

Reducing Burners Climate Impact – Offsetting Travel to Kiwiburn

One of the Burning Man principles is to Leave No Trace. We collect our MOOP but some of our traces are not so obvious. We're creating a GOOP – Gas Out Of Place – through emitting carbon dioxide via our burning of fossil fuels. If we want to avoid the worst of climate change, then we, as a civilisation, need to cut our emissions of greenhouse gases by 50 to 80 % as fast as possible. Hence the Kiwiburn organisation will:

1. Support Kiwiburn as an regional alternative to flying the 22,000 km round trip to Black Rock City;
2. Reduce Kiwiburn's overall emissions where possible;
3. Reduce Kiwiburn's net emissions through offsetting participants travel emissions.

Action (a) continues through everything that the Kiwiburn community does to make Kiwiburn awesome. One hundred Kiwis attending Kiwiburn have roughly the same emissions as one Kiwi attending Burning Man¹.

Action (b) is a problem, as the vast majority of our emissions come from transport – 95% or so. Hence we have the ride share scheme. Any other suggestions?

Action (c) involves planting and growing trees to absorb our unavoidable emissions which is called offsetting². Action (c) requires changes to the Kiwiburn income stream flow operations, i.e. What we do with the ticket money. This cost is small, around \$2.60 per person. This document describes how we calculate that cost and what we will do with the money we gather.

Our emissions

Our main source of emissions is the transport to the event. Assuming ~200 people attend and that attendees come from the places they came from in 2007³, then our emissions of greenhouse gases look roughly like:

Home	Person-kilometers	Tonnes Emitted ⁴
Auckland	130 people, 450 kms	6.1
Wellington	80 people, 700 kms	5.8
Christchurch	6 people, 1300 kms	0.8

1 The hundred to one ratio is plus or minus some. It could be as low as fifty Kiwiburners equals one trip to Burning Man, or higher, depending on a whole bunch of assumptions. Atmosfair provide a good summary of how to calculate emissions from air travel at:

<http://www.atmosfair.de/index.php?id=6&L=3>

- 2 Yes, carbon offsetting is more than just planting trees and helping native bush to regenerate. Anything that reduces overall greenhouse gas emissions can be used as an offset. Overseas methods include subsidising wind turbines, installing house insulation, buying farmers human-powered irrigation pumps so they don't have to use diesel pumps, etc... But in NZ, we can suck up carbon in trees very cheaply, much more cheaply than we can hand out solar panels, so why do it the expensive way?
- 3 Obviously, these assumptions will change for the 2008 event. We'll be gathering whatever information we can about how far people travel to update these figures and produce a more detailed estimate of our emissions after the event.
- 4 In tonnes of CO₂ equivalent, assuming 2 people per vehicle, vehicle emissions of 2.30 kg of CO₂ per litre, from "New Zealand's Greenhouse Gas Inventory 1990 – 2003", Ministry for the Environment, and an average light vehicle fuel efficiency of 9 l/100km, from "Climate Change Policy: Options for Controlling Vehicle Entry – Fuel Economy Standards", Ministry of Transport. Flight emissions from Perth use atmosfair.de assumptions and calculations.

Local	10 people, 20 kms	0.02
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Other emissions are small. The table below presents rough estimates of emissions.

Source	Rough Consumption	Rough Emissions ⁵
Wood for the Man	400 kg	0.4
Kerosene for fire swingers	80 litres	0.07
Sound camp generator	5 kVA, 8 hours for 3 days	0.05
Pony Club shed electricity	4 days at 1 kW	0.08

Over 95% of our emissions come from travel. Our expected emissions come to around 13 tonnes of carbon dioxide. This is equivalent to nearly two round trip flights from New Zealand to Black Rock City.

The current cost to offset this would be \$480, or a cost of \$2.60 per ticket.

Emissions from International Travellers

Flying generates massive emissions per person. Modern aircraft are efficient, but the sheer number of miles travelled adds up. These emissions also occur at high altitudes, where their effect is increased, possibly by a factor of three. A return trip from Australia can add 2-3 tonnes, from the US 7-10 tonnes.

These personal emissions are nearly as large as the total emissions from all Kiwis travelling to and from Kiwiburn, hence we suggest that individual travellers from overseas should account for their own emissions by buying their own offsets⁶. Many airlines are starting to offer emissions offset schemes of their own, including Pacific Blue⁷. Air New Zealand have promised to have their scheme up and running in 2008. Dr Happyinmotion is happy to assist you with this.

Why is Kiwiburn doing this centrally?

Trees need looking after and are best off planted en masse. For them to reduce climate change, they need to grow and stand for many decades. Hence the Kiwiburn organisation has chosen to handle emission offsetting as part of the ticket price, rather than suggesting that individuals should be responsible for planting their own trees.

But don't let this stop you from planting your own trees when you get home. We like trees.

We realise that spreading the cost equally doesn't support people who make the effort to use a low-emissions form of transport, nor does it penalise anyone who uses a high-emissions form of transport. We are doing it this way for simplicity, otherwise we'd have to make an additional charge at the gate, with the level of that charge set by how people arrived and how far they'd come. However, if you cycle to Kiwiburn, we'll make sure you get a cold beer on arrival.

5 In tonnes of CO₂ equivalent. These are very rough figures. For example, burning wood puts out lots of black soot which strongly absorbs sunlight. However, the amounts involved are so small that it makes little difference to the overall emissions from the event.

6 Better yet, why not set up your own regionals? Just don't make them more fun than Kiwiburn, or we'll all be flying over there, which defeats the object of having regionals.

Emissions from theme and sound camps

For theme and sound camps, the fuel consumption and thus emissions may vary widely. Fuel use will be better known by the sound camp members, not by the Exec Committee. Hence a voluntary approach will be taken, and camps can make a contribution. KB.org will provide a suggested \$ rate per litre of generator fuel, or hour of expected running.

Reducing emissions

On a global scale, Kiwiburn's existence reduces the emissions of the Burning Man community. If two New Zealanders choose to go to Kiwiburn instead of Burning Man then that's a net reduction. I'm one, and others would have gone this year if not for Kiwiburn. Hence we are already ahead of the game.

Reducing travel emissions

However, we should still reduce emissions as much as possible. Given that 95% of the emissions come from travel, then this should be our focus. The 2007 event had a ride share scheme and we should ensure that this works as well as it can in 2008. Possible actions to help the ride share scheme could include better publicity and a friendly user interface.

Offsetting

Certified carbon zero status

CarboNZero is the main company carrying this out commercially in NZ and is working towards certification to ensure that their scheme is effective. However, their scheme is designed to help companies verify and demonstrate the green credentials of their brands. Working with CarboNZero would allow us to claim a certified carbon neutral status. However, overhead costs are high (at least \$1000, twice our offsetting costs) because the scheme delivers a level of formality that we do not need. We are not trying to impress institutional investors.

Our preferred option is to make a contribution to one of the many offsetting and reforestation charities such as Future Forests or Zerofootprint. In NZ, these schemes are rapidly developing, but no local schemes exist yet. This may change by February, or we may choose to purchase offsets from an overseas source. Ideally, we want to contribute to a local offsetting scheme that helps the regeneration of native forest.

Summary

We will estimate and offset our emissions in 2008. This will be done on an informal basis, by me. Estimations will be assumed but informed by the information the Kiwiburn organisation holds. The offsetting will be carried out by purchasing offsets from a local scheme, if one exists, or an international scheme if not. The cost of this will be approximately \$2.60 per ticket.

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