





## 1. Carbon neutral information

The Climate Active event calculator was used to prepare this carbon inventory, which is based on the *Climate Active Carbon Neutral Standard for Events*.

### Event introduction

Founded in 1960, the Adelaide Festival is a major multi-arts festival held annually in South Australia, produced and presented by the Adelaide Festival Corporation.

Planning and execution for each Festival is the core business of the Corporation, which operates continuously over the year.

The Adelaide Festival was first certified as Carbon Neutral under Climate Active in 2020 (see <https://www.climateactive.org.au/buy-climate-active/certified-members/adelaide-festival-2020>, Accessed November 2020).

The 2021 festival encompassed around 77,000 ticketed attendances, with an additional 66,000 attending free events. These numbers were substantially lower than the 2020 event, largely as a result of Covid 19 restrictions/hesitancy on travel and constraints on crowd sizes.

Visitors to SA were therefore significantly lower at around 4,700 persons versus 14-20,000 in other years.

The composition and execution of the Festival varies from year to year, but with the advent of the COVID-19 pandemic, the 2021 event has been substantially altered relative to 2020 in order to encourage social distancing, reduce or eliminate the need to travel and balance the risks of outbreak induced cancellations. The major changes for 2021 include:

- Limiting capacity across venues
- Greater emphasis on Australian content and artists (90% Australian versus around 20% in other years).
- Engagements in regional South Australian centres
- Greater use of technology in terms of live streaming of some events.

As part of its ongoing commitment greenhouse gas emissions management, the Adelaide Festival has continued Climate Active certification as carbon neutral. The Adelaide Festival is committed to reducing its carbon emissions where it can do so directly, but also to work with and influence its suppliers and the many theatres and other venues where performances are held. The Festival continually engages audiences, artists, employees and volunteers in practices that will cut emissions per attendee to make every festival as sustainable as possible.

Adelaide Festival Corporation has a Sustainability Committee which has encouraged a variety of environmental/emissions reduction activities in relation to their corporate office as well as for the event itself.

For 2020, the total emissions estimate from the post event assessment was 10,653 tonnes CO<sub>2</sub>-e. Given the nature of the enforced changes to due to COVID-19, approaches to any targets were discounted. The 2021 festival was envisaged to be somewhat of an outlier in terms of emissions management compared to previous and future years.

Planned emissions reduction activities fall into the following categories:

- Energy efficiency and use of renewable energy

- Waste reduction and recycling
- Water use efficiency
- Low emissions transport
- Sustainable supply chain
- Measurement, marketing and engagement.

Key strategies include:

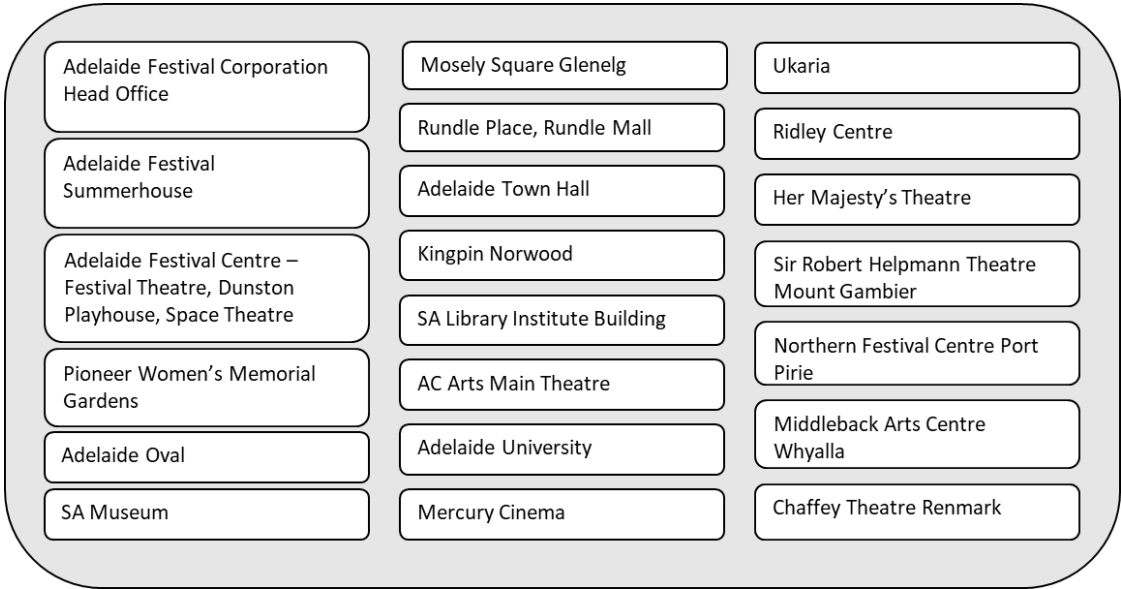
- Utilising the City of Adelaide’s renewable energy network in the Adelaide Parklands and Botanic Gardens.
- Reducing waste by mandating the use of compostable or recyclable materials by food trucks, implementing ways to educate attendees to use the correct bins and to minimise their waste by bringing their own refillable water bottles.
- Facilitating lower emission forms of travel for artists, attendees and staff including public transport, city bikes, more bike parking and utilising fuel efficient vehicles where possible for hired vehicles and freight services.
- Seeking ways to reduce printed materials, including ticketing and day bills, by creating electronic day bills and engaging with suppliers.
- Seeking to re-purpose old sets and props wherever possible through post-festival sales and donation, rather than sending to landfill.
- Aiming to re-use as many items as possible including t-shirts, fence wrap, signage etc. to avoid sending to landfill.
- Removing dates from as many generic branded items as possible, to facilitate re-use in future years.
- Where possible, carbon neutral products or services will be sourced.

## 2. Emissions boundary

The Adelaide Festival 2021 was organised and presented across 25 venues (including corporate spaces).

The following emission sources have been excluded from the emissions boundary:

- Umbrella productions have been excluded as they are run by partners and therefore fall outside of the control of the responsible entity and in some cases already have offset programs of their own.
- A series of 152 very short (15 minute) one-to-one engagements planned for various locations around Adelaide. These shows have only two persons (one artist and one audience member) with no power allocation. It has been assumed that the emissions associated with these events are non-material, although note that the audiences are included in the overall number of ticketed attendees.
- Printed t-shirts and bags, largely for employee and volunteer use have been excluded as they are deemed immaterial and it is difficult to quantify the emissions associated with their full lifecycle.
- The storage facility operated by the Adelaide Festival is considered immaterial as it comprises some shipping containers that are visited only sporadically.



**Emission boundary Diagram**



### 3. Changes since pre-event report

Major changes from the pre-event assessment relate to:

- Air transport (km) - Long haul economy flights – reduced  
 Long haul flights relate primarily to international travel (>3,700 km) and therefore substantially reduced as a result of COVID 19 travel restrictions.
- Air transport (km) - Short haul economy flights - increased  
 Short haul flights were nearly five times higher than the pre-event assessment. This increase is in part a result of an underestimate of the ticketed attendances in the pre-event compared to the post event (55,022 versus 76,677 persons respectively), with substantially more interstate travelers in the post-event (3818 versus 6,994 persons). When accounting for two-way travel for each person this would explain the large increase in short haul flights.
- Electricity - Total net electricity emissions (market based) – decreased  
 Electricity data for the post-event encompasses a mixture of both actual electricity consumption supplied by venues as well as estimates based on the floor area / occupancy model supplied in the Climate Active calculator. Conversely, the pre-event assessment was largely based on the calculator. Electricity consumption estimates is therefore sensitive to changes in the venue schedule (including cancelations and venue changes) between the pre- and post-event assessments.
- Food - Meat products (Beef) - increased  
 The food consumption estimate model is based on the number of attendances as well as estimated expenditure at festival venues. Both numbers were substantially higher than the pre-event assessment.
- Food - Meat Products (Poultry) - increased  
 As above for beef.
- Ground transport - Large Car: Unknown fuel - increased  
 Ground transport was influenced by a larger than expected number of regional SA visitors to the event (3,085 in the post-event assessment versus 1,107 in the pre-event) as well as more interstate visitors (6,994 versus 3,818) and the related commuting to venues.

