YEAR

9

Sustainable Event Report

16 - 19 June 2021

New Zealand National Agricultural Fieldays

instep™

Sustainability in Action

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

New Zealand Agricultural Fieldays 2021

and is issued according to Instep standard terms and conditions.

NEW ZEALAND AGRICULTURAL FIELDAYS 2021

SUSTAINABLE EVENT PROGRAMME

16 - 19 JUNE 2021

SUSTAINABLE
EVENT
2021
ISO 20121

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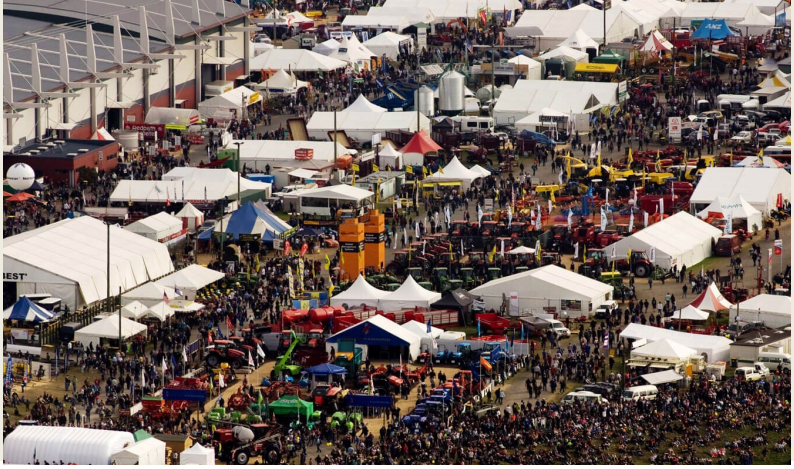
EXECUTIVE SUMMARY



The New Zealand Agricultural Fieldays

(Fieldays) has now been committed to sustainable event management for nine years, incorporating environmental management and carbon footprint calculations into the event planning and staging.

This year's event was held from 16 - 19 June and attracted 132,776 visitors over the four days. 1,050 exhibitors displayed products and services throughout the Mystery Creek Event Centre (MCEC) in Hamilton, New Zealand.

2021 follows the worldwide arrival of COVID-19 and upheaveal of the event industry and international travel. The 2020 Fieldays event was cancelled for the first time in its history. Thus, the 2021 event was run with a backdrop of caution from both MCEC organisers as well as exhibitors and attendees. Despite this, 2021 was a resounding success, with record daily visitors, even though it was were restricted to primarily domestic visitors only.

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. Results and objectives are summarised here.

ENERGY

Energy emissions are 114.16 tonne CO_{2e}, 5% lower than 2019 but 30% higher than base year levels. Emissions from diesel and petrol have reduced dramatically this year.

WASTE

Total waste levels continue to rise. This year 96,987 kgs of waste were generated; 38% of this was diverted from landfill through either recycling or composting via a waste sorting regime. This is a drop from a record 41% diversion last year.

TRANSPORT

This has the largest impact on Fieldays' footprint, with 132,776 attendees and 1,050 exhibitors travelling across the country to attend. The 2021 Transport footprint is 4,737.16 tCO_{2e} which is 23% higher than 2019 Transport emissions.

GHG EMISSIONS

The 2021 emissions profile is dominated by Transport emissions at more than 97% of all emissions. Transport emissions saw a 23% increase compared with 2019; this contributed to an overall 22% increase in Fieldays' total emission profile to 4,869.92 tCO_{2e}.

FIELDAYS 2021 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

✓ Achieved

– In Progress

! Not achieved

Energy

– Reduce energy emissions per exhibitor back to Base Year levels through an exhibitor sustainability levy.

– Investigate carbon mitigation or conservation programmes that may align with the exhibitor offset levy.

– Plan logistics around introducing an exhibitor sustainability levy.

✓ Communicate positive environmental messages around these programmes to exhibitors.

! Trial a small solar powered site..

✓ Use online and social media communications to share energy savings.

Waste

– 1. Divert 50% of all waste from landfill.

✓ 2. Strongly encourage compostable packaging in order to collect >1,000 kg compostable material.

✓ 3. Introduce Sustainable Waste Partner scheme with key exhibitors.

✓ 4. Continue sorting of hot zones waste.

✓ 5. Continue to promote composting of food and coffee grinds across site.

✓ 6. Expand composting to sorting and composting of commercially compostable serveware and coffee cups.

! 7. Hold a waste workshop with exhibitors and vendors to gather ideas, opportunities and issues.

1.Reduce energy emissions per exhibitor back to Base Year levels through a exhibitor sustainability levy.

– Enhance car parking options at the Park n Rides to lift bus patronage to 15%.

✓ Continue to promote and incentivise bus travel.

✓ Communicate the benefits for everyone in terms of reduced traffic congestion when shared transport is used.

GHG Emissions

! Lower emissions per visitor by 5% compared with 2019 levels.

Suppliers & Materials

✓ Promote ticket downloads to further reduce printed tickets.

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 nine 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 practices 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 in June each year.

The event in 2021 attracted 1,050 exhibitors, and 132,776 primarily domestic visitors came through the gates over the four days of the exhibition.

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 primary industry and government alike.

Fieldays is recognised as a crucial date in the 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 2021 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 such as 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 2021 were separated into the following areas:

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

*Those areas marked with * contribute directly to GHG emission calculations*

Objectives are set within each Environmental Impact Area (EIA) to direct efforts and rate success.

A breakdown of the EIAs that were monitored within the event boundaries, and the objectives set for Fieldays, are listed in Table 1.

FIELDAYS 2021 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 RECUCED IN FUTURE YEARS.
NEW ZEALAND NATIONAL FIELDAYS SOCIETY AIMS TO BE A LEADER IN STAGING SUSTAINABLY MANAGED EVENTS.

Table 1: 2021 Objectives Set for Fieldays

✓ Achieved
– In Progress
! Not achieved

Energy

– Reduce energy emissions per exhibitor back to Base Year levels through an exhibitor sustainability levy.
– Investigate carbon mitigation or conservation programmes that may align with the exhibitor offset levy.
– Plan logistics around introducing an exhibitor sustainability levy.
✓ Communicate positive environmental messages around these programmes to exhibitors.
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Suppliers & Materials

✓ Promote ticket downloads to further reduce printed tickets.

BOUNDARY

A boundary that includes event areas which will contribute to GHG emissions is also 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 2021 are depicted in Figure 1.

BENCHMARKING

Benchmarking is a valuable tool for NZ National Fieldays Society 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.

