

## Table.1. Fuel Use in our local community

Energy Used for.....	Source of Energy	% of our community that uses this
Lighting and appliances	Mains electricity	100
Heating	Mains Electricity	Normal 17 and Off Peak 22
	Mains Gas	0
	Fuel Oil	115
	LPG	12
	Coal	30
	Logs / Biomass	60

## 2. Costs and Emissions of different energy sources

Energy Source	Indicative cost KWh (pence)	CO2e Emissions (kg per Kwh)
<b>Mains electricity</b>	16.2p (Standard credit) 15p (Direct debit) 16.3p (Prepayment meter)	0.537
<b>Mains Gas</b>	4.9p (Standard credit) 4.4p (Direct debit) 4.9p (Prepayment meter)	0.184
<b>Fuel Oil</b>	5.6p	0.286
<b>LPG</b>	6.3p	0.214
<b>Coal</b>	3.6p	1.47
<b>Biomass wood fuel</b>	5.3p	0.01

CO2e emission conversion factors taken from <http://www.ukconversionfactorscarbonsmart.co.uk> – 2014

Indicative Costs taken from DECC annual Energy data report. Average annual domestic cost/Average annual consumption.  
Assumed annual electricity consumption 3,800KWh.

Indicative gas costs <https://www.ofgem.gov.uk/gas/retail-market/monitoring-data-and-statistics/understanding-energy-prices-great-britain/supply-market-indicator>. Assumed annual gas consumption of 15,000KWh.

Fuel Oil, LPG, coal and Biomass wood fuel (average of log, pellet & chip) taken from [confusedaboutenergy.co.uk](http://confusedaboutenergy.co.uk) based on March 2014 data

### Table 3. A Rough estimate of our community's household energy expenditure

	Name of our community		
1	Number of households	250	
2	UK average annual household energy consumption for heating	15,000KWh	
3	UK average annual energy consumption for lights and appliances	3,800KWh	
4	Our community's estimated annual energy consumption	4,700,000kWh	
<b>We estimate that....</b>			
5	.... of us use mains electricity for lighting & appliances	$250 \times 3800kWh \times 15p = £142,500$	<i>(£570 per household)</i>
6	.... of us use mains electricity for heating	$17 \times 15,000kWh \times 15p = £38,250$	<i>(£2250 per household)</i>
		$22 \times 15,000kWh \times 8p = £26,400$	<i>(£1200 per household)</i>
7	.... of us use mains gas for our heating	0	
8	.... of us use LPG for our heating	$12 \times 15,000kWh \times 6.3p = £11,340$	<i>(£945 per household)</i>
9	.... of us use fuel oil for our heating	$115 \times 15,000kWh \times 5.6p = £96,600$	<i>(£840 per household)</i>
10	.... of us use Coal for heating	$30 \times 15,000kWh \times 3.6p = £16,200$	<i>(£540 per household)</i>
11	... of us use Logs / Biomass for heating	$60 \times 15,000kWh \times 5.3p = £47,700$	<i>(795 per household)</i>
12	A (very rough) estimate of our total annual energy spend is therefore.	<b>£378,990</b>	

The gas and electricity consumption figures have been used as proxies for energy use in lighting and appliances and heat. Taken from DECC annual energy data report 2014.

**Table 4: A rough estimate of carbon emissions equivalent from household energy use**

	Name of our community	Cornwall
1	Number of households	250
2	UK average annual household energy consumption for heating	15,000KWh
3	UK average annual energy consumption for lights and appliances	3,800KWh
4	Our community's estimated annual energy consumption	4,700,000kWh      4,700MWh
We estimate that...		
5	... of us use mains electricity for lighting & appliances	$250 \times 3800kWh \times 0.537kg = 510,150kg \text{ CO}_2$ (2040kg per household)
6	... of us use mains electricity for heating	$39 \times 15,000kWh \times 0.537kg = 314,145kg \text{ CO}_2$ (8055kg per household)
7	... of us use mains gas for our heating	0
8	... of us use LPG for our heating	$12 \times 15,000kWh \times 0.214kg = 38,520kg \text{ CO}_2$ (3210kg per household)
9	... of us use fuel oil for our heating	$115 \times 15,000kWh \times 0.286kg = 493,350kg \text{ CO}_2$ (4290kg per household)
10	... of us use coal for heating	$30 \times 15,000kWh \times 1.47kg = 661,500kg \text{ CO}_2$ (22,050kg per household)
11	... of us use logs/biomass for heating	$60 \times 15,000kWh \times 0.01kg = 9000kg \text{ CO}_2$ (150kg per household)
12	A (very rough) estimate of our total annual CO <sub>2</sub> e emissions for household use is therefore.	2,026,665kg CO <sub>2</sub> e <b>2027 tonnes!</b>

**Table 5: Example renewable energy installations and their annual energy output**

Technology	Capacity and size	Estimated annual power output	What kind of energy	Notes on suitability
Wind turbine - small	15kW, 30 feet (9m) tall	37 MWh	Electricity	
Wind turbine - medium	300kW, 90 feet (30m) tall	735 MWh	Electricity	
Wind turbine - large	2MW, 300 feet (90m) tall	5,600 MWh	Electricity	
Micro-hydro - small	25kW	10.5 MWh	Electricity	
Micro-hydro - medium	50kW	219 MWh	Electricity	
Micro hydro - large	100kW	438 MWh	Electricity	
Anaerobic digester	1MW – large installation on a farm or industrial estate	7,000 MWh	Electricity (and lots of waste heat)	
Solar PV panels	2kW (household scale)	1,700 kWh	Electricity	
Solar thermal systems	5m <sup>2</sup> evacuated tubes (household scale)	2,500 kWh	Heat – for hot water only	
Biomass domestic boiler	20kW	20 MWh	Heat	