## 4. Emissions summary

Table 1 Emissions summary

Emission source category	Pre-Event tonnes CO <sub>2</sub> -e	Post-Event tonnes CO <sub>2</sub> -e
Electricity	624.965	449.58
Stationary Energy (Natural gas)	0	13.01
Ground transport	861.34	1119.89
Flights	1376.37	3080.21
Food	798.9	1465.69
Water	72.8	89.03
Waste	20.21	128.53
Accommodation	161.02	214.84
Paper	0	47.85
Postage, Couriers and Freight	0	17.44
<b>Total tCO<sub>2</sub>-e</b>	<b>3915.61</b>	<b>6,626.07</b>
Uplift factor (as tCO <sub>2</sub> -e)	130.5	0
<b>Total tCO<sub>2</sub>-e + uplift factor</b>	<b>4046.11</b>	<b>6,626.07</b>
<i>Please indicate what this uplift factor covers:</i>		
<i>Paper consumption (playbills and posters)</i>		
<i>Interstate freight</i>		
<i>Note that these are included in the inventory for 2021</i>		
<b>True-up (total post event minus total pre event)</b>	2,579.96	

## 5. Carbon neutral products

Reflex carbon neutral paper used in corporate operations.

## 6. Data collection

Table 2 Data collection

Emission source	Data collection method	Assumptions
<b>Travel</b>	Source: Adelaide Festival internal data and Economic Impact Report 2021 Festival  Corporate flights have been allocated according to Adelaide Festival travel agent reports based on distances travelled within each of economy or	It has been assumed that interstate visitors have come from their relevant state capital.

	<p>business class within each of the short, medium and long-haul categories.</p> <p>Where distance data were unavailable, from reports the data were obtained from online values for each pair of airport identifiers.</p> <p>Note that travel between international destinations was included with allocations according to the distance between each of the respective airports.</p> <p>Event related flights were estimated based on the percentage of ticketed attendances from each state divided by the average number of ticketed events that participants undertook and offset by the percentage reason for travel.</p> <p>This number was then doubled to account for a two-way journey.</p>	
<b>Regional ground transport</b>	<p>Source Data: Economic Impact Report 2021 Festival</p> <p>The number of regional attendees was estimated based the average number of ticketed events undertaken as well as the motivation for travelling to the Festival (see the flight estimate example below).</p> <p>3,085 persons were allocated evenly across each of the regional departure points. The total activity (in kilometres) was calculated independently using the same estimation framework as in the calculator model.</p>	
<b>Local transport</b>	<p>Source Data: Staff survey and Economic Impact Report 2021 Festival</p> <p>Adelaide Festival staff commuting across the year was derived based on an in-house survey using FTE, post codes and primary mode of transport as the source. The distance per day between post codes was calculated based on their average position.</p> <p>A total of 144 volunteers were used over the period of the festival. These were converted to an FTE equivalent and with travel distances in each transport mode based on the average commute breakdown and distance across paid staff.</p> <p>The total number of ticketed performances was 76,677, with a further 66,428 attendances going to free events (particularly the opening night concert and Writer's Week).</p> <p>The total activity (in kilometres) was calculated independently using the same estimation framework as in the calculator. The resulting kilometres travel were then summed across each travel category.</p>	<p>This model assumes 239 working days per year across all staff including an extra 8 days added owing to week-round operations during festival time.</p> <p>Where the distance calculation was zero (i.e. the staff member lived and worked within the same post code) a default distance of 1 km was used. Note that these instances all had walking or cycling as the primary transport mode and so there is no emissions impact.</p> <p>Other than Writers Week and the opening concert it was considered likely that attendees would visit installations in conjunction with other events/activities.</p> <p>It has been assumed that the calculator model incorporates a degree of vehicle sharing otherwise the ensuing carbon estimate is highly conservative.</p>
<b>Accommodation</b>	<p>Source: Economic Impact Report 2021 Festival and Event survey data</p> <p>The modified number of interstate and overseas persons came to the state with an average of ~8 nights.</p>	<p>It has been assumed that the vast bulk of attendees travelled as at least couples.</p> <p>It has been assumed that staying with family or friends as well as BNBs is less carbon intensive than hotels.</p>



However, assuming twin share across visitors (which seems likely to be conservative) the number of nights was halved.

All hotel accommodation was assumed to be domestic.

In addition, survey data conducted at events (opening concert and writer's week) indicated that only around 34% of visitors stayed in hotels/motels, with the bulk of the remainder staying with friends/family or BNBs. The total number of nights spent was therefore halved again to account for more than half the visitors used less carbon intensive accommodation. Data were evenly distributed across each of the accommodation star ratings, which is also considered likely to be conservative.

Finally, the number of ticketed attendances per person was around 1.9. This number would suggest that the actual number of nights required to encompass festival activities was 2-3, which is in line with the value employed.

Adelaide Festival staff accommodation tracker reports and travel agent data on total number of nights at each hotel as well as the star rating.

**Natural gas**

Source: Adelaide Festival venue data

Most venues indicated no natural gas usage.

For the remaining venues it is difficult to establish whether or not gas was in use. For this reason, the gas data that was available was added without modification or extrapolation.

**Electricity**

Source: Adelaide Festival data on 2021 venues and related performance data.

Actual electricity consumption data was obtained from ~ 8 venues, although note that the three sites at Festival Theatre were subsumed under a single total. This total was split evenly across the three theatres, bringing the total number of venues with data to ~10.

Otherwise venue electricity was generally based on the area usage x hours performance model. The area of each venue was determined either from venue data and/or seating configuration maps and some web map interpretations. The period of occupation for each venue was determined based on scheduling software.

Note that outdoor venues – Adelaide and the Pioneer Women's Garden used empirical electricity measurements from outdoor events in 2020. Electricity estimates were based on the consumption per participant/seat in the target venue. This approach was used as the floor area model provides a poor interpretation of the actual electricity consumed at outdoor sites.

Corporate electricity was based on kWh usage derived from tenancy

	<p>invoices with some additional power allocated for extra air-conditioner usage based on consumption per hour within each month (assuming a 12-hour operational time per day) multiplied by the number of additional hours.</p> <p>Electricity consumption for storage spaces was included in the corporate estimate.</p>
<b>Water</b>	<p>Source Data: Economic Impact Report 2021 Festival</p> <p>Uses the calculator model based on the total number of attendances.</p> <p>For staff, water has been estimated based on 20 FTEs for 250 days using the calculator model.</p>
<b>Food</b>	<p>Food and drink calculations for the event were complex and reliant upon multiple data sources including:</p> <ol style="list-style-type: none"> <li>1. Economic Impact Report provided data on the numbers of attendees and their expenditure</li> <li>2. Data on venues in terms of food and drink availability (most had only bars)</li> <li>3. Data to assist in apportionment of the drink expenditure across beer, wine/spirits and soft drink (pattern based on Palais Venue calculations from 2019)</li> </ol> <p>The modified number of attendees was used to generate an estimate of total food expenditure using the Food and Drink expenditure from all festival venues.</p> <p>Many venues had neither food nor bar facilities. Of the remainder 62% had only bars and snack offerings.</p> <p>The drinks components of the total food expenditure were estimated to be ~62% of the total expenditure spread over beer, wine and soft drink in proportion to the ratios derived from sales pattern at the Palais Venue in 2019 (33% 58% and 9% respectively) with an estimated allocation to tea and coffee (3% of total food expenditure).</p> <p>No data were available on the breakdown of the remaining food expenditure (38% of the total) and so an assumption was made that the breakdown was roughly evenly across remaining major categories (8% each for vegetables, meat and poultry, with 4% allocated to seafood), with the remainder divided across bread, dairy, oils and sugar.</p> <p>Note there was no allocation to flour and cereals as well as dairy drinks as these were considered less likely to be influential for events predominantly run in evenings.</p> <p>Corporate expenditure on food and drink was included based on cost and</p>

	<p>the nature of the food (i.e. mostly cocktail snacks that were 80% vegetarian/gluten free).</p>	
<b>Waste</b>	<p>Source: Adelaide Festival data collated from venues</p> <p>Where actual tonnages were available these were employed.</p> <p>Bin volumes, clearance rates and percentage full values were used in calculating a waste total based on the calculator model.</p> <p>For those locations with no data available, the waste was estimated based on the performance length and number of days occupancy, excluding venues that were active for most of the day (i.e. Writer's Week).</p> <p>Paper waste was not identified, although this was most likely included within mixed recycling.</p> <p>Corporate landfill waste was attributed to a single 240 L bin and an 1,100 L skip bin at the Adelaide Festival Storage facility which were emptied 6-7 times per year at 100% full.</p>	<p>Other corporate waste streams (mostly paper and some office related kitchen waste) are assumed to be either recycled or non-substantive.</p>
<b>Paper</b>	<p>Source: Data from Adelaide Festival</p> <p>An estimate of emissions related to purchased paper for the event was included based on AF internal data related to the printing of the booking guide, posters and day bills.</p> <p>For the 2021 event there was a concerted effort to supply a lot of this information in electronic form.</p> <p>All Corporate paper consumption was derived from Carbon Neutral sources.</p>	
<b>Freight</b>	<p>Source: Data from Adelaide Festival</p> <p>Freight related emissions were derived from shipping data using weight of freight, distance and mode of transport (sea, air or land).</p>	<p>In the absence of any other information, distances were assumed to be the shortest direct route.</p> <p>If no weights were obtained, the tonne.km was based on one third of the gross weight capacity of the standard shipping container, assuming that the material for a performance were unlikely to be heavy.</p>

## 7. Eligible offset units

### Offsets summary

Table 3: Offsets summary

Project description	Type of offset units	Registry	Date retired	Serial number (and hyperlink to registry transaction record)	Vintage	Quantity (tonnes CO2-e)
Siam Cement Biomass Project	VCUs	Verra	11 Feb 2021	6174-283331421-283335920-VCU-030-APX-TH-4-403-01012017-30062017-0 <a href="https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=31463">https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=31463</a>	2017	4,500
Hyundai Steel Waste Energy Cogeneration Project	VCUs	Verra	15 Jul 2021	8967-56927054-56929180-VCS-VCU-260-VER-KR-1-786-01012014-31122014-0 <a href="https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=124277">https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=124277</a>	2014	2,127
<b>Total offsets cancelled</b>						6,627



### Offset projects – co-benefits

Siam Cement Group Biomass to Energy, Thailand.

This project replaces fossil fuel consumption across five cement manufacturing plants with alternative fuels and biomass residue, including a range of wood processing residues, rice husks and agricultural waste. By helping to improve the technology for biomass utilization as an energy source, this project replaces up to 610,203 tonnes of fossil fuels per year.

As well as the supplementary income to farmers supplying the alternative fuels, the project also funds a range of social and environmental programs across health, education, forest conservation and regional small-scale industry development. The mobile health clinic that offers free services to neighbouring communities treats around 100 people daily. Over 60,000 check dams have been built to reduce runoff velocity, erosion and channel gullyng to sustainably improve water sources. And, through the project funding 9,000 hectares of Eucalyptus forest have been planted.

See <https://www.southpole.com/projects/siam-cement-biomas-to-energy> for more information.

Hyundai Steel Waste Energy Cogeneration Project

Waste gasses from steel production are used to generate either electricity or be directed for reused within the steel plant, creating a closed loop that prevents these gasses from being emitted to the atmosphere.

See <https://greenermiles.eco/projects/hyundai-steel-waste-energy-cogeneration-project/> for more information.

## 8. Use of certification trade mark

Table 4: Trade mark register

Description where trademark used	Logo type
Event fliers and information brochures	Certified event
Website	Certified event
Emails	Certified event