

The COIN Guide to Online Carbon Calculators

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It should be noted that this survey was undertaken in Spring 2007, and that calculators may have changed (and new calculators may have been pioneered) in the intervening time.

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1. Summary

Increasing numbers of people are using web-based Carbon Calculators to estimate their emissions. There are lots of calculators out there on the web, but how do you know which one to use? Which ones are most accurate, or easiest to use?

COIN has searched the web to find the best calculators out there. We compared the calculators in detail, and our top calculators, listed below, should be all you need to accurately and easily estimate your emissions.

Most calculators we surveyed were strong in some areas of calculation and weaker in others. For this reason as well as giving an overall summary we have broken down our comparisons into four areas ? Air Travel Calculations, Land Travel Calculations, Home Fuel Emissions Calculations, and Waste & Consumption Emissions Calculations.

If you want a good overall calculator, try one of our top 5 listed below; but if you're specifically interested in focussing on one area - for example calculating emissions from a flight or train journey, then you might want to check out our top 5's for individual categories. Good luck!

Top 5 Overall Calculators

Resurgence.org

Coinet

Carbonfootprint.com

Msn

Clevel

<p>Top 5 Air Travel Calculators</p> <p>Resurgence.org</p> <p>Chooseclimate.org</p> <p>Msn.com</p> <p>Coinet.org.uk</p> <p>Nef.org.uk</p>	<p>Top 5 Land Travel Calculators</p> <p>Resurgence.org</p> <p>Co2balance.com</p> <p>Carbonfootprint.com</p> <p>Carbonbalanced.org</p> <p>Clevel.co.uk</p>
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<p>Top 5 Home Fuel Calculators</p> <p>Carbonfootprint.com</p> <p>Coinet.org.uk</p> <p>Carboncalculator.com</p> <p>Resurgence.org</p> <p>Clevel.co.uk</p>	<p>Top 5 Waste & Consumption Calculators</p> <p>Ecofoot.org</p> <p>Steppingforward.co.uk</p> <p>Clevel.co.uk</p> <p>Bestfootforward.com</p> <p>Resurgence.org</p>
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2. The categories in more detail

Overall

Most calculators we surveyed were strong in some areas of calculation and weaker in others. We rated each calculator on each category (the details of how this was done are below). For each calculator we then averaged its score for the 4 categories to produce an overall score. So our final rating took a lot of factors into account!

Our overall winner was Resurgence.org. It is easy to use and explains what to do step-by-step. It allows you to input detailed information about most aspects of your travel and consumption, which we believe will give an accurate estimate of your carbon footprint. For those interested in the technical details it also makes its calculation factors explicit.

Air travel

We based our ratings on several factors. Many calculators allow the user to enter destinations but not whether the flight was return or single! We felt this could easily leave users confused so we gave points for calculators that made this clear. We gave a point where it was possible for the user to enter exact destinations, since this is both easier and probably more accurate than the user estimating miles flown or hours of flying time. A user who may wish to calculate a whole year's emissions will most likely need to enter multiple flights, so we gave points if the calculator could do this.

We also typed into each calculator one short haul flight (London-Belfast return) and one long haul flight (London-Tokyo return). The calculators produced a wide range of emissions estimates. We did not have an 'ideal figure' in mind, but we do think that given the gravity of the climate change situation at present it is important not to underestimate emissions. Therefore we also gave a calculator points if it produced a higher-than average estimate for a flight.

Our winner, with explicit criteria and higher-than-average estimates for both domestic and international flights, was Resurgence.org.

We found

massive variation in the calculators' emissions estimates. For a return flight to Tokyo, the highest estimate was 15.66T (Resurgence.org) and the lowest was 1.71T (clevel.co.uk). One is nine times more than the other! This means users need to be very careful which website they choose to calculate their emissions from air travel. This is discussed further in the 'More on Air Travel' section below.

Land travel

We assessed how well the calculators measured car, train, bus, and boat travel. Calculators

scored highly when they allowed the user to estimate emissions on all these modes of transport. Many calculators ask for 'number of miles travelled per year' while this is useful, we also gave calculators points if they allowed calculations of single land journeys. This might be particularly useful for users trying to decide which mode of transport is environmentally best to take for a journey they are planning. We also gave points if car manufacture was taken into account on emissions estimates and if it was possible to enter destinations easily.

Our winner in this category was, once again, Resurgence.org. Nearly all modes of transport are covered; users can enter single or multiple journeys; and conversion factors are explicitly given.

Within this category there was a lot of variation in which modes of transport it was possible to input to the calculators. Most calculators could estimate car travel emissions, but co2balance.com was the only calculator which allowed the user to enter train and boat journey destinations specifically.

Home fuel emissions

We gave calculators points if they allowed users to enter exact figures for electricity, gas and oil usage; if they asked users about their use of renewable energy sources; if the data could be entered in kWh; and if it took into account the number of people who lived in the house.

Our winner in this category was Carbonfootprint.com. It is very easy to use, and takes in the detailed information needed to produce a reliable estimate of your carbon footprint. Most calculators scored well in this category.

Waste & consumption

Although travelling and heating a home very obviously burn fuel, other aspects of our daily lives produce emissions as a by-product. We gave points if the calculator asked about recycling habits, food buying habits (e.g. Does the user buy food locally, minimising food miles?), or consumption of other goods.

Most calculators scored poorly on this area of calculation. Few asked the user for relevant information. But our winner was Ecofoot.org. This is very easy to use as it comes in the form of a ?quiz? and asks about food consumption and waste production.

