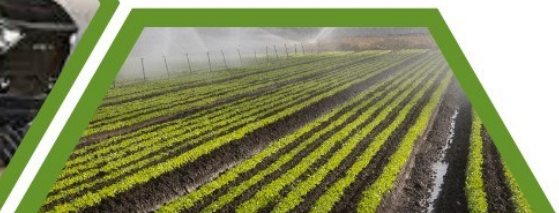
# 2024

Fieldays NZ

## Sustainable Event Report

New Zealand National Agricultural Fieldays

12 June - 15 June 2024



Prepared by

instep™

Sustainability in Action

This report by **Instep (a division of Asian Scientific Technologies Limited)** has been prepared for

**New Zealand Agricultural Fieldays 2024**

and is issued according to Instep standard terms and conditions.

# NEW ZEALAND AGRICULTURAL FIELDAYS 2024

## SUSTAINABLE EVENT PROGRAMME

**12 June - 15 June 2024**

SUSTAINABLE
EVENT
2024
ISO 20121


Peter Birkett
Author

Margaret Birkett
Peer Reviewer

# Table of Contents

# EXECUTIVE SUMMARY

The New Zealand Agricultural Fieldays (Fieldays) has now been committed to sustainable event management for 12 years, incorporating environmental management and carbon footprint calculations into event planning and staging. This year's event was held in warmer weather from 12 June to 15 June 2024. Visitor and exhibitor numbers increased compared to the 2023 event.

During the event various Environmental Impact Areas (EIAs) were identified in order to set objectives and monitor progress. Data was then gathered on-site by independent staff utilising meter readings, calculations and surveying. This was followed by post-event data collection. All information was then used to calculate a carbon footprint for the event, assess whether objectives had been achieved, and recommend initiatives for environmental improvement in future.

## TOTAL GHG EMISSIONS

- Total $CO_{2e}$ emissions reduced by 0.35% compared to 2023, recording 3,468.13 $tCO_{2e}$.
- Kg $CO_{2e}$ per attendee reduced by 1.24% compared to 2023, to record a ratio of 32.72 kg $CO_{2e}$ per attendee.

## ENERGY

- Energy emissions total 95.72 tonne $CO_{2e}$
- This marks a 14.6% increase from 2023.
- Increases are noted across key areas of Consumed Electricity, diesel and petrol. However, significant reductions are recorded in LPG consumption across exhibitors and food vendors.

## WASTE

- Total waste levels increased by 34%, recording 102,395 kgs. (mainly increases in recyclable material such as wood and cardboard.)
- This is compared to 76,100 kg from the previous year.
- Data collection for 2024 involved measuring both weight (tonne/kg) and volume (cubic metres) of generated waste. This includes on-site, or 'at-gate' volume-based data, and off-site data based on the processor's invoiced data.
- On-site volume analysis shows landfill diversion reducing from a record-high rate of 64.5% last year to record 61.8%
- Processor-invoiced data based on weight records a 59.9% landfill diversion rate, compared with 49% last year.
- When all data is combined by weight the end result shows an increased landfill diversion rate by weight of 62.9% for the 2024 event compared with 49% last year (processor's data).
- While on-site diversion rates are notable, utilising processor data is prudent for calculating accurate $CO_{2e}$ emissions

## TRANSPORT

- Transport-associated $CO_{2e}$ remains the most impactful scope on Fieldays' footprint.
- In 2024, transport-related emissions accounted for over 97% of all emissions
- Total $CO_{2e}$ transport emissions reduced by 0.71% compared to 2023, reaching 3,367.99 $tCO_{2e}$

# OVERVIEW

During the 2024 event, various Environmental Impact Areas were monitored to answer objectives and report emissions generated from a range of identified sources.

In total **3,468.13 t $CO_{2e}$** was emitted over the duration of the event, equating to a footprint of 0.0327 $tCO_{2e}$ or 32.72 kg $CO_{2e}$ per attendee.

This records a 0.35% reduction in total $CO_{2e}$ emissions generated compared with the 2023 event, recording 32.72 kg $CO_{2e}$ per attendee compared with 33.15 kg $CO_{2e}$ per attendee for the June 2023 event, down by 1.24%.

Fieldays 2024

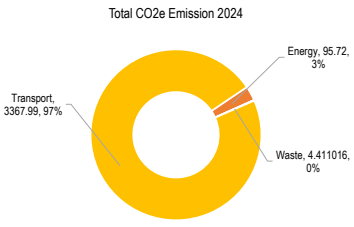
| Emission Source | 2024 GHG Emissions ($tCO_{2e}$) | % Change GHG Emissions vs. 2023 | 2023 GHG Emissions ($tCO_{2e}$) |
|---|---|---|---|
| Energy | 95.72 | +14.6 | 83.54 |
| Waste | 4.41 | -2.2% | 4.50 |
| Transport | 3,367.99 | -0.71% | 3,392.24 |
| Total GHG Emissions | 3,468.13 | -0.35% | 3,480.29 |
| kg $CO_{2e}$/ attendee | 32.72 | -1.24% | 33.15 |

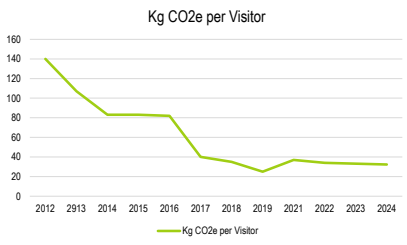
## LOW CARBON OBJECTIVES - GHG EMISSIONS:

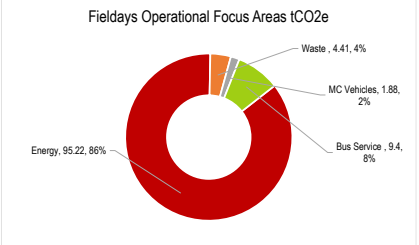
### OBJECTIVE 1: 2024

- *Lower emissions per visitor by 1% v 2023 levels.*

Emissions per visitor reduced 1.24% in 2024 to record 32.72 kilograms / visitor compared with 33.15 kgs / visitor in 2023. As detailed in the graphics below, transport emissions continue to dominate the profile whilst the important ratio of $CO_{2e}$ per attendee continues to be well controlled.



## OBJECTIVE 2: Ongoing

- *Focus on areas that Fieldays can control. (Energy, internal transportation, waste management and water)*

Environmental Impact Areas Controllable by Fieldays

| Energy Emission Source | 2024 Activity Data | % Change Activity Data vs. 2023 | 2024 GHG Emissions ($tCO_{2e}$) | % Change GHG Emissions vs. 2023 | 2023 Activity Data | 2023 GHG Emissions ($tCO_{2e}$) |
|---|---|---|---|---|---|---|
| Total Electricity | 158,282 | +7.95% | 10.70* | +25.3% | 146,626 | 8.55* |
| Total Diesel | 25,109 | +36.6% | 68.05* | +36.6% | 18,383 | 49.82* |
| Total Petrol | 1423 | +38.2% | 3.50* | +38.3% | 1029 | 2.53* |
| Total LPG | 4,538 | -40.8% | 13.47 | -40.5% | 7,624* | 22.65* |
| Total Energy GHG Emissions | | | 95.72 | +14.6% | | 83.54* |

| Waste Emission Source | 2024 Activity Data | | | | 2024 GHG Emissions ($tCO_{2e}$) | | 2023 Activity Data | | 2023 GHG Emissions ($tCO_{2e}$) |
|---|---|---|---|---|---|---|---|---|---|
| | Total weight (kg) | % Change vs. 2023 kg at processing | Total volume $m^3$ at gate | Total volume $m^3$ at processing | | % GHG Change vs. 2023($tCO_{2e}$) | Total weight (kilogram) | Total volume (cubic metre) | |
| Landfill | 38,026 | -2.2% | 513.3 | 564 | 4.41 | -2.0% | 38,868 | 519 | 4.50 |
| TOTAL Waste | 102,395 | +34% | 1344.8 | 1,284 | | | 76,100 | 1,423 | |
| TOTAL Recycling/ Composting | 63,359 | +73% | 831.5 | 729 | | | 37,232 | 904.66 | |
| Diversion Rate | 62.9% | | 61.8% | 56.3% | +28% | | 49% | 64.5% | |

| Water Meter | 2024 Activity Data ($m^3$) | Data Source | % Change m3 vs. 2023 | 2023 Activity Data ($m^3$) |
|---|---|---|---|---|
| River process (28) | 724.9 | Company Records | -15.7% | 860 |
| 190-180 MC Rd (5) | 6,081 | Company Records | -0.7% | 6,123 |
| Wool Shed (5-9) #110199105 | 4,364 | Company Records | +>100% | 515 |
| Meter ID:06M127635 LHS of farm driveway | 68 | Company Records | -9.3% | 75 |
| Meter ID: 06M127616 - (Gate 3) | 1 | Company Records | -83% | 6 |
| Meter ID: 17MC225038 - NEW 2 meters in same box opposite 366 MCR | 1,102 | Company Records | +100% | - |
| TOTAL | 12,341 | | +62.8% | 7,579 |

**Recalculated due to changed emission factor, and, or data changes.*

# ENERGY OBJECTIVES: Overview

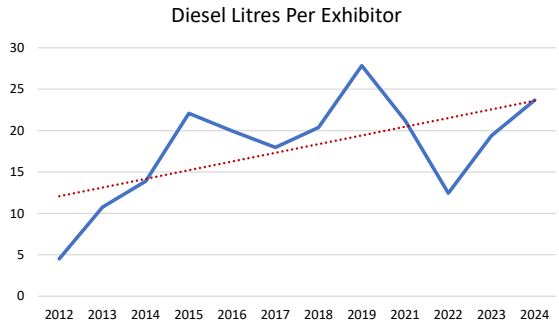
## OBJECTIVE 1:

- *Invest in on-site alternative energy solutions, establish a renewable energy hub on site.*

### SPECIFIC ENERGY OBJECTIVES (DIESEL)

Diesel litres consumption per exhibitor averages 17.84 litres since 2017.

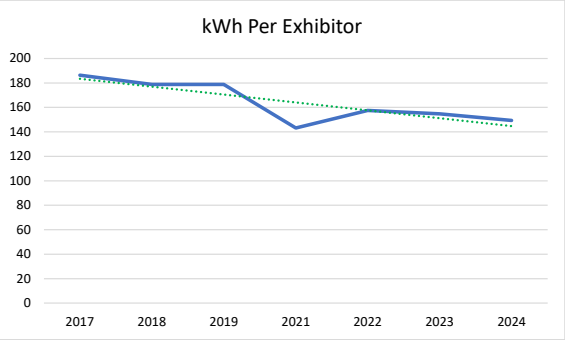
2024 litres consumed was 23.69 litres per exhibitor. Trendline negative.



## SPECIFIC ENERGY OBJECTIVES (ELECTRICITY)

Average Electricity kwh consumption per exhibitor averages 164 kWh since 2017.

2024 kWh consumption was 149 kwh per exhibitor. Trendline positive.




### ACTIONS:

Identify areas that could be operated from appropriately sized solar systems, e.g. ticket office, pumps, etc.

Trial 'selected' solar system or energy storage systems for specific locations.

# WASTE OBJECTIVES Overview

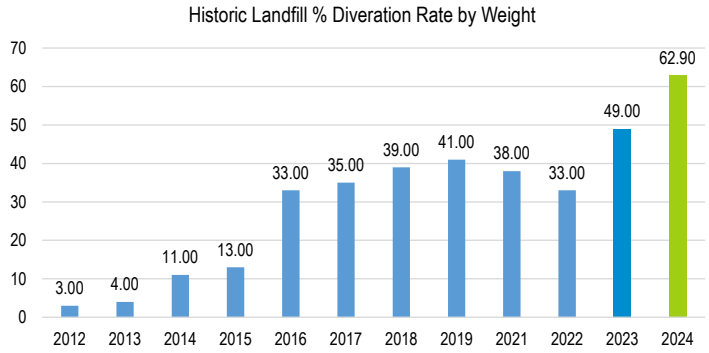

## OBJECTIVE 1: 2024 Achieved

- *Divert 50% of all waste from landfill.*

Improved weight data from the contractor closes the gap when compared with the 'at gate' volume driven diversion rates. Actual contractor weight diversion rate improves from 49% last year to reach 56.3% and when combined with material sent to other disposal channels delivers a positive 62.9%. Trendline Positive

## OBJECTIVE 2: ONGOING

- *Maintain a landfill diversion rate of 65% or more ( with recognition of national challenges in the waste diversion landscape around Aotearoa)*




| | 2024 Activity Data | | | | 2024 GHG Emissions ($tCO_{2e}$) | | 2023 Activity Data | | 2023 GHG Emissions ($tCO_{2e}$) |
|---|---|---|---|---|---|---|---|---|---|
| | Total weight (kg) | % Change vs. 2023 kg at processing | Total volume $m^3$ at gate | Total volume $m^3$ at processing | | % GHG Change vs. 2023($tCO_{2e}$) | Total weight (kilogram) | Total volume (cubic metre) | |
| **Landfill** | 38,026 | **-2.2%** | 513.3 | 564 | **4.41** | **-2.0%** | 38,868 | 519 | **4.50** |
| **TOTAL Waste** | **102,395** | **+34%** | 1344.8 | 1,284 | | | **76,100** | 1,423 | |
| **TOTAL Recycling/ Composting** | **63,359** | **+73%** | 831.5 | 729 | | | **37,232** | 904.66 | |
| **Diversion Rate** | **62.9%** | | **61.8%** | **56.3%** | **+28%** | | **49%** | **64.5%** | |

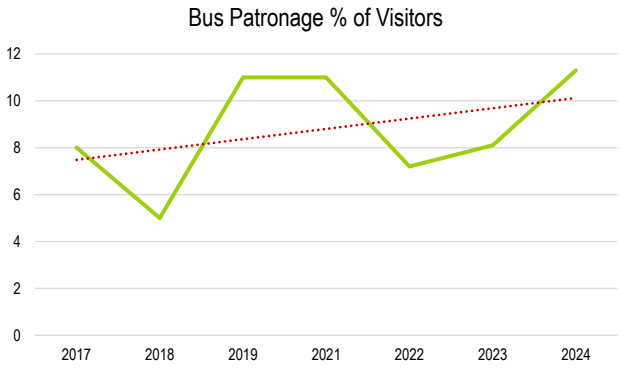

9

# TRANSPORT OBJECTIVES Overview


## OBJECTIVE 1: 2024

- *Lift bus patronage to 15%of total visitor numbers.*

Bus patronage in 2024 recorded an increased level of 11.5% of all visitors, an increase from 8.1% last year. Despite not reaching the targeted percentage of visitors, passenger numbers increased on the back of greater visitor numbers and slowly shows signs of reaching the 15% target.




## OBJECTIVE 2: ONGOING

- *Continue to promote and incentivise alternative options for transport and limit the environmental impact of travel to Fieldays.*

# INTRODUCTION


Sustainability and environmental concerns are becoming increasingly important amongst event attendees and stakeholders. The management team at New Zealand National Fieldays Society has acknowledged these concerns and has committed to playing their part in bringing more sustainable events to New Zealand.

For 12 years The New Zealand Agricultural Fieldays event (Fieldays), held over four days at Mystery Creek in Hamilton New Zealand, has incorporated sustainable event management into the event planning and staging.

The Instep Sustainable Event Programme (ISEP) follows international standard ISO 20121 which includes monitoring of sustainability metrics and calculation of greenhouse gas (GHG) emissions, or a carbon footprint as it is commonly referred to. Fieldays is currently an ISEP certified sustainable event.

Benchmarking between past Fieldays' events and other Mystery Creek events is now an established way to gauge each event's progress against New Zealand National Fieldays Society's best practice for sustainability.

## **BACKGROUND:** New Zealand National Agricultural Fieldays

The New Zealand National Agricultural Fieldays event is an annual international agricultural show held in Hamilton, New Zealand.

Fieldays exhibits cutting-edge agricultural technology, innovations and developments in the agriculture and farming industries. As a non-profit organisation, any surplus generated from the event, or from hosting other events on site, is invested in further development of the property, venues and facilities, and charitable purpose along with advancing agriculture.

This model has seen the event grow from strength to strength with continued support from both primary industry and government.

Fieldays is recognised as a crucial date in the New Zealand agricultural calendar and generates both local and international business growth opportunities.

## **BACKGROUND:** Sustainable Events

Increasingly, event organisers have recognised that staging an event can impact the environment in various ways, and many have embraced the challenge of running their event in the most sustainable way possible.

There are many definitions of the word “sustainable”. In terms of our natural environment, a sustainable event is one that ensures resources are used in such a way that they will remain available for others to use and enjoy. The key goal when undertaking a sustainable event is that environmental impact areas are identified and monitored so that strategies can be put in place to manage these areas in future, and ultimately reduce their impact.

As part of a sustainable event, a carbon footprint is calculated. A carbon footprint is a way of quantifying the amount of GHG emissions an individual, organisation or event is responsible for.

It is widely recognised that global emissions of the six GHGs are responsible for increasing the greenhouse effect in the atmosphere, and causing potentially dangerous levels of climate change.

To calculate a carbon footprint, all possible sources of GHG emissions must first be identified. Then activity data relating to the source is collected and the amount of GHG calculated using published emission factors. Emissions from all sources are then added together to give a total carbon footprint, or carbon emission profile, expressed in carbon dioxide equivalent or $CO_{2e}$.

Instep provided independent monitoring at Fieldays 2024. Due to the size of the event and a long lead-up period by staff and exhibitors, data is taken from sources monitored for the entire month of June. This covers Mystery Creek staff activities, exhibitor pack-in and pack-out, site planning and post-event waste clearing.

Data collected includes direct readings from meters on fuel tanks, invoices from suppliers, on-site observations and surveying. This data has been used to calculate GHG emissions for the event and recommend reduction measures for future events.

Instep follows the internationally recognised ISO 14064-1[1] to calculate carbon emissions and ISO 14064-3[2] to undertake quality assurance checks.

Emission factors used in calculations are selected based on the best currently available. Additional information on quality assurance can be found in the accompanying Verification Report.

Sustainable event planning and reporting is assessed against the internationally recognised ISO 20121.[3]

THERE ARE 6 GREENHOUSE GASES: $CO_2$, $CH_4$, $N_20$, HFCS, PFCS & $SF_6$. EMISSIONS ARE STANDARDISED AND REPORTED AS $CO_{2E}$, OR CARBON DIOXIDE EQUIVALENT

1: ISO 14064-1 Specification with guidance at the organisation level for quantification and reporting of GHG emissions and removals.
2: ISO 14064-3 Specification with guidance for the validation and verification of greenhouse gas assertions.
3: International Standard for Organisation 20121 - Event Sustainability Management Systems

# SUSTAINABLE EVENT PROGRAMME

## ENVIRONMENTAL IMPACT AREAS

The Environmental Impacts of Fieldays 2024 were separated into the following areas:

- Energy*
- Waste* & Recycling
- Transport*
- Suppliers & Materials
- Water
- Attitudes & Legacy
- GHG Emissions

Objectives are set within each Environmental Impact Area (EIA) to direct efforts and rate success.
A breakdown of the EIAs monitored within event boundaries, and the objectives set for Fieldays, are listed in Table 1.

- Fieldays is committed to sustainable event management across all areas of event planning and staging

- Fieldays aims to showcase excellent environmental stewardship as an example to New Zealand's agricultural industry improving the management of event sustainability by monitoring environmental impacts that can be reduced in future years

- The New Zealand National Fieldays society aims to be a leader in staging sustainably managed events

- Recent investments in dedicated sustainability staff has resulted in a significant increase in focus and support in the sustainability messaging and initiatives to all stakeholders. This has resulted in a huge shift in environmental and sustainability appreciation and actions across all areas of ex-hibitors, visitors, partners and suppliers

- These rewards can be seen across various scopes, but especially in the waste management and minimization programmes and initiatives

* These areas contribute directly to GHG emission calculations

Table 1: Objectives

## Objectives

✓ Achieved
– In Progress
! Not achieved

### Energy

– 1. Invest in onsite alternative energy solutions to provided NFS with a renewable energy hub on site

### Waste

✓ 1. Maintain a landfill diversion rate of 65% or more ( with recognition of national challenges in the waste diversion landscape around Aotearoa)

### Transport

– 1. Continue to promote and incentivise alternative options for transport and limit the environmnetal impact of travel to Fieldays

### GHG Emissions

– 1. Lower emissions by 3 - 5%.

## BOUNDARY

A boundary that includes event areas which will contribute to GHG emissions is decided on.
Setting the boundary for an event can be difficult as events are often made up entirely of indirect GHG emission sources.

Indirect sources are those which event organisers do not directly own or control, but have indirectly contributed to. For example, event organisers usually hire venues to stage their event, the operation of which may be left up to the venue owner as part of the lease agreement. This would be an indirect emission source.
This is in contrast to direct GHG emission sources, which are those that event organisers own or control. For example company-owned cars driven by event organisers.

Boundaries for Fieldays 2024 are depicted in Figure 1.

## BENCHMARKING

Benchmarking is a valuable tool for Fieldays to compare sustainability strategies employed at the various events held there, and the differences in challenges and successful outcomes at each.

Each event is unique in size, audience and challenges and this needs to be taken into account when making comparisons, however, benchmarking in this way allows lessons learned to be shared and can set a standard of best practice for sustainable events at Mystery Creek.

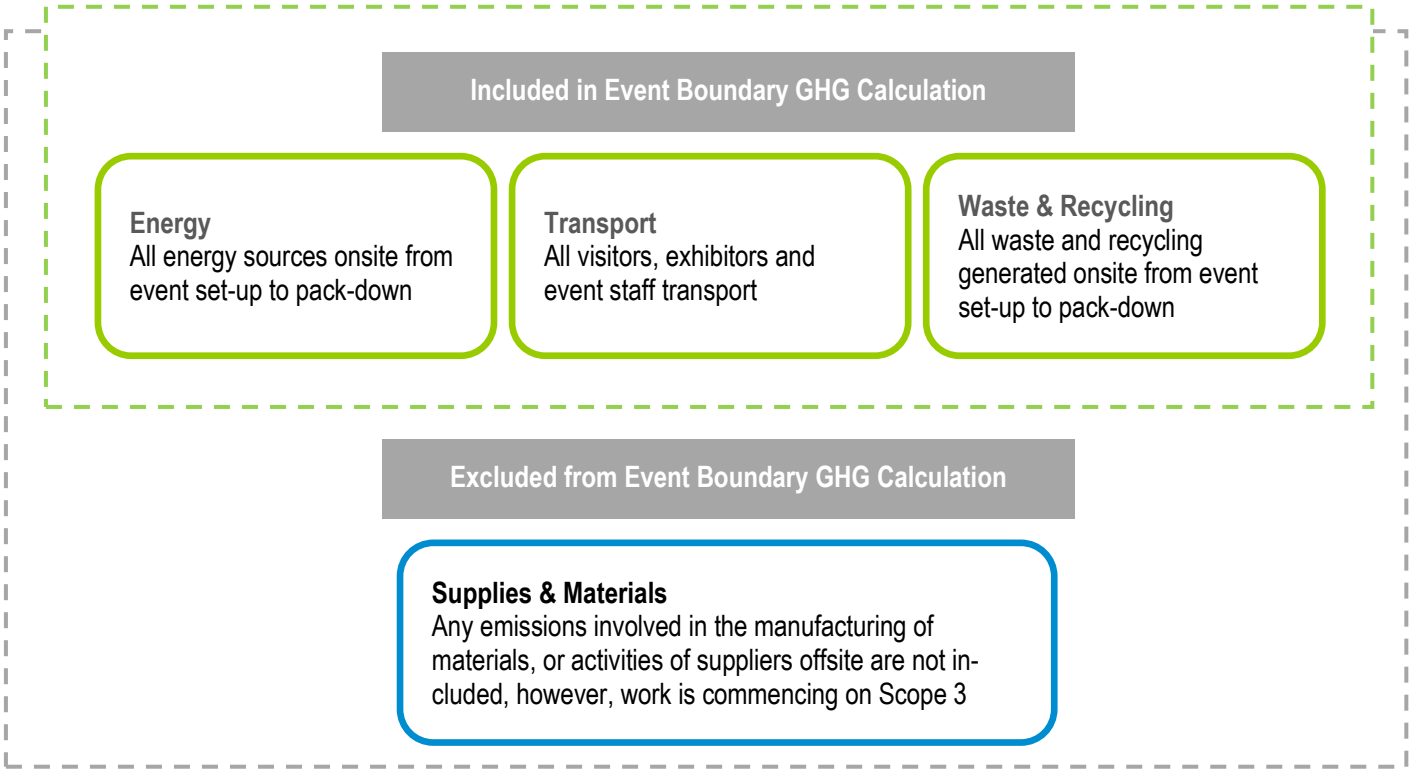



Figure 1: Event Boundaries Fieldays 2024

# METHODOLOGY

Instep provided independent monitoring throughout Fieldays 2024 and put together the calculations included in this report.

