**Introduction**

The Hall’s Sustainability Policy requires yearly reports on aspects relating to the three pillars of sustainability – economic, social and environmental - as a means of understanding impact and measuring improvements. The policy acknowledges that environmental attention should be focussed on the major environmental impact of the organisation, being its carbon footprint, which is addressed in this report.

**Emissions**

In considering the Hall’s carbon emissions, this report uses the common framework assigning emission to scopes 1,2, or 3:

* **Scope 1**: carbon emissions arising directly from the activities of an organisation. For The Queen’s Hall this comprises the gas burnt for heating.
* **Scope 2**: carbon emissions arising indirectly from activities carried out by others on our behalf. For The Queen’s Hall this comprises the carbon emissions attached to our electricity usage. Water usage is arguably within scope 2, but the UK Government deems it to be scope 3.
* **Scope 3**: all other carbon emissions created in relation to the activities of the organisation such as by others in supplying products, and those generated by the use of the products of the organisation. For The Queen’s Hall, water usage is placed in scope 3. Clearly, there are many other sources of emissions in this category which are outwith the control of The Queen’s Hall, but which may be influenceable.

**Offsets**

The only offset claimed at present by The Queen’s Hall is for electricity. The current supplier of electricity uses a certified scheme whereby the total amount of energy they sell as renewable is backed by supply contracts from renewable generation. This is a close approximation to having a renewable supply, but a truly renewable electricity supply will only happen when all sources of generation on the system are renewable, for which the present target date is mid 2040s.

Offsets generally are a fraught subject. Other offsets are available, particularly for gas supplies. These are of two types:

* Carbon removal – removing carbon from the atmosphere by projects such as atmospheric carbon capture, which is not yet commercially available, or tree planting, which takes a long time to sequester carbon, and is quite likely to re-release the carbon stored before the carbon it is offset against has decayed in the atmosphere.
* Carbon avoidance – largely involves investing in projects to reduce carbon emissions, often by paying for things to be done that should be done anyhow.

Commercial companies are interested in such offsets as it can be useful for signalling green intentions, but for The Queen’s Hall the best project to invest in is reducing our own carbon footprint.

**Control over emissions**

The Queen’s Hall has different levels of control over its various emissions:

* Scope 1 – high level of control where we can make decisions to directly affect the level of emissions.
* Scope 2 – considerable level of control over usage and source of supplies which generate emissions.
* Scope 3 – minimal level of control over emissions, but some capacity of choice and influence.

**Quantified emissions**

The methodology for producing the quantified emissions in the attached report sheet is as follows:

* For gas and electricity, the energy usage for the year in kWh comes from meter readings. For water, which is not metered, a usage per person attendance of 10 litres is assumed as an order of magnitude.
* Each usage figure is then multiplied by a factor issued yearly by the UK Government Department of Energy Security and Net Zero to yield a carbon dioxide equivalent (CO2e) emission figure in kg.

The quantified emissions are given on the attached report sheet which shows:

* Absolute total emissions for 2023 of 90,252 kgCO2e
* Net total emissions after offsets of 69,331 kgCO2e

The specific emissions per audience person attendance are also given on the basis that reducing our emissions by reducing audience numbers is not compatible with economic sustainability. These are:

* Specific absolute emissions of 0.93kgCO2e per person attendance
* Specific net emissions of 0.71kgCO2e per person attendance.

**Points of comparison**

As two points of comparison:

* The total Queen’s Hall emissions given above for 2023 are equivalent to those of 9 or 10 average domestic homes.
* In 2023, the average per person carbon footprint in the UK was around 6 tonnes CO2e so the Hall’s contribution to a visit to The Queen’s Hall would be equivalent to around 5% of the average daily carbon footprint.

**Changes from datum**

An arbitrary datum year of 2022 has been set as the first nearly full year of normal operations after the covid pandemic. In relation to that datum the actual emissions have increased but so have the audience numbers, leaving both the absolute and offset specific carbon emissions virtually constant.

**Other Scope 3 emissions**

Scope 3 emissions for The Queen’s Hall, other than water, can be usefully grouped and considered as follows.

* **Emissions by artists and promoters in their activities in QH**. Our significant promoter partners are being asked about the state of their environmental policies and carbon footprint measurement, but it is acknowledged that QH has little influence over major promoters. For QH promotions, consideration is being given to how QH can persuade other parties to think about their environmental impact.
* **Supplies to the bar business.** The major bar supplier is being asked about their environmental policies; in this area we do have more choice and hence somewhat greater influence.
* **Waste management.** The waste management contractor is being asked about their environmental policies; in this area also there is more choice and potentially greater influence.
* **Staff travel.** This is a very small component of the total emissions. Staff are encouraged to use public transport to get to work. The amount of staff travel while at work is minimal.
* **Audience travel.** This is potentially a much larger component of total emissions, but one over which The Queen’s Hall has little influence. Details of how to reach the Hall by public transport are posted on the website, but our capacity to persuade people into electric vehicles or active means of transport is strictly limited.

