 Festival show that the Kg CO₂e emissions were broken down as shown in Table 1 below:

Item	Total Kg CO ₂ e emissions	% of Total
Flights	36,820.80	65.21
Artist accommodation	16,420.00	29.08
Administration and management	2,789.81	4.94
Taxis	108.61	0.19
Waste	78.00	0.14
Ferries	67.48	0.12
Buses	1.58	0.00
Annual Total	56,286.28	

Table 1: 2018 Kg CO₂e emissions (Baseline figures)

The figures given in Table 1 will be used as baselines against which subsequent reductions will be measured.

From the information in Table 1, the areas producing the highest proportion of Kg CO₂e emissions are clearly flights and artist accommodation, and these should be the first to be targeted for reduction as they have the potential to provide “*quick hits*” in any reduction strategy.

Carbon Emissions Reduction Strategies – Flights

The carbon emissions reduction achievable from transferring passenger flights to rail and ferry would be significant. It seems reasonable that a target of **75%** of artist travel being made by rail and ferry rather than air should be put in place for **2025**, with this being **reviewed annually**.

Since St. Magnus International Festival operates within a rural and remote island location, the provision of transport, both in relation to bringing performers and staff to Orkney and in transporting them to venues, is particularly challenging logistically.

Carbon conversion guidelines for 2018 – ’19, as shown in Table 2 below, show clearly that air travel produces the highest levels of Kg CO₂e emissions per passenger mile, whilst rail travel produces only 17.5% of that per passenger mile:

Emissions Source	Kg CO ₂ e
Flight (average for all distances)	0.4 per passenger mile
Car mileage (average car)	0.29 per mile
Hybrid (average car)	0.20 per mile
Plug in Hybrid (average car)	0.18 per mile
Ferry (average passenger)	0.18 per passenger mile
Bus	0.16 per passenger mile
Electric Vehicle (average car)	0.09 per mile
Rail	0.07 per passenger mile

Table 2: Carbon Conversion Guidelines 2018 (Source: Creative Carbon Scotland)

Carbon conversion factors change each year, and any calculations performed using these factors should always be regarded as estimates. Average values are provided for each transport mode as an indication only. Type of vehicle and length of journey will significantly affect the carbon factors and these can cover a range of values.

Although it is clearly not possible to transfer any travel within Orkney to rail, a strategy to transfer passenger miles from air to rail and ferry for artists travelling to and from the Festival in future should be key to the overall carbon emissions reduction strategy.

Carbon Emissions Reduction Strategies – Accommodation

It seems reasonable to aim for a target reduction in hotel bed-nights of **10% by 2025**. However, this should be kept under **annual review** and taken in consideration with potential improvements in emissions conversion factors applicable in local hotels.

The type of accommodation used for artists during the Festival is dependent on several factors, not least the general availability of accommodation in Orkney at the height of the visitor season.

As shown in Table 3 below, self-catering accommodation already accounts for a significant proportion of that used by the Festival, and has a lower emissions conversion factor than hotels, but this type of accommodation is often dependent on booking a minimum number of bed-nights, which has financial implications for the Festival in that the stipulated number of bed-nights might not coincide with Festival dates, resulting in the Festival paying for empty accommodation. A balance has to be achieved here.

Another major factor is consideration for the comfort and convenience of artists. In many cases it would not be considered reasonable to expect artists to prepare their meals and attend to domestic chores on top of performing, as would be required in self-catering accommodation. Similarly, in bed and breakfast accommodation, meals would need to be arranged in restaurants during the busy season, which could result in less than satisfactory arrangements to meet artists' nutritional requirements combined with their ability to fulfil performance commitments.

Accommodation Type	No. of Bed/nights	Total Kg CO ₂ e emissions	% Bed/nights	% emissions
Hotel	204	10,200.00	39.61	62.11
Self-catering	197	3,940.00	38.25	24.00
Host	45	900.00	8.74	5.48
Bed and Breakfast	40	800.00	7.77	4.87
Guest House	29	580.00	5.63	3.53
	515	16,420.00		

Table 3: 2018 Accommodation Kg CO₂e emissions by bed-night type

The Kg CO₂e emissions conversion factor used for hotel bed-nights is 50, and the emissions conversion factor used for host, bed and breakfast, guest house and self-catering bed-nights is 20, as agreed with Creative Carbon Scotland.

Carbon Emissions Reduction Strategies – Administration and management

Given the rate of development in IT and office equipment, and the importance of carbon emissions reduction, it seems reasonable to aim for a target reduction of **25% for Kg CO₂e** emissions from those aspects of the office function by **2025**. This should be **reviewed annually** by the Festival in conjunction with IT and office equipment suppliers.

