# ASSUMPTIONS USED IN THE GREEN CALCULATOR

TANDBERG

See: green

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## 1. MEASURING $CO_2$ EMISSIONS BY DIFFERENT MODES OF TRANSPORT[1]

- **Car Travel** — Medium size car — average $CO_2$ emissions for petrol and diesel engine = 0.175 kg/km or 0.62 lb/mile
- **Airplane Travel** — Average $CO_2$ emissions per passenger = 0.13 kg/km or 0.46 lb/mile
- **Train Travel** — Average $CO_2$ emissions per passenger = 0.04kg/km or 0.14 lb/mile

## 2. MEASURING DISTANCE WHEN TRAVELING BY AIRPLANE[2]

The Green Calculator relies on a database of all major airports throughout the world. By pinpointing the exact location of each airport on the globe, the calculator measures the exact distance from any potential airport of departure to any potential airport of arrival.

For ease of use, the calculator assumes that all flights are direct, although, in practice, one may travel to and from several airports in the course of a single journey, making an actual journey longer than the result found.

## 3. MEASURING TIME SPENT TRAVELING BY PLANE[3]

Based on the distance from departure airport to arrival airport, the Green Calculator places each flight you enter into one of several bands for short-haul, medium-haul and long-haul air travel.

Then, using actual travel data, the Green Calculator estimates how long it takes a typical aircraft in each of these bands to cover a given distance, based on the time required to travel 100 miles/161 km.

| Flight distance band | Average minutes to cover 100 miles/161 km |
|---|---|
| one mile to 2000 miles/1.6 km to 3219 km | 18.1 |
| 2001 miles to 4000 miles/3220 km to 6438 km | 14.7 |
| 4001 miles to 6000 miles/6439 km to 9656 km | 12.7 |
| 6001 miles to 8000 miles/9557 km to 12875 km | 12.8 |
| 8001 miles and above/12876 km and above | 12.6 |

## 4. MEASURING TIME SPENT TRAVELING BY CAR OR TRAIN[4]

For car and train travel, the Green Calculator assumes average speeds over certain distances.

**Car travel**

| | |
|---|---|
| Average speed while traveling less than 50 km (31.15 miles) — one way | 50 km/h |
| Average speed while traveling between 50 and 200 km (124.3 miles) — one way | 80 km/h |
| Average speed while traveling more than 200 km — one way | 90 km/h |

**Train travel**

| | |
|---|---|
| Average speed while traveling less than 50 km — one way | 70 km/h |
| Average speed while traveling more than 50 km — one way | 100 km/h |

[1] Department for Environment, Food and Rural Affairs, U.K. (DEFRA)
[2] Innovata in association with the International Air Transport Association (IATA)
[3] Innovata in association with the International Air Transport Association (IATA)
[4] Based on data from www.progressiverailroading.com

## 5. PRE AND POST TRANSIT TIME FOR AIR AND TRAIN TRAVEL[5]

For any flight or train trip you take, you need to consider not only your actual transit time, but the total time you spend away from your origin and destination. The Green Calculator assumes that before you start traveling by plane or train you need to spend some time getting to the airport or train station.

At the airport, you need to spend time in line at registration and security, approximately one hour for a domestic U.S. flight and two hours for an international flight. Once you disembark you also need to spend time gathering bags, perhaps going through customs, transferring, and then reaching your final destination via another mode of transportation. On average, the calculator assumes that these processes take the following amounts of time:

| **Air travel** | | | **Train travel** |
|---|---|---|---|
| Domestic | Medium haul | Long haul | Domestic |
| 7 hours | 8 hours | 12 hours | 2 hours |

## 6. PRODUCTIVITY LOSS[6]

Certainly, some of the time you spend in transit can be spent on the phone, using email, or catching up on some work. But, how productive can you truly be while in line, going through security, or finding your bags? The Green Calculator assumes the following productivity loss per method of transportation:

While in flight, on the road or on the tracks:

| **Air travel** | | **Car travel** | **Train travel** |
|---|---|---|---|
| International travel | European /domestic | 50% | 20% |
| 65% | 70% | | |

**Pre and post travel:**

The Green Calculator assumes 60% of your pre and post travel time while traveling by plane and 50% of your pre and post travel time when traveling by train is unproductive.

## 7. AVERAGE HOURLY COST PER EMPLOYEE TO AN ORGANIZATION[7]

Average hourly costs per employee are based on average salary assumptions. Of course this will vary depending on salaries and billing rates.

**Average hourly cost per employee = £25, $47, €37**

[5] Based on information gathered from TANDBERG customer case studies
[6] Based on information gathered from TANDBERG customer case studies
[7] Based on salary studies from British Telecom and WorldCom