Instep uses International Standard 20121 for Event Sustainability Management Systems during event planning phases, and the internationally recognised ISO 14064-1 to calculate GHG emissions. Emission factors used in calculations are the most current available for the particular source.

The second stage involves collecting data (both quantitative and qualitative) throughout the event, so that conclusions can be drawn around whether objectives have been met.

In order to do this, Instep staff attend the event while it is staged, collecting data independently of organisers. This is important to verify the quality and independence of the data. This is then backed up with other secondary data including energy bills and contractor invoices.

For GHG emissions in particular, strict protocols around calculation are in place. Instep uses the internationally recognised ISO 14064-1 to calculate GHG emissions and ISO 14064-3 to verify.

Compliance against ISO 20121 is assessed post event to certify the event as a sustainable event.

## BASE YEAR

A base year is a year for which there is good quality GHG and sustainability data available that can be used as a baseline to monitor future reduction success. Fieldays' base year is 2012; the first year an environmental monitoring programme was put in place. Comparisons are also made between the more recent previous events.

CALCULATION METHODOLOGY ACTIVITY DATA X EMISSION FACTOR = GREENHOUSE GAS EMISSIONS, TONNES CARBON DIOXIDE EQUIVALENT, (T $CO_{2E}$ )

# GHG

## Emission Sources

"Greenhouse Gas Emissions from an event come from a wide range of sources including suppliers, attendees and hired equipment"

# ENERGY

**158,282 Kilowatts Electricity**
**26,532 Litres Fuel**
**4,538 Kilograms LPG**
**95.72 tonne $CO_{2e}$**

Energy consumed in equipment is central to any event. Energy emission sources at Fieldays Mystery Creek site include electricity consumed in event buildings over event dates, as well as Mystery Creek office electricity in the month leading up to the event.

Diesel and petrol use is from event vehicles (utes, forklifts etc.), and generators around the site that are refueled at an on-site tank, as well as being used to run portable lighting towers, particularly in car parks. LPG includes the use of LPG in tanks brought on-site by food stalls and exhibitors, as well as use by the Fieldays restaurant and other catering requirements.

Data is collected during the event through surveys and meter readings; this data is then verified and post-event energy invoices are analysed. Details of all activity data for the energy areas, the associated calculated emissions, and the percentage change from last year's results are shown on the following page in Table 2.

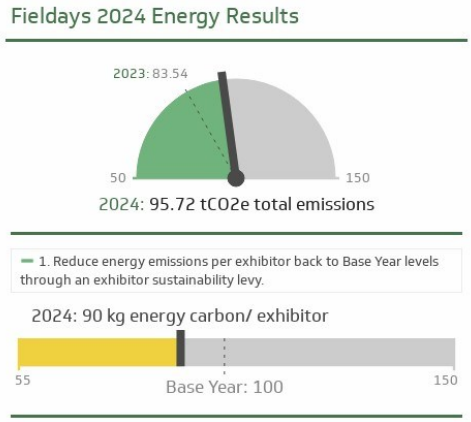
Total 2024 Fieldays emissions from all energy sources are 95.72 tonne $CO_{2e}$, a 14.5% increase against the 2023 event.

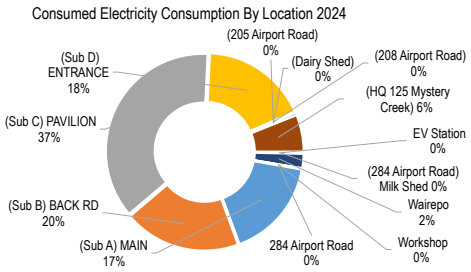
As detailed in the graphics, diesel continues to contribute the largest quantity of $CO_{2e}$ emissions to the energy profile at 68.05 $tCO_{2e}$ or 71%.

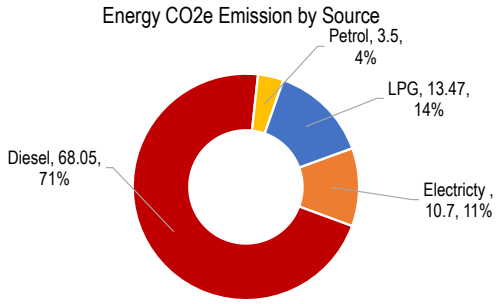
LPG at 13.47 $tCO_{2e}$ or 14%, records a significant 40% reduction in total consumption when compared with 2023.

Whilst Bulk MCEC LPG tank consumption increased by 93% from 168 kg last year to 325 kg, a significant reduction was recorded across the exhibitor sites with a 62% reduction recorded, to record 1,998 kg compared with 5,251 kg last year. Whilst wet, the temperature was higher in 2024. A note was made of the increase in use of wood burning heaters. X Site, the gas bottle hirers, also reported a 38% reduction in hireage in 2024.

Consumed Electricity increased in both kwh and associated $CO_{2e}$ emissions. Emission factor changes impacted the increase in associated $CO_{2e}$ emissions.



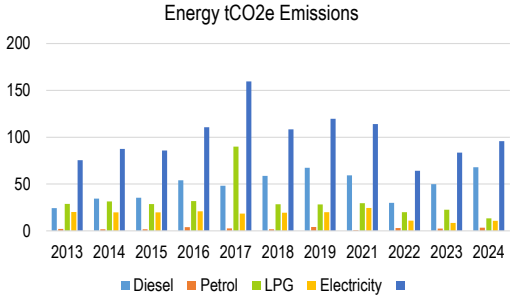



Table 2: Energy Emissions & Use Fieldays 2024

| | Emission Source | Data Source | 2024 Activity Data | % Change Activity Data vs. 2023 | 2024 GHG Emissions ($tCO_{2e}$) | % Change GHG Emissions vs. 2023 | 2023 Activity Data | 2023 GHG Emissions ($tCO_{2e}$) |
|---|---|---|---|---|---|---|---|---|
| **Electricity** | | | **kWh** | | **t CO2e** | | **kWh** | **t CO2e** |
| | Sub A event buildings | Meter readings | **26,245** | **+3.8%** | **1.55** | **+14.0%** | **27,290** | **1.36** |
| | Sub B event buildings | Meter readings | **30,748** | **+36.2%** | **1.81** | **+61.6%** | **22,575** | **1.12** |
| | Sub C event buildings | Meter readings | **58,494** | **+9.7%** | **3.45** | **+30.2%** | **53,315** | **2.65** |
| | Sub D event buildings | Meter readings | **28,002** | **-5.7%** | **1.65** | **+11.5%** | **29,708** | **1.48** |
| | Mystery Creek Office | Meter readings | **9,600** | **+17.6%** | **0.57** | **+42.5%** | **8160** | **0.40** |
| | Other Sites | Meter readings | **4,890** | **-6.0%** | **0.29** | **+16.0%** | **5,203** | **0.25** |
| | EV Station | Meter readings | **302** | **-7.9%** | **0.02** | **+11.1%** | **328** | **0.018** |
| | **Total Electricity** | | **158,282** | **+7.95%** | **10.70** | **+25.1%** | **146,626** | **8.55*** |

*NB: The total electricity GHG emissions include an additional 1.361 $tCO_{2e}$ to account for transmission losses.*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Diesel** | | | **L** | | **tCO2e** | | **L** | **t CO2e** |
| | **Total Diesel** | Invoices | **25,109** | **+36.6%** | **68.05** | **+35.6%** | **18,383** | **49.82** |
| **Petrol** | | | | | | | **L** | |
| | **Total Petrol** | Invoices | **1,423** | **+38.2%** | **3.50** | **+38.3%** | **1,029** | **2.53** |
| **LPG** | | | | | | | **kg** | |
| | Onsite tank | Gas invoice | **325** | **+92.7%** | 0.97 | **+92.8%** | **168** | 0.51 |
| | Food stalls | Onsite survey | **2,215** | **+0.4%** | 6.57 | **+0.4%** | **2,205** | 6.54 |
| | Exhibitors | Onsite survey | **1,998** | **-61.9%** | 5.93 | **-61.9%** | **5,251** | 15.6 |
| | **Total LPG** | | **4,538** | **-40.77%** | **13.47** | **-40.52%** | **7,624** | **22.65** |
| | **TOTAL GHG** | | | | **95.72** | **+14.6%** | | **83.54** |

## ENERGY OBJECTIVES:

### OBJECTIVE :

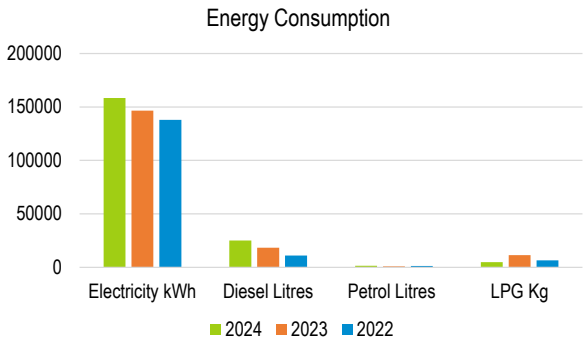
*Invest in onsite alternative energy solutions to provide NFS with a renewable energy onsite.*

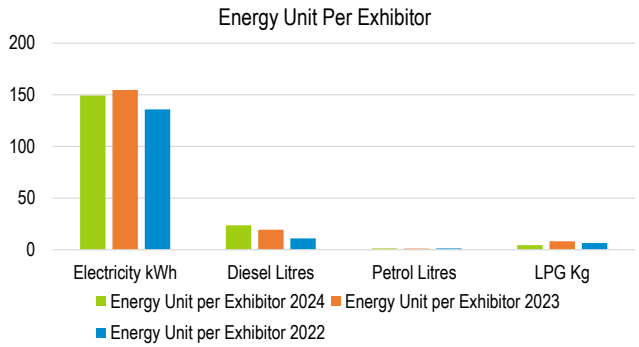
Although energy neutralisation was not pursued in 2024, the Sustainable Exhibitor Award and general sustainability actions were well received with an increasing number of exhibitors both small and large. The ‘trial introduction’ period for these initiatives has proven that environmental aspects of delivering an international event is well understood, and plans are now in place to re-vamp the entire environmental and sustainability programme delivery to the exhibitors. This positive initiative by management, initially labelled as Sustainable Exhibitors Framework (SEF), will potentially deliver long running benefits across all environmental and sustainability areas for all stakeholders

# ENERGY BENCHMARKNG:

Table 3: Energy Benchmarking

| Energy Benchmarking | | | | | |
|---|---|---|---|---|---|
| | **Fieldays 2024** | **Fieldays 2023** | **Fieldays 2022** | **Fieldays 2021** | **Fieldays 2019** |
| **Total Energy tCO2e** | 95.72 | 83.54 | 65.26 | 113.89 | 119.86 |
| **Total kWh Electricity** | 158,282 | 146,626 | 137,959 | 150,354 | 191,152 |
| **Total LPG kg** | 4,538 | 7,624 | 6,590 | 9,726 | 9,313 |
| **Total Liquid Fuel Ls** | 26,532 | 19,412 | 12,426 | 22,636 | 26748.5 |



# WASTE & RECYCLING

**102,395 Kilograms Total Waste**
**64,369 Kilograms Recycling/ Compost**
**62.9% Landfill Diversion**
**4.41 tonne $CO_{2e}$**


Consumption in general, and the production of waste, has numerous negative environmental impacts. In particular, large volumes of waste sent to landfill consume resources and contribute to GHG emissions through waste breakdown and the emission of methane gas.

Waste diversion through the utilisation of recycling, re-purposing and compost bins is one of the easiest ways to encourage attendee participation and education in the event's sustainability journey.

The long-running waste reduction programme continues to deliver positive results. 2024 saw the continuation of the identification and implementation of structured disposal pathways. The main objective, to reduce the impact by both cost and emission-generation from material going to landfill, continues. Whilst 2024 saw an increased volumed of total waste, the large increase in cardboard and wood recycling assisted in increasing the landfill diversion rate reported by the contractor against last year. Landfill volumes reduced by a modest but important 2.2% against 2023, again assisting to deliver a 62.9% landfill diversion rate, up from the contractors rate of 49% last year.

Table 4: Waste Emissions & Generation Fieldays 2024

| | 2024 Activity Data | | | | 2024 GHG Emissions ($tCO_{2e}$) | | 2023 Activity Data | | 2023 GHG Emissions ($tCO_{2e}$) |
|---|---|---|---|---|---|---|---|---|---|
| | Total weight (kg) | % Change vs. 2023 kg at processing | Total volume $m^3$ at gate | Total volume $m^3$ at processing | | % GHG change vs. 2023($tCO_{2e}$) | Total weight (kilogram) | Total volume (cubic metre) | |
| **Landfill** | 38,026 | -2.2% | 513 | 564 | **4.41** | -2.2% | 38,868 | 519 | **4.50** |
| **General Recycling 1, 2 & 5** | 950 | +52% | 23.6 | 1.6 | | - | 625 | 18 | |
| **Cans** | 861 | -2.2% | 25 | | | | | 35.2 | |
| **Cardboard Recycling** | 35,778 | +78% | 527.5 | 498 | | | 20,038 | 600 | |
| **Glass Recycling** | 2,800 | +15% | 6.4 | 12.8 | | | 2,430 | 6.8 | |
| **Wood Recycling** | 18,000 | +>100% | 180 | 108 | | | 8,300 | 186.9 | |
| **Organic Composting** | 5,350 | -9.4% | 35 | 0 | | | 5,903 | 12 | |
| **Other Re-purpose** | 630 | - | | 0 | | | | 13.5 | |
| **TOTAL Waste** | **102,395** | +34% | 1,423.66 | 1,284 | | | **76,100** | 1,423 | |
| **TOTAL Recycling/ Composting** | **64,369** | +73% | 904.66 | 720.2 | | | **37,296** | 580.5 | |
| **Diversion Rate** | **62.9%** | | **63.5%*** | **56.1%** | +28% | | **49%** | | |

# WASTE OBJECTIVES:

## OBJECTIVE 1: ONGOING

*Maintain a landfill diversion rate of 65%, or more ( with recognition of national challenges in the waste diversion landscape around Aotearoa)*

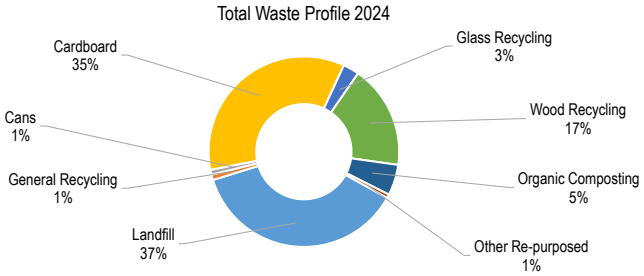
The 50% diversion goal set for 2024 has been achieved based on both processing weights (62.9%) and volume analysis (61.8%). This success is a result of a number of initiatives with the most successful being identification and utilisation of appropriate disposal channels for non landfill waste. Challenges still remain with identifying disposal pathways for the ever-changing packaging and food serve-ware material due in part to a number of stakeholders who naturally have their own interpretation, desire, and business strategies that may not fit totally within perceived best options for Fieldays. However, this should not dilute the success of this long running programme, and credit must go to all involved in achieving a very respectable level of landfill avoidance from such a large and somewhat complex event.