At present, Kg CO₂e emissions produced by administration and management functions represent only 4.94% of the total produced by the Festival, and that is broken down as shown in Table 4 below. There is less scope here for “*quick hits*” in any reduction strategy. However, there is scope for significant reductions in this area.

There is already a “*switch it off if not in use*” policy in operation in the office, and it is adhered to. Office heating is provided by air-to-air heat pumps and is only used when the office is occupied. Lighting is provided by low-energy consumption lamps and is only used when the office is occupied. There appears to be limited scope for reducing the present Kg CO₂e emissions of these items.

IT equipment combined, server, desktops and laptops, accounts for 64.11% of Kg CO₂e emissions by the administration and management function at present, and if the printer is included it rises to 64.31%. It seems reasonable to assume that this could be reduced through review of the equipment presently in use.

Item	Total Kw Hrs.	Total Kg CO ₂ e emissions	% emissions
Server	5,616.00	1,589.72	56.98
Heating	1,248.00	353.27	12.66
Desktops	1,040.00	294.39	10.55
Desk lamps	624.00	176.64	6.33
Fridge	624.00	176.64	6.33
Lights	599.04	169.57	6.08
Laptops	62.40	17.66	0.63
Printer	20.80	5.89	0.21
Phone	7.80	2.21	0.08
Kettle	4.68	1.32	0.05
Chargers	3.12	0.88	0.03
Franking machine	2.34	0.66	0.02
Laminator	1.30	0.37	0.01
Vacuum	1.56	0.44	0.02
Shredder	0.39	0.11	0.00
Fan – stand	0.10	0.03	0.00
	9,855.53	2,789.81	

Table 4: 2018 Administration and management Kg CO₂e emissions
The Kg CO₂e emissions conversion factors used are those provided by Creative Carbon Scotland.

Whilst it is not defined as part of the administration and management function and is not measured at present, it seems reasonable to assume that material printed for the Festival, such as programmes, flyers, posters, etc., will have relatively significant Kg CO₂e emissions.

It seems reasonable to include printed material as part of the carbon management plan in future, and to measure the effectiveness of this resource in relation to numbers ordered and surplus from each Festival as a starting point. Additionally, it is already Festival policy to encourage patrons to access programmes online rather than using printed versions, but the demographic of Festival patrons mitigates against this aspiration to a relatively significant degree. It is already Festival policy to print internal documents only when it is absolutely necessary, and to use double-sided printing and multiple pages per sheet whenever possible to minimise paper and ink usage.

Similarly, use of venues and audio and lighting equipment, etc., is not defined or measured at present, but it seems reasonable to assume that this use will produce relatively significant Kg CO₂e emissions. It seems reasonable to include Kg CO₂e emissions for venues and audio and lighting equipment as part of the carbon management plan in future, and to regularly review the potential for using equipment that is more environmentally friendly for future productions.

Carbon Management Plan – Timescale

The implementation of the CMP is initially defined here as 2019 to 2025, but it will operate dynamically with **annual reviews** required, and changes in policy and legislation, both nationally and locally, will be monitored and consideration given to any implications for the CMP that may require amendment to the document.

A full review and redrafting of the CMP will be carried out in **2025** to ensure it remains fit for purpose.

Carbon Management Plan – Emissions data

The data used to produce the baseline information on which the Festival's carbon footprint is based has been gathered from accounting records, travel records, accommodation records and other primary sources produced and held by the Festival.

Conversion factors used to produce the Kg CO₂e figures are those supplied to the Festival by Creative Carbon Scotland, the body that works with creative organisations and individuals to promote environmental sustainability and support carbon measurement, reporting and reduction.

The baseline for measuring the effectiveness of the strategies outlined above will be the 2018 Festival figures.

It is anticipated that the 2018 figures will be extended to include procurement of consumables, advertising and promotion, and hire of performance venues, from 2020 onwards, which will give a more complete picture of the Festival's carbon footprint through accounting for embodied carbon factors.

Emissions data – accuracy of data

The data used to produce emissions figures is taken from primary data recorded to meet statutory and funding requirements for the Festival, so can be safely considered to be accurate. The conversion factors used to calculate Kg CO₂e are provided by the public body with responsibility for the promotion of environmental sustainability in the arts, so can be safely considered to be reliable.

Emissions data – accessibility of data

It is anticipated that the emissions data will be made available publicly as an Annex to the Annual Report of St. Magnus International Festival.

Emissions data – ownership and management of data

The Board of Management of St. Magnus International Festival are the owners of the emissions data, and all projections resulting from management of that data.

Responsibility for management of emissions data lies with the St. Magnus International Festival Manager, who may delegate operational management of the data to other members of Festival staff.