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# Practice Guidance

## Using the One Planet Development Ecological Footprint Calculator



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# Wales Planning Policy Development Programme

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# USING THE ONE PLANET DEVELOPMENT ECOLOGICAL FOOTPRINT CALCULATOR

*These are instructions for the use of the OPD Ecological Footprint Calculator. They accompany the Practice Guidance for TAN 6 and should be read with it.*

The OPD Ecological Footprint Calculator is a simple spreadsheet-based tool designed to estimate the Ecological Footprint (EF) of OPD applicants based upon annual household expenditure on goods and services, travel, the use of energy and the production of foods and materials from the site for domestic use.

It is based on the REAP 2 tool from the Stockholm Environment Institute. This calculator uses mostly financial information to lay out the household consumption over the year and allocate environmental impacts to it.

Results are generated in global hectares (gha) per capita.

There are two sheets.

The first for entering your data also shows your resulting EF

The second shows an itemised detailed breakdown of the EF.

## The data entry sheet

There are three columns for data entry these represent different year's expenditure and resource use.

- 1) **Existing Household - Actual Figures** - it is an option to enter data for the past 12 months (i.e. pre OPD project) here in order to lay out what your current EF is and to see on the detail breakdown sheet where your biggest impacts come from. This is recommended as it can provide you with useful information on which to base changes in your lifestyle for your OPD application. It is not *compulsory*.
- 2) **Estimated Household Figures on First Habitation** - you are required to lay out your best estimate of what your EF will be on first habitation of the site<sup>1</sup>. This column allows you to do this. You should fill it in to generate an EF figure to estimate the proposal's EF on first habitation. This is compulsory.
- 3) **Year Three & Year Five Review - Actual Figures** – you are required to review your progress towards the 2.4 gha per capita target after three and five years after first habitation. This column allows you to do this. You should plan to gather data in advance to allow you to easily carry out the review. This column will remain empty at the time of the initial OPD planning application. These are compulsory.
- 4) **Estimated Household Figures at Year Five** - you are required to lay out your best estimate of what your EF will be once you have implemented your OPD project as described in you management plan at application. This

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1 when the site becomes the sole residence of the household

column allows you to do this. You should fill it in to generate an EF figure to estimate the proposal's EF at five years after first habitation.

For timings of the different Ecological Footprint Assessments see paras 4.13 – 4.14 of the main One Planet Development Practice Guidance.

### **How to enter your data**

Each line where information is required has an item reference number.

Data should be entered in the appropriate box in the units indicated.

The following section lays out what information is required in each line.

### **What data to enter**

You will be assessing your **domestic per capita Ecological Footprint**. You therefore need to ensure you separate expenditure, travel and energy use necessary for your domestic affairs from any expenditure, travel and energy use associated with any business activities. Anything used by volunteers, or guests should also not be counted in your domestic figures.

Enter figures for your whole household. The calculator divides the total into a per capita figure.

If you are a group of households; do calculations on separate spreadsheets for each household to obtain individual results and then calculate an average per capita EF.

## Item by item guidance for data entry

### General information

1. **Number of people in Household** – state the number of people living in your home during the year. This is required in order to give a per capita EF figure. *Do not include volunteers in this figure.*
2. **Household annual income** – this is only required for Three & Five year review and existing household figures. This helps to verify your data and check that all impacts have been included in the assessment. You need to demonstrate a summary balance sheet laying out domestic income plus any savings used to purchase items during the year against expenditure and savings made during the year and thus accounting for where you have bought external resources (energy, goods and services) into your household. If income cannot be balanced against expenditure and savings as laid out in the tool then you need to look at the data to determine what has been missed or counted twice.

### Energy use

*Don't include energy used for any business activities.*

3. On Grid electricity - if you use electricity from the grid enter your annual use in kWh from your bills here..
4. Solar - if you generate your own power off grid enter your annual generation here.
5. Wind - if you generate your own power off grid enter your annual generation here.
6. If you use mains or bottled gas enter the annual consumption in kWh here. A conversion figure for 1kg of bottled gas to kWh is shown to help you.
7. If you burn wood for heat and hot water enter your annual consumption here. A conversion figure for 1000 kg of wood to kWh is shown to help you. As a guide stacked hardwood log wood seasoned air dried @ 20% moisture assumed to be 421 kg/m<sup>3</sup>. Stacked hardwood log wood seasoned air dried @ 35% moisture assumed to be 518 kg/m<sup>3</sup>. Stacked softwood log wood seasoned air dried @ 20% moisture assumed to be 312 kg/m<sup>3</sup>. Stacked softwood log wood seasoned air dried @ 35% moisture assumed to be 384 kg/m<sup>3</sup>
8. If you use coal enter the annual consumption in kWh here. A conversion figure for 1kg of coal to kWh is shown to help you.
9. If you use fuel oil enter the annual consumption in kWh here. A conversion figure for 1kg of oil to kWh is shown to help you.

### Housing and infrastructure

10. Annual rent or mortgage expenditure.

11. Capital invested in renewable energy plant / water plant. Total costs can be divided by 15 years and entered as an annual sum or entered as a one off capital sum. Note that capital costs set across 15 years must be entered every year in analysis for 15 years.
12. Capital invested in building home. Total costs can be divided by 30 years and entered as an annual sum or entered as a one off capital sum. Note that capital costs set across 30 years must be entered every year in analysis for 30 years.
13. Include any repair services you pay for, plumbers, painters, etc. and expenditure on big purchases of materials. Not tools and DIY equipment which go in line 56 & 57. Not costs of build which are entered in line 11.
14. Cleaning equipment or services
15. Water supply and miscellaneous dwelling services. For mains water and any other service costs not included above.

### Travel and transportation

16. New and 2<sup>nd</sup> hand vehicles. You can divide the cost of the vehicle by its anticipated life and enter as an annual sum.
17. Costs of maintaining and servicing your vehicle(s). If the vehicle is also used for business divide the costs up proportionate to the domestic/business mileage.
18. Cost of rail travel
19. Cost of buses and taxis
20. Cost of air travel
21. Costs of ferries etc.
  
22. Distance travelled by your private car in km (1.609 km = 1 mile) for domestic use. If the vehicle is also used for business divide the distance up proportionate to the split of domestic/business mileage.
23. Domestic private vehicle petrol use. Also include any petrol used in chainsaws, mowers etc. Litres.
24. Domestic private vehicle diesel use Litres.
25. Domestic private vehicle bio diesel use - Litres. Fill here if you use 100% biodiesel.
26. Domestic private vehicle reclaimed vegetable oil use - Litres. If you have a converted vehicle.

### Food purchased

27. Meat & meat products purchased.
28. Poultry meat and poultry meat products including eggs.
29. Fish and fish products from catch including farmed fish.
30. Fruit and vegetables.
31. Vegetable and animal oils and fats. Lard, margarine, veg oils etc..

32. Dairy products, butter, cheese, milk.
33. Grain mill products; starches and starch products, Wheat, corn, rice, cous cous etc..
34. Bread; rusks and biscuits; pastry goods and cakes.
35. Cocoa; chocolate and sugar confectionery.
36. All other food products (including sugar) processed ready meals etc..
37. Fizzy drinks, squashes, juices.
38. Alcoholic beverages.
39. Eating out, restaurants, cafes, take aways, fish n chips.

#### Food produced on site for home use

40. Compost purchased.
41. Inorganic fertilizer/ pesticides etc. purchased.
42. Gardening / horticultural / farming equipment purchased for your domestic production.
43. Seeds purchased for your domestic production.
44. The area of land that your home sits on and land that is used to produce veg, fruit and animals for your home use only. Don't count land that is used for business production.
45. Any feeds and concentrates used to feed animals (including poultry) for domestic consumption.

#### Consumable goods

46. Tobacco.
47. Clothing. .
48. 2<sup>nd</sup> hand Clothing.
49. Footwear.
50. 2nd hand Footwear.
51. Furniture, furnishings, carpets etc..
52. 2<sup>nd</sup> hand Furniture, furnishings, carpets etc..
53. Household textiles, sheets, curtains etc..
54. Household appliances, cooker, fridge, kettle etc..
55. Glassware; tableware & household utensils.
56. 2<sup>nd</sup> hand Glassware; tableware & household utensils.
57. Tools and equipment for house & garden.
58. 2<sup>nd</sup> hand Tools and equipment for house & garden.
59. Medical products; appliances & equipment. Glasses, hearing aids etc..
60. Telephone & telefax equipment - not telephone contracts; see item 68.
61. Audio-visual; photo & IT equipment, computers, TV etc..
62. Other major durables for recreation & culture, games, sports kit etc..
63. Other equipment for recreation, bikes, boats etc..
64. Newspapers; books & stationery.
65. Personal care – soaps, shampoos, razors, sanitary products, perfumes etc..

66. Personal effects – Anything else not included above.

## Services

67. Postal services, stamps etc..

68. Telephone & telefax services – phone contracts etc..

69. Education – private education and courses..

70. Accommodation services – hotels, camping, B&Bs etc but not business use.

71. Insurance – car, household but not business.

72. Financial services – bank charges, investment costs.

73. Other services - planning costs, engineers, architects, IT etc..

74. UK residents abroad (UK holiday makers) – spend when on holiday abroad..

## All other transactions

75. Savings in year.

76. Spending on all fuels in year, electricity, gas, vehicle fuel, etc.

Items 75 and 76 allow your data to be verified by comparing your income against your outgoings and savings for the year ensuring that all consumption is accounted for and not counted more than once. The total outgoings and savings for the year as entered are displayed in the verification box. This figure should come to within 5% of your income plus any savings used for purchases during the year.

## Results

The results of the analysis are displayed at the top of the data entry sheet. An itemised detailed breakdown of the results is shown on the separate sheet.

**Public Services and Capital investment sections** – The administration and delivery of Public Services, Government and Capital investment by Government carry environmental impacts that are shared by all citizens. The contribution these make to each person's footprint are noted on the bottom of the input sheet. For future scenarios the calculator reduces these impacts to 50% of those stated on the input page in line with the 50% reduction in domestic impact applicants are expected to achieve at year Five.

**Example Sheets** – There is an example calculator sheet which shows the data for typical household figures at 2004 prices which generate an EF of 4.84 gha in the "Existing Household Figures" section. There are also example OPD figures generating an EF of 2.25 gha in the "Estimated Future Household Figures at Year Five" section.