City of Westminster

CLIMATE essentials

The creative industry and its carbon impact

Dirty Looks Case Study

Thanks to City of Westminster

Dirty Looks

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Introduction

This report has been developed in partnership with Westminster City Council, Climate Essentials, and Dirty Looks.

Westminster City Council's Climate Essentials for Business programme was launched in early 2023. The programme supports businesses in measuring, understanding, tracking, and reducing their carbon emissions. As of June 2024, over 40 Westminster based organisations are participating in the programme, across a diverse range of sectors and industries.

The creative and cultural sector is a key industry within the City of Westminster, and several participating organisations on the Climate Essentials for Business programme operate within this sector. One of these business is Dirty Looks, a post-production house specialising in film and television. This is a particularly interesting workspace; the reliance on using cloud computing, rendering, and data storage means it is carbon intensive, however research and data relating to this is limited.

Dirty Looks has been a highly engaged participant in the Climate Essentials for Business programme. They have recorded several years of carbon data, and committed to a number of decarbonisation strategies, leading the way in sustainability for their industry.

61%

lower

Dirty Looks' carbon footprint is 61% lower than the average business in the creative industries*

11%

reduction

How much Dirty Looks has reduced its carbon intensity since 2020

* Calculated based on energy-related emissions (Scope 1 and Scope 2), using the Average carbon intensity of the grid (location-base)
https://www.ons.gov.uk/economy/environmentalaccounts/datasets/ukenvironmentalaccountsatmosphericemissionsgreenhousegasemissionsbyeconomicsectorandgasunitedkingdom

Creative Industries

The City of Westminster is a cultural hub within London. The borough boasts the West End, iconic landmarks such as Somerset House and the National Gallery, and blockbuster movie premieres at Leicester Square. Over 100,000 people work in the creative and cultural industries within Westminster, making up 15% of all jobs in the borough—3 times more than the average for London, placing Westminster among the top 10 boroughs in terms of its share of creative industry businesses. The creative economy is integral to Westminster, significantly contributing to London's status as one of the most culturally rich cities globally, with world-class institutions and renowned talent. London's creative economy now employs 1 in 6 Londoners and contributes £47bn to the economy.

The City of Westminster employs more people in every cultural or creative sector than any other London borough.

83,000 tCO_2e

Total energy-related emissions from creative industries in the UK in 2021

101.2 tCO_2e

Average energy-related carbon footprint of businesses in the creative industry

https://www.london.gov.uk/sites/default/files/2018_culture_strategy_final_2021.pdf
London's Creative Industries – Sector deep dive - Monet Durieux October 2023
WESTMINSTER CITY COUNCIL CULTURAL STRATEGY DRAFT FOR CONSULTATION 2020-2024

Project types

Productions and projects contribute to a large proportion of carbon emissions from businesses operating in the creative industries. This is often unaccounted for in the carbon reporting process, as it sits outside of energy usage or day-to-day operations. As the below table shows, some of these projects and productions can be highly carbon intensive. Addressing these emissions is crucial for the industry to achieve net zero goals.

Film and Television Production:

77 tCO_2e	Average carbon footprint of a 1 hour episode of television
391 tCO_2e	Average carbon footprint of small scale film production
3,370 tCO_2e	Average carbon footprint of a large, tentpole production

Theatre Performances:

50,000 tCO_2e	Total emissions produced from London theatres annually (excluding pre-production and audience travel) ...This is roughly equivalent to driving a car 1.5 million times round the M25
85,000 tCO_2e	Total emissions produced from London theatres annually (including indirect emissions from audience travel)

https://time.com/collection/time-CO_2-futures/6767943/sustainable-film-and-tv-production/
https://www.statista.com/statistics/502096/united-kingdom-uk-london-theater-performance-numbers/
https://www.london.gov.uk/sites/default/files/green_theatre_summary.pdf + 35,000 audience travel, divide 1 by 2

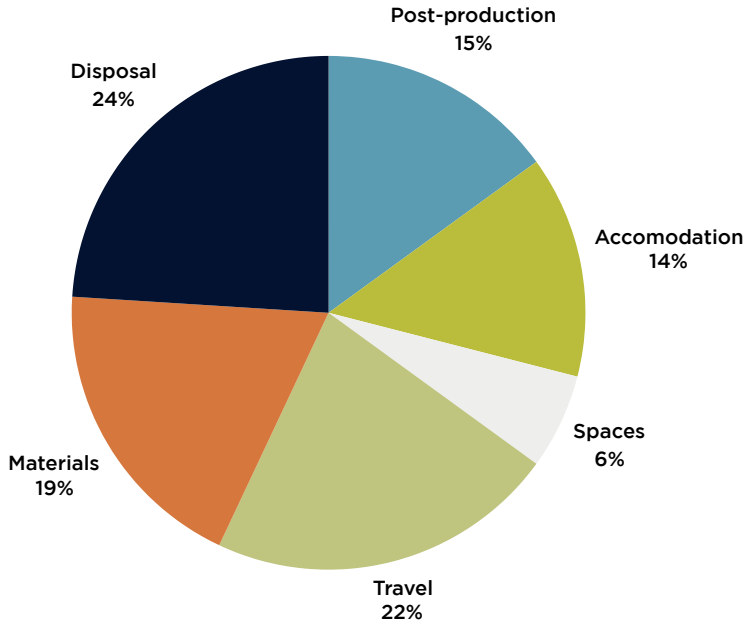
Post Production

A hidden impact

Every aspect of making a movie leaves an imprint on our planet. With the Net Zero agenda gaining momentum within film production, many studios and filmmakers have implemented eco-friendly practices and adopted cutting-edge technology in their efforts to reduce their carbon footprint. Post-production and visual effects is an area that is often overlooked in these efforts.

Short Film - Location Shoot

For a short film on site, post-production can contribute up to 15% of the total film emissions, mostly through electricity usage.



The carbon footprint associated with extensive cloud computing, rendering, and data storage required in post-production and visual effects is not well understood in the creative industries. The intricate algorithms and computing power required for this work rely on energy-hungry hardware systems, leading to very high electricity consumption and associated carbon emissions. High-performance computers and specialised rendering servers have short lifespans and require frequent upgrades, adding to the environmental burden through the production and disposal of electronic waste.

The post-production and the VFX industry plays an important role in contributing to the film industry's large carbon footprint, however very little data exists surrounding the exact figures in comparison to other areas of the industry.

A 2016 BAFTA report found that the average animation production emits 5.5 tonnes of CO_2e per hour, with the majority of these emissions caused by the production office and post-production.

...This is the same as driving 14,067 miles on an average petrol-powered passenger vehicle.

https://www.london.gov.uk/sites/default/files/green_theatre_summary.pdf
https://cmpa.ca/wp-content/uploads/2024/01/Animation-Production-Sustainability_A-Case-Study.pdf

Data processing

If we assume that a 90-minute animated film has a total of 130,000 frames, each of which takes 3 hours to render with 270W equipment, the rendering of the film consumes approximately 100,000kWh of electricity in total. In practice, electricity consumption is often even more than the calculated estimate indicates. This is the same as 23 tonnes of CO_2e considering electricity generation and transmissions and losses.

Rendering a 90-minute animated film produces the same emissions as driving 58,824 miles on an average petrol-powered passenger vehicle.

One of the most costly and time-consuming parts of the animation process is rendering, which involves high-powered computers pulling together the various elements of a CGI scene, including all the geometry, lighting, and motion effects into the perfect final image.

To understand more about the impact of post-production and support the team in reducing their carbon impact, Westminster City Council, as part of its Climate Essentials for Business programme, engaged with Dirty Looks, an independent post-production house in London's West End.

https://www.kajawood.com/green-post-production-solutions-are-a-hot-topic/

Dirty Looks

Case study

Dirty Looks is a leading post-production house in London's West End. With a passion for crafting exceptional visuals, it has built a reputation for delivering stunning colour grading and mastering services to independent British feature films, broadcast dramas, and beyond. From commercials to music videos, documentaries, and fashion promos, Dirty Looks has collaborated with some of the industry's most exciting productions.

Dirty Looks isn't just about creating magic on screen – it is also committed to making a positive impact on the environment. As part of the Climate Essentials for Business programme, supported by Westminster City Council, it has committed to measuring, reporting, and reducing its carbon footprint.

Since 2023, Dirty Looks has been working with Climate Essentials and Westminster City Council. Its journey on the Climate Essentials platform began by measuring and reporting energy usage, transport, products, services, data processing, and waste. The team have now completed data entry for years 2019 - 2024, including fully comprehensive and expertly validated carbon reporting for 2 full years: 2021-22 and 2022-23.

Emissions by Scope

As part of Dirty Looks' efforts to reduce its carbon footprint, it has broken down its emissions into 3 scopes, as defined by the Greenhouse Gas Protocol (GHG).

Scope 1	Direct Emissions	Scope 1 emissions account for direct fossil fuel usage and fugitive emissions, such as refrigerant leaks, which occur within the premises.
Scope 2	Indirect Emissions	Scope 2 emissions relate to electricity usage within the premises. The team calculated the carbon equivalent of their electricity consumption, which is a direct contributor to their overall emissions.
Scope 3	Value Chain Emissions	Dirty Looks' Scope 3 emissions represent indirect emissions related to its value chain, including: • Business travel and employee commuting • Products and services purchased (e.g., equipment, software, and supplies) • Home working and remote work arrangements • Waste generated and sent to landfills or incinerated • Energy-related activities, such as off-site data centre usage

By segmenting its emissions into these 3 scopes, Dirty Looks is able to gain a deeper understanding of its environmental impact and develop targeted strategies to reduce its carbon footprint.

Emissions summary 22-23

Climate Essentials has thoroughly reviewed the summary data provided by Dirty Looks, validating it through various data checks. We've utilised evidence such as account records, billing information, and employee-collected data wherever possible. Additionally, we compared Dirty Looks' results with industry benchmarks in the UK and found it to align with our expectations. As a result, we are confident that this report accurately represents Dirty Looks' carbon footprint.

Below is a summary of Dirty Looks' carbon emissions for the year 2022-23. This data has been verified by Climate Essentials.

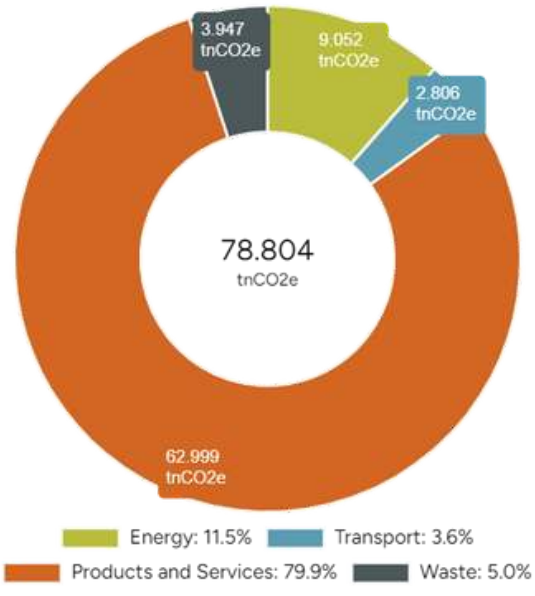
78.8 tCO_2e* **Dirty Looks carbon footprint for 2022-23**

Equivalent to... 201,536 miles driven by a petrol or
10.3 homes powered for a year

61% **Lower than the average business in the Creative Industries****

11.1% **Lower than the average business in data processing****

Dirty Looks' recorded emissions were divided into 4 categories in order to provide a better understanding of different carbon sources. 'Energy' and 'Transport' are the direct business activities. 'Products and Services' and 'Waste' outline the indirect activities that produce carbon emissions, including home working emissions. Nearly 80% of Dirty Looks' recorded emissions are related to the products and services that it buys.

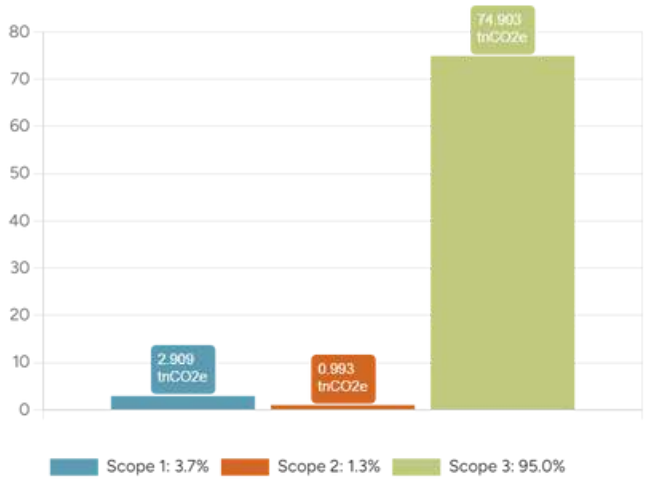


*The results shown on this page were calculated using the Market-Based Approach (This considers Dirty Look's renewable electricity provider)
** Calculated based on energy-related emissions (Scope 1 and Scope 2), using the Average carbon intensity of the grid (location-base)
https://www.ons.gov.uk/economy/environmentalaccounts/datasets/ukenvironmentalaccountsatmosphericemissionsgreenhousegasemissionsbyeconomicsectorandgasunitedkingdom

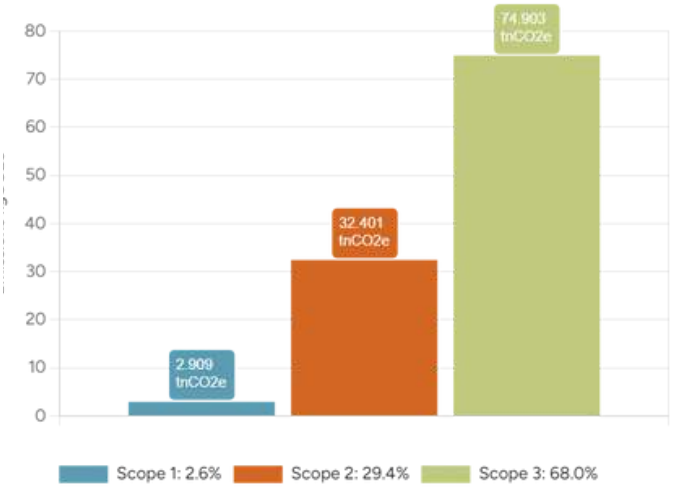
Electricity-related emissions

Dirty Looks' carbon footprint for the year 2022 was 79.3 tonnes of CO_2e, using a market-based approach. This approach considers the carbon intensity of Dirty Looks' electricity supplier, which is 100% renewable, and therefore Dirty Looks' Scope 2 (electricity) emissions are considered to be 0.

Under the Location Based Approach, we don't consider Dirty Looks' 100% renewable electricity provider to calculate electricity-related emissions. Instead, we look at the UK electricity grid's carbon intensity. Using the Location-Based Approach, Dirty Looks' emissions are 106 tonnes CO_2e. For transparency purposes, and following the Greenhouse Gas Protocol Guidelines, below we present what Dirty Looks' footprint would look like if they didn't have a 100% renewable electricity provider:



Market based approach emissions breakdown



Location based approach emissions breakdown

22-23 Footprint:

110.2 tCO_2e Location-based approach: Considers the average carbon intensity of the local electricity grid.

78.8 tCO_2e Market-based approach: Considers the carbon intensity of the specific electricity supplier chosen by Dirty Looks.

Carbon intensity metrics

Intensity ratios compare emissions data with an appropriate business metric or financial indicator, such as sales revenue or square metres of floor space. Using an intensity ratio allows Dirty Looks to compare its performance over time and with other similar types of organisations. The chosen metrics were energy-related emissions per floor space, and total emissions per full time equivalent (FTE).

Energy

0.015 tnCO_2e/ft^2 (location)
0.0026 tnCO_2e/ft^2 (market)

Gas and Electricity emissions per square footage (location-based and market-based)

Workforce

7.1 tCO_2e/FTE

Total carbon emissions per full-time equivalent

Emissions sources

The carbon footprint of Post Production: A deep dive into Dirty Looks' emissions

Data processing and equipment is extremely energy intensive and makes up a large proportion of Dirty Looks' carbon footprint. As a post-production company this is not unusual. Dirty Looks joined the Climate Essentials for Business programme to gain a deeper understanding of how data processing and equipment impact its carbon footprint, and how these factors fit into overall business operations. Dirty Looks should be commended for its commitment to transparency and sustainability, and for its efforts to understand every aspect of the business that produces emissions.

Uncovering the hidden emissions

In addition to data processing and equipment, Dirty Looks has examined its supply chain-related emissions from products and services purchased. This comprehensive approach shows that the majority of the emissions fall within the indirect emissions of its value chain. It's a critical finding that underscores the importance of considering the broader environmental implications of its operations.

Emissions sources

The data processing connection

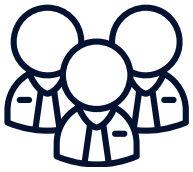
Dirty Looks' data processing and equipment activities account for more than 22% of its total carbon footprint. This highlights the significant energy and equipment demands placed on these systems and the need for sustainable solutions to reduce its environmental impact. By shedding light on these hidden emissions, Dirty Looks is taking a crucial step towards reducing its carbon footprint and minimising its environmental impact.

	Source	Total (tCO_2e)	%
Data-related emissions	Energy	1.10	1.39%
	Equipment	8.80	11.17%
	Software	5.77	7.32%
	Off-premise data centre	2.42	3.07%
Operational emissions	Electricity and gas	5.51	6.99%
	Refrigerants	0.05	0.06%
	Electric Vehicles	0.15	0.19%
	Products & Services	39.55	50.19%
	Commute	1.29	1.63%
	Upstream transport	0.90	1.14%
	Business travels	1.46	1.85%
	Waste	11.8	14.98%

Year on year comparison

Sustainability success: Dirty Looks' carbon footprint reduction

In a remarkable achievement, Dirty Looks has successfully maintained a relatively constant carbon footprint between 2019 and 2022, despite significant growth in its employee count and turnover. This feat is a testament to the company's commitment to sustainability and its dedication to reducing the environmental impact of its operations. Since 2020, Dirty Looks has been able to reduce 11% of its total emissions across Scope 1, 2, and 3.



emissions per employee

2020	2022	
13 tCO2e	7.1tCO2e	45% Lower

The Carbon intensity advantage

Additionally, this reduction in carbon intensity is having a positive impact on Dirty Looks' customers. By decreasing its own carbon emissions, the team is contributing to a broader reduction in its customers' carbon footprints, most of them operating in the Creative Industry. This is a significant benefit, as it helps to mitigate the environmental impact of the Creative Industry, which has experienced increasing scrutiny due to the carbon-intensive nature of their productions, as highlighted in previous sections.

emissions per million pounds of sales

64% Lower against 2020

Benchmarking

How does Dirty Looks emissions compare to other data processing businesses?
To better understand Dirty Looks' 22-23 emissions, we compared its energy-related emissions to industry benchmarks. We analysed the total emissions from data processing businesses in the UK, as well as the average carbon intensity metrics published by the UK Government for the sector.

Key findings
Dirty Looks' emissions are comparable to those of similar businesses in the UK.

Its carbon intensity metrics align with the average for the sector, as reported by the UK Government for energy-related emissions.

3.19tCO$_2$e/FTE

Dirty Look's direct energy-related emissions per FTE.
For the creative industries, it's 3.2

27 tCO$_2$e/£

Dirty Look's energy-related emissions per million pound of sales.
For the creative industries, it's 29.1

This benchmarking exercise provides valuable context for understanding Dirty Looks' emissions and its position within the industry. By comparing its performance to industry averages, we can gain a deeper understanding of its sustainability efforts and identify areas for improvement.

Reduction plan

Dirty Looks should be commended for their efforts so far to reduce its carbon emissions. Operating in a rented building means that opportunities for decarbonisation are more limited than other businesses and organisations. Energy use and power consumption is one of the most impactful ways that Dirty Looks can reduce its carbon footprint.

Energy awareness

Dirty Looks plans to provide energy awareness training for all staff, and education on energy-saving practices. Practices such as turning off devices at the switch to avoid phantom energy consumption can save up to 10% of energy usage each year, this is the same as 1.8 tonnes of CO_2e. Employee engagement related to heating can also reduce a further 8% to 16% off heating costs, or 0.8 tonnes CO_2e. Dirty Looks is also installing technology to monitor and shut down electrical devices when not in use, which can enable a further 5% to 10% reduction in electricity usage.

Data improvements

Emissions related to data usage will be reduced by moving to a sustainable data centre. This is planned for 2025. Dirty Looks has also moved its website to a Green Web Host.

Heat diversion

Heat generated from high-end computing tasks will be re-used. Dirty Looks currently diverts heat from its immersed servers in Devon to heat a public swimming pool in Exeter, subsequently having a positive impact on the carbon footprint of the leisure centre. According to Energy Innovation, the electricity used to cool a data centre accounts for 43% of data centre electricity use – the same amount of energy needed to power the data centre servers themselves. This means that Dirty Looks could help save nearly 13 tonnes of CO2e by heating the public swimming pool.

https://energysavingtrust.org.uk/advice/home-appliances
https://www.egi.co.uk/news/data-centres-feel-the-heat-over-energy-consumption/

Conclusion

As a business in post-production colour grading and mastering for the creative industries, Dirty Looks is helping the industry transition to a low-carbon post-production service. By measuring and reporting its emissions, the team are shedding light on the often-overlooked environmental impact of post-production operations.

Dirty Looks has both reduced its own carbon footprint and helped encourage other businesses in the industry to do the same. In the summer of 2024 Dirty Looks became a signatory of Westminster City Council's Sustainable City Charter. As part of this, the business has made a pledge to continue to reduce its carbon emissions in areas such as energy use, procurement, transport, and waste. As a signatory to the Charter, Dirty Looks will be able to continue demonstrating its commitment to decarbonisation amongst Westminster peers, and benefit from the opportunities and resources that Westminster City Council has made available to Charter signatories.

Thanks to the support provided by Westminster City Council, Dirty Looks has been able to promote transparency in its carbon reporting and demonstrate its commitment to sustainability. Climate Essentials recommends that it continue reporting its emissions annually and encourage other businesses in the industry and supply chain to do the same.

Acknowledgements

Thank you to the Westminster City Council for supporting this case study.

Climate Essentials and Westminster City Council thank Dirty Looks for its engagement, enthusiasm, and dedication to the Climate Essentials for Business programme, and the ongoing commitment to reducing its environmental impact.

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