3. More findings on air travel

We found an interesting pattern within this category. First, those calculators which were easy and clear to use tended to produce lower-than-average estimates of emissions. Second, of the calculators provided by carbon offset companies, 4 out of 5 produced lower-than-average estimates of flight emissions (these were co2balance.com, climatecare.org.uk, clevel.co.uk, thechangantrust.org). One (carbonfootprint.com) produced an average estimate.

This implies that exactly those calculators which appeal to users most (because of their ease of use and direct link to action) are the ones most likely to give them low estimates. Most of those are provided by offset companies.

Of course, calculator providers choose to use different conversion factors for good reasons. Some, such as Climate Care, are careful to make these reasons explicit on their website. But nevertheless this is a worrying finding as we believe users should be aware that on a less conservative estimate flight emissions can be higher than they might think.

4. Summary ratings for all calculators

All ratings out of a maximum 4

	Overall	Land	Air	Home fuel	Waste
Resurgence.org	2.88	4	3.5	3	1

Coinet.org.uk	2.50	2	3	4	0
Carbonfootprint.com	2.25	3	1	4	1
Msn.com	1.88	2	2.5	2	0
Carbonbalanced.org	1.75	3	1	3	0
Clevel.co.uk	1.75	2	0	3	2
Bestfootforward	1.50	1	1	2	2
Ecofoot.org	1.50	1	0.5	2	2
Bp.com	1.38	2	1	2	0.5
Nef.org.uk	1.38	2	1.5	2	0
Co2balance.com	1.38	4	-0.5	2	0
Carboncalculator.com	1.13	2	-0.5	3	0
Steppingforward.org.uk	1.00	0	0	2	2

Carbonneutral.com	0.88	2	-0.5	2	0
Chooseclimate.org	0.88	N/A	3.5	N/A	N/A
Thec-changetrust.org	0.75	1	0	2	0
Climatecare.org.uk	0.63	0	0	2	2
Travelcalculator.org	0.50	2	N/A	N/A	N/A
Targetneutral.com	0.25	1	N/A	N/A	N/A

5. Comments for each calculator

Resurgence.org

This was the overall best calculator from those we surveyed. It is easy to use and explains what to do step-by-step. It allows you to input detailed information about most aspects of your travel and consumption, which we believe will give an accurate estimate of your carbon footprint. For those interested in the technical details it also makes its calculation factors explicit.

Carbonfootprint.com

This calculator came third in our overall ratings, and in our top 5 for land travel and fuel use. It is relatively quick to use, but takes in the detailed information needed to produce a reliable estimate

of your carbon footprint.

Clevel.co.uk

Run by

bestfootforward, this was one of our top 5 calculators overall, and in our top 5 for land travel, fuel, and consumption. It is easy to use. Its 'flights' section allows detailed input of international flights, but produces unusually low figures and can't calculate domestic flights.

Chooseclimate.org

This is a specialised calculator for flights only. It is extremely easy to use, and produces accurate figures which are explained in the accompanying text, making it our top calculator for flight calculations.

CO2balance.com

This is one of our top calculators for land travel. It has lots of options to be as specific or as rough as you like. It is the only calculator we surveyed which allows you to select exact rail destinations; and the only calculator which estimates emissions from ferry travel. However, its estimates of flight emissions are unusually low.

Carbonbalanced.org

This is a calculator designed for businesses to use. The user inputs detailed information about business travel and office buildings, and your results are emailed back to you within a few days.

Msn.com

This is an easy to use calculator, in our top 5 overall and our top 5 flight calculators ? it estimates flight emissions quickly and accurately.

Nef.org.uk

This is quick to use and for those interested, makes its calculation factors explicit. It was in our top 5 calculators for air travel.

Bestfootforward.com

This was one of our top calculators for consumption. Overall, it does not make a very detailed estimate of your footprint, but will give you a rough estimate very quickly in a user-friendly layout.

Ecofoot.org

This user-friendly calculator gives a footprint in 'global hectares' - different from the usual 'tonnes carbon'. It is extremely easy to use, and was one of our top 5 for consumption calculators, but probably lacks some detail needed to produce a really accurate estimate of your footprint. It comes in the form of a 'quiz' which can be taken in many different languages.

Bp.com

This is a really fun calculator to use, but lacks the detail necessary to produce a really accurate estimate of your emissions.

Thec-changetrust.com

This calculator gives lots of options to input very specific or very rough figures for car travel, though it does not give you the option to input train or bus journeys. It also allows detailed input to fuel use and flights, though it gives unusually low estimates of flight emissions.

Carboncalculator.com

This calculator requires registration to use. It is structured as a quiz, but for frequent travellers of all kinds may miss asking you some important details.

Carbonneutral.com

This is easy to use, but lacks some detail. In terms of flights, it allows you to specify the exact airports you are flying from / to, though estimates are unusually low.

Climatecare.org.uk

This is very easy to use, and creates a useful ?carbon profile? as you add your different emissions sources together. However, it lacks some detail. Its flight calculator is detailed and easy to use, though it produces unusually low estimates.

Steppingforward.org.uk

This links to a bestfootforward calculator (see above). This was one of our top calculators for consumption. Overall, it does not make a very detailed estimate of your footprint, but will give you a rough estimate very quickly in a user-friendly layout.

Travelcalculator.org

This calculator only takes account of your land journeys (e.g. car, train). It is in the form of a quiz, but the breakdown of questions can leave you a little unsure that you've remembered to enter everything..

Targetneutral.com

Powered by bp, this calculator only calculates your car emissions, though it does let you input very detailed information about your car (down to the model!)

Coinet.org.uk

This is COIN's own calculator. It fulfills many of our own criteria, so came second in our overall ratings, and in our top 5 for air and fuel emissions estimates. For those interested, it makes its

calculation factors explicit. However it does not automatically calculate figures for you, so you need to do it by hand!