

At Footprint Ecology we strive for very high environmental and ethical standards, with a commitment to minimise our environmental impact. We also only use suppliers with similar ethics. For each contract we estimate the amount of CO<sub>2</sub> generated for each activity and charge clients a fee based on the following estimates:

- We assume 26kg of carbon are generated by every 100 miles of car travel<sup>1</sup>
- We assume 10kg of carbon are generated by every 100 miles of train travel<sup>2</sup>
- We assume 15kg of carbon are generated for every person day (in the office)<sup>3</sup>

We relate the total CO<sub>2</sub> for each contract to a financial value by using the typical rate charged by carbon offset companies, £15 per tonne CO<sub>2</sub><sup>4</sup>.

## Outcomes

In the financial year 2009/10 the total CO<sub>2</sub> charge was £259.5 for 17 completed contracts out of 39. The median charge was £10 and the largest contract of the year contributed the greatest amount (the Solent II project which involved extensive visitor and bird monitoring was charged £62).

**Table 1: CO<sub>2</sub> charge by project over the financial year 2009/10**

Project	CO <sub>2</sub> charge (£)
Blackwater valley visitor survey	5
Purbeck HRA	5
Brecks HRA	10
Great Yarmouth HRA	10
Hindhead / Devils Punchbowl Visitor Surveys	10
Management of Common Land	10
North Dorset Core Strategy HRA	10
Pebblebeds	10
Pebblebeds II	10
Phoenix Green	10
Poole Footbridge	10
Sunnyside	10
North Kent Baseline Data and Analysis	12.5
Suffolk Sandlings Living Landscape	15
Exe Disturbance Study	20
Chobham Common	40
Solent II	62
<b>Total</b>	<b>259.50</b>

<sup>1</sup> From <http://www.resurgence.org/resources/quickcalc.html>

<sup>2</sup> From <http://www.resurgence.org/resources/quickcalc.html>

<sup>3</sup> Estimated using typical office values provided by the Carbon Neutral Company

<sup>4</sup> From a search at <http://www.endscarbonoffsets.com/>

We have estimated the energy consumption, total CO<sub>2</sub> and associated offset amount for our office based work (Table 2). We are yet to calculate the final figures for transport and travel but currently our offset figures for the office based work are almost the same to the carbon offset charged. Therefore with the addition of travel CO<sub>2</sub> the total offset amount will fall short of the CO<sub>2</sub> produced and we need to review our offsetting process. The first way to ensure that the amount charged meets the energy used is to include offsetting on every contract no matter how small. It is clear that this wasn't achieved in 2009/10 as offsetting was only received from 44% of contracts.

**Table 2: Footprint Ecology Forest Office energy use (\* indicates that staff working from home are included)**

Energy use	Power consumption (W)	Usage level	Annual energy use (KWh)	Reference
Laptop*	20	2.5 used for 8hr x 5 days x 45 weeks	90	David JC Mackay, Sustainable Energy without hot air
Desktop PC*	80	3 used for 8hr x 5 days x 45 weeks	342	David JC Mackay, Sustainable Energy without hot air
LCD display*	34	5.5 used for 8hr x 5 days x 45 weeks	336.6	David JC Mackay, Sustainable Energy without hot air
Server at peak*	326	8hr x 5 days x 50 weeks	652	<a href="http://www.pcpro.co.uk/reviews/servers/224058/dell-poweredge-t605">http://www.pcpro.co.uk/reviews/servers/224058/dell-poweredge-t605</a>
Server when idle*	247	16hr x 7 days x 52 weeks	1438.5	<a href="http://www.pcpro.co.uk/reviews/servers/224058/dell-poweredge-t605">http://www.pcpro.co.uk/reviews/servers/224058/dell-poweredge-t605</a>
Printer when idle	45	7.7hr x 5 days x 50 weeks	86.6	<a href="http://www.dell.com/downloads/global/products/print/5110cn_brochure.pdf">http://www.dell.com/downloads/global/products/print/5110cn_brochure.pdf</a>
Printer when printing	600	0.3 hr per day x 5 days x 50 weeks	45	<a href="http://www.dell.com/downloads/global/products/print/5110cn_brochure.pdf">http://www.dell.com/downloads/global/products/print/5110cn_brochure.pdf</a>
Heating*	1000 per person	18 KWh per person per day 4050 KWh per person per year (6 x 4050)	24,300	David JC Mackay, Sustainable Energy without hot air
Kettle*	2000	Based on 20 minutes use per day	360	David JC Mackay, Sustainable Energy without hot air
Fridge*		Based on 0.5 KWh per day for 300 days	75	David JC Mackay, Sustainable Energy without hot air
Lighting		1.3 KWh per person per day 300KWh per person per year (6 x300)	1800	David JC Mackay, Sustainable Energy without hot air
<b>Total (KWh)</b>			<b>29,525.7</b>	
<b>Total CO<sub>2</sub> (Kg)</b>			<b>15,559.7</b>	0.527kg CO <sub>2</sub> / KWh David JC Mackay, Sustainable Energy without hot air
<b>Total CO<sub>2</sub> (tonnes)</b>			<b>15.56</b>	
<b>Total offset needed</b>			<b>£233.4</b>	Based on £15 per tonne

## **Improvements and spending options**

We have stated our commitment to use the CO<sub>2</sub> charge to ensure that year on year we reduce our carbon emissions. Potential measures that we will investigate as a company and with our landlord (the Forestry Commission) are:

- Increased insulation
- Changes to the way the building is heated
- Upgraded lighting to a low energy system
- Photovoltaic panels
- Further changes to travel practices
- Long term changes in office equipment (e.g. photocopier)

Given that we already operate the business in a very environmentally aware way it is likely that we will continue considering the options above and make a significant investment when more funds are available.