Generally, it is submitted that The Queen’s Hall’s influence on scope 3 emissions is limited, but by asking the questions we would hope to persuade others to take action and to add to the general conversation and awareness of climate issues.

**Future plans**

The main activities in this area are guided by the ‘Towards Net Zero’ plan approved by the Board in December 2023 which was informed by extensive study work in conjunction with Harley Haddow Consultants.

Activities in the coming year which will impinge on our carbon footprint comprise:

* Completion of the refurbishing of the backstage area which will improve the insulation of the building in that area and reduce the energy demand of the hot water supply.
* A project to improve draft proofing generally and to double glaze where feasible.
* A project to improve the detailed control of the heating system.
* Progressing the frontage, access and offices project which, when complete at some subsequent time, will reduce the heat demand by improvement of the insulation of the main Hall and the offices leading to a reduction in gas consumption.
* Progressing the project to replace the air conditioning system for the auditorium which will both reduce the energy demand for heating by incorporating heat recycling, and also provide some of the heat input from air source heat pumps. Both of these features will reduce the demand on the gas supply.

**Targets**

It is desirable to set targets for emissions reduction but while the Hall has capacity for conceiving and planning initiatives, and for seeking finance, the key requirement is external funding for implementation of what are largely capital projects of significant cost, which makes the timescales deeply uncertain.

The Hall therefore is pursuing a policy of progressing as far as possible in the definition of its various emissions reduction schemes so that meaningful applications for funding can be made, with implementation as and when suitable funds are available.

**Conclusion**

In terms of actual carbon emissions, the situation has sensibly not changed from 2022. However, the definition of significant initiatives for emissions reductions has moved forward significantly which will be critical in reducing emissions in the future. Funding is the key issue.

Evan Henderson – CEO

Peter Cannell – Chair of Buildings Working Group

Presented to the Board on 22nd March 2024

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **THE QUEEN’S HALL** | **Carbon footprint report** |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **Year** | **calendar year** |  | **2022** | **2023** |  |  |  |  |
|  |  |  | datum |  |  |  |  |  |
| **Scope 1** | **mains natural gas burn** |  |  |  |  |  |  |  |
|  | metered supply - kWh |  | 318828 | 344817 |  |  |  |  |
|  | CO2e factor - kg/kWh |  | 0.200 | 0.200 |  |  |  |  |
|  | **CO2e - kg** |  | 63765 | 68963 |  |  |  |  |
|  | **% of datum** |  | 100% | 108% |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **Scope 2** | **mains electricity generation & supply** |  |  |  |  |  |  |  |
|  | metered supplies - kWh |  | 79521 | 101035 |  |  |  |  |
|  | CO2e factor - kg/kWh |  | 0.211 | 0.207 |  |  |  |  |
|  | **CO2e - kg** |  | 16754 | 20922 |  |  |  |  |
|  | **% of datum** |  | 100% | 125% |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **Scope 3** | **mains water supply and treatment** |  |  |  |  |  |  |  |
|  | estimated supply - m3 (10l/person attendance) |  | 886 | 972 |  |  |  |  |
|  | CO2e factor - kg/m3 |  | 0.421 | 0.378 |  |  |  |  |
|  | **CO2e - kg** |  | 373 | 367 |  |  |  |  |
|  | **% of datum** |  | 100% | 98% |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **Absolute total** | **CO2e - kg** |  | **80893** | **90252** |  |  |  |  |
|  | **% of datum** |  | 100% | 112% |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **Offsets** | **mains electricity CO2e - kg** |  | 16754 | 20922 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **Net total** | **CO2e - kg** |  | **64139** | **69331** |  |  |  |  |
|  | **% of datum** |  | 100% | 108% |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **Audience attendance** | **tickets sold** |  | 88609 | 97171 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **absolute specific CO2e** | **kg/person attendance** |  | **0.91** | **0.93** |  |  |  |  |
|  | **% of datum** |  | 100% | 102% |  |  |  |  |
| **net specific CO2e** | **kg/person attendance** |  | **0.72** | **0.71** |  |  |  |  |
|  | **% of datum** |  | 100% | 99% |  |  |  |  |