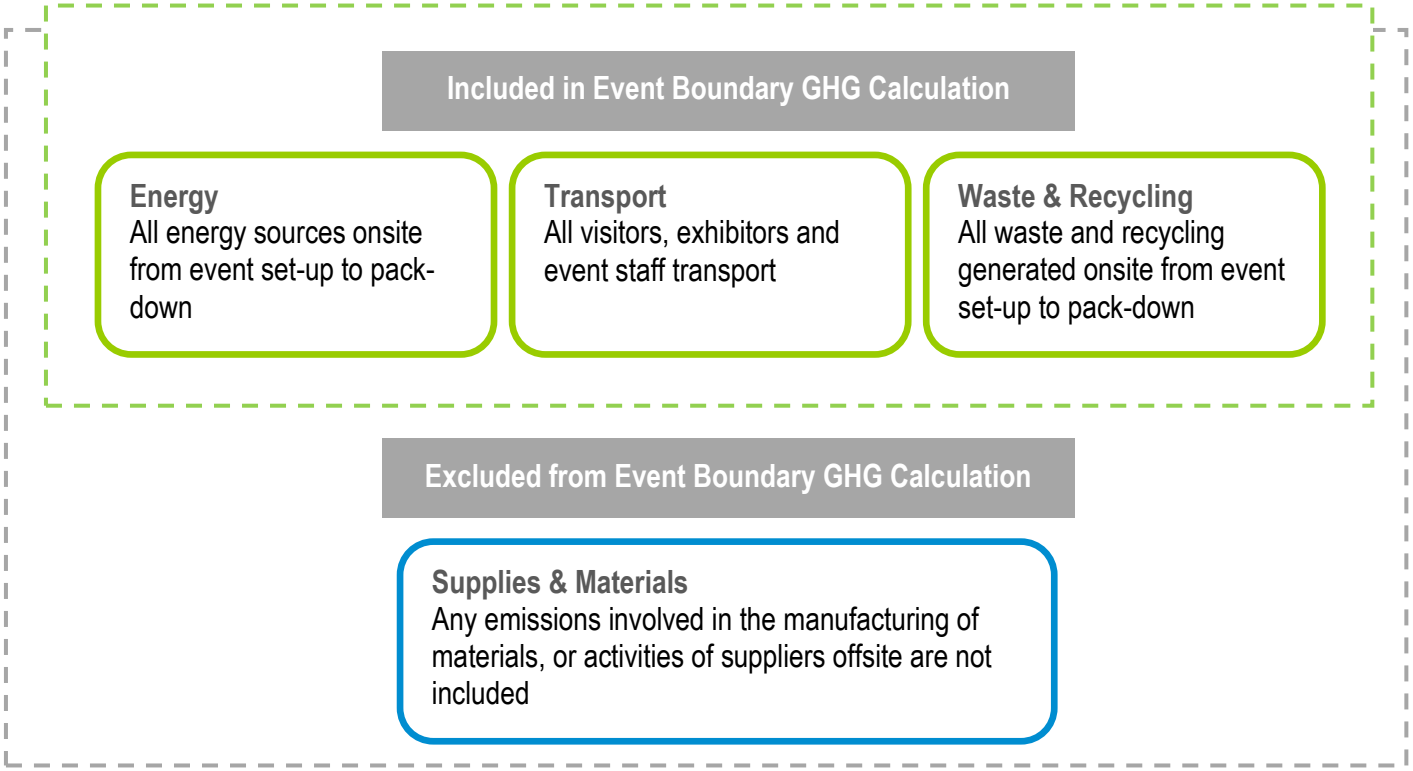


Figure 1: Event Boundaries Fieldays 2021

METHODOLOGY

Instep provided independent monitoring throughout Fieldays 2021 and put together the calculations included in this report.

Instep uses the 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, TONNE 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

114.16 tonne CO_{2e}
150,354 Kilowatts Electricity,
22,636 Litres Fuel,
9,726 Kilograms LPG

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.

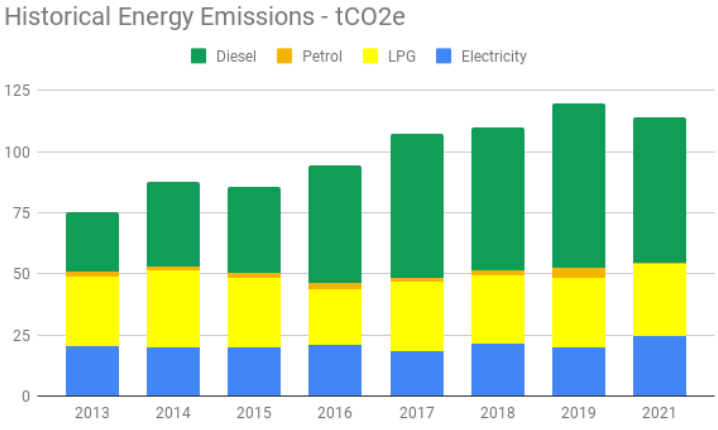
Diesel and petrol use is from event vehicles (utes, forklifts etc.) and generators around the site that are re-fueled at an on-site tank as well as being used to run portable lighting towers, particularly in car parks. LPG includes the use of LPG in tanks brought on-site by food stalls and exhibitors,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

Data was collected during the event through surveys and meter readings, and followed up post-event with energy invoices. 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 2021 Fieldays emissions from all energy sources are 114.16 tonne CO_{2e}, 5% lower than 2019 but 30% higher than base year levels. Emissions from diesel and petrol have dropped dramatically this year.

Electricity use during the event period at MCEC sites dropped throughout (Sub A - D event buildings), however, this was not seen in the MCEC office where usage rose by 39%. The increase at MCEC should be looked at more closely as this is a significant increase when compared with 2019.

Electricity emissions are much higher than previous years due to high drought-year NZ wide emission factors.



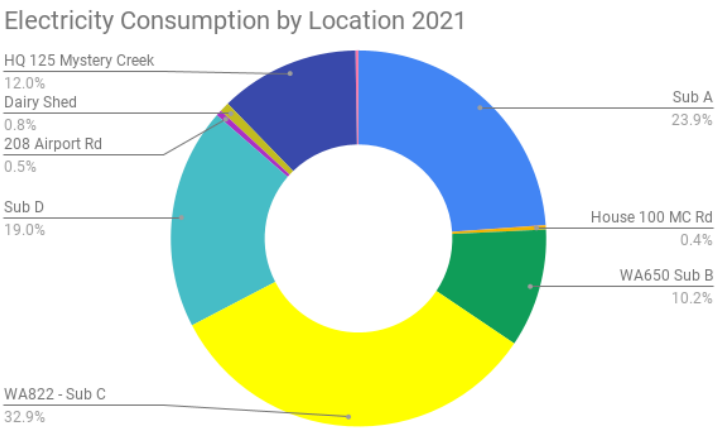


Table 2: Energy Emissions & Use Fieldays 2021

	Emission Source	Data Source	2021 Activity Data	% Change Activity Data vs. 2019	2021 GHG Emissions (tCO_{2e})	% Change GHG Emissions vs. 2019	2019 Activity Data	2019 GHG Emissions (tCO_{2e})
Electricity			**kWh**		**t CO2e**			
	Sub A event buildings	Meter readings	**35,870**	-21%	**5.52**	+25%	45,207	4.42
	Sub B event buildings	Meter readings	**15,322**	-16%	**2.36**	+32%	18,281	1.79
	Sub C event buildings	Meter readings	**49,513**	-37%	**7.62**	-1%	78,565	7.68
	Sub D event buildings	Meter readings	**28,595**	-13%	**4.4**	+37%	32,817	3.21
	Mystery Creek Office	Meter readings	**18,060**	+39%	**2.78**	+119%	13,020	1.27
	Other Sites	Meter readings	**2,950**	0%	**0.45**	+48%	2,945	0.31
	EV Station	Meter readings	**44**		**0.01**			
	Total Electricity		**150,354**	-21%	**24.46**	+22%	191,152	20.09
NB: The total electricity GHG emissions include an additional 1.31 tCO2e to account for transmission losses.								
Diesel			**Ls**		**tCO2e**			
	Total Diesel	Invoices	**22,294**	**-12%**	**59.39**	**-12%**	25,054	67.4
Petrol			**Ls**		**tCO2e**			
	Total Petrol	Invoices	**342**	**-80%**	**0.84**	**-80%**	1,695	4.15
LPG			**kg**					
	Onsite tank	Gas invoice	**696**	-73%	2.11	-73%	2,594	7.86
	Food stalls	Onsite survey	**2,478**	+11%	7.51	+11%	2,236	6.78
	Exhibitors	Onsite survey	**6,552**	-2%	19.85	-2%	6,719	20.36
	Total LPG		**9,726**	**+4%**	**29.47**	**+4%**	9,313	28.22
TOTAL GHG Emissions					**114.16**	**-5%**		**119.86**

ENERGY OBJECTIVES:

Energy

- Reduce energy emissions per exhibitor back to Base Year levels through an exhibitor sustainability levy.
- Investigate carbon mitigation or conservation programmes that may align with the exhibitor offset levy.
- Plan logistics around introducing an exhibitor sustainability levy.
- ✓ Communicate positive environmental messages around these programmes to exhibitors.
- Trial a small solar powered site..
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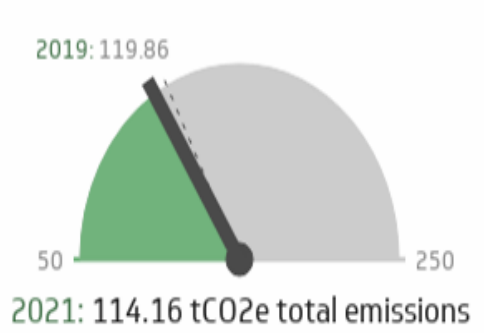
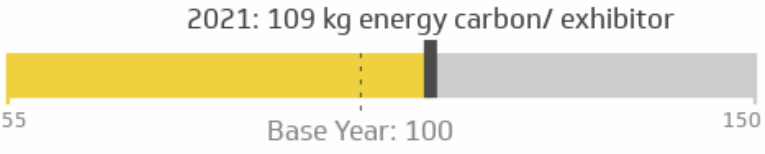


OBJECTIVE 1: —
REDUCE ENERGY EMISSIONS PER EXHIBITOR BACK TO BASE YEAR LEVELS THROUGH AN EXHIBITOR SUSTAINABILITY LEVY

OBJECTIVE 2: —
INVESTIGATE CARBON MITIGATION OR CONSERVATION PROGRAMMES THAT MAY ALIGN WITH THE EXHIBITOR OFFSET LEVY

OBJECTIVE 3: —
PLAN LOGISTICS AROUND INTRODUCING AN EXHIBITOR SUSTAINABILITY LEVY

Objectives 1 – 3 have been actively discussed in the time period between the 2019 and 2021 Fieldays events. Due to the ongoing constraints around major events due to the COVID-19 pandemic, additional levies were not actioned in 2021. However 2021 has provided good information as to how this could be achieved in future years, with an exhibitor energy emission of 109 kgs of carbon for every exhibitor meaning neutralising this to base year levels would cost just 53 cents per exhibitor.



OBJECTIVE 4: ✓
COMMUNICATE POSITIVE ENVIRONMENTAL MESSAGES AROUND THESE PROGRAMMES TO EXHIBITORS

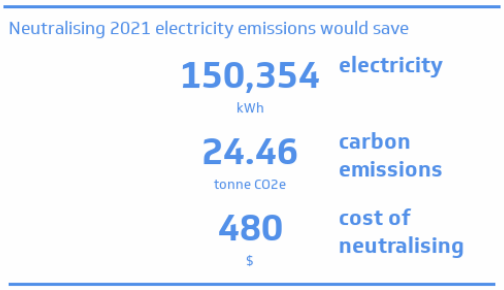
Although energy neutralisation was not pursued in 2021, the Sustainable Exhibitor Award continued. Competition was of a high level this year, with several experienced organisations choosing to enter.

OBJECTIVE 5: —
TRIAL A SOLAR POWERED SITE

Whilst this specific objective has not been achieved, work is currently undergoing to potentially neutralise all electricity emissions for the 2022 event through electricity provider Meridian and their renewable energy certification scheme.

OBJECTIVE 6: ✓
USE ONLINE AND SOCIAL MEDIA COMMUNICATIONS TO SHARE ENERGY SAVINGS

Sustainability has become a larger part of the conversation at Fieldays 2021; plans for even more initiatives, in particular around energy are underway for 2022.



ENERGY BENCHMARKNG:

Table 3: Energy Benchmarking

Energy Benchmarking					
	Fieldays 2021	Fieldays 2019	Fieldays 2018	Fieldays 2017	Fieldays 2012 (Base Year)
	4 days	4 days	4 days	4 days	4 days
	132,776 visitors	128,747 visitors	131,868 visitors	133,588 visitors	128,271 visitors
	1,050 exhibitors	1,067 exhibitors	1,059 exhibitors	998 exhibitors	1,000 exhibitors
Total Energy tCO2e	114.16	119.86	109.33	90.01	N/A
Total kWh	150,354	191,152	185,914	185,914	N/A
kWh/ Attendee	1.13	1.48	1.41	1.39	N/A
Kwh/ Exhibitor	143.19	179.15	179	186.29	N/A
Total LPG kg	9,726	9,313	9,321	6,759	N/A
LPG kg/ Exhibitor	9	9	9	7	N/A
Total Fuel Ls	22,636	26748.5	22272	19093	N/A
Fuel Ls/ Exhibitor	22	25	21	19	N/A

ENERGY GOALS - BEYOND 2021:

Utilising achievements and outcomes of the 2021 Energy Objectives allows Fieldays to set future sustainability goals that will have maximum impact.

Goals are set on a short (next event), medium (2 years) and long term (5 years) time-scale with the aim to challenge the status quo with an ambitious long term goal, yet scale this achievably using shorter term objectives.

2022 ENERGY GOALS:

- Investigate renewable electricity certification in order to make Fieldays 2022 energy carbon free.
- Invest in onsite alternative energy solutions by leveraging exhibitor sustainability levy.
- Use data to indicate energy usage per exhibitor site and allow exhibitors to be part of a “zero energy” scheme if Fieldays goes energy neutral.

Mid Term 2021	Long Term 2023
Energy	
Reduce energy emissions per exhibitor back to Base Year levels through a exhibitor sustainability levy.	Mitigate all energy emissions through a per exhibitor sustainability levy.

WASTE & RECYCLING

96,987 Kilograms Total Waste
37,164 Kilograms Recycling/ Compost
38% Landfill Diversion
18.61 t 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 emission of methane gas.

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

Total Waste levels continue to rise. This year 96,987 kilograms of waste was generated; 38% of this was diverted from landfill through either recycling or composting through a waste sorting regime which is down from a high of 41% diversion in 2019.

THE LANDFILL DIVERSION RATE FOR FIELDAYS 2021 IS 38%

Table 4: Waste Emissions & Generation Fieldays 2021

Venue	2021 Activity Data			Data Source	2021 GHG Emissions (tCO_{2e})		2019 Activity Data		2019 GHG Emissions (tCO_{2e})
	Total weight (kilogram)	% Change vs. 2019 (kilograms)	Total volume (cubic metre)			% GHG Change vs. 2019 (tCO_{2e})	Total weight (kilogram)	Total volume (cubic metre)	
Landfill	59,823	**+37%**	888	waste contractor weights	18.61	**+78%**	43,675	809	10.48
General Recycling	13,239	**+>100%**	195	waste contractor weights			4,105	228	
Cans Plastic	700	**+100%**	3.2	waste contractor weights			0	0	
Cardboard Recycling	14,804	**+6.6%**	360	waste contractor weights			13,882	578	
Glass Recycling	1,350	**+75%**	0.8	waste contractor weights			772	1	
Wood Recycling	560	**-94.2%**	9	waste contractor weights			9,600	60	
Organic Composting	7,210	**+>100%**	11.5	waste contractor weights			1,500	19	
TOTAL Waste	**96,987**	**+32%**	1,468.5				**73,534**	1,696	
TOTAL Recycling/ Composting	**37,164**	**+24%**	580.5				**29,859**	887	
Diversion Rate	**38%**	**-6%**					**41%**		

WASTE OBJECTIVES:

- 1. Divert 50% of all waste from landfill.
- ✓ 2. Strongly encourage compostable packaging in order to collect >1,000 kg compostable material.
- ✓ 3. Introduce Sustainable Waste Partner scheme with key exhibitors.
- ✓ 4. Continue sorting of hot zones waste.
- ✓ 5. Continue to promote composting of food and coffee grinds across site.
- ✓ 6. Expand composting to sorting and composting of commercially compostable serveware and coffee cups.
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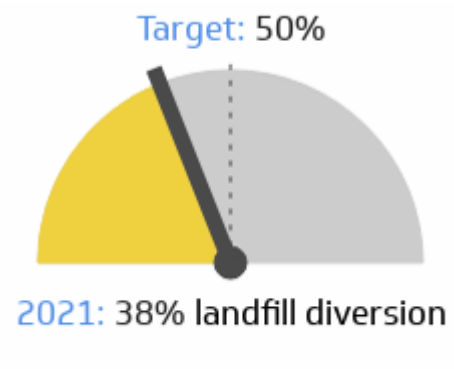


OBJECTIVE 1: !

DIVERT 50% OF ALL WASTE FROM LANDFILL

The 50% diversion goal has not yet been achieved in 2021 with landfill diversion rates sitting at 38% of all waste generated at Fieldays on the basis of waste.

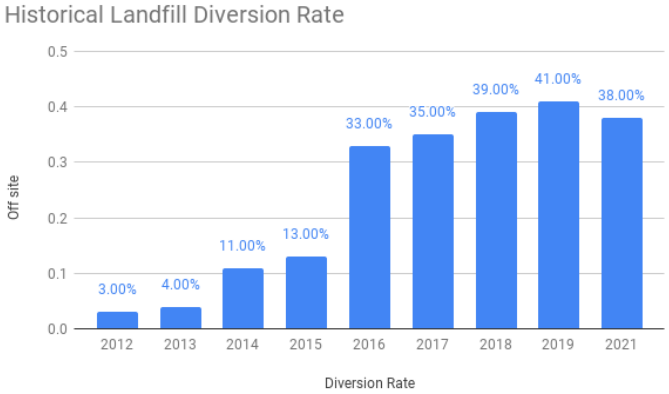
Whilst this is a drop from last year, it remains in the 30 - 40% diversion level seen since sorting and composting began in 2016.

OBJECTIVE 2: ✓

ENCOURAGE COMPOSTABLE PACKAGING TO COLLECT >1,000 KGS COMPOSTABLE MATERIAL

This objective was achieved and surpassed in 2021 with a total of 7,210 kgs of organic material collected; a large increase on the 1,500 kgs in 2019.

The logistics needed to successfully compost are now firmly in place with exhibitors knowing compostable materials are expected and will be sorted and properly disposed of with the use of a local contractor.

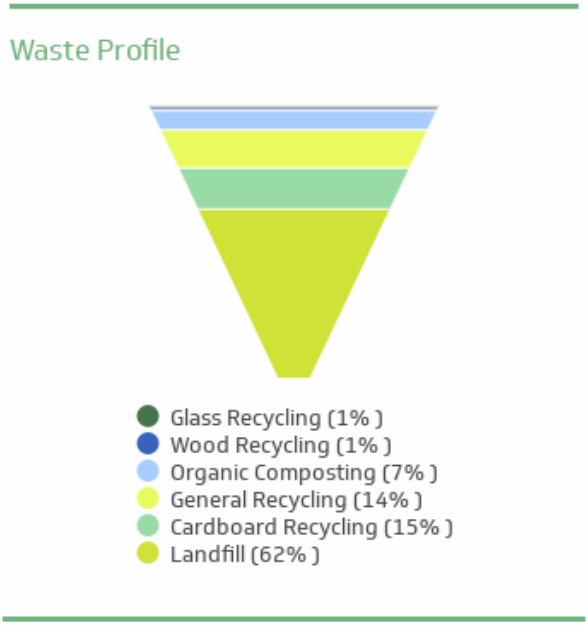


OBJECTIVE 3: ✓

INTRODUCE 'SUSTAINABLE WASTE PARTNER' SCHEME WITH KEY EXHIBITORS

This objective first introduced in 2019 has now become embedded within the Fieldays exhibitor experience. This year key exhibitors, including some of the largest sponsorship exhibitors, were - unprompted - contacting event staff before the event to be part of this initiative.

Plans are in place to further expand this in 2022.



OBJECTIVE 4: ✓
SORT COMPOSTABLE MATERIAL IN HOT ZONES

OBJECTIVE 5: ✓
CONTINUE TO PROMOTE COMPOSTING OF FOOD AND COFFEE GRINDS ACROSS SITE

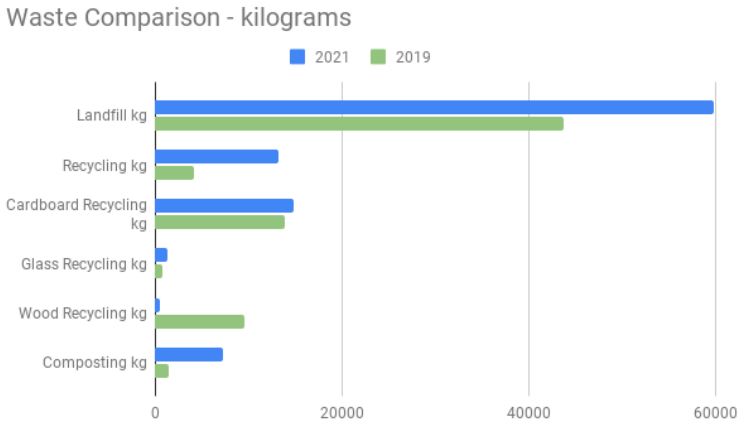
OBJECTIVE 6: ✓
EXPAND COMPOSTING TO COMMERCIALLY COMPOSTABLE SERVICEWARE AND COFFEE CUPS

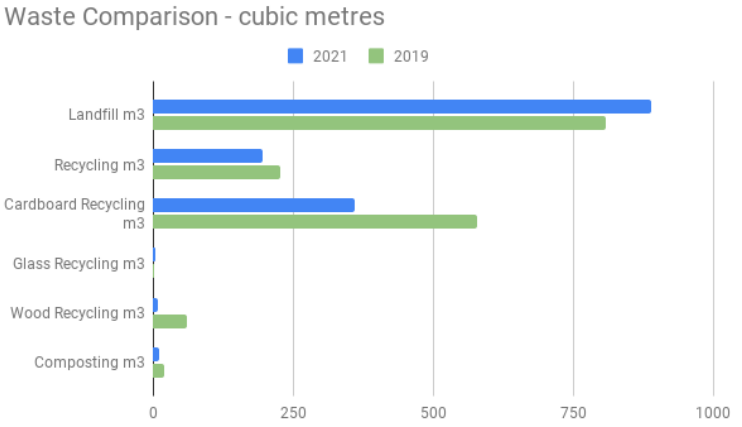
OBJECTIVE 7: !
HOLD A WASTE WORKSHOP WITH EXHIBITORS AND VENDORS

Plans were underway in 2020 to undertake this and run pre-event workshops and webinars with exhibitors. Due to the financial impact of Covid-19 this was paused for 2021 but planning is already underway as to how to integrate this in 2022.

OBJECTIVE 8: !
WORK WITH HOT EXHIBITOR PARTNERS TO TRIAL "PLASTIC FREE FIELDAYS". RAISE AWARENESS OF OPTIONS OF COMPOSTABLE MATERIAL FOR FOOD VENDORS AND ANYONE SERVING FOOD

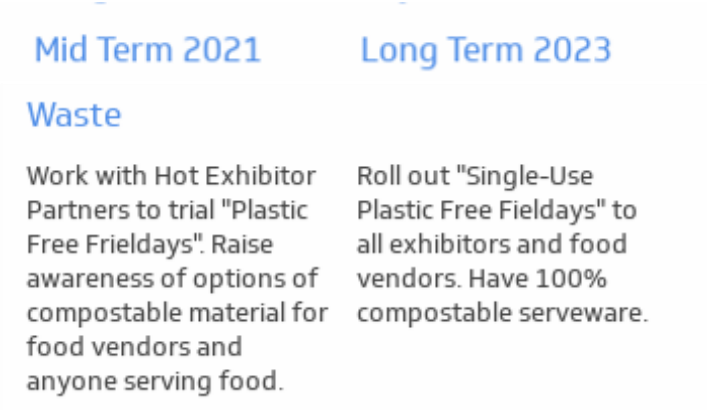
Once again, the pressures and financial impacts of Covid-19 on exhibitors and organisers meant Plastic Free Fieldays was not pushed in 2021, however, planning is already underway for 2022.





WASTE GOALS, BEYOND 2021:

Utilising the achievements and outcomes of the 2021 Waste Objectives allows Fieldays to set future sustainability goals that will have maximum impact. Goals are set on a short (next event), medium (2 years) and long term (5 years) time-scale with the aim to challenge the status quo with an ambitious long term goal, yet scale this achievably using shorter term objectives.



2022 WASTE GOALS:

- Mandate compostable serve-ware.
- Set up a waste sorting site that allows visitors and / or exhibitors to understand the effort that MCEC puts into servicing waste.
- Continue working with Sustainable Waste Partner Exhibitors and expand this programme in 2022.
- Use Waste Partners as a trial to work towards “Single Use Plastic Free Fieldays”.
- Hold a waste workshop with exhibitors and vendors to gather ideas, opportunities and issues pre-event. Utilise online portals for this.
- Liaise with food vendors through Mystery Creek spokesperson to set expectations pre-event.
- Investigate working with the supplier of fencing posts made from recycled material to recycle Fieldays plastic.

WASTE BENCHMARKING:

Waste Benchmarking					
	Fieldays 2021	**Fieldays 2019**	**Fieldays 2018**	**Fieldays 2017**	**Fieldays 2012 (Base Year)**
	4 days 132,776 visitors 1,050 exhibitors	**4 days 128,747 visitors 1,067 ex-hibitors**	**4 days 131,868 visitors 1,059 exhibitors**	**4 days 133,588 visitors 998 exhibitors**	**4 days 128,271 visitors 1,000 exhibitors**
GHG Emissions (tCO_{2e})	18.61	10.48	23.74	28.82	24.5
Total Waste (kg)	96,987	73,534	87,839	99,288	56,598
Total Recycling (kg)	37,164	29,859	33,879	34,312	1,248
Diversion Rate	38%	41%	39%	35%	2%
Waste (kg)/ Visitor	0.73	0.57	0.67	0.64	0.44
Waste (kg)/ Exhibitor	92.37	68.92	83	85	57

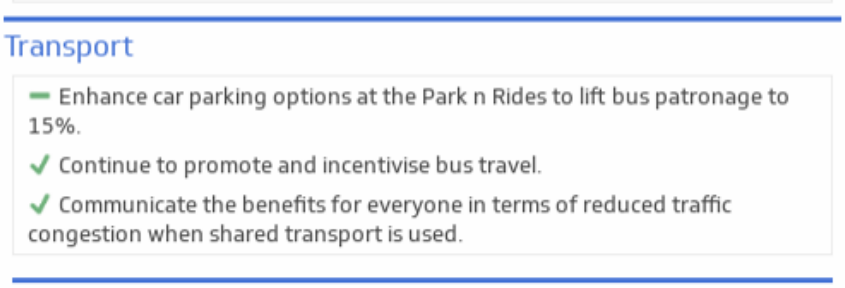
TRANSPORT

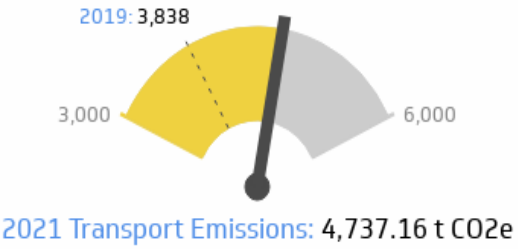
4,737.16 tonne CO_{2e}

19,394,891 pkm Total Travel

2,836,212 pkm	Air Travel
16,552,978 km	Car Travel
165,145 pkm	Truck Travel
10,647 km	Bus Travel

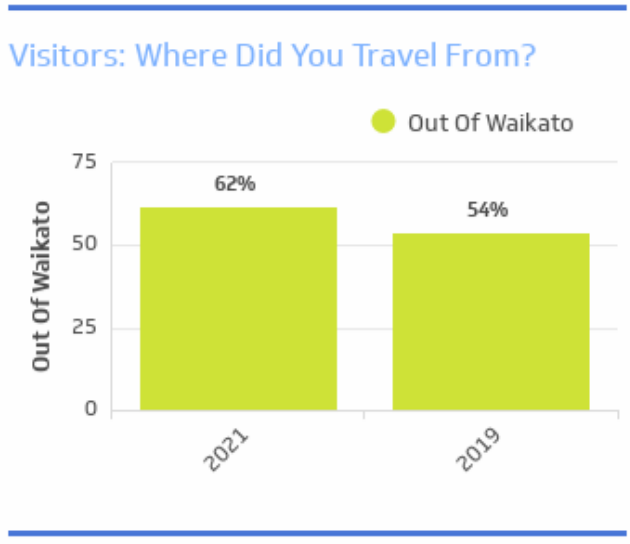
TRANSPORT OBJECTIVES:





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.

2021 is an unusual year in that only a handful of invited guests and exhibitors attended from Australia due to New Zealand border restrictions, however, despite this Fieldays 2021 saw a record number of local attendees travel to MCEC from Waikato and beyond.



Transport emissions have the greatest impact on Fieldays' footprint, with a record 132,776 attendees and 1,050 exhibitors travelling across the country to attend. This year's Transport footprint is 4,737.16 tCO_{2e} which is 23% higher than 2019 Transport emissions.

It is interesting that car kilometres travelled and accompanying emissions have risen beyond the actual 3% increase in visitor numbers. Data suggests two reasons for this; firstly, a larger proportion of visitors in 2021 came from regions beyond Waikato, 8 percentage points higher than 2019's 54%; secondly, and compounding this, the percentage of visitors arriving in groups of three or more in one car (and therefore defined as "carpooling"), dropped to 46% in 2021. Interestingly the same was not seen for exhibitor travel.

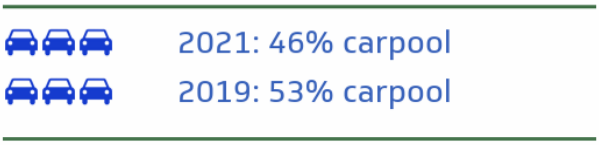


Table 5: Transport GHG Emissions Fieldays 2021

	Emission Source	2021 Activity Data	% Change Activity Data vs. 2019	Data Source	2021 GHG Emissions (tCO_{2e})	% Change tCO2e vs. 2019	2019 Activity Data	2019 GHG Emissions (tCO_{2e})
Visitors	Air Travel (pkm)	**2,438,425**	**-48%**	survey	**316.19**	**-43%**	4,711,646	550
	Bus Service (km)	**10,647**	**-2%**	operator information	**11.59**	**-37%**	10,817	18.34
	Medium Car (km)	**15,578,621**	**+27%**	survey	**4,122.99**	**+61%**	12,229,228	2,555.91
	Boat (Ls)	**710**	**0%**	previous data	**2.09**	**0%**	710	2.09
	Helicopter (Ls)	**1,236**	**0%**	previous data	**2.86**	**0%**	1,236	2.86
	Total visitors travel	**18,029,639**	**+6%**		**4,455.72**	**+42%**	**16,953,636**	**3,129.20**
Mystery Creek Staff	Air Travel (pkm)	**844**	**-89%**	travel records	**0.11**	**-91%**	7,744	1.25
	Staff Vehicles (Ls)	**1,365**	**+2%**	odometer readings	**1.25**	**-65%**	1,332	3.58
	Total staff travel	**2,209**	**-76%**		**1.35**	**-72%**	9,076	4.83
International Guests	Air Travel (pkm)	**14,208**	**->100%**	contact list	**1.14**	**-100%**	3,530,240	332.09
	Total international travel	**14,208**	**->100%**		**1.14**	**-100%**	3,530,240	**332.09**
Exhibitors	Air Travel (pkm)	**382,735**	**-61%**	survey	**49.63**	**-56%**	974,665	111.86
	Medium Car (km)	**800,955**	**-2%**	survey	**211.98**	**13%**	813,923	188.02
	Large Car (km)		**-100%**	survey* changed definition		**-100%**	176,210	48.99
	Truck (km)	**165,145**	**-<1%**	survey	**17.34**	**-<1%**	167,819	23.49
	Total exhibitors travel	**1,348,835**	**-37%**		**278.95**	**-25%**	**2,132,617**	**372.36**
TOTAL		**19,394,891**	**-14%**		**4,737.16**	**23%**	**22,625,569**	**3,838.48**

OBJECTIVE 1: —
LIFT BUS PATRONAGE TO 15%

OBJECTIVE 2: ✓
CONTINUE TO PROMOTE & INCENTIVISE BUS TRAVEL

Bus patronage in 2021 stayed static at 11% of all visitors, the same percentage as 2019. However, this does represent an absolute increase in the numbers of people riding the Fieldays' bus and was done so with a small dip in the actual travel distances of all buses, so indicating a more efficient and well thought-out bus system.

OBJECTIVE 3: ✓
COMMUNICATE THE BENEFITS FOR ALL IN TERMS OF REDUCED TRAFFIC CONGESTION WHEN SHARED TRANSPORT IS USED

2022 offers even more opportunity to promote and incentivise shared transport, due to the efficiencies already highlighted with the bus services and giving people an option to avoid carpark congestion which was at a peak in 2021.

Incentives to consider include, priority parking spots or entry, free coffee or giveaways, small reduction in ticket price, and could be offered to carpoolers as well as bus users.

TRANSPORT BENCHMARKING:

	Fieldays 2021	Fieldays 2019	Fieldays 2018	Fieldays 2017	Fieldays 2016
	4 days 132,776 visitors 1,050 exhibitors	4 days 128,747 visitors 1,067 exhibitors	4 days 131,868 visitors 1,059 exhibitors	4 days, 133,588 visitors, 998 exhibitors	4 days, 130,684 visitors, 1,010 exhibitors
GHG Emissions (tCO_{2e})	4,737.16	4,737.16	4,461.78	5,528.13	7,371.20
Largest Transport Impact	Attendees 94%	Attendees 82%	Attendees 82%	attendees 79%	attendees 87%
Air Travel Emissions	8%	26%	27%	32%	54%
$kgCO_{2e}$/ Attendee	36	37	34	40	60

TRANSPORT GOALS, BEYOND 2021:

Utilising achievements and outcomes of the 2021 transport objectives allows Fieldays to set future sustainability goals that will have maximum impact. Goals are set on a short (next event), medium (2 years) and long term (5 years) time-scale with the aim to challenge the status quo with an ambitious long term goal, yet scale this achievably using shorter term objectives.

Mid Term - 2020	Long Term - 2023
Enhance car parking options at the Park n Rides to lift bus patronage to 15%.	Continually promote these initiatives to lift bus patronage to 20%.

2022 TRANSPORT ACTIONS:

- Enhance incentives for shared bus travel.
- Think whether other shared transport modes this could also be applied to, e.g. carpooling, park and ride.
- Communicate the benefits for everyone in terms of reduced traffic congestion when shared transport is used.

TOTAL GREENHOUSE GAS EMISSIONS

4,869.92 tonne CO_{2e}

Table 7: Total Greenhouse Gas Emissions Fieldays 2021

Emission Source	2021 GHG Emissions (tCO_{2e})	2019 GHG Emissions (tCO_{2e})	% Change GHG Emissions vs. 2019
Energy	**114.16**	137.12	**-17%**
Waste	**18.61**	10.48	**+78**
Transport	**4,737.16**	3,838.48	**+23**
Total GHG Emissions	**4,869.92**	**3,986.08**	**0.22**
kg CO_{2e}/ visitor	**37**	31	**0.18**

Fieldays' carbon footprint is made up of all of the Greenhouse Gas Emission sources that have been detailed in the previous sections of this report, namely 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: !

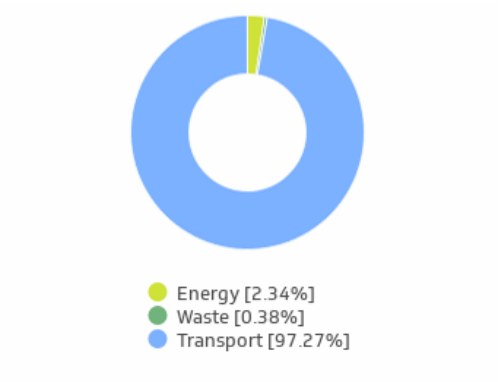
LOWER EMISSIONS PER VISITOR BY 5% COMPARED WITH 2019 LEVELS

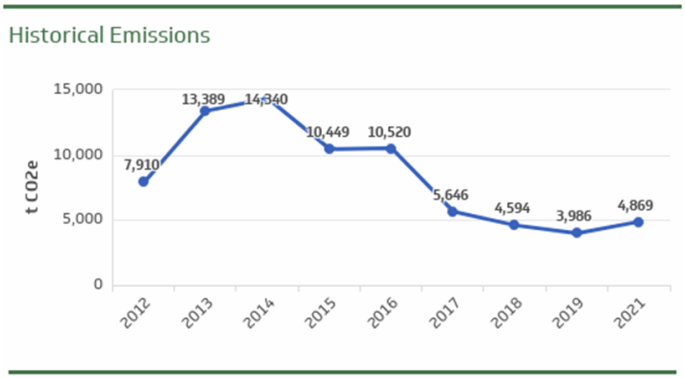
Emissions per visitor rose in 2021 to 37 kilograms per visitor compared with 31 kgs/ visitor in 2019. The main driver of this in an increase in transport emissions per visitor.

GHG Emissions

Lower emissions per visitor by 5% compared with 2019 levels.

The 2021 emissions profile is unchanged from past years in that the dominant emission source is Transport, at more than 97% of all emissions. Because Transport emissions also saw a 23% increase compared with 2019, this contributed to an overall 22% increase in Fieldays' total emission profile to record 4,869.92 tCO_{2e}.





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

4,723,904 A4 sheets

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

Over time, the methods of sharing information have changed for Fieldays, with a downloaded App making inroads into reducing the number of printed programmes. This year the Fieldays Focus Newspaper was included, which increased the number of printed A4 sheets by a dramatic 4000%.

Other supplied materials; in particular cleaning and waste management materials, have been monitored this year which will provide further opportunities for change in coming years.

Table 8: Materials Fieldays 2021

Source	Data Source	2021 Activity Data (# items)	% Change vs. 2019 # items	2019 Activity Data (A4 sheets equivalent)	% Change vs. 2019 (A4 sheets equivalent)	2019 Activity Data (# items)	2019 Activity Data (A4 sheets equivalent)
Volunteer Handbook	office data	**0**	-100%	-	-100%	220	1,320
Tickets	office data	**35,132**	-56%	2,928	-56%	80,185	6,682
Vehicle Passes	office data	**3,470**	16%	289	16%	3,000	250
Focus Newspaper	office data	**82,600**		4,625,600			
Exhibitor Handbook	office data	**0**	-100%	-	-100%	200	2,900
Fieldays Programmes	office data	**8,000**	-20%	80,000	-20%	10,000	100,000
Ricoh Copier/Printer	office data	15,087	359%	15,087	359%	3,284	3,284
Total # items		**144,289**	**4%**		#DIV/0!	**139,283**	
Total # A4 sheets				**4,723,904**	4028%		**114,436**
Ocean Care (clear foam soap)		**12**					
Paper Towels - SC100C		**83**					
Toilet Tissue - Large Rolls DJ2		**102**					
Black 2040L bin liners		**21**					
Clear 240L bin liners		**27**					

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

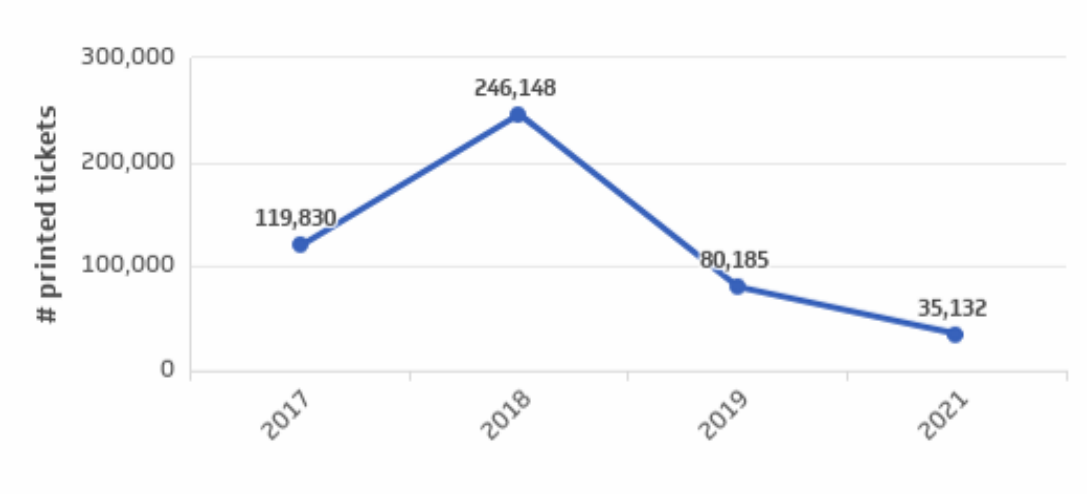
SUPPLIERS & MATERIALS OBJECTIVES:

✓ Promote ticket downloads to further reduce printed tickets.

OBJECTIVE 1: ✓

PROMOTE TICKET DOWNLOADS TO REDUCE PRINTED TICKETS

This objective is being very successfully implemented, with 35,132 tickets printed for sale in 2021, 56% lower than 2019 and a huge drop from a 2018 peak.



WATER CONSUMPTION

5,259 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.

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Water reduction objectives were not priorities during 2021. Data quality continues to be an issue and fluxes from year to year. The 2022 focus should be on getting data sources concrete and of a high quality before implementing any reduction initiatives around the Fieldays' site.

Water consumption from the two comparable metering sites (MC Rd 3 & 5) has dropped by 9% in 2021 compared with 2019.

Table 10: Water Consumption Fieldays 2021

Water Meter	2021 Activity Data (m^3)	Data Source	% Change m3 vs. 2019	2019 Activity Data (m^3)
River process (28)	1,041	Last year estimate	0%	1041
River toilet (26)	394	Last year estimate	0%	394
Golf club (41)	75	Last year estimate	0%	75
E street (16-38)	1,034	Last year estimate	0%	1034
MC Rd Wool Shed Gate (3)	1,920	Onsite meter readings	+20%	1603
MC Rd 190-180 Gate (5)	795	Onsite meter readings	-52%	1660
TOTAL	5,259		-9%	5,807

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 - 3 years, even in 2021 despite Covid challenges.

Objectives could be set specifically in this area in 2022 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 2022 include:

- Building 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.

2022

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 2022 complies with ISO 20121 Sustainable Event certification.

FIELDAYS 2021 IS A
ISO 20121 COMPLIANT
SUSTAINABLE EVENT

ENERGY

- Investigate renewable electricity certification in order to make Fieldays 2022 energy carbon free,
- Invest in onsite alternative energy solutions by leveraging an exhibitor sustainability levy.
- Use data to indicate energy usage per exhibitor site and allow exhibitors to be part of a “zero energy” scheme if Fieldays goes energy neutral.

TRANSPORT

- Enhance incentives for shared bus travel.
- Think if other shared transport modes this can also be applied to, eg: carpooling, park and rides.
- Communicate the benefits for everyone in terms of reduced traffic congestion when shared transport is used.

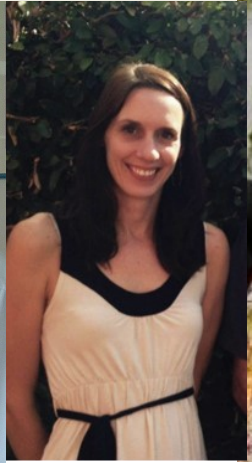
WASTE

- Mandate compostable serveware.
- Set up a waste sorting site that allows visitors and / or exhibitors to understand the effort that MCEC puts into servicing waste.
- Continue working with Sustainable Waste Partner Exhibitors and expand this programme in 2022.
- Use Waste Partners as a trial to work towards “Single Use Plastic Free Fieldays”.
- Hold a waste workshop with exhibitors and vendors to gather ideas, opportunities and issues pre-event. Utilise online portals for this.
- Liaise with food vendors through Mystery Creek spokesperson to set expectations pre-event.
- Investigate working with the supplier of fencing posts made from recycled material to recycle Fieldays plastic.

WIDER SUSTAINABILITY

- Building 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.

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 12 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