

Green matters

Environmental sustainability
and film production: an overview
of current practice

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Forewords

In November this year, COP26, the UN climate change conference, is taking place in Glasgow. World leaders will be under huge pressure to agree formal commitments to tackle climate change, and all eyes will be on the UK. Addressing the impact of the climate emergency has never been more urgent globally and the need for action is headlining government and social agendas.

The climate emergency is an existential issue for all of us, and all industries have a role to play in fostering best practice and driving behavioural change. But given the power of our artistic output on screen, film and television, our industry has an even greater role to play in influencing and forging shifts in the ways we relate to one another and the world, in our values and behaviours.

Yet at the same time as a sector, we must acknowledge that production can be wasteful and resource intensive; countering this, professionals in all areas of the industry are seeking to create positive change.

Our current strategic plan, *BFI2022*, recognises the lead role played by BAFTA and albert, the industry-led consortium, to enable every part of the screen industry to eliminate waste and carbon emissions from production. Our partnership with BAFTA will support us as we work within film and the creative industries to create a culture of environmental responsibility, commensurate with the challenge we face.

The BFI is committed to incorporating best practice in sustainability across our funded activities. We also take the environmental impact of our own operations seriously, and have recently pledged to work towards reducing our own emissions to net zero. In October we joined other major arts and cultural organisations in signing up to Culture Declares Emergency.

As part of our commitment to deliver change, the BFI has commissioned this overview of UK film production activity and environmental sustainability to help support the sector reach net zero. It documents and describes current practices to inform further steps that can be taken in terms of policy and immediate interventions; signposts good practice which should be shared more widely; and includes comments from production professionals on experiences, attitudes and the actions needed to make change happen.

Forewords

The key findings highlight a lack of consistent data monitoring of carbon emissions across industry, without which it is difficult to effect and monitor change; a lack of cohesion and coordination in carrying sustainability best practice from production to production; infrastructure upgrades which would be required to reduce the energy consumption of studios; and the need for better signposting to existing grassroots and regional organisations supporting green production. The report strongly recommends fast-tracking the collation of carbon footprinting data across a sample of film productions to inform cross-industry efforts.

As a result of this research the BFI has set up a joint project with BAFTA and the design, engineering and architectural specialists ARUP to map the current film production eco-system in order to provide a helpful source of information and knowledge on more sustainable solutions for both studios and industry working on location.

We hope that it will be just one of many initiatives produced by this research; as we gain a fuller picture of the impact our industry has on the living world, it becomes easier to target interventions and design system changes that will drastically reduce our carbon emissions. Please join us in this industry-wide drive for change.

Ben Roberts

Chief Executive, British Film Institute

Imagine walking on to location, silent except the sound of the crew. Imagine walking into the studio, lights ablaze but air fresh and cool. Imagine sitting in the production office, safe in the knowledge that the only impact of the activity co-ordinated is cultural. Imagine it, because it is where we are heading – powered by the wind and the rays of the sun.

The journey ahead is a long one indeed, but one the industry must travel down with great speed. And why not? Addressing environmental sustainability in the industry is the single most positive, unifying, exciting and necessary challenge laid before all those who work in it. Furthermore, is the only possible way our industry can move forward – sustaining creativity for generations to come.

The key to unlocking this version of the future is hope and knowledge. Not a blind hope, but a steely determination and a stubborn optimism. And the knowledge to speak with conviction about the nature of our problems.

The pickle we are in is down to poor planning. No exit plan exists for the majority of materials and resources that enter our industry. Little consideration is given to the carbon emissions created from generators, or where beautifully crafted props spend the rest of their days. Fixing this is our principal challenge, and one that represents a great opportunity for service providers, studios and facility companies. For while production can create a swell of enthusiasm, only those who provide services can deliver infrastructure change on the scale that is required.

This transition is neither a story of sacrifice nor of duty. This is simply about building an industry that works more efficiently, creatively and collaboratively. We believe our future industry will exclusively contain individuals and organisations who realise this, the others falling away with the passing of time. See you on the other side.

Aaron Matthews

Industry Sustainability Manager, BAFTA

Executive summary

Research background

The BFI commissioned this research to create a snapshot of UK film production activity and environmental sustainability. In a relatively short fieldwork period over the summer of 2019, the aim was to document and describe current practices and identify future research opportunities.

Evidence-gathering involved desk research alongside consultation interviews with 20 experienced and well-placed practitioners and industry representatives including Production Managers, Location Managers and Environmental Coordinators as well as executives at production studios and supply chain vendors; trade associations/representative bodies; and public agencies and local authorities.

‘Because of Extinction Rebellion and all those [crew] with teenage children who are talking about it, it feels like it’s easier to have that conversation about sustainability.’

Trade association source

‘Everyone [in film production] is working under pressure. Everyone has to get their jobs done quickly and the set turned around quickly. The priority is being ready to shoot. Everything else is secondary to that.’

Production studio source

Key findings

A step change is needed in industry efforts to help meet the UK's legally binding carbon reduction commitments. Tighter regulation and obligations are likely in the near future. Attitudes to environmental sustainability are changing in the film industry, but current approaches lack strategic co-ordination. There is a risk of industry disengagement unless messaging and support are in tune with corporate thinking, and the commercial and practical realities of feature film production in the UK.

- The UK is transitioning to a carbon neutral economy but is not on target to its meet long-term legal commitments. There is minimal regulation at present, and industry is left largely to its own devices. Given the need to meet the UK's legal obligations, this is likely to change in the near future.
- Climate change is an issue of concern in the film industry and there is growing recognition of the challenges posed. But it remains a low priority in the face of other commercial pressures (including the squeeze on studio and crew capacity resulting from the current production boom).
- In the UK, the **albert Consortium** (led by BAFTA) aims to unite the production sector around a strategy to achieve zero-carbon, zero-waste. While albert has made significant strides in raising awareness of sustainable practices and changing behaviour in the television industry, more needs to be done to engage the film production community to achieve zero-carbon, zero-waste.
- The situation is complicated by the fact that the major US studios who make films in the UK use an alternative system of carbon calculation and sustainability certification hosted by Production Guild of America (PGA). This overlaps with albert's approach, but there is no common standard and sustainability practices can vary widely from production to production.
- This is exacerbated by the lack of publicly available data about the scale of the environmental challenge facing those involved in film production and current sustainability practices. Without hard data informing strategic planning and consensus-building, the film production industry as a whole will struggle to gear its response in a way that manages continued growth while taking proportionate and effective action. To address this, the report proposes fast-tracking the collation of carbon footprinting data across a sample of film productions of all sizes and types (including those currently using albert's and the PGA's carbon calculators), for data modelling to inform cross-industry efforts.

Other future research options

Unilever's Five Levers for Change model offers a simple but effective way of recasting our understanding of the challenge posed by environmental sustainability and thinking about future courses of action. In the first instance, this means considering what factors stop industry practitioners from adopting a new behaviour (barriers); how to get them to start a new behaviour (triggers); and ways to help them stick with the new behaviour (motivators).

The present research highlighted some of the more notable barriers, including perceptions around the additional time and costs involved; a tendency to stick with tried and tested production methods, products and services; a general lack of awareness and low prioritisation of sustainability; and limited green infrastructure and supply chain options.

Current understanding rests largely on data from the television industry, yet targeted action, informed by the practical realities of different types of film production activity, is likely to be more successful than general initiatives. Practitioners working at different levels in film production, and within different departments, will face their own specific barriers, and require different triggers and motivators to help overcome them. There may be common elements, but bespoke support (including tools and resources) is more likely to succeed if it takes account of the specific circumstances and challenges of each production role and department.

In view of this, the report closes by suggesting ways of framing appropriate research questions (linked to the five levers for change) as the basis for building cross-industry consensus around the kind of strategic planning and implementation envisioned by the albert Consortium.

Introduction



‘There is good scientific evidence to show the climate is changing because of emissions of greenhouse gases resulting from human activity.

The bulk of emissions derive from our demand for energy. The largest contributor is carbon dioxide (CO₂), emitted when fossil fuels are burnt to meet those demands.

There are also other emissions attached to industrial processes and agriculture.’

The Committee for Climate Change¹

1.1 Climate change 101

1.1.1 Ever since The Climate Change Act (2008) passed into law, the UK has staked its claim to be a leading player in the international fight against global warming.

1.1.2 The 2008 Act established the world’s first long-term, legally binding framework to cut carbon emissions, requiring reductions of at least 100% by 2050. The UK is also signatory to The Paris Agreement (2015), a wider legal commitment for the global response to climate change.

1.1.3 Though doubters question whether the UK has set ambitious enough carbon reduction targets (along with every other country), or is doing enough to meet present obligations, the scale of the challenge within the current legal framework remains daunting. Every person, every household, every group, every business, every organisation, every government and every intergovernmental organisation is required to take concerted action if the dire predictions of scientific consensus are to be averted.² Naturally, that includes every player in the global film industry.

¹ <https://www.theccc.org.uk/tackling-climate-change/>

² See IPCC for details about prevailing scientific opinion on climate change (<https://www.ipcc.ch>).

³ Carbon budgets are targets set for five-yearly periods until 2032, which restrict the amount of greenhouse gas the UK can legally emit each period. <https://www.theccc.org.uk/tackling-climate-change/reducing-carbon-emissions/carbon-budgets-and-targets/>

1.1.4 The scale of the challenge has been forcefully articulated by The Committee for Climate Change, the independent body established by the 2008 Act to advise government and monitor progress against the UK's legal obligations. While the UK is on track to meet the third carbon budget for the period 2018-2022,³ it is expected to fall short of the target for 2023-2027 (which straddles the next BFI strategic plan period) and beyond. According to the Committee, a significant step change in behaviour is required to get back on track:

'Meeting future carbon budgets and the UK's 2050 target to reduce emissions by at least 100% of 1990 levels will require reducing domestic emissions by at least 3% of 2018 emissions, that is 50% higher than under the UK's previous 2050 target and 30% higher than achieved on average since 1990.'

This is an indication of how substantial the step up in action must be to cut emissions in every sector.'

The Committee for Climate Change

1.1.5 Against this backdrop, the present report casts an eye over current practice in the UK film production sector. It is based on desk research and consultation with industry representatives, including the review of published statements and environmental policies, web sites, research reports and other publicly available documents from UK and international sources; and telephone interviews with experienced production crew members, production studio executives, trade associations and representative bodies, public agencies and other organisations and companies active in this area.

1.1.6 The research focus is deliberately narrow, looking at environmental impact in isolation from other aspects including social and economic sustainability. There are good arguments for taking a holistic approach to environmental, social and economic development, which lies at the heart of the UN's Sustainable Development Goals⁴, but for reasons of practicality the research takes environmental sustainability as the main object of study.

1.1.7 Within that broad area of interest, particular attention is given to the challenge of climate change and efforts to reduce greenhouse gas emissions, most notably carbon dioxide.

'We talk in terms of carbon because it's a unit that everything can be converted into, no matter what type of emission or greenhouse gas we're talking about.'

Jo Coombes, Carbon Emissions and Production: the Magic Numbers, APA, February 2018

⁴ <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

‘The majority of the UK’s greenhouse gas emissions arise from our production and consumption of energy – whether that’s driving cars, manufacturing goods or simply boiling a kettle. Emissions can be lowered by becoming energy efficient and by switching to low-carbon fuels. Both will be necessary to meet UK carbon targets, along with action to tackle non-energy emissions.’

The Committee for Climate Change

1.1.8 So while other environmental impacts present legitimate cause for concern (e.g. air quality and public health; plastic pollution in the oceans and marine protection; habitat degradation and the conservation of biodiversity), this research has bracketed them in order to highlight action around climate change (while acknowledging that these issues are inter-related, and efforts to address, say, air quality by limiting diesel engine/generator use can also contribute to carbon reduction).

1.1.9 Like all industrial processes, film production requires the input of energy, raw materials (e.g. for construction and catering), and transport for travel and haulage. All of these can involve carbon emissions linked to the use of fossil fuels and carbon-intensive technologies, as well as yielding other environmental effects. Added to this, waste is inevitably produced throughout the production process, which carries its own carbon load (e.g. used set materials and redundant assets).

1.1.10 As such, the challenge facing film production, as for all other sectors, is taking the necessary steps to reduce, reuse and recycle as much as possible while remaining a viable business enterprise. The UK’s albert Consortium, led by BAFTA, has a suitably ambitious goal in this regard:

‘We’re working to unite the production industry around a single strategy outlining the route to a zero-waste and zero-carbon industry infrastructure [...] The challenge facing the industry is how it can continue to grow while shrinking its footprint, a trend already underway in other industries.’

albert Annual Report 2018

1.2 UK feature film production

1.2.1 UK feature film production is booming thanks to inward investment features attracted to the UK's highly skilled workforce, its world-class studios and facilities and by a favourable tax regime (and aided by the dollar exchange rate).⁵

1.2.2 The latest BFI Statistical Yearbook observes that “[d]ue in part to a competitive tax regime, the number of UK films receiving final certification has risen substantially over the 10-year period, 2009-2018. [T]he impact of the extended tax relief for film introduced in 2014 is evident, with the number of inward investment films shooting in the UK increasing from an annual average of 37 (2009-2013) to 64 (2014- 2017)” (BFI Statistical Yearbook 2019).

1.2.3 These achievements are a source of considerable pride and admiration, both inside and outside the UK. But there is a view that the UK has a particular responsibility for environmental protection, by virtue of its historic relationship with US Studio productions (as explained in 1.2.5 below):

‘The UK on the whole now holds a lot of responsibility in paving the way with sustainability measures on an international level. [W]e also have a good opportunity to push the international film industry forward by implementing new measures and systems that perhaps other countries haven’t been able to do so far.’

Production crew source

1.2.4 To illustrate the character of UK feature production activity, consider the fact that in 2018 over 200 feature films were made, with total UK spend of £1.96 billion. Although inward investment features numbered 53 that year (24% of the total), they accounted for two-thirds (67%) of all UK feature production spend:

Table 1: UK feature production, 2018

	Number of productions	Value of UK spend (£ million)
Inward investment films	53	1,600
Domestic UK films	150	331
Co-productions	19	23
TOTAL	222	1,960 million

Source: BFI Statistical Yearbook 2019

⁵ The BFI defines an inward investment film as “one which is substantially financed and controlled from outside the UK and which is attracted to the UK by script requirements (e.g. locations) and/or the UK’s filmmaking infrastructure and/or UK film tax relief” (BFI Statistical Yearbook 2018).

1.2.5 Within these numbers lie some very large productions, backed by US studios: 3 features had budgets in excess of £30m, and 19 were classified as UK Studio-backed.⁶ It follows that, in respect of feature films, inward investment features in general, and big-budget US Studio productions in particular, are likely to be responsible for the largest share of the UK production sector's environmental impact due to the scale of shooting activity involved (section 2.2 describes the range of sustainable practices currently undertaken by UK Studio-backed productions).

'If you want to do anything about [sustainability] you have to persuade people not in Pinewood, Leavesden or anywhere like that, but in Burbank [...] The amount of money we spend on indigenous British film is a drop in the ocean compared to the total amount being spent.'

Trade association source

1.2.6 That doesn't absolve smaller productions, including UK domestic features, of their responsibility to reduce carbon emissions, but it highlights the need for proportionate responses across all types of production while pointing to where changes in approach could bring the largest environmental benefits at a macro level.

1.2.7 Wider developments have already influenced the way production activity is organised and delivered, and consequently its environmental impact. On the one hand, modern consumer culture has become ever more reliant on disposability and built-in obsolescence, and film production activity is not immune to the pervasive nature of its most visible manifestations, like single-use plastics and throwaway fashion.

1.2.8 On the other hand, technology can drive efficiencies and reduce the use of consumable items such as paper (e.g. paperless production office systems and online callsheets), as well as enabling set-less production with a lower environmental footprint than construction-based shoots (e.g. through the use of computer-generated scenery and motion capture).

1.2.9 Arguably the move from shooting on 35mm film to digital storage over the last decade or so has had some beneficial environmental effects, although largely as a by-product of workflow and technological developments and the draw of long-term cost efficiencies rather than the drive towards carbon reduction.

⁶ UK Studio-backed = "UK film wholly or partly financed and controlled by a US Studio but featuring UK cast, crew, locations, facilities, post-production and often UK source material" (BFI Statistical Yearbook 2018).

1.2.10 The current boom in shooting activity has consequences for the UK's production infrastructure. Capacity is being stretched, with studio space and skilled crew at a premium leading to cost pressures. Skills shortages which have emerged through the production boom are being addressed by the BFI's Future Film Skills Strategy and ScreenSkills.

1.2.11 According to some of the well-placed sources consulted for this research, factors such as this, which have an immediate commercial imperative, push environmental sustainability lower down the priority list of key decision-makers.

1.2.12 This echoes the classic dilemma at the heart of sustainable development: how to reduce

'My feeling is that sustainability is a low priority.'

Trade association source

carbon emissions while at the same time managing industrial growth and allowing businesses to contribute to collective prosperity.

1.2.13 Production studios, facilities companies and other providers of products and services in the film supply chain are at the sharp end of this challenge. While some environmental regulations already govern the way suppliers conduct their business, the government has been reluctant to introduce too many enforceable rules.

1.2.14 That is very likely to change in the near future, in order to keep the UK on target to meet its legal obligations for carbon reduction. For now, the onus is on businesses in the supply chain to decide how green to make their offer.

1.2.15 As commercial operators, many start from the position that new business models and fresh investment can only be justified if there is demand for more environmentally friendly products and services. In other words, if there is any compelling prospect of securing some competitive advantage in the market and/or an appropriate return on investment.

1.2.16 Some businesses have taken a more proactive approach to environmental sustainability, as part of their corporate social responsibilities or in direct response to government and local authority policies (in the case of publicly owned and managed companies). In consequence, there is little consensus about environmental sustainability and no uniform approach in the film production supply chain.

1.3 Cross-industry cohesion

1.3.1 This lack of consensus reflects a broader point about cross-industry cohesion. Despite the best efforts of the likes of the albert Consortium, the diffuse and diverse nature of film production at different budget levels provide few points at which sustainable practices can develop and take hold from production to production.

1.3.2 Added to this, the US Studios active in UK production have their own approaches linked to the PGA Green Production Guide programme.⁷

1.3.3 Given the particular character of the UK film production sector, it is difficult to establish the type of institutional or corporate memory necessary to make the most of the Plan-Do-Act-Check model at the heart of environmental sustainability management systems (even among the relatively small number of larger, slate-driven production companies at work in the UK).

1.3.4 Factors that mitigate against this include the itinerant nature of the film production workforce (made up largely of freelancers); the range of company structures operating in film production, including extensive use of Special Purpose Vehicles (SPVs); and the varied nature of funding and finance sources (in contrast with the more homogenous commissioning model common in TV).

1.3.5 Although this research highlights many examples of good practice across the film production sector, there is very little co-ordination (including between US-based and UK-based industry initiatives) and this stems from the lack of cross-industry buy-in and ownership:

‘Who is owning this plan of a zero-carbon industry future?

No one – that plan doesn’t exist at the moment, and no one is telling people which bits to contribute.’

Representative body source

1.3.6 Recognising this, the albert Consortium has recently taken the view that the accumulation of best practices at the level of individual productions is insufficient on its own to meet the scale of the challenge the UK now faces. “*Large strategic interventions*” by key industry players are now called for (*albert Annual Report 2018*).

⁷ <https://www.greenproductionguide.com>

1.4 Carbon footprinting

1.4.1 One pre-requisite for cross-industry action is a firm grasp of the scope and scale of the strategic challenges posed by climate change. There is little that can be achieved through collective approaches without an informed view about the contribution of particular film production activities to carbon emissions, and the cumulative impact of these across all UK feature productions.

1.4.2 Without this, it is difficult to provide credible answers to a number of fundamental questions that are essential for advocacy and consensus-building across the industry (as well as for winning over individuals and businesses to take appropriate action on their own productions):

- What is the contribution of feature film production to UK carbon emissions in any given period?
- Is this contribution growing, and at what rate?
- What are the main drivers of film production's environmental impact, and what are the principal barriers to addressing them?
- What measures are most successful at reducing the impact of film production?
- Which actions are desirable, and which are essential?
- What scale of response is required to achieve any long-term, strategic goal for the industry as a whole (whether this is zero-carbon, zero-waste by 2050 or some other common target)?

1.4.3 That is why the two most commonly adopted, free-to-use industry programmes supporting sustainable production in the UK (albert and PGA Green Production Guide) have at their heart a suite of tools for carbon calculation (see Appendix 1 for an overview of albert and PGA Green carbon calculators, and Appendix 6 gives details of their wider industry programmes).

1.4.4 Taking the example of albert, the early carbon calculator tool developed in-house at the BBC was intended to compare the environmental impact of different programme genres and production activities, to see which areas had greatest impact.

1.4.5 Yet as one consultee for this research noted, *"just because I weigh myself, doesn't mean I put myself on a diet."* That's why certification and other ways of documenting, verifying and recognising best practice achievements have been developed alongside carbon measuring tools.

1.4.6 The original carbon calculator model has since been refined and extended but the logic remains the same. Carbon footprinting during pre-production is used to identify the largest contributors to carbon emissions, informing decisions about what action can be taken to minimise or mitigate these. An equivalent footprint taken after a production wraps then shows what effect these strategies had on actual emissions. This is instructive at the level of an individual production, and it also holds the potential for gauging industry-wide impact by collating individual footprints into a single dataset.

1.4.7 Over time, with enough records of individual productions at different budget levels and involving the full range of shooting activity in studio facilities and on location, this aggregated dataset can provide valuable insights into the effect of different activity (at every stage of production and by different departments) as well as allowing macro trends to be observed.

1.4.8 The difficulty from a film perspective is the existence of a significant blindspot in the carbon footprinting data record. albert has an extensive dataset going back eight years for TV and commercials, but relatively few records for feature film production. This is illustrated by the pattern of footprinting and certification over the last two years:

Table 2: albert carbon footprints and certifications

	Footprints		Certifications	
	Film for cinema	TV/other	Film for cinema	TV/other
Sept 2017/18	5	700	0	70
Sept 2018/19	4	1,400	1	200

Source: BAFTA/ albert Consortium

1.4.9 This is likely to change in time, as albert’s footprinting process is now mandatory for BFI Film Fund supported projects (including production and completion funded feature projects, BFI/Doc Society funded documentary projects and BFI Network supported shorts; see section 4 for further details).

1.4.10 Meanwhile PGA Green’s tools (PEACH, PEAR and PLUM) are used extensively by all the major US Studios, including on UK Studio-backed features, but data is retained in-house for use only by individual Studios and not shared or pooled to create an aggregate picture.

1.4.11 There is little appetite among US Studios to adopt albert’s tools for their UK-based productions, not least because the PGA Green system is used right across their US domestic and international slates, and data for internal benchmarking and comparison has accumulated over a number of years.

1.4.12 In the case of the present research, which draws on a review of desk research sources and consultation with a wide range of industry representatives, two strident views come across:

1. Film production is resource-intensive and wasteful, and its environmental impact is large.
2. Steps are being taken by industry to address this.

1.4.13 Most of those consulted believe more can and should be done to reduce film production's impact, but there are diverging views about what type of action is required, at what order of magnitude, who should take responsibility, and how financing and business models should adapt to facilitate this.

1.4.14 But because of the current blindspot in film-specific data, the exact scale of the environmental impact of UK feature film production is currently unknown, and unknowable at an aggregate level. Just as importantly, the precise effect of different carbon reduction measures to mitigate or reduce this impact is also unknown and unknowable at a collective level.

1.4.15 If all film productions went carbon-zero and zero-waste overnight, and all future activity was guaranteed to follow the same path, this would be a purely academic point. In such circumstances, an open and transparent system of carbon measurement and tracking would be redundant.

1.4.16 However, during this transitional period, where individual industry players and cross-industry groups are grappling with decisions about if, how, where and when to channel time and resources into action to help meet UK carbon reduction targets, an evidence-based approach has considerable merit. Without hard data it is impossible for the film production industry as a whole to gear its response in a way that manages continued growth while taking proportionate and effective action.

1.4.17 Notwithstanding the above commentary, we are able to glean some useful insights from available albert and PGA Green footprinting and certification reporting.

1.4.18 Drawing on its extensive TV and commercials dataset, BAFTA's albert Annual Report 2018 states *"there is no doubt that more productions are taking more action than ever [but] the data does not suggest that we are on track to peak the sectors' overall emissions from 2020 in line with global expectations and requirements."*

1.4.19 The report helpfully identifies three key macro trends, with salutary implications for industry efforts:

1. Industry-wide carbon footprint is increasing.

“There is little doubt that some of this can be explained through improved data recording, but this alone is unlikely to explain how footprints have doubled in the last seven years.”

2. Impacts linked to electricity use are falling as the UK sees an increase in renewable power.

3. Impact from travel is increasing, “specifically air travel”.

“The overall rise of 10% seen between 2016 and 2017 can be explained almost exclusively through increased air travel.”

1.4.20 By analysing patterns within the albert dataset using variables including production type, budget size, departmental emissions and type of production activity, the report also calls attention to particular factors affecting environmental impact:

- *“Larger production budgets result in larger carbon footprints”;*
- *“Productions with the highest shooting ratios are less carbon efficient”;*
- *“The production office and transportation of people have a consistent impact across all styles of programme making”;*
- *“When generators are used, they have large negative impact on the size of the carbon footprint”;*
- *“The carbon impact of materials (sets, paper, construction) is relatively small in comparison to the other impacts measured”.*

1.4.21 Important though they are, these general points are based (in the most part) on TV and commercials production. No equivalent, film-specific overview examining macro trends and the role of particular factors in sustainable production activity is currently available.

1.4.22 The albert Consortium plans to continue upgrading its carbon footprinting tools, including improved data analysis functionality. For example, there is presently no mechanism to generate data on specific environmental actions taken by albert certified productions, showing which are most commonly adopted and what impact they have. This is planned in due course, along with other more powerful ways of interrogating the data.

1.4.23 Given the limited nature of public domain reporting, useful insights from PGA Green footprinting and related EMA Green Seal awards are still harder to come by.

1.4.24 As a starting point, it seems safe to assume that all UK Studio-backed features use PGA Green reporting tools. We know from EMA records published online that 14 feature films receiving a Green or Gold Seal in 2019 were shot wholly or in part in the UK.⁸ Of these, 11 (79%) achieved a Gold Seal award, and eight (57%) had a named Sustainable Production Representative in their credits (see section 1 for more information about this role):

Table 3: EMA Green and Gold Seal awards for UK Studio-backed features

Film	Studio	EMA award	Sustainable Production Representative*	Credit
Aladdin	Disney	Gold	Aashish Gadhvi	Environmental Coordinator
Artemis Fowl	Disney	Gold	Aashish Gadhvi	Environmental Coordinator
Dumbo	Disney	Gold	Louise Marie Smith	Environmental Coordinator
Maleficent: Mistress of Evil	Disney	Gold	Louise Marie Smith	Environmental Coordinator
Star Wars Episode IX	Disney	Gold	Unknown	Unknown
Fast & Furious Presents: Hobbs & Shaw	NBCUniversal	Gold	Louise Marie Smith	Sustainability Manager
Last Christmas	NBCUniversal	Gold	Louise Marie Smith	Sustainability Manager
The Voyage of Doctor Doolittle	NBCUniversal	Gold	Unknown	Unknown
Yesterday	NBCUniversal	Gold	Elmar David	Assets & Sustainability Coordinator
Cats	NBCUniversal	Green	Elmar David	Assets & Sustainability Coordinator
Downton Abbey	NBCUniversal	Green	Unknown	Unknown
Rocketman	Paramount	Green	Unknown	Unknown
Spiderman Far From Home	Sony Pictures	Gold	Unknown	Unknown
Wonder Woman 1984	Warner Bros	Gold	Unknown	Unknown

Source: EMA, Bigger Picture Research

*Named credit on IMDb

⁸ <https://www.green4ema.org/ema-green-seal-recipients>

1.4.25 A Green Seal award is achieved by scoring 75 points out of a possible 200, and the Gold Seal requires 125 points. Yet we cannot say by what means any individual production achieved its score, or how UK Studio-backed features collectively fared against the list of best practice actions contained in the PGA Green Production Guide reporting tools. As with the albert system, there is no way of judging how widely carbon emission reductions vary between productions scoring the same number of points.

1.4.26 Just as importantly, there is no way of knowing the size of the combined carbon footprint of UK Studio-backed features in any given period, or what difference was made by the best practice actions taken.

1.4.27 It is, however, possible to catch a glimpse of UK Studio-backed feature activity from records published on the Green is Universal web site maintained by NBCUniversal.⁹ Here, the Studio publishes an overview of actions taken by its Green and Gold Seal awarded productions, including those shot wholly or in part in the UK.

1.4.28 Appendix 2 summarises those actions taken on UK shoots for seven features awarded a Green or Gold Seal in the last two years (*Fast & Furious Present: Hobbs & Shaw*; *Yesterday*; *Mary Queen of Scots*; *Johnny English Strikes Again*; *Mamma Mia! Here We Go Again*; *Jurassic World: Fallen Kingdom*; *Darkest Hour*).¹⁰

⁹ <https://www.greenisuniversal.com>

¹⁰ There is no way of determining how comprehensive these summaries are, so they have to be taken at face value. It is possible that additional actions were taken but omitted from public reporting.

1.4.29 Actions taken by these productions are listed in Table 4, with the most common involving composting and recycling, reusable water bottles, use of 100% recycled paper and the donation of unwanted food:

Table 4: Environmental actions taken by NBCUniversal UK Studio-backed features in recent years

Action	Number of features taking action	% of selected features
Composting and recycling programme	6	86%
Reusable water bottles	6	86%
100% recycled paper used	5	71%
Catering team: unwanted food donations	5	71%
Wardrobe team: clothing donations	4	57%
Use of LED set lighting	4	57%
Use of biodiesel heaters	3	43%
Props and set dressing teams: unwanted asset donations	3	43%
Construction team: materials donations	2	29%
Using office and construction materials from previous productions, or reclaimed period props	2	29%
Issuing crew green tips & competitions	2	29%
Digital distribution of scrips and schedules	1	14%
Use of hybrid cars for crew vehicles	1	14%
Transport: No idling policy	1	14%
Incorporation of environmental messaging on screen	1	14%
Using re-chargeable batteries	1	14%
Re-purposing sets after use	1	14%
Carbon offsetting	1	14%
Making other charitable donations	1	14%

Source: GreenIsUniversal.com, Bigger Picture Research

1.5 About this report

1.5.1 Each section in the remainder of this report looks at the matter of sustainability and film production from a particular vantage point, picking up on the main ideas and themes outlined above.

1.5.2 Section two looks at current approaches to addressing environmental impact made by (a) UK Studio-backed features and (b) UK independent productions. This is followed in section three with an overview of action taken by UK production studios and developments in the wider supply chain.

1.5.3 Section four examines the issue of cross-industry cohesion from two perspectives: what industry bodies and trade associations are saying and doing around environmental impact; and the space currently occupied by public bodies and other support agencies.

1.5.4 The report closes with a summary of the main barriers to the wider adoption of green production practices identified through desk research and consultation interviews. This is brought to a conclusion with some preliminary thoughts on identifying possible levers for changing behaviour as the basis for further discussion and research.

UK feature film production activity

2

2.1 Sustainability in practice

‘The practices on productions vary so much from film to film. They’ve got different policies. They’ve got different people working on them. They’ve got different positions and viewpoints.’

Production studio source

2.1.1 As the quote above indicates, the extent to which filmmaking engages in sustainable practices varies from production to production and from company to company, but is “*definitely increasing*” according to one senior production studio source. While sustainability may be a relatively low priority in the film production sector, the issue appears to be gaining traction.

2.1.2 In the absence of hard data to corroborate this view, a statement like this chimes with much of the other consultation evidence gathered for this research, suggesting a plausible basis in reality rather than just wishful thinking:

‘Some productions have different attitudes to others. But on the whole people care a lot more.’

Production studio source

‘I certainly feel that crews are much more on side than they were in the past.’

Production studio source

‘We’re definitely seeing an uptick in the number of people who are interested [in sustainability]. The scope of people that are interested has changed. Now it is not just people who care about the environment, but people from all departments. They all want to know that what they are doing is helping in some way, or at least is less harmful.’

Production studio source

‘From where I started, five or six years ago, it was very much a push against the tide. But now, the last few productions I’ve been on, quite a lot of people have come up to me and asked questions about how they can make their department greener.’

Environmental Coordinator source

2.1.3 Admittedly, these comments were made with reference to UK Studio-backed productions, and it is harder to discern the growth (or otherwise) of sustainable practices in independent film production, a point returned to below.

2.1.4 According to the albert Consortium, one thing that unites productions of all sizes is the existence of a ceiling effect limiting their carbon reduction efforts. Analysis of albert carbon footprinting data (mainly involving TV and commercials) shows that productions are only able to reduce their carbon footprint by up to 20% before they run into factors beyond their immediate control (whether shooting in studios or on location, and in the wider supply chain).

2.1.5 If this analysis is correct, the extent to which productions can unilaterally influence the industry's carbon emissions may be limited in scope, necessitating a joined-up approach with production studios, supply chain companies and locations.

2.2 UK Studio-backed productions

‘[US] studios are taking more of an interest in their own targets.’

Production studio source

2.2.1 There are no mandatory requirements on US Studios to operate sustainable production practices in a particular way, either in the US or internationally. The Majors prefer to manage and regulate their own activity in this area, collaborating with the PGA to design a common system for recording sustainability actions while recognising good practice through the Environmental Media Association Green Seal awards (see Appendix 1).

‘Our filmmakers change, our crew members change. The city that we’re filming in changes, that means the vendors and supply chains change. So very early on we decided to collaborate and work together as an industry. Together [...] we are sharing the same pool of filmmakers, of crew, of suppliers. So we thought we could make more change faster if we worked together and tackle it as an industry rather than individual companies.’

Shannon Bart, Sustainability Director, NBCUniversal¹¹

2.2.2 The approach taken by US Studios is driven by their publicly stated Corporate Social Responsibility policies. The statements below give a flavour of the positions adopted by the five largest global businesses with film divisions active in UK production, and additional details of each Studio’s approach can be found in Appendix 3:

‘NBCUniversal is committed to sustainability. Our Green is Universal initiative brings an environmental perspective to everything we do, informing and entertaining our audiences while driving more sustainable practices into our own operations.’

NBCUniversal (Universal Pictures and Focus Features)

<http://www.greenisuniversal.com>

‘Sony Pictures is committed to playing our part towards greater environmental responsibility. We believe in leaving our world better than we found it, aiming to reduce our ecological footprint by pursuing policies and actions that combat climate change, preserve natural resources and protect the health and safety of our community. We have several programs in place that support our sustainability goals.’

Sony Corporation (Sony Pictures Motion Picture Group)

<https://www.sonypictures.com/corp/corporateimpact.html>

¹¹ Speaking at AtlanticLIVE event, October 2018. <https://youtu.be/JPUBpw1JIMo>

‘Paramount’s green initiative encourages eco-friendly behavior and business practices throughout the company. The Green Action Team, a coalition of employees representing a range of departments, drives the effort and has spearheaded a variety of projects.’

Viacom (Paramount Pictures)

<https://www.paramount.com/giving-back-news/tags/119/environment>

‘At Disney, our commitment to environmental stewardship focuses on using resources wisely as we operate and grow our business. We also provide philanthropic grants and expertise to save wildlife, inspire action, and protect the planet.’

The Walt Disney Company (The Walt Disney Studios, 20th Century Fox, Lucasfilm, Marvel Studios, Pixar)

<https://www.thewaltdisneycompany.com/environment/>

‘Creating Responsibly and Sustainably means we act ethically and with integrity and work to reduce our environmental impact as we serve an increasingly global audience.’

WarnerMedia (Warner Bros. film company & studios, including Warner Bros. Studios Leavesden)

<http://www.timewarner.com/company/corporate-responsibility>

2.2.3 The Studios have corporate teams in the US with dedicated responsibility for sustainability practices, led by senior executives.

2.2.4 These executives and their teams oversee and co-ordinate Studios’ activities across their global production slates. Budgeting and procurement policies tend to be organised centrally, helping to ensure a consistent approach is taken within each corporate structure.

2.2.5 In the UK, Studio-backed productions commonly take on a UK-based Environmental Coordinator or equivalent (also known by other role descriptors, e.g. Sustainability Manager).

2.2.6 They are hired as crew, working within the Production Office and liaising with the Unit Production Manager (UPM), Production Manager and Production Supervisors, as well as with Heads of Department and others. Their role is to manage each production's approach to sustainability in line with the Studios' corporate policies:

“I complete the PEACH form in conjunction with the HoDs or coordinators. Usually I go and meet them in prep and run through it so we have our intentions set out, if there's a barrier to doing something I can help to facilitate it. Find the correct vendor/product/ ask Production to allow for increased spending to achieve something etc. On wrap I circle back to see how the intentions worked out in practice.”

Environmental Coordinator source

2.2.7 The role of Environmental Coordinator first developed in around 2013/14 and is becoming more defined now. According to sources consulted for this research, prior to 2013 this area of responsibility lay with Production Assistants and was not especially well resourced.

2.2.8 UK Studio-backed features now have dedicated budget lines for environmental action, which covers everything from Environmental Coordinator fees to procurement of green kit, responsible waste management and environmental messaging for crew.

2.2.9 Environmental Coordinator contracts vary from Studio to Studio: sometimes it is a full-time role, and on other productions it is part-time. There is currently no standard division of labour across all Studio-backed productions: on some, the Environmental Coordinator manages all aspects of sustainable activity; on others certain responsibilities are retained by individual departments (catering, transport, locations) and the Coordinator role is more about ensuring a common approach is taken.

2.2.10 Typically, the Environmental Coordinator comes on board in pre-production with around 10 to 12 weeks prep. The Coordinator works with departments as they start-up, setting a waste management plan and other processes as part of a coherent strategy for each studio facility and location shoot (where applicable).

2.2.11 Another important task during prep is identifying green vendors and options in the supply chain for green procurement:

‘Where are we getting all the timber to build these sets? What kind of fuel are we using? What is our policy on water use and energy use?’

Environmental Coordinator source

2.2.12 During production, the Environmental Coordinator works with Production Assistants as part of a sustainability team on shoot days:

‘The big franchise films have the budget to carry an environmental team. Their operations are so large it becomes its own department.’

Environmental Coordinator source

2.2.13 The PA role entails setting up and maintaining recycling and composting facilities, water stations etc., and the involvement of these environmental team members is important:

‘There needs to be someone [managing] it and then a Production Assistant. If a Production Manager sees me moving recycling bins around and then I go into their office and ask them to spend money on something, they’re not going to take me seriously. You can’t do both: moving recycling bins or working out strategically where your money is best spent.’

Environmental Coordinator source

2.2.14 According to sources, production studio shoots are often easier to manage than location work, which often takes additional effort because appropriate services are not always easily accessible.

2.2.15 At wrap, the Environmental Coordinator's main task shifts to information gathering and reporting using the PGA Green Production Guide tools described in Appendix 1. Coordinators complete PEACH and PEAR reporting on behalf of some productions, while US-based executives complete the forms for other Studios, with information supplied by UK Coordinators.

2.2.16 Alongside carbon footprinting data, the final wrap report may also include a summary of activity that worked well, with notes on anything that could be improved upon by future productions. The report forms part of the wrap folder delivered to a Studio at the end of production.

2.2.17 There is evidence that US studios are making use of the information and data collected through the PEACH and PEAR process, beyond simply recording and rewarding action on individual productions. One source with an insight into the way Studios operate could point to examples where procurement decisions were influenced by Environmental Coordinator feedback, informing global strategic sourcing policies that ultimately fed into UK contracts for waste management and catering.

2.3 Independent productions

‘The US Studios are not where there might be a problem. I suspect the Studios know what they are doing. It’s probably the independent, lower budget films that struggle more with knowing how to measure their impact or what that all means.’

Trade association source

‘It feels like the US Studios are getting into a good place to make all that happen. Where it is difficult is for an independent film that doesn’t have a specific studio or distributor behind them. So there’s no fixed policy, there’s no one pushing for sustainability to happen on sets. There’s no one taking responsibility for that, unless you’ve got a particularly active producer.’

Production studio source

2.3.1 These two quotes illustrate the prevailing view of those consulted for this research: that while some good practice certainly exists among independent productions, the adoption of environmentally aware approaches is uneven and faces a number of impediments.

2.3.2 The obvious barrier cited by many is the potential for additional costs involved, and the very real budgetary constraints faced by smaller, independent films. Not only are the finances of such productions often quite precarious (usually involving multiple sources), which means hard pressed producers already have enough on their plate before considering sustainability as an option; but pressure within budgets means it may be hard to carve out specific lines for environmental action. Difficult choices are often called for:

‘This all comes down to: what are you going to do with your money? Are you going to put it on screen and try and improve your product to make it commercially viable, or not?’

Trade association source

2.3.3 While Environmental Coordinators who work with UK Studio-backed productions also offer their services to independent producers, it remains the case that relatively few productions take up the opportunity:

‘Usually for independents there isn’t the budget to support a sound waste management strategy [let alone] any other initiatives.’

Environmental Coordinator source

‘One thing I’ve found in recent years, is persuading UPM’s to take on someone full-time to do sustainability, when they’re often under pressure to cut costs.’

Production crew source

2.3.4 According to one Coordinator, the limiting factor of tight budgets is compounded by the lack of compulsion to take a greener route:

‘[Independent productions] run very tight on the number of people they have, because that’s an expense. So as soon as things wrap up, it’s the first thing that gets dropped. Because people are working 16 hours a day already, are they going to stay an extra hour to start filling in the environmental paperwork that no-one is necessarily asking for?’

Environmental Coordinator source

2.3.5 This reflects the fact that, unlike in the case of TV commissions where albert footprinting is a requirement for final payment to be made by the main UK broadcasters, by and large there is no direct equivalent requirement for independent films to take action to reduce their carbon emissions.

2.3.6 That said, there are publicly funded support schemes for independent productions that make carbon footprinting and the adoption of good practice a funding requirement.¹²

¹² Including recent changes to the BFI Film Fund guidelines for production and completion funding mentioned previously (see section 4 for further details on these and other public support schemes).

2.3.7 One such scheme is Film London's Green Screen, run in partnership with Greenshoot, a private consultancy specialising in supporting sustainable production in TV, film and commercials (see section 4 for more detail about Green Screen).

2.3.8 Greenshoot has been active in this space since 2009, contributing to an early report on the subject published by the Greater London Authority and Film London (Green Screen, 2009). Although it is difficult to confirm on the available evidence, Greenshoot is likely to be the largest private provider of sustainable production advice and support currently active in the UK.¹³

2.3.9 In addition to managing Green Screen, Greenshoot provides services direct to productions at all budget levels, including advising clients, managing asset donations and providing training for green runners ("We've supported over 160 productions, with budgets ranging from £5,000 to £100m", Greenshoot web site).

2.3.10 Working with Jane Burston of Carbon Retirement, Greenshoot also developed a proprietary carbon footprinting tool, to help identify both carbon and cost savings for productions they work with.

2.3.11 Comprehensive data on the extent and nature of sustainability practices undertaken by independent productions are just as hard to come by as they are for UK Studio-backed features. That said, publications produced by Greenshoot help to shed light on practical examples.

2.3.12 A 2014 report prepared by Greenshoot and published by Cine-Regio (*Sustainability in Vision*)¹⁴ features case studies from various European countries of independent productions funded by regional and national agencies across Europe. The report concludes:

"These examples of best practice show that progress is definitely being made and they can go towards forming the basis of sustainable production moving forward.

- *Establishing a recycling system in the production office*
- *Use of recycled paper*
- *Emailing call sheets on all productions*
- *Use of FSC wood in set construction. However, chain of custody not established*
- *Donation of set and/or props on wrap*
- *Recycling of on-set waste as legislation required it*
- *Respect for the environment during location shooting*
- *Employing local crew*
- *Reduce food miles by sourcing ingredients locally*
- *Ban plastic water bottles."*

¹³ Greenshoot is by no means the only private consultancy advising independent productions about sustainability practices. Freelancer Amelia Price, a former Locations manager, came to attention during the present research after moving into sustainability consultancy in 2019 (<http://ameliaprice.co.uk/>). Services include: Carbon Calculator Paperwork Delivery; HoD & Crew 'Short, Sharp, Shock' Course; Carbon Offsetting Advice; Ethical Product Placement; Individual Film Environmental Policy; Producing your Green Production Memo and any other paperwork; Supplier Liaison; and Department Specific Advice.

¹⁴ https://www.cineregio.org/publications/green_regio_report_-_sustainability_in_vision/

2.3.13 Greenshoot was also instrumental in trialing BS 8909¹⁵ on behalf of the BFI, resulting in a 2015 report with three feature production case studies: *City of Tiny Lights* (Sixteen Films), *Free Fire* (Rook Films) and *Swallows & Amazons* (Harbour Pictures).

2.3.14 These cases illustrate some of the ways that independent productions can introduce measures to reduce their carbon emissions by implementing a Sustainability Management System and using a Green Runner during production. In the example of *Free Fire*, this led to a reduction in carbon emissions of 10% (no equivalent data are available for the other case studies).

2.3.15 The report concludes that “more emphasis should be placed on practical ‘hands on’ support in the supply chain within the filming sector.” It also recommends that independent productions should allocate a green budget during prep, mirroring the approach taken by US Studios (“If there is a line allocated the desire will go hand in hand and cost savings will be seen across the sector”).

¹⁵ The British Standards Institute specification for a Sustainability Management System for film (see section 4 for further details).

Production studios and the film supply chain

3

3.1 UK infrastructure and services

3.1.1 As noted in the introduction, UK production is buoyant and studio space is at a premium as new developments (and re-developments) ramp up across the UK.

‘Demand for content [is] unprecedented [and] all different kinds of facilities are benefitting [...] We are running at pretty much 100% capacity.’

**Andrew M. Smith, Corporate Affairs Director,
Pinewood Studios¹⁶**

- Pinewood is expanding with six new sound stages at its Buckinghamshire site, and recently announced a long-term agreement with Disney to take stages, backlot and other production spaces. The company is also developing Shepperton with the addition of 16 new sound stages, having signed a 10-year residency agreement with Netflix.
- Other existing studio expansions are underway or planned at Space Studios in Manchester and Wardpark Studios in Scotland.
- There are also proposed new studios in Birmingham (Mercian Studios), Barking and Dagenham (Dagenham East), Liverpool (The Littlewood Building and Twickenham Studios), Edinburgh (Edinburgh Caledonia Film Studios), and several new sites in Northern Ireland are being considered, including the Michelin Ballymena tyre factory and Shackelton Barracks.

3.1.2 These and other developments represent significant and long-term investment across the UK’s production studio estate. While it should be recognised that companies of all sizes are adopting greener practices for their own operations, and offering more environmentally friendly services to visiting productions and tenants, it is impossible to say on present evidence how much of this investment is directed at reducing carbon emissions.

3.1.3 Elsewhere in the wider film production supply chain, new products and services with green potential are entering the market but it is hard to build a comprehensive picture of all that is available, and at what cost/benefit.

¹⁶ As reported in *Screen International*, 28 August 2019.

3.2 Production studios

‘We are proud of [our] progress but realize that more can be done. That’s why we continually strive to reduce our environmental footprint, including through energy savings and sustainable production methods.’

Jon Gilbert, President, Worldwide Warner Bros. Studio Facilities

3.2.1 In a recent thought piece, Aaron Matthews (Albert’s Head of Industry Sustainability) sets out a number of ways that production studios might help their clients to drive carbon emission reductions on a grander scale than at present.

3.2.2 Three arenas for action by production studios are identified (materials, energy and travel), with the suggestion that costs for green services should be passed on to productions:

Materials
Objective: <i>“Comprehensive material reprocessing streams in place; materials that cannot be processed within these streams do not enter the industry.”</i>
Studio action: <i>“Support productions with the responsible recycling and disposal of all of their waste and assets and charge for the provision of this service.”</i>
Energy
Objective: <i>“The maximum amount of energy is generated on-site, all energy purchased is from a 100% renewable tariff and the impact of any additional energy created or purchased is carbon offset.”</i>
Studio action: <i>“Generate power on-site, ensure there is plenty of power across the complex and purchase 100% renewable energy, and charge for this service.”</i>
Travel
Objective: <i>“Vehicles chosen are the lowest impact possible; the impact of any remaining travel is carbon offset.”</i>
Studio action: <i>“Ensure provision of zero carbon vehicle charging and charge for this service.”</i>

3.2.3 As documented below, the present research found evidence that a number of production studios are already taking action along these lines (often in addition to other measures).

¹⁷ Future proofing your studio in a changing climate, August 2019 <https://wearealbert.org/2019/08/01/future-proofing-your-studio-in-a-changing-climate/>

3.2.4 The prevailing view from those production studio sources consulted echoes the words of Jon Gilbert quoted above: that, by and large, production studios want to contribute to industry efforts around climate change.

‘We definitely want to be able to offer [sustainable options] regardless of production demand because we want to be doing it anyway. Thankfully for us, there is more and more desire from the productions to get on board.’

Production studio source

3.2.5 Nonetheless, it is also the case that some of the production studios consulted for this research feel they have limited options to take bolder action.

‘We as studios are very limited in what we can push on the productions. We can deal with the type of power they are using. Transport is taken out of our hands because ultimately everything is going electric. We can guide waste management but we can’t actually get involved in it. In terms of the green credentials of productions, we as studios are quite limited in telling productions what they can do. We can advise, we can offer support. But the root has to come from the productions themselves.’

Production studio source

3.2.6 In part this is due to the nature of their commercial relationship with productions, and wariness around being seen to impose green practices on visiting productions.

‘Essentially we rent the box to them. Whether that box is offices, workshops, stages, backlot. What they then do with that space is down to them.’

Production studio source

3.2.7 It also reflects some of the practical challenges involved, including the difficulty, and therefore expense, of retrofitting older studio buildings and facilities to the latest environmental standards; or the fact that large backlot areas do not easily lend themselves to power grid upgrades capable of reducing diesel generator use and taking advantage of renewable energy supplies.

‘Retro-fitting sustainability is really difficult and really expensive.’

Production studio source

3.2.8 Other changes have not been possible to date because existing contracts with energy suppliers, waste management companies, etc., have to run their course before greener alternatives can be negotiated and signed.

3.2.9 On the other side, visiting productions want to minimise their rental period as far as possible (to manage costs), which places time constraints on tasks such as asset disposal and waste management at the end of a shoot. There are systems for expediting this process, reducing skip hire costs in the process as less material is destined for landfill, but many studios are reluctant to get directly involved in this if implementation takes up valuable space on site.

‘One thing that crops up all the time is at the end of a production, the mass of stuff [left over]. They are all about quick, easy ways to dump it.’

Production studio source

3.2.10 Clearly, there exist some differences of opinion around where responsibility should lie: with production studios or with productions themselves. Even this is an oversimplification, as both sides would agree that production studios and their clients bear some responsibility; the question to be resolved is where the line should be drawn.

3.2.11 Then again, it is not true to say that production studios sit on one side of the argument and productions on the other, because views are not uniformly shared either way. The consultation exercise found there are many shades of opinion on both sides.

3.2.12 Undoubtedly there is scope for greening studio operations in a number of ways, and many of the approaches favoured by Albert are already in evidence, e.g.:

- Switching to renewable energy supplier;
- Providing grid power to the backlot;
- Changing to LED lighting;
- Dedicated recycling facilities as part of waste management plan;
- Integrated transport planning, including electric vehicle charging points and public transport options.

3.2.13 Real world examples derived from desk research and consultations are given in Appendix 4, which identifies the key actions taken by two of the largest UK operators (Pinewood Studio Group and Warner Bros. Studios Leavesden), along with environmental developments in smaller facilities around the UK, including examples Z Studios’s VEKTAR Project in Stockport, which aims to operate on a zero carbon basis in the very near future.

3.3 Supply chain

‘You can definitely see a change in the way [productions] are managing some of their suppliers on set. The way they’re dealing with catering. The way they are dealing with raw materials. And also the paperwork: call sheets are mainly online now.’

Production studio source

3.3.1 The UK production sector benefits from a well-developed supply chain. A number of companies offer green technologies and services, either alongside more traditional and carbon-intensive options or as the sole focus of their business founded on sustainable principles.¹⁸

3.3.2 Other companies, such as Sargent-Disc, are using sustainable features to differentiate their products and services in the market. Sargent-Disc’s Digital Production Office¹⁹ is a productivity tool that makes a virtue of its green credentials:

‘Sargent-Disc’s approach to more sustainable production involves replacing paper processes with low-energy, paperless and mobile-friendly solutions; removing the need for multiple emails and manual circulation of hard copies. Modern society consumes many natural resources and so it has become more important to maintain the three main elements of sustainable practice: economic and social development, and environmental protection.’

3.3.3 It is impossible to say for certain how many such companies are active in the UK, or what green products and services are most commonly available in the market, as no single source provides a comprehensive list and new examples arise all the time.

¹⁸ Dresd, a set and props reclamation and sustainable services company, is a good example of the latter, and is profiled as a case study in Appendix 5.

¹⁹ <http://www.digitalproductionoffice.com>

3.3.4 In the UK, the albert Consortium’s Sustainable Suppliers Directory²⁰ comes closest to offering a one-stop-shop for such information, with listings for 38 companies (the PGA Green Production Guide also offers an online Green Vendor listings service, with a handful of UK entries²¹). The largest number of companies found in the albert Directory provide products and services in catering, energy, and waste management:

Table 5: Listings in the albert Sustainable Suppliers Directory

Sustainable supply area	Number of companies in Directory
Catering and catering supplies	5
Energy	4
Waste management and recycling	4
Transport, courier and travel	3
Lighting	3
Camera/crane/grip	3
Water	3
Studios	2
Construction and sets	2
Other*	9

Source: albert Consortium Sustainable Supplier Directory

* Data storage, access platforms, product placement, physical effects, post production, office supplies

²⁰ <https://wearealbert.org/search-suppliers/>
²¹ <https://www.greenproductionguide.com/green-vendors/>

3.3.5 albert also publishes Costume Designer Sinéad O’Sullivan Kidao’s Costume Directory online, which provides an open resource connecting “designers and buyers with suppliers and brands who prioritize sustainability, environmental responsibility and fair trade”.²² In addition, albert recommends suppliers through its affiliate designation, including companies like Pinewood MBS Lighting, which provides lighting services for every production on the Pinewood lot.

‘We’re delighted to be the first-ever albert affiliated lighting company. We constantly engage with cinematographers, crews and colleagues from all areas of our industry to make sure we make available the very latest advances in lighting technology. We currently have almost four thousand low energy products out on production and with power savings of up to 92%, every single one of them is directly helping with albert’s aim to create sustainable production’.

Darren Smith, Pinewood MBS Lighting Managing Director²³

3.3.6 The AdGreen web site also lists named suppliers in a Resources section, covering areas such as waste management and low energy lighting. A similar resource is offered by Greenshoot on its Ethical Suppliers page, which includes details of four companies.

3.3.7 As for commercial production directories, Kays has a search function containing the category ‘Environmental Sustainability’, which brings up two records (for AdGreen and Greenshoot). The keyword search also yields a single record apiece for ‘Environmentally friendly lighting’, ‘Sustainable fuel’, ‘Sustainable props’ and ‘Sustainable sets’.²⁶

3.3.8 The Knowledge, which houses details of over 500 UK suppliers, lists 12 companies in the ‘Environmental and Recycling Services’ category.²⁷

3.3.9 Despite the free availability of these information sources, it remains difficult to grasp the full range of alternatives to carbon-intensive products and services, or to easily compare them in terms of cost, utility, reliability and user-experience.

3.3.10 This means anyone looking for inspiration or practical information either has to put in considerable effort to research options themselves or rely on word of mouth recommendations, which may be hit or miss. Neither route is especially practical during a busy pre-production period, especially for lower budget productions with more limited scope for R&D and experimentation.

²² <https://www.sineadkidao.com/the-costume-directory>

²³ <https://www.pinewoodgroup.com/pinewood-today/news/pinewood-mbs-lighting-are-named-as-the-first-ever-albert-affiliated-lighting-supplier>

²⁴ <http://www.adgreen-apa.net/resources>

²⁵ <http://www.greenshoot.com/services/suppliers>

²⁶ <https://www.kays.co.uk/>

²⁷ <https://www.theknowledgeonline.com>

Advocacy and support for sustainability

4

4.1 Sustainability focused advocacy

4.1.1 The albert Consortium, led by BAFTA, is the most prominent player advocating for, and supporting, sustainable production activity in the UK.

4.1.2 As noted in section 2, PGA Green Production Code tools are widely used by UK Studio-backed feature productions, rather than albert's carbon calculator and certification, yet these two approaches have complementary features.

4.1.3 For example, they share the common goal of spurring and guiding the adoption of green practices, which lies at the heart of their respective certification systems. To this end, the certification checklist model encourages productions to take certain defined actions and to ask suppliers about their sustainability credentials. The aim is to lower a production's carbon emissions and raise awareness among crew and cast members, while harnessing demand for green products and services to drive changes in the supply chain.

4.1.4 This approach is not confined to film and television, as other players active elsewhere in the UK arts and creative industries take a similar approach, ensuring cross-sector action and partnership work is possible. For example, AdGreen, a volunteer-run advocacy group for individuals and companies working in commercials, works closely with albert, including co-hosting events around the UK.

4.1.5 In the arts and cultural sphere, Julie's Bicycle is a charity that started life in efforts to address carbon emissions by the music industry. It provides tools and resources along similar lines to albert and manages the environmental reporting of Arts Council England funded National Portfolio Organisations. Through its Creative Green programme, Julie's Bicycle works with a number of film exhibitors including Curzon Cinemas, HOME in Manchester, Tyneside Cinema and The Barbican. Julie's Bicycle also partners albert in the Creative Energy project.²⁸

4.1.6 In a similar vein, Creative Carbon Scotland provides accreditation, advice and guidance about sustainability to Creative Scotland's Regularly Funded Organisations, and the organisation is currently advising Screen Scotland about introducing sustainable practices into its funding requirements.

4.1.7 Appendix 6 gives further details about albert, PGA Green, AdGreen, Julie's Bicycle and Creative Carbon Scotland. The remainder of this section looks at advocacy and support from two other perspectives:

- (a) trade associations and representative bodies;
- (b) public bodies and support agencies.

²⁸ <https://www.juliesbicycle.com/creative-energy-project>

4.2 Trade associations and representative bodies

4.2.1 Desk research and consultation with industry representatives indicate that trade associations and representative bodies are alert to the issue of sustainability but in many cases it is not considered to be a priority of their memberships or governing bodies at the current time.

‘There was a clear impression from the digital content sector that carbon impacts were not particularly a focus for clients, trade associations or representative bodies.’

Scoping Study on Carbon Reduction Strategies for the Craft and Digital Content Sectors of the Arts and Creative Industries in Scotland, Creative Carbon Scotland, 2017

4.2.2 The fact that few such bodies have taken an active role in this area (at least until recently) may be due to the presence of programmes like those offered by albert and others described above, which do most of the heavy-lifting around advocacy and support.

4.2.3 That said, events are moving quickly, with several trade associations and representative bodies publishing sustainability positions in the last few months (with more planned). Among bodies representing different interest groups and crafts within film production there is some openness to the idea of greater collaboration and cross-industry working, although there is no clear path to achieving this beyond the networking opportunities already on offer.

4.2.4 Trade associations and representative bodies who take a more prominent stance on sustainability are listed below, illustrating the range of approaches taken currently:

BECTU

- Issued a public statement on climate change in September 2019 (in concert with Prospect, of which BECTU is a sector).²⁹ Web page includes briefing for reps/officials on what action can be taken, climate change policy position and policy on low-carbon energy and a Just Transition.
- BECTU Freelancers Fair in June 2019 included a session on sustainable filmmaking with a contribution from Roser Canela-Mas of albert.
- BECTU has also hosted a training course for environment reps on ‘bargaining for a sustainable workplace’.³⁰
- More recently, BECTU endorsed screen industries’ involvement in a global ‘climate strike’ on 20 September 2019.

‘We will be using the September climate week of action to highlight our support for tougher action on carbon emissions and to create a low-carbon society. This includes encouraging members to stage events on September 20 and during the week of action to show out support.’

Bectu press statement

Directors UK

- Web site hosts a page on Sustainable filmmaking, with information about carbon literacy, footprinting, training opportunities and tips tailored for directors.³¹
- Directors UK is an albert affiliate and Chair Steve Smith is an albert Ambassador. The organisation supports the recently launched Planet Placement initiative promoting onscreen environmental messaging.³²

Pact

- Has no formal policy statement on sustainability but news section includes references to albert and training opportunities e.g. Carbon Literacy for producers by BAFTA, and Pact will promote similar opportunities to members when they arise.
- A Pact representative sits on albert Consortium industry group.

The Production Guild (PGGB)

‘The Production Guild works to make sure our members, affiliate companies and productions have the most up to date knowledge and advisers when it comes to shooting green.’³³

- Web site includes reference to Dresd, PGA Green Production Guide and Pinewood Studios Environment policy. Sits on industry working group.
- In the past, sustainability has featured in Production Manager and Location Manager training promoted by PGGB and delivered by Film London and Greenshoot.

Production Managers Association (PMA)

- The PMA is beginning to engage with sustainability and has been involved in industry working parties. Website has sustainability page listing sources of information and support.³⁴
- A group of members is developing PMA thinking around sustainability as part of wider policy review, including setting up a green steering group. A new position is likely to be adopted later in 2019.

²⁹ <https://www.prospect.org.uk/climate-crisis>

³⁰ <https://www.bectu.org.uk/training-development/courses/157>

³¹ <https://www.directors.uk.com/campaigns/sustainable-filmmaking>

³² <https://wearealbert.org/planet-placement/>

³³ <https://productionguild.com/members-hub/member-resources/sustainability/>

³⁴ <https://www.pma.org.uk/sustainability/>

4.3 Public bodies and support agencies

‘If the UK film industry can become a leader in sustainability then we will have a real competitive advantage internationally for years to come.’

John Woodward, CEO UK Film Council, May 2010

4.3.1 Public bodies that support independent film production (through direct funding and other programmes), as well as working to attract inward investment features to the UK, have taken various measures to promote the adoption of sustainable practices over the years.

4.3.2 There has been little consistency in the methods employed in the UK, and efforts to share best practice and adopt common approaches are being spearheaded in Europe by organisations like Cine-Regio and its Green Regio subgroup.³⁵

4.3.3 As early as 2007, the UK Film Council published a report by Dr Emma Gardner to inform the development of an environmental plan for film.³⁶

4.3.4 After taking on lead responsibility for film in 2011, the BFI picked up the baton with the development of BS 8909, a specification for sustainability management system standards produced by the British Standards Institute. Although BS 8909 remains active, and has proponents including Greenshoot, there is little evidence of widespread use in film production:

‘I remember wondering how well [BS 8909] fits into the reality of the production process. I had forgotten that it existed.’

Environmental Coordinator source

4.3.5 The BFI launched its first sustainability strategy in 2012, and between 2015 and 2017 it supported green runners on 14 of its funded productions (working with Greenshoot).

4.3.6 The organisation’s current strategic plan recognises the lead role played by BAFTA and the albert Consortium:

‘While the BFI concentrates on diversity, we welcome the lead from BAFTA to take over leadership on environmental sustainability, ensuring increased adoption of the internationally leading environmental objectives across the UK film industry.’

BFI 2022: Supporting UK Film 2017-2022

³⁵ https://www.cineregio.org/subgroups/green_regio/

³⁶ <https://www.bfi.org.uk/sites/bfi.org.uk/files/downloads/uk-film-council-developing-and-environmental-strategy-for-uk-film.pdf>

4.3.7 Nonetheless, action is being taken in this area, including a re-launched sustainability page on the BFI website, a new sustainability policy and publication of a BFI Sustainability Summary 2018/19. The BFI has also signed up to Culture Declares Emergency.³⁷

4.3.8 The most significant changes have been made to BFI Film Fund guidelines (updated in summer 2019), which require projects awarded production and completion funding to undertake albert carbon footprinting (both before and after production for production awards, and post production for completion funding).

“All productions in receipt of BFI funding are required to complete a BAFTA albert carbon prediction prior to production and a final calculation once post-production is complete.

The prediction and online materials will enable you to see which of your activities will generate the most carbon emissions, and to identify actions to reduce these before you enter production.

Your final calculation needs to be submitted to us as part of the BFI delivery materials. In addition, we encourage you to seek full albert Sustainable Production Certification for your project.”

BFI Film Fund³⁸

4.3.9 The onus is on productions to identify areas of biggest carbon emission and to take action. Production teams are encouraged to go through albert carbon literacy training and seek albert certification, but there is no requirement to do so. Submission to the BFI of an approved carbon calculation is required to trigger the final funding payment as part of the delivery materials for funded projects.

4.3.10 The BFI Doc Society Fund already requires projects awarded funding to undergo carbon footprinting, in line with Doc Society’s proactive stance towards climate change (having declared a Climate Emergency by signing up to Culture Declares Emergency).³⁹

4.3.11 BFI Network short film guidelines are in the process of being updated, to include a similar carbon footprinting requirement.

4.3.12 Working with the BFI Film Audience Network, the BFI has also recently published sustainability tips for film exhibitors.⁴⁰

³⁷ <https://www.bfi.org.uk/about-bfi/policy-strategy/sustainability>

³⁸ <https://www.bfi.org.uk/supporting-uk-film/production-development-funding/production-funding>

³⁹ <https://docsociety.org/climate-emergency/>

⁴⁰ <https://www.bfi.org.uk/supporting-uk-film/distribution-exhibition-funding/environmental-sustainability-film-exhibition>

4.3.13 The BFI hosts the certification unit to qualify productions for the UK's creative sector's tax reliefs (for film, high-end television, animation programmes, children's television programmes and video games). The cultural test for film, which provides one route for projects to qualify for relief, includes no formal provisions for environmental sustainability, however the guidelines (last updated in 2015) highlight the issue as follows:

'Sustainability in film is important, be it encouraging skills and talent development, making films in an environmentally sustainable way, or ensuring that works are available to future generations. Filmmakers are encouraged to read Annex D for further information about how to help through the Skills Investment Fund, the Voluntary Deposit Scheme and the Greening Film Initiative.'

**British Film Certification: Schedule 1 to the Films Act 2015
Cultural Test Guidance Notes**

4.3.14 Film London works closely with Greenshoot on sustainability initiatives, including the Green Screen scheme (details in Appendix 7) and the Interreg Europe funded Green Screen EU project.⁴¹

4.3.15 The aim is to help London retain a competitive advantage for attracting inward investment productions. Film London is also keen to prepare crews and production companies for any forthcoming environmental legislation and regulations.

4.3.16 All projects awarded Film London Microwave funding are required to take part in Green Screen, as are their shorts funded through the BFI Network Short film fund. Film London also receives ACE funding, and the organisation is certified by Julie's Bicycle.

4.3.17 In addition, Film London operates a Locations Discount Scheme in partnership with key locations, which offers a 3% to 5% discount on filming fees to productions signing up to Green Screen.⁴²

4.3.18 Agencies in other home nations are also active in this area, responding to the policy frameworks of devolved administrations. Ffilm Cymru Wales is currently drafting a Green Cymru policy, in line with its recently published plan linked to the Well-Being of Future Generations (Wales) Act 2015, which embeds concern for the environment within seven well-being goals.

⁴¹ <https://www.interregeurope.eu/greenscreen/>

⁴² Participating locations include: Network Rail, Harrow School, The May Fair Hotel, Freemasons' Hall, The Honourable Society of the Inner Temple, Royal Botanic Gardens at Kew, Borough Market, Somerset House, Senate House and English Heritage.

4.3.19 Meanwhile, Screen Scotland (which sits within Creative Scotland) is currently working with Creative Carbon Scotland on a project looking at (a) the feasibility of adding environmental criteria to funding schemes (based on a review of international models); (b) mapping sustainability practices in film in Scotland. This work is linked to Creative Scotland's statutory requirements under the Climate Change (Scotland) Act 2009.⁴³

4.3.20 Industry practitioner Mairi Claire Bowser, leading this work with Creative Carbon Scotland, contacted national and regional funds across Europe and found evidence that a number of funding agencies are either planning to develop, have developed or are currently developing specific support mechanisms around sustainability. Notable examples include Vlaams Audiovisueel Fonds (VAF) in Belgium⁴⁴ and Trentino Film Commission in Italy⁴⁵ (see Screen Scotland/ Creative Carbon Scotland report on publication for full details).

4.3.21 Both Film London and Ffilm Cymru Wales are members of the Cine-Regio network, which has authored several publications promoting best practice. These include *Sustainability in Vision* (2014), drafted by Greenshoot in partnership with Screen South, Film i vast, Ffilm Cymru Wales and Film I Skane; and *Cine-Regio Green Report 2017: On Sustainability In The European Regions*, which provides a digest of best practices across Green-regio members in the following areas:

- Training
- Incentives and support
- Green rewards and certification
- Green suppliers guides
- Tools for productions
- Carbon calculators
- Green post-production
- Industry collaboration and partnerships
- Green productions
- Green cinema (exhibition)

4.3.22 Green Screen EU, a five-year partnership project (2017-21) involving Film London and seven other support agencies in European film-making regions, shares this mission to promote best practice in sustainable production across Europe.

⁴³ <https://www.creativescotland.com/resources/our-publications/policies/environment-policy>

⁴⁴ <https://www.vaf.be/flanders-audiovisual-fund>

⁴⁵ <https://www.trentinofilmcommission.it/it/film-fund/>

4.3.23 Current projects include a report on supply chain innovations (due for delivery in late 2019), which reviewed over 400 products and services designed to reduce carbon emissions in audiovisual production. The final report includes 25 innovations across 12 fields of application:

- Air purification
- Audio / video signal transmission
- Broadcast
- Building HVAC management
- Energy management
- Fixed (building) energy generation
- Lighting
- Logistics / transport
- Off-grid power supply
- Waste management
- Workflow pipeline
- Workflow software

4.3.23 Another Green Screen EU project, which is being led by Film London, is exploring the feasibility of grid hook-ups for filming crews working on location in London. The goal of the Grid Project is to install mains powered electrical cabinets at the top eight Unit Base locations to reduce their dependence on diesel generators. The project estimates that CO2 emissions could be reduced by up to 97% as a result. Arup is finalising the feasibility study for the project, and Film London is working in partnership with the Mayor's Office to identify sources for funding for the project.

4.3.24 Organisations dispensing National Lottery and other public funding are not the only public bodies with an interest in sustainability. Many local authorities around the UK maintain film offices to attract and facilitate shooting activity in their area. This activity usually falls under Councils' business development workstreams, but there is evidence that local authorities' environmental obligations and policies are a consideration in the activity of some film offices.

4.3.25 The question of how film offices currently deal with sustainability matters across the UK was put to Film Office: UK members (FO:UK).⁴⁶ Responses received to date show there is little consistency in the approaches taken, with very few examples of incoming productions asking about environmental services or local requirements. However, among film offices consulted for this research there is a common interest in learning more about sustainability and developing policies and practices in future:

Glasgow Film Office

The Glasgow Film Office is aware of the sustainability initiative led by Film City Glasgow, which is part funded by Glasgow City Council.⁴⁷ The Council has introduced a number of measures such as a Low Emission Zone in the city centre, green waste management practices, etc. – although none of these are exclusive to production activity.

⁴⁶ Surrey Film Office has lead responsibility for FO:UK at the present time: <https://www.surreyfilmoffice.co.uk/film-offices-uk-fouk/>

⁴⁷ <http://www.filmcityglasgow.com/PFS>.

Kent Film Office

Kent has no local facilities companies for film as they tend to be London-based. Productions are required to observe the Council's waste management strategy, but there are no equivalent requirements for vehicle emissions or energy use. Kent County Council has a general environmental policy that the film office adheres to.

Screen Cornwall

A new screen agency in start-up mode, and keen to develop environmental guidelines for local and incoming productions. Interested in signposting sustainability best practice in the industry.

Surrey Film Office

Surrey Film Office has no specific sustainability policy for filming. Surrey County Council has a recycling policy in place, but this does not yet extend to filming in the region. The film office is not aware of companies in the local supply chain offering green services but would be keen to see further research on this.

Torbay Film Office

Torbay Film Office is in development and has been exploring sustainable filming as part their code of conduct. No environmental policy has been agreed for filming at this stage, but TFO encourages productions to consider waste management on location (such as recycling plastics and glass) and using energy efficient kit wherever possible.

The Film Office's approach is aligned with the principles of Torbay Council's Municipal Waste Management Strategy 2008-2025, which focuses on waste from households, parks and beaches (Torbay is an award-winning authority for recycling and working with partner organisations to maximise recycling achievements).

Torbay Council has an energy and climate change strategy (2014-2019) with a focus on reducing carbon emissions, energy efficiencies, and sustainable transport. As the strategy is due for renewal, there may be an opportunity to include other environmentally friendly approaches in areas such as filming.

Discussion

5

‘We are [...] a temporary circus [...] It’s like throwing a wedding every single day, and you’re feeding people breakfast and lunch and all of the waste that can come out of that.’

Shannon Bart, Sustainability Director, NBCUniversal⁴⁸

5.1 Recap

- Public awareness around environmental sustainability continues to grow, and climate activism is gathering momentum, including film industry-targeted campaigