



ABC Employer Project

Terms 1 & 2 2021



Context

According to the Inter-Governmental Panel for Climate Change (IPCC), the climate crisis is the single biggest threat to humanity and has unequivocally been caused by human activity. The latest report revealed that humanity has less time than originally predicted to avoid the worst effects on the environment. The government have a ten point plan for the UK to reach net zero CO₂ emissions by 2050, which will require significant changes across multiple industries. The plan includes banning new gas boilers by 2025 and replacing them with heat pumps to heat UK homes, which contribute 40% of the country's carbon footprint. World leaders will meet in Glasgow for the first COP meeting since the report, and many environmentalists hold out hope that their response will be ambitious enough to match the urgency of the situation.

Active Building Centre will host Gloucestershire COP this month, where they will discuss the changes that need to be made to the construction and energy sectors.

Construction

The Active Building Centre is a company based in Berkeley that specialises in the development of smart technology to transform the construction and energy sectors to make buildings more energy efficient, which could significantly contribute to the decarbonisation of the UK. They are hosting Gloucestershire COP on October 21st to discuss the required changes in the county.

Energy

Ecotricity, based in Stroud, is the world's first green electricity company and will be attending Gloucestershire COP. The founder of the company, Dale Vince, is currently campaigning against the Government's plan to replace gas boilers with heat pumps in UK homes, and to instead replace fossil fuel gas with renewable biogas. He states that it will be far cheaper to repurpose existing boilers than to install new infrastructure.

Task

With all the changes that need to be made to meet the UK's ambitious 2050 target, there is a lot of work to be done on both a local and national scale. Choose one of the following options as the focus for your project:

1. **Design an object that can improve the sustainability of the Berkeley Green**
2. **Design a digital technology to reduce the carbon footprint of a home**
3. **Research and present the solution for heating homes in the UK** - *Explain how many UK homes currently use gas for heating and how much this accounts for our carbon emissions. Describe the government's current plan for heating homes and compare efficiency, costs, green job opportunities and timescales with other proposals from industry and/or your own suggestions. Conclude which option is the best overall choice.*

Presentation

Your presentation must include the following:

- Who is in your team and their roles
- Present information on the urgency of the climate crisis, based on the recent IPCC report
- Research into one of the three areas of focus from the brief above
- Identify an issue and explain the environmental impact
- Present existing technologies/products
- Design proposals based on your research findings
- A final design solution
- Conclusion including answering the ethical problem

Sources

<https://www.activebuildingcentre.com/>

<https://www.ecotricity.co.uk/our-news/2021/save-our-boilers>

<https://www.thermalearth.co.uk/blog/600000-heat-pumps-a-year>

https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf