

ECM2434 Group 4 CO2 Stats

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Percentage renewable:

- 7% of university's electricity is non-renewable [3]
- The rest is under third parties:
 - For this will use estimated CO2 per kwh given by the UK government:
 - This is 0.19338 kg/kwh (2022) [4]

How were number of rooms approximated:

- Selected buildings we knew (Amory, XFI, Harrison)
- Each estimated number of rooms results:
 - Amory: 60, 100, 80, 80, 60 (average: 76)
 - XFI: 30, 20, 15, 30, 20 (average: 23)
 - Harrison: 60, 50, 50, 50, 50 (average: 52)
- Divided total kwh for building by estimated number of rooms for estimate kwh per room
 - Stats from 2018/19 [2]:
 - Amory total: 537805
 - XFI total: 121001
 - Harrison total: 615482
 - Amory kwh/r: 7076.38
 - XFI kwh/r: 5260.91
 - Harrison kwh/r: 11836.19
 - Average kwh/r: 8057.83
- Did total kwh for all buildings divided by estimated average kwh per room
 - Total for rooms used in project: 11999806, [2]

- From this received 1489 rooms in the buildings we looked at
- The amount of energy lost from lights and windows:
- Lights:
 - 11% of energy bills on commercial premises, [1]
 - Windows:
 - 30% of energy lost to open windows, [5]

References

- [1] U. E. I. Administration, “How much electricity is used for lighting in the united states?,” Last accessed on 21 March, 2023. [Online]. Available: <https://www.eia.gov/tools/faqs/faq.php?id=99&t=3#:~:text=The%20commercial%20sector%2C%20which%20includes,U.S.%20electricity%20consumption%20in%202021.>
- [2] U. of Exeter, “University of exeter energy and water use 2018/2019,” Last accessed on 21 March, 2023. [Online]. Available: <https://www.exeter.ac.uk/about/sustainability/energyandwater/energyuse/>.
- [3] U. O. Exeter, “University of exeter, 2020/2021 electricity consumption,” Last accessed on 21 March, 2023. [Online]. Available: https://www.exeter.ac.uk/media/universityofexeter/campuservices/sustainability/pdf/2020-21_Electricity_Consumption.pdf.
- [4] U. Government, “Greenhouse gas reporting conversion factors, 2022,” Last accessed on 21 March, 2023. [Online]. Available: <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2022>.
- [5] U. Government, “Energy efficient window coverings,” Last accessed on 21 March, 2023. [Online]. Available: <https://www.energy.gov/energysaver/energy-efficient-window-coverings#:~:text=About%2030%25%20of%20a%20home's%20heating%20energy%20is%20lost%20through%20windows..>