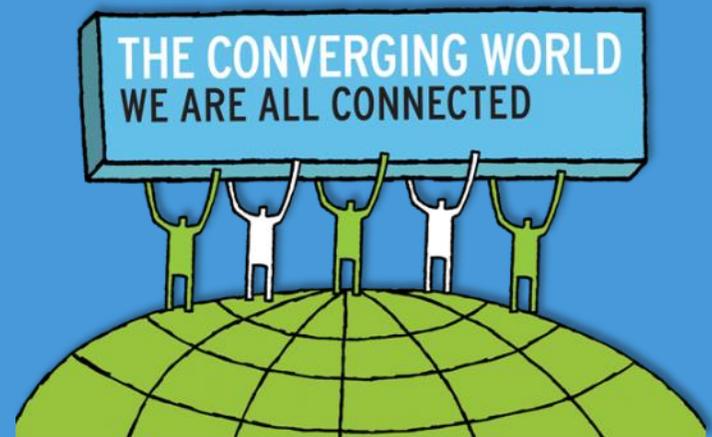


A chance for you and
your community to
be the change.

A Community Sustainable Energy Plan Toolkit
produced by The Converging World



Contents

Introduction to Sustainable Energy and Why It's Needed

- Energy Consumption
 - Categories of Energy Use
 - Reducing Energy Use
 - Carbon Dioxide (CO₂) Emissions & Planetary Boundaries

Section 1

1. Your Baseline Assessment
 - 1.1. In Summary
 - 1.2. Spotlight on your Energy Consumption
 - 1.2.1. Heat - Domestic
 - 1.2.2. Heat - Industrial and Commercial
 - 1.2.3. Electricity - Domestic
 - 1.2.4. Electricity - Domestic - Economy 7
 - 1.2.5. Electricity Industrial and Commercial
 - 1.2.6. Transport
 - 1.3. Your CO₂ Emissions

Section 2

2. Your Demand Reduction

Section 3

3. Your Renewable Energy Plan

Summary

Targets and Action Plan

Organising Your Project

Funding

Other Ideas to Explore...

Appendices

- Energy Management
- II. Renewable Energy
- III. Units and Concepts
 - Energy and Power
 - CO₂ Emissions
- IV. Statistical Areas
- V. Baseline Assessment Overview

References

About The Converging World

Introduction to Sustainable Energy and Why It's Needed

Energy Consumption

There are two main factors that drive the need for us to start implementing sustainable energy solutions as soon as possible:

- Environmental impacts (e.g. climate change)
- Security of supply

In the UK, current projections of energy demand imply that a further 30-35 GW of new generation capacity for electricity will be required over the next 15 years. This is equivalent to approximately 27 more Hinkley B nuclear power stations. Projections also show that the UK will be relying increasingly on imported gas. This demonstrates how vulnerable the UK's future energy supply could be, known as the 'energy gap', and how prone to price rises as well.

Our present energy supply is mainly from fossil fuels (coal, oil and gas) which, when burned, emit carbon dioxide (CO₂), a greenhouse gas that contributes to climate change. The International Panel on Climate Change states that developed nations must reduce their emissions by 25-40% by 2020 to have a chance of avoiding a temperature rise of 2°C.

A sustainable energy plan will guide you to switch your energy supply to a renewable source, helping to minimise these environmental impacts.

Categories of Energy Use

To assess the potential to reduce and replace fossil fuel use, we need to first understand how we use energy in the home and workplace. The three major ways in which we use energy are [A-I]:

- Heat
- Electricity
- Transport



Reducing Energy Use

The energy sources we are dependent on today are limited and will one day run out. Therefore, we need to use them wisely, which will save us money and reduce detrimental environmental impacts.

Before we understand how much energy can be supplied from renewable sources (wind and solar for example), we must first understand how we can reduce our energy demand.

Good energy management or efficiency is the easiest, most convenient and cost-effective way to reduce the amount of energy that we use [A-I]. Measures such as insulation and choosing more modern, efficient appliances as well as switching the lights out when not in use all help to reduce energy consumption.

Carbon Dioxide (CO₂) Emissions

Climate change and rapidly diminishing reserves of gas and oil mean that we must reduce our energy consumption and emissions. Many experts are calling for the concentration of CO₂ in the atmosphere to be reduced to 350 parts per million (ppm). We're currently heading for 500ppm, which scientists say will alter the world's climate beyond anything humans have experienced before. At the same time, we are facing an energy gap that could affect us all in the next decade.

Where do we start and how do we address these very real issues? The UK and many other countries now have targets for reducing CO₂ emissions. Cities and towns have been asked to contribute to the achievement of these targets through local programmes and initiatives. The UK targets are a 34% reduction of emissions by 2020 and 80% by 2050. The aim of the government is that these targets will be partly met by reducing demand through energy efficiency measures and by using more renewable energy.

After many years of little to no action from politicians on the issue, times are changing and now local authorities around the UK have started declaring a climate emergency. Bristol City Council was the first to pass the motion and has stated its intentions to become carbon neutral by

2030. The shift followed the release of the 2018 UN (IPCC) report, which concluded that unless we radically transform the way we live in the next 12 years, we risk climate catastrophe.

You can find the full IPCC report here: www.ipcc.ch/sr15/

Planetary Boundaries

It is now flagrantly clear that global warming is not the only threat to the health of our planet's ecology, but that there are several other areas of risk, from collapsing insect populations to soil degradation. It is more imperative than ever that we consider the implications that our economic ideology, lifestyle choices, and pathologically high levels of consumption have on the planet's life-systems.

The Converging World is also encouraging communities to look at ways they can organise to reduce and repair the damage done to local and global ecology. From growing projects to packaging-free shops, setting up wildlife corridors to harvesting rainwater, there are numerous ways communities can improve both their quality of life now and outcomes for future generations.

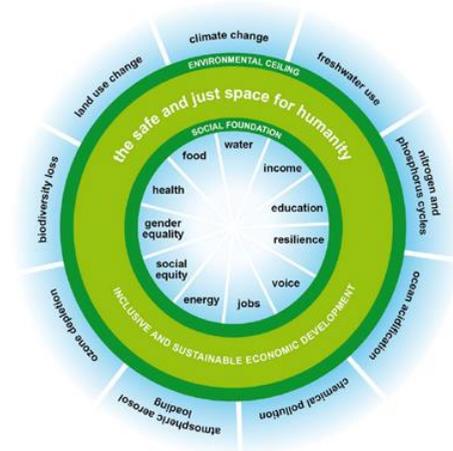
For more information about planetary boundaries,

visit:

www.stockholmresilience.org/research/planetary-boundaries.html

Doughnut Economics

The premise of the doughnut economic theory is that the current insistence on perpetual growth needs to be reassessed. It suggests that there are other, more accurate ways that we could measure prosperity than GDP. The proposal is to find a way of organising our economies that both respects the ecological limits of the planet and ensures every person's human rights are upheld. Find more information by visiting: www.kateraworth.com/doughnut



Ref: Kate Raworth, (2012), Doughnut Economics [ONLINE]. Available at: <https://www.kateraworth.com/2012/06/12/get-into-the-doughnut/> [Accessed 15 April 2019].

Section 1

1. Your Baseline Assessment

[By using the TCW EnergyMap, you can find your region or your community's energy consumption and carbon emissions data. We would recommend presenting that data in graphs and breaking it down into the following categories.]

1.1. In Summary

[Here you can include an overview of your region or your community's energy mix and total consumption.]

1.2. Spotlight on your Energy Consumption

1.2.1 Heat – Domestic

1.1.2. Heat – Industrial and Commercial

1.2.3. Electricity – Domestic

1.2.4. Electricity – Domestic – Economy 7

1.2.5. Electricity Industrial and Commercial

1.2.6. Transport

1.3. Your CO₂ Emissions

[Using the TCW EnergyMap, you can also find CO₂ emissions data for your locality.]

Section 2

2. Your Demand Reduction

[In this section, you can set out ways to reduce the demand. Demand can be reduced domestically through practices such as installing insulation or double-glazed windows and using more efficient appliances. And in the commercial and industrial sectors through implementing energy-saving practices and using more efficient machinery.]

Section 3

3. Your Renewable Energy Plan

[In this section, you can present your plan to transition towards renewables. This could include a breakdown of the most suitable replacement(s) for each of the categories of energy use. For example, solar PV might be the best substitute in the domestic electricity category and air source heat pumps (ASHP) might be most suitable for domestic heating. Your plan will reflect the specific needs and context of your locality or community.]

Summary

[You can collate all the most salient information gathered here. You might also want to include a cost-benefit analysis to demonstrate the money and emissions that will be saved by your community moving away from fossil fuels.]

Targets and Action Plan

[Here you can lay out the aims of the plan, the practical steps that will need to be taken to implement the plan, and the time frame you will be working within.]

Organising Your Project

[You could also include information about what model you are planning to use to organise your project. For example, you may want to set up an energy co-operative or a community interest company (CIC). If you have not done so already, you might want to officially establish yourselves as a community group, which may help when applying for funding. More information can be found here: www.gov.uk/guidance/community-energy]

Funding

[There are a whole host of different funding options available, many that are particularly focused on supporting community-led projects.

Charitable Grants: The National Lottery Community Fund and The Esmée Fairbairn Foundation are good place to start. A list of potential funding sources can be found here: communityenergyengland.org/pages/funding-opportunities-2

Crowdfunding: Setting up a crowdfunding page can be an effective way to raise money. Here are a few options: www.crowdfunder.co.uk, communityshares.org.uk/share-offers/microgenius, www.spacehive.com/, www.indiegogo.com/#/picks_for_you

Loans: There is also the option to take out a loan, banks that are likely to be especially supportive of community-led energy projects include: Tridos Bank, Charity Bank and Coop Financing.]

Other Ideas to Explore...

Asides from reliance on fossil fuels, there are many other aspects of the way we live in the UK that are not compatible with the ecological limits of our planet. As well as transforming our energy consumption, we also need to address other ecologically harmful consumption habits and work to restore to health eco-systems. Making fundamental changes is incredibly difficult to do alone, which is why we are encouraging people to come together as a community to be the change.

Here is a non-exhaustive list of possible community solutions:

1. Plant trees! The more trees we can get in the ground, the better! Planting locally benefits air quality and your community's quality of life. Supporting reforestation projects in the tropics, is an effective way to sequester CO₂ and creates sustainable livelihoods for people in deprived areas of the world. Join 'The Forest the Size of Anywhere' campaign, by visiting: theconvergingworld.org
2. Planting local wildlife corridors can help protect and restore biodiversity. Take a look at the 'My Wild City' campaign for inspiration: www.avonwildlifetrust.org.uk/mywildcityprojects
3. Setting up a packaging free shop in your community helps reduce the use and environmental impact of plastics. A great example is 'Zero Green' in Bristol: www.zerogreenbristol.co.uk
4. Community supported agriculture (CSA) is a way of connecting communities to where their food comes from and ensures a more stable livelihood for farmers. Find out more here: communitysupportedagriculture.org.uk
5. Start a growing project in your community. Take a look at the work of Incredible Edible for ideas: ediblebristol.org.uk
6. Community composting: www.farmgarden.org.uk/resources/community-composting-resource-pack
7. Set up a library of things. Rather than everyone buying their own individual everything, why not have a community bank of useful, but rarely used tools and appliances instead! For inspiration have a look at 'SHARE' in Frome: sharefrome.org
8. Eating a predominantly plant-based diet hugely reduces your environmental footprint: www.theguardian.com/environment/2018/may/31/avoiding-meat-and-dairy-is-single-biggest-way-to-reduce-your-impact-on-earth
9. Set up a community car share scheme or join an existing one. For more information visit: www.sustrans.org.uk/what-you-can-do/use-your-car-less/car-clubs-and-car-sharing

Appendices

References

About The Converging World

Convergence is a process that aims to create equal access for all to the earth's resources, such as food, energy and water, as well as education and health. The Converging World (TCW) aims to support communities in both the developed and developing worlds and to foster links between communities on sustainable development to implement convergence.

One of the ways in which we do this is through the TCW sustainable energy plans. We aim to support communities to understand their use of energy, how they can reduce it and to explore community owned renewable energy options. The aim is to reduce CO₂ emissions at home while simultaneously addressing fuel poverty and building local resilience.

Recognising the need to act fast and to support communities to do so, we are disseminating this guidance and community support free of charge. However, we need your support to help us continue our work both in the UK and in India.

If you like what we do, then please consider making a regular or one-off donation. Our suggested donation is £50 a year for a community group and £2 a month for an individual. To find out more about what we do then please visit our website at theconvergingworld.org

If you find our guidance useful, we would also like you to acknowledge us in your sustainable energy plan, and provided our mentors have peer reviewed your work, then you can also use some of our graphics and style if this is desirable.

But more importantly, our hope is that this is a useful tool to drive forward action from within your community, where collaboration will result in positive change that is beneficial now, as well as for future generations to come. Good luck!