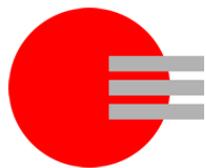


# Oxfordshire Community Groups & Volunteers

# Activities



Working in partnership with  
**THE NATIONAL  
ENERGY FOUNDATION**



*Compiled by Dale Hoyland,  
Strategic Development Manager,  
NEF*

# Activity 1: Calculate Your Carbon Footprint

## CARBON CALCULATOR

Calculate your annual carbon emissions



### HOUSE HEATING

#### GAS HEATING

Enter an annual figure for just one of the following

New style units (cubic metres) of mains gas

Old style units (100's cubic feet) of mains gas

Kilowatt hours (kWh) equivalent

Gas bill (£ / year)

#### COAL

One sack of coal usually weighs 50kg

Kilograms of domestic coal

#### HEATING OIL

Enter an annual figure for just one of the following

Litres of heating oil

Gallons of heating oil



### ELECTRICITY

Kilowatt hours (kWh) of conventional electricity

Kilowatt hours (kWh) of green tariff electricity

Electricity bill (£ / year)



### CAR

Enter your annual mileage according to your car type

Small petrol car up to 1.4 litre engine (Miles)

Medium petrol car 1.4 to 2.0 litre engine (Miles)

Large petrol car over 2.0 litre (Miles)

Small diesel car up to 1.7 litre engine (Miles)

Medium diesel car up to 1.7 to 2.0 litre (Miles)

Large diesel car over 2.0 litre engine (Miles)

Hybrid car (Miles)

LPG car (Miles)



### PUBLIC TRANSPORT (bus, train, etc)

Bus (Miles)

Train (Miles)



### PLANE

Domestic (km)

Short-haul international - europe (km)

Long-haul international - rest of the world (km)

Enter the figure  
for how much  
you use (yr)

Conversion  
factor

Kg of CO<sub>2</sub>

<input type="text"/>	2.02	<input type="text"/>
<input type="text"/>	5.71	<input type="text"/>
<input type="text"/>	0.20	<input type="text"/>
<input type="text"/>	5.10	<input type="text"/>

<input type="text"/>	2.51	<input type="text"/>
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<input type="text"/>	2.53	<input type="text"/>
<input type="text"/>	11.49	<input type="text"/>

<input type="text"/>	0.52	<input type="text"/>
<input type="text"/>	0.00	<input type="text"/>
<input type="text"/>	4.70	<input type="text"/>

<input type="text"/>	0.27	<input type="text"/>
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<input type="text"/>	0.34	<input type="text"/>
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<input type="text"/>	0.48	<input type="text"/>
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<input type="text"/>	0.23	<input type="text"/>
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<input type="text"/>	0.29	<input type="text"/>
----------------------	------	----------------------

<input type="text"/>	0.39	<input type="text"/>
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<input type="text"/>	0.22	<input type="text"/>
----------------------	------	----------------------

<input type="text"/>	0.34	<input type="text"/>
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<input type="text"/>	0.15	<input type="text"/>
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<input type="text"/>	0.05	<input type="text"/>
----------------------	------	----------------------

<input type="text"/>	0.16	<input type="text"/>
----------------------	------	----------------------

<input type="text"/>	0.10	<input type="text"/>
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<input type="text"/>	0.11	<input type="text"/>
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To calculate the distance between locations you can use:  
[www.freemaptools.com/how-far-is-it-between.htm](http://www.freemaptools.com/how-far-is-it-between.htm)



TOTAL CO<sub>2</sub> EMISSIONS =

## Activity 2: Energy Advice Check List

SUBJECT	Y	N	FURTHER DETAILS
<b>SECTION 1: HEATING AND HOT WATER</b>			
Is the householder using the most appropriate form of heating currently fitted in the home?			
Is the householder aware of the comparative cost of fuels for heating/hot water?			
If fitted, does the householder know how to use:			
- Room thermostat (set to 18°C – 21°C)			
- Central Heating/Hot water programmer			
- Thermostatic Radiator Valves (TRVs)			
- Hot water cylinder thermostat (set to 60°C)			
- Boiler Thermostat			
- Storage heater controls			
If the householder has an electric immersion heater			
- Does it have a timer			
- is it on economy 7 or other off peak tariff			
<b>SECTION 2. LIGHTING AND APPLIANCES</b>			
Are running costs of electrical appliances understood?			
Are low energy light bulbs used throughout the entire house?			
Does the householder understand labels on energy efficient appliances?			
<b>SECTION 3. READING METERS AND UNDERSTANDING FUEL BILLS - Paying for fuel to heat home and use appliances -</b>			
Does the householder monitor their fuel use			
Does the householder understand their fuel bills?			
Does the household have a meter and are fuel reading taken and communicated to supplier on a regular basis?			
Is the householder aware of the different fuel payment methods?			

<b>SECTION 4. TARIFFS, FUEL PAYMENT METHODS AND SWITCHING SUPPLIERS METERS</b>			
Is the householder aware of the different tariffs available?			
Is the householder aware of the different payment methods available?			
Does the household use a green tariff?			
If not, does the householder know the benefits of buying energy from a green provider?			
Does the householder know how to switch supplier?			
<b>SECTION 5. CAVITY WALL, SOLID WALL AND LOFT INSULATION</b>			
Does the house have a loft?			
Does the house have cavity walls?			
Does the house have solid walls?			
Does the householder know if the loft and all solid/cavity walls are insulated?			
If not does the household know about the recommended insulation levels and options?			
<b>SECTION 6. RENEWABLE ENERGY</b>			
Is the house using renewable energy sources?			
If not does the household know about the different renewable energy options?			
Would they consider installing renewable energy sources if they were appropriate?			
<b>SECTION 7. SUSTAINABLE TRANSPORT</b>			
What is the main form of transportation in the household?			
Have they ever considered a more sustainable option? (if relevant)			
Are they aware of the available local transport resources?			
<b>SECTION 8. USEFUL INFORMATION, FINANCIAL HELP AND CONTACTS</b>			
Does the household use more than ten per cent of their income on energy bills?			
If relevant do they require any advice on where to receive financial help?			

**SUMMARY OF RECOMMENDATIONS GIVEN (write in)**

**SECTION 1: HEATING AND HOT WATER**

**SECTION 2. LIGHTING AND APPLIANCES**

**SECTION 3. READING METERS AND UNDERSTANDING FUEL BILLS - Paying for fuel to heat home and use appliances -**

**SECTION 4. TARIFFS, FUEL PAYMENT METHODS AND SWITCHING SUPPLIERS METERS**

**SECTION 5. CAVITY WALL, SOLID WALL AND LOFT INSULATION**

**SECTION 6. RENEWABLE ENERGY**

**SECTION 7. SUSTAINABLE TRANSPORT**

**SECTION 8. USEFUL INFORMATION, FINANCIAL HELP AND CONTACTS**

**OTHER RECOMMENDATIONS**



## Activity 3: Energy Saving Quiz



1. How much would you have to turn your heating thermostat down by to save 10% off your annual heating bill?

- |        |        |        |
|--------|--------|--------|
| A) 1°C | B) 3°C | C) 5°C |
|--------|--------|--------|



2. What percentage of an average home's annual electricity bill is due to appliances being left on stand-by?

- |         |          |           |
|---------|----------|-----------|
| A) 2-3% | B) 8-10% | C) 14-16% |
|---------|----------|-----------|

3. Setting your washing machine to 30°C instead of 60°C would save you how much electricity per typical wash?



- |        |        |        |
|--------|--------|--------|
| A) 20% | B) 30% | C) 40% |
|--------|--------|--------|

4. Replacing a 100W light bulb with its low energy equivalent will save you how much electricity over the life time of the low energy bulb?



- |               |               |                |
|---------------|---------------|----------------|
| A) Around £15 | B) Around £50 | C) Around £100 |
|---------------|---------------|----------------|

5. Which is the most energy efficient way to cook/heat a meal?



- |                   |             |                  |
|-------------------|-------------|------------------|
| A) Microwave oven | B) Gas oven | C) Electric oven |
|-------------------|-------------|------------------|

6. How many low-energy light bulbs would each UK household need to install to save enough energy to power all the street lighting in Britain?



- |                    |                    |                    |
|--------------------|--------------------|--------------------|
| A) 3 per household | B) 5 per household | C) 7 per household |
|--------------------|--------------------|--------------------|

7. How much money could be saved per year across the UK if home appliances weren't left on stand-by?



- |                 |               |               |
|-----------------|---------------|---------------|
| A) Around £500k | B) Around £1m | C) Around £1b |
|-----------------|---------------|---------------|

8. An average two-hour dryer cycle uses the equivalent energy of a 20W low energy light bulb burning for how many hours?



- |            |             |              |
|------------|-------------|--------------|
| A) 5 hours | B) 50 hours | C) 500 hours |
|------------|-------------|--------------|

9. How many dinners can be cooked with the energy wasted by a PC monitor left on overnight?



- |      |      |       |
|------|------|-------|
| A) 2 | B) 6 | C) 10 |
|------|------|-------|

10. The energy we use at work in the UK causes how much carbon dioxide emissions per person per year?



- |         |             |              |
|---------|-------------|--------------|
| A) 5 kg | B) 5 tonnes | C) 50 tonnes |
|---------|-------------|--------------|

11. A PC left on 24 hours a day causes how much CO2 emissions per year?



- |         |           |            |
|---------|-----------|------------|
| A) 1 Kg | B) 100 Kg | C) 1 Tonne |
|---------|-----------|------------|

12. How much can an average family save per year by taking energy efficient measures?



- |        |         |          |
|--------|---------|----------|
| A) £20 | B) £200 | C) £1000 |
|--------|---------|----------|

13. Which of the following uses the most energy?



- |                         |               |                    |
|-------------------------|---------------|--------------------|
| A) Electric tooth brush | B) Television | C) Electric Heater |
|-------------------------|---------------|--------------------|

14. What temperature should your water cylinder thermostat be set at?



- |         |         |         |
|---------|---------|---------|
| A) 60°C | B) 70°C | C) 80°C |
|---------|---------|---------|

1. How much would you have to turn your heating thermostat down by to save 10% off your annual heating bill?

A) 1°C	B) 3°C	C) 5°C
--------	--------	--------

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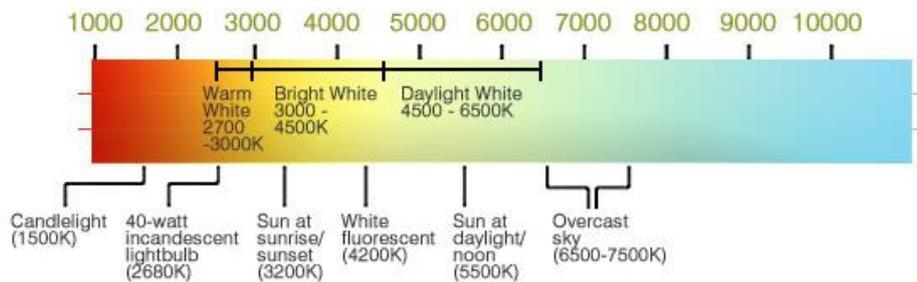
## Activity 4: Checking the lights

- Does the household know what type of lights they have and what is their consumption?
- Have they considered changing them? Would they save money if they changed the light bulbs?

### BASIC INFORMATION

**Colour temperature:** The colour of the bulb is measured as a temperature on the Kelvin scale (K)  
 Lower K value: Emits a warm, yellowish light and creates a cosy mood  
 Higher K value: More blue light: cooler, more energizing mood.

**It is recommended you choose a warmer colour for living spaces and a cooler**



**Wattage:** The amount of power, especially electric power, expressed in watts or kilowatts.

**When buying a compact fluorescent light bulb, choose a wattage that's about one-fourth of what you usually buy (incandescent bulbs). For a high-efficiency LED bulb, this should be around one-tenth of an incandescent bulb...**

**Lumens:** Lumens measure the bulb's light output; watts are a measure of energy



More lumens: More light  
 Less watts: Less energy

**It is recommended to choose by looking at the lumen output, not the watts**

### TYPES OF LIGHT BULBS

	Energy Efficiency	Colour Temperature	Average Lumens per watt (LPW)	Life Span
<b>LED</b>	Best	Warm hues to full spectrum (high blue to white colours)	70	20+ years
<b>CFL</b>	Good	Warm hues to full spectrum (high blue to white colours)	46	4 years
<b>Halogen</b>	Fair	Warm hues	26	1.5 years
<b>Incandescent</b>	Poor	Yellow, Warm hues	13	8 months

## Activity 5: Understanding the bills

Page 1 of 2
visit us online at [yourenergysupplier.co.uk](http://yourenergysupplier.co.uk)

Mrs J Jones,  
109 Clear Street,  
London,  
SW1 1AB

**1** Need help?  
**Call 0845 000 123**

Mon - Fri - 7am - 8pm  
Saturday - 8pm - 6pm  
Sunday - 10pm - 4pm

**Please have your customer reference number when you call us.**

**2** Customer Reference Number **1234 5678 1234**

**3** Bill date: **31st March**

**Your Gas & Electricity Bill**

Please pay **£283.68** by **July 31st**

**4** **Billing Summary**  
Bill period: **01 January to 31st March**

<b>Your last bill</b>	£193.32
<b>Payment received on 29th December</b>	£193.32 credit
<b>Balance before this bill</b>	£0.00
<b>Energy you've used (estimated reading)</b>	£270.17
<b>VAT at 5%</b>	£13.51
<b>Please pay</b>	<b>£283.68</b>

*We must receive your payment by 31st July*

**9** **Additional information**  
Any information your supplier wants to show you will be placed here, including details of special offers or online account management.

**10** Electricity Supply Number

S	01	123	456
	12	2345	6789 456

1. Any contact details you need to get in touch with your energy supplier will be provided.
2. You'll usually find your customer reference number or account number on the front of your bill. This is your unique identifier should you need to contact your supplier.
3. This is the date your bill was issued.
4. The bill period shows you the dates that your energy bill relates to.
5. This is the date and amount of the last payment you made to your energy supplier.
6. This is the total cost of the energy you've used in this period before VAT is added.
7. VAT at a standard level of 5% (and not the usual 15%) will be added to your bill here.
8. This is the final total of your bill and is the amount you need to pay your energy supplier.
9. Any additional information that your supplier wishes to show you will often appear on the front of the bill.
10. Your electricity supply number will appear in this box format - however it will often appear very small so you might need to look for it carefully.

### Your usage - in detail

Meter readings for meter number **7123156781** **11**

Your current tariff is **Standard** **12**

Previous reading	Recent reading	Units used	Units as kWh	Pence per kWh	Charges for energy used
80120 (ELECTRICITY)	80925	N/A	805 over 90 days	First 222 kWh at 17.312 p Next 583 kWh at 8.635 p	38.43 50.34
8561 (GAS)	8761	200	6286 over 90 days	First 1430 kWh at 4.152 p Next 4856 kWh at 2.513p	59.37 122.03
<b>14 January (reading)</b>		<b>14 April (estimate)</b>			

**Total charges: £270.17**

#### Estimated meter readings

Estimated readings are based on your previous usage to date. If we don't hold details of your previous usage, we base the readings on average consumption levels.

To make sure you receive accurate bills, please contact us directly to submit your meter readings.

#### How we calculate your gas charges

We convert gas units to kilowatt hours as follows: units used x 2.83 (metric conversion factor) x 1.02264 (volume conversion factor) x 39.1 (calorific value) divided by 3.6 (kilowatt hour conversion factor).

#### Services for customers with specific needs

If you have any special needs, please contact us to let us know. We can send you your bills in large print or in braille, or on audio tape if required.

To find out what we can do to help you, please call us on 0845 123 4567.

**15**

#### Energy payment slip

#### Bank Giro Credit

Reference (customer account number)

Credit account number

Amount due £

By transfer from bank account number

Cashier's stamp and initials 

Your signature

Date

Barcode: 1234 4567 8912 3456 7890 123

Total cash

Cheques

£

Please do not write or mark below this line or fold this counterfoil

- This is your meter point reference number, which you will need if you choose to switch your gas plan. This is sometimes referred to as an MPRN;
- Your current plan name will often be shown on your bill - but if it isn't displayed, you may need to contact your supplier to find out what it is;
- A detailed breakdown of your energy usage is provided, including the kilowatt hours (kWh) used, the cost per kilowatt hour and your latest meter readings. You can also find out here if your meter readings are estimated or actual and the dates they were taken or estimated;
- You'll be given a contact number to call if you have any specific requirements such as large print or braille bills;
- A payment slip is provided if you wish to pay your bill at the bank or by post.

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## Activity 6: Checking Insulation

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Have you decided to insulate your home? You can see from the brick layout if you have cavity walls or solid walls...



**Cavity Wall**



**Solid Wall**

If you aren't sure whether your cavity walls have already been insulated, look for small circular marks left by the drilling process as pictured here – looking under the windows on the ground floor is a good place to start...



If you are still not sure, you can get a local insulation company to come and take a look.

At the time of writing (March 2015), there remains lots of free or heavily discounted deals around, using the Energy Company Obligation (ECO) grant funds. Check with your local council, or Oxfordshire Affordable Warmth Network (0800 107 0044) to find out what's out there, and how best to progress.

If you have a solid walled property (no cavity), or you have narrow cavities which cannot be filled with insulation, or they have been filled, but the insulation is patchy / has slumped etc, then solid wall insulation (either internally applied or externally) can be a good solution. Again, at the time of writing, some grant funds may contribute to the significant cost of the works, but not likely to fully-fund such works.

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## Activity 7: Transport true or false?

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### Questions without answers

- 50% of Britain's car journeys are less than 5 miles.
- Approximately one quarter of UK car trips are under 2 miles which is less than a 15 min cycle or 40 min walk.
- An average urban household spends about 18% of its monthly income on transport.
- 17% of car journeys are travelling to and from work.
- If half of UK motorists received a lift one day a week, pollution would be reduced by 10% and traffic jams by 20%.
- UK devote 15 to 20% budget expenditure on urban transport systems.
- There are 20 million empty seats on the road every day.
- Traffic jams cost the economy £3.5 billion every year in lost productivity.
- The cost of running a car in Britain averages at £557 a month.
- UK households spend £1 in every £6 on motoring.
- The smaller your car, the cheaper it is to run.
- The average double-decker bus carries as many people as 20 cars and takes up just a seventh of the road space.
- 89% of British households have a bus stop within a 12 minute walk.

## Questions with answers

- 50% of Britain's car journeys are less than 5 miles. **TRUE**
- Approximately one quarter of UK car trips are under 2 miles which is less than a 15 min cycle or 40 min walk. **TRUE**
- An average urban household spends about 18% of its monthly income on transport. **FALSE** (*African cities statistics*)<sup>1</sup>
- 17% of car journeys are travelling to and from work. **TRUE**
- If half of UK motorists received a lift one day a week, pollution would be reduced by 10% and traffic jams by 20%. **TRUE**
- UK devote 15 to 20% budget expenditure on urban transport systems. **FALSE** (*African cities statistics*)
- There are 20 million empty seats on the road every day. **FALSE** (there are 38 million)
- Traffic jams cost the economy £3.5 billion every year in lost productivity. **FALSE** (£5 billion)
- The cost of running a car in Britain averages at £557 a month. **TRUE**
- UK households spend £1 in every £6 on motoring. **TRUE**
- The smaller your car, the cheaper it is to run. **TRUE**
- The average double-decker bus carries as many people as 20 cars and takes up just a seventh of the road space. **TRUE**
- 89% of British households have a bus stop within a 12 minute walk. **FALSE** (6 minutes).