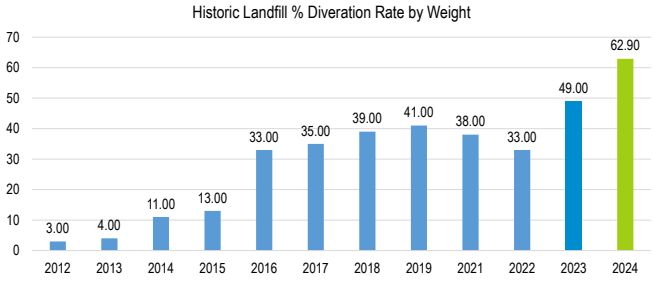
## OBJECTIVE 2: ONGOING

*Introduce a detailed minimisation plan (WMP) which included 'no go areas' for serve ware and packaging.*

This objective is on going and in line with regulatory changes, both locally and nationally. Due to limited appropriate disposal channels, a slight reduction in composting material sent to the commercial composting facility was recorded from the 5,903 kg last year, to record 5,350 in 2024. However, increased visitor numbers ensures that the important weight per visitor ratio reduces from 0.056 kg /visitor last year to 0.050 kg in 2024.


LANDFILL DIVERSION RATE 'AT THE GATE' RECORDED 61.8% BASED ON VOLUME, WHICH WAS ADJUSTED TO 62.9% AFTER ANAYSIS OF CONTRACTOR DATA. $TCO_{2E}$ EMISSIONS WERE CALCULATED BASED ON 62.9% DIVERSION RATE



## WASTE DISPOSAL CHANNELS

| Waste Management | Closed Loop | Green Gorrilla |
|---|---|---|
| Landfill - Landfill Site | Soft Plastics-Saveboard | Organic & Approved packaging - Envirofert |
| Cardboard - Oji FB | | |
| Plastic 1,2 &5- ELS | | |
| Aluminum Cans - Sims | | |
| Glass - Visy | | |
| Timber WM -? | | |
| Steel/ Metal - Sims/Global Metals | | |

## WASTE GOALS BEYOND 2024:

Utilising achievements and outcomes of 2024 Waste Objectives allows Fieldays to set future sustainability goals that will have maximum impact.

## WASTE BENCHMARKING WITH BASE YEAR.

The base year saw three disposal channels for waste created at Fieldays. This was driven by landfill waste which made up between 96 to 98% of total waste generated. The balance was cardboard, with a small amount of glass.

The base year delivered a landfill diversion rate of between 3 and 4%. The graphic below details the disposal channels today which delivers a 62.9% diversion rate.

| Waste Benchmarking | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Fieldays 2024** | **Fieldays 2023** | **Fieldays 2022** | **Fieldays 2021** | **Fieldays 2019** | **Fieldays 2018** | **Fieldays 2012 (Base Year)** |
| **GHG Emissions ($tCO_{2e}$)** | 4.41 | 4.50 | 5.05 | 18.61 | 10.48 | 23.74 | 24.5 |
| **Total Waste (kg)** | 102,395 | 76,100 | 61,726 | 96,987 | 73,534 | 87,839 | 56,598 |
| **Total Landfill Diversion Material (kg)** | 37,526 | 37,29 | 19,930 | 37,164 | 29,859 | 33,879 | 1,248 |
| **Diversion Rate** | 62.9% ** | 64.5% * 49.0** | 60%* 33%** | 38%** | 41%** | 39%** | 3-4%** |

** Volume Landfill Diversion Rates calculated using contractor invoice weights.
* Volume Landfill Diversion Rates calculated using 'at the gate' volumes.

# TRANSPORT

**3,960,903 pkm** Air Travel
**13,494,935 km** Vehicle Travel
**5,825 km** Bus Service
**3,367.99 tonne $CO_{2e}$**

The Impact of Transport can be one of the largest in terms of event GHG emissions as the scope of this source extends to event visitors, exhibitors and organisers.

2024 saw increased visitor numbers including international travellers. Emission factors used for air travel (domestic, short haul and long haul) assist in emission reductions across all air travel activity. The domestic travellers' survey indicates a reduction in air travel for 2024.

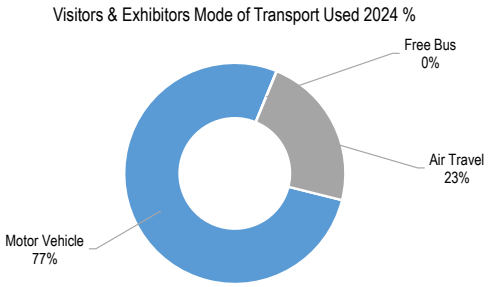
Visitor surveys again reported that visitors travelling from the Waikato region remaining below 10%, resulting in increased travel from outside the region. The internal exhibitor survey indicated slightly healthier results; by including Hamilton into the Waikato region the findings indicated 28% of exhibitors were from the Waikato region.

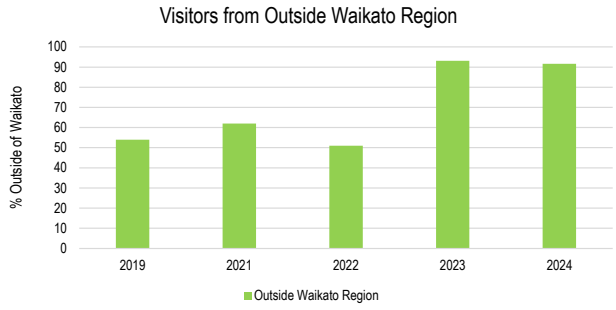
Transport emissions have the greatest impact on Fieldays' footprint with the 2024 transport footprint recording 3,367.99 $tCO_{2e}$, 0.71% lower than the 2023 transport emissions.

Surveying data indicates a changing vehicle spread with small vehicle travel distances reducing by 33%, whilst medium and large vehicles increased; interestingly, large vehicle kilometres travelled for exhibitors reduced, while a significant increase in medium sized transport was recorded. An increase was noted in EV and hybrid-use across the board.

These changes, when coupled with emission factor adjustments to reflect efficiency gains of post 2015 vehicles, assist in delivering reduced $tCO_{2e}$ emissions of 3,367.99 $tCO_{2e}$ compared with 3,392.24 $tCO_{2e}$ in 2023. Domestic visitors' total $tCO_{2e}$ emissions increased by 7.7%.

Mystery Creek staff's travel, although low, increased by over 100% due to air travel activity, whilst international and exhibitor total emissions reduced by 12.8% and 31.2% respectively.

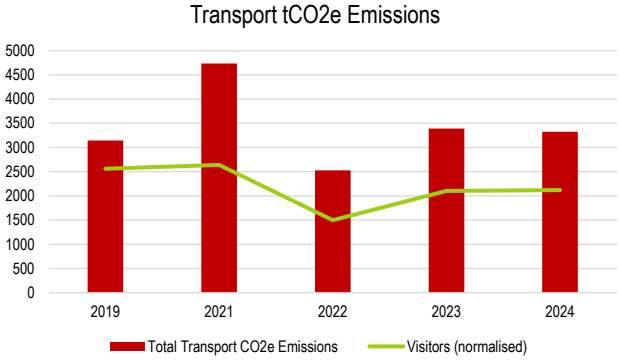



Table 5: Transport GHG Emissions Fieldays 2024

| | Emission Source | 2024 Activity Data | % Change Activity Data vs. 2023 | Data Source | 2024 GHG Emissions ($tCO_{2e}$) | % Change tCO2e vs. 2023 | 2023 Activity Data | 2023 GHG Emissions ($tCO_{2e}$) |
|---|---|---|---|---|---|---|---|---|
| **Visitors** | Air Travel (pkm) | **945,147** | **-51.3%** | survey | **155.0** | **-38.6%** | **1,942,073** | **252.49** |
| | Bus Service (km) | **5,825** | **-32.5%** | operator information | **6.34** | **-32.5%** | **8,706** | **9.40** |
| | Small Car (km) | **971,467** | **-32.6%** | survey | **160.29** | **-30.0%** | **1,441,235** | **229.16** |
| | Medium Car (km) | **5,125,703** | **-46.4%** | survey | **953.38** | **-39.5%** | **9,563,337** | **1577.95** |
| | Large Vehicle (km) | **5,336,997** | **+>100%** | survey | **1,318.24** | **+>100%** | **1,818,381** | **449.14** |
| | EV – Hybrid | **709,171** | **-** | survey | **115.59** | **-** | **-** | **-** |
| | Helicopter (Ls) | **3036** | **+1.8%** | Supplier data | **6.83** | **+0.9%** | **3012** | **6.77** |
| | Jet Boat | **1500** | **+4.4%** | Supplier Data | **3.69** | **+4.5%** | **1437** | **3.53** |
| | **Total visitors travel** | | | | **2,719.36** | **+7.5%** | | **2,528.44** |
| **Mystery Creek Staff** | Air Travel (pkm) | **21,032** | **+100%** | travel records | **3.45** | **+100%** | **0** | **0** |
| | Staff Vehicles (Ls) | **738.64** | **-16.2%** | Company records | **2.66** | **+16.15%** | **881.17** | **2.29** |
| | **Total staff travel** | | | | **6.11** | **+>100%** | | **2.29** |
| **International Guests** | Air Travel (pkm) | **2,307,857** | **+9.5%** | contact list | **235.40** | **-12.8%** | **2,107,235** | **270.12** |
| | **Total international travel** | **2,307,857** | **+9.5%** | | **235.40** | **-12.8%** | **2,107,235** | **270.12** |
| **Exhibitors** | Air Travel (pkm) | **686,867** | **+>100%** | survey | **67.90** | **-63.9%** | **526,502** | **188** |
| | Medium Car (km) | **807,487** | **-30.9%** | survey | **150.19** | **+50.2%** | **437,623** | **99.99** |
| | Large Car (km) | **746,456** | **+>100%** | survey | **184.37** | **-35.8%** | **1,393,838** | **287.13** |
| | Truck (km) | **18,779** | **-63.8%** | survey | **4.64** | **-71%** | **59,736** | **16.00** |
| | **Total Exhibitors Travel** | | **+>100%** | | **407.10** | **-31.2%** | | **591.12** |
| **TOTAL** | | | | | **3,367.99** | **-0.71%** | | **3,392.24** |

## TRANSPORT OBJECTIVES:

- **OBJECTIVE 1: ONGOING**
- *Continue to promote and incentivise alternative options for transport and limit the environmental impact of travel to Fieldays.*

2024 offered even more opportunity to promote and incentivise shared transport due to efficiencies already highlighted with the bus service, giving people an option to avoid carpark congestion.

A review and brainstorm session is probably required to address the dilemma, where benefits are clearly understood but the persuasion point that will get people to leave their vehicles at home may not have been found yet.

| Transport Benchmarking | | | | | | |
|---|---|---|---|---|---|---|
| | **Fieldays 2024** | **Fieldays 2023** | **Fieldays 2022** | **Fieldays 2021** | **Fieldays 2019** | **Fieldays 2018** |
| **GHG Emissions ($tCO_{2e}$)** | 3,367.99 | 3,392.24 | 2,518.01 | 4,737.16 | 4,737.16 | 4,461.78 |
| **Largest Transport Impact** | Visitor 81% | Visitor 76% | Visitors 84% | Visitors 94% | Visitors 82% | Visitors 82% |
| **Air Travel Emissions** | 14% | 25% | 14% | 8% | 26% | 27% |
| **$kgCO_{2e}$/ Attendee** | 31.7 | 32 | 33 | 36 | 37 | 34 |

# TOTAL GREENHOUSE GAS EMISSIONS

## 3,468.13 Tonne $CO_{2e}$

Table 6: Total Greenhouse Gas Emissions Fieldays 2024

| Emission Source | 2024 GHG Emissions ($tCO_{2e}$) | % Change GHG Emissions vs. 2023 | 2023 GHG Emissions ($tCO_{2e}$) | % Change GHG Emissions vs. 2022 | 2022 GHG Emissions ($tCO_{2e}$) |
|---|---|---|---|---|---|
| Energy | 95.72 | +14.6% | 83.54 | +28.1% | 65.63 |
| Waste | 4.41 | -2.2% | 4.50 | -11.0% | 5.06 |
| Transport | 3,367.99 | -0.71% | 3,392.24 | +34.2% | 2,528.09 |
| Total GHG Emissions | 3,468.13 | -0.35% | 3,480.29 | +33.94% | 2,598.78 |
| kg $CO_{2e}$/ attendee | 32.72 | -1.24% | 33.15 | -2.14% | 34 |

Fieldays' carbon footprint is made up of all GHG emission sources that have been detailed in the previous sections of this report; energy, waste and transport. Whilst actions to reduce emissions need to be made within each of these three areas, the event's total carbon footprint, and the footprint intensity per visitor, act as an overall indicator of progress made towards sustainability goals.

## GHG EMISSIONS OBJECTIVES:

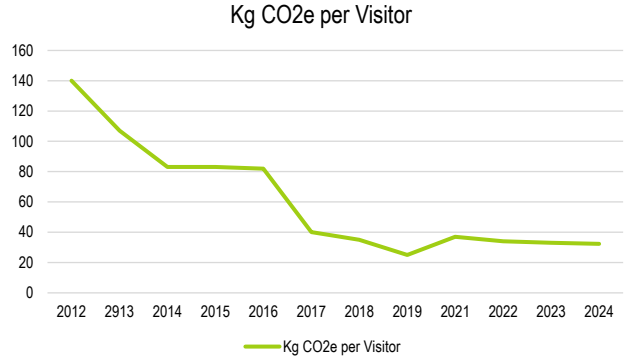
### OBJECTIVE 1: ONGOING

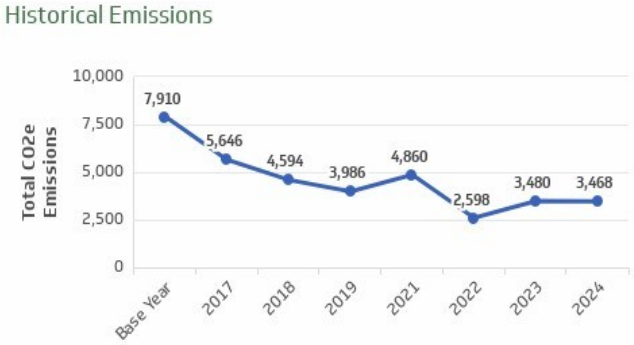
*Emissions reductions of between 3 - 5% .*

Emissions per visitor reduced 1.24% in 2024 to record 32.72 kilograms / visitor compared with 33.15 kgs / visitor in 2023. As detailed in the graphics below, transport emissions continue to dominate the profile whilst the important ratio of $CO_{2e}$ per attendee continues to be well controlled.

The 2024 emissions profile is similar to past years in that the dominant emission source is transport, at 97% of all emissions. Subtle changes in transport data and behavior is now becoming apparent with increased references to EV and hybrid vehicles, thus improving associated emission-generation. 2024 saw a reduction in $tCO_{2e}$ emissions in all areas except Energy. This again highlights the important focus points and areas that Fieldays' operational management can focus on.

.



# SUSTAINABILITY

## MEASURES

"These do not contribute to your GHG emissions but including these sources helps you manage and reduce your consumption of resources."

# SUPPLIERS & MATERIALS

## 55,722 A4 Sheets

Information sharing pre, and during Fieldays, is central to the smooth running and enjoyment of the event by all attending.

Over time, methods of sharing information have changed for Fieldays, with a download App making inroads into reducing the number of printed programmes. 2024 records a further 90% reduction compared with last year. Main changes are seen in the elimination of the Fieldays lift out supplement and reduced numbers of the Fieldays Focus Tabloid.

Other supplied materials, in particular cleaning and waste management materials, were monitored in 2021; unfortunately, at the time of writing this report data was not available for the current period and will be added when received.

Table 7: Materials Fieldays 2024

| Source | Data Source | 2024 Activity Data (A4 sheets equivalent) | % Change vs. 2023 | 2023 Activity Data (A4 sheets equivalent) |
|---|---|---|---|---|
| Volunteer Handbook | office data | 0 | - | 0 |
| Tickets | office data | 3,295 | -64% | 9,216 |
| Vehicle Passes/Hangers | office data | 427 | +33% | 322 |
| Fieldays Lift-out Supplement | office data | 0 | -100% | 302,268 |
| Fieldays Focus Tabloid | office data | 52,000 | -83% | 302,268 |
| Ricoh Copier/Printer | office data | 0 | -100% | 150 |
| Total # A4 sheets | | 55,722 | -90% | 614,224 |
| Ocean Care (clear foam soap) | | No Data | | No Data |
| Paper Towels - SC100C | | No Data | | No Data |
| Toilet Tissue - Large Rolls DJ2 | | No Data | | No Data |
| Black 2040L bin liners | | No Data | | No Data |
| Clear 240L bin liners | | No Data | | No Data |

*Paper and Publications is now included as a Sustainability Measure, meaning quantities are monitored without associated GHG emissions.*

# WATER CONSUMPTION

## 12,341 cubic metres

Water Conservation, and management within an event, is an integral part of sustainability. Whether an event is an indoor or outdoor venue, it will use clean water and produce waste water. An event may consume and dispose of metered water or impact on natural waterways.

Data quality improves with 4 main meter locations and continuing River offtake data.

Total water consumption increased by a significant 62.8% compared with last year.

As detailed in Table 8, the main contributors to this increase are locations at the Wool Shed and the new location of 17MC225038.

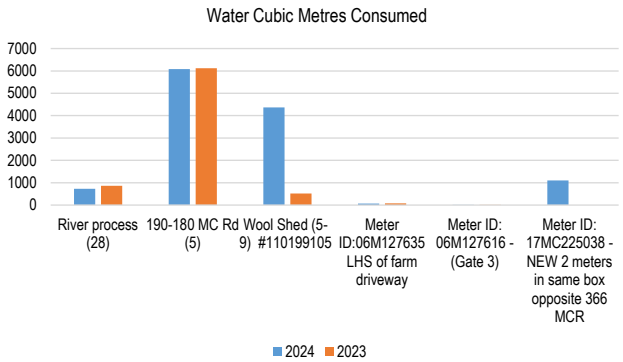
Whilst River offtake reduced by 15.7%, the Wool Shed increased by over 100% or 3449 cubic metres.

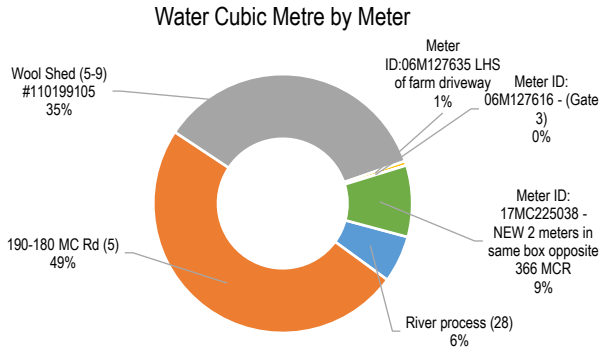
### OBJECTIVE 1: ONGOING

- *Commitment to educate stakeholders on why and how water conservation is important.*

Table 8: Water Consumption Fieldays 2024

| Water Meter | 2024 Activity Data ($m^3$) | Data Source | % Change m3 vs. 2023 | 2023 Activity Data ($m^3$) |
|---|---|---|---|---|
| River process (28) | 724.9 | Company Records | -15.7% | 860 |
| 190-180 MC Rd (5) | 6,081 | Company Records | -0.7% | 6,123 |
| Wool Shed (5-9) #110199105 | 4,364 | Company Records | +>100% | 515 |
| Meter ID:06M127635 LHS of farm driveway | 68 | Company Records | -9.3% | 75 |
| Meter ID: 06M127616 - (Gate 3) | 1 | Company Records | -83% | 6 |
| Meter ID: 17MC225038 - NEW 2 meters in same box opposite 366 MCR | 1,102 | Company Records | +100% | - |
| TOTAL | 12,341 | | +62.8% | 7,579 |



# ENVIRONMENTAL ATTITUDES

One of the indirect positive benefits from undertaking an Instep Sustainable Event Programme is the wider impact the event can have on the education and awareness of participants and stakeholders on sustainability issues.

Strategies and ideas around the environment and sustainability can be shared through communication with stakeholders, e.g. pre-event newsletters, on-site signage and through engagement in the sustainable event process such as active encouragement to recycle and feedback in surveying.

The attitudes of exhibitors in particular have seen clear positive change over the past 2 to 5 years, with 2024 witnessing a further jump in exhibitors' engagement and the desire to ensure they are in line with everyone's objectives, especially in the energy and waste areas.

Objectives are being set specifically in this area in 2025 and beyond in order to track and increase the positive influence Fieldays can have on the wider Waikato and New Zealand agricultural community.

Ideas for 2025 include:

- Continue to build on the Sustainable Exhibitor Award entries and marketing.
- Enhancing pre-event communication through a sustainability portal.
- Increasing benefits received by exhibitors who get on-board with Fieldays' sustainability initiatives e.g. no single use plastic, energy conservation etc.

# 2025

LOOKING AHEAD

"A reduction goal for the future is an essential component to reducing your emissions.  It allows progress to be tracked over time."

# REDUCTION GOALS


## FUTURE GOALS

Mystery Creek Events Centre Management is committed to aligning sustainability practices with the environmental concerns of the New Zealand agricultural community and leading by example when it comes to showcasing sustainable management.

Working towards the mid and long term goals first set in 2019 allows the event management team to continually improve upon their stewardship of this sustainable event and ensures Fieldays complies with ISO 20121 Sustainable Event certification.

## ENERGY

- Invest in onsite alternative energy solutions to provide NFS with a renewable energy hub onsite.
- Target a reduction in Diesel consumption.
- Target a reduction in Kwh electricity consumed.

## TRANSPORT

- Continue to promote and incentivize alternate options for transportand limit the environment impacts of travel to Fieldays
- Target the development electrify or non fossil fuel programme for Fieldays associated service vehicles.

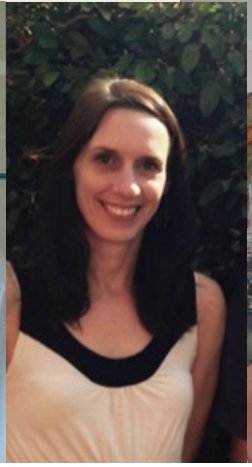
## WASTE

- Maintain a landfill diversion rate of 65% or more (with recognition of national challenges in the waste diversion landscape around Aotearoa).

## WIDER SUSTAINABILITY

Building on the Sustainable Exhibitor Award entries and marketing, a key initiative is being investigated to take the stakeholders environmental contribution to a new gold standard level by way of a Sustainable Exhibitor Framework (SEF), or similar.

# A LITTLE BIT ABOUT US


**By Joining the Instep Programme** you are making a conscious decision to do something positive about a global problem.

At Instep, we believe that without first understanding your own impacts, one cannot take the right action. We strongly believe that your individual awareness and action has a more positive impact on our environment than the purchasing of carbon 'offsets'.

Any effects of climate change cannot be reversed overnight, however, you may be surprised how small changes through the Instep programme can make a big difference to your own situation.

At Instep we like to look at the positive things you can do, and they might be easier than you think. Our experience has shown that if 'you measure it – you manage it'.

## WHO ARE WE?

### Peter Birkett, Director and Founder of Instep.

With over forty years' experience in the international specialist chemical industries, Director and Founder Peter Birkett knows that environmental monitoring and reporting must be carried out accurately, professionally and with little disturbance to business-as-usual. After viewing first-hand the environmental and sustainability issues industry and business face around the world Peter established Instep, aiming to assist with minimising the impact of these processes on the environment and assist businesses of all types to meet the environmental challenges in today's business world.

### Alisha Black, Technical Director Instep

Scientific credibility and compliance with all International Standards are key to the success of the Instep programmes and consulting services. Under the control of Alisha Black and her scientific team we know that this requirement is achieved.

Alisha completed her MSc in Biology at the University of Auckland in 2003, studying molecular genetics and environmental science. Since then her working experience has involved roles both in the laboratory and the field undertaking air, water and odour testing. Over the last 18 years Alisha and her team have created and developed the very successful range of Instep Carbon and Sustainability Programmes.

### Margaret Birkett, Director and Finance Manager

Margaret's background is in education with many years of teaching in the United Kingdom, Hong Kong and New Zealand.

She subsequently moved into educational administration with responsibility for budgets, payroll and enrolments. Most recently she has held the roles of Careers, Gateway and STAR administrator, and International Student Manager - all within the educational system.

AS THE PROVERB GOES
"EVERY JOURNEY OF A THOUSAND MILES STARTS WITH A SINGLE STEP".
THE INSTEP PROGRAMMES WILL ASSIST YOU IN YOUR OWN SUSTAINABILITY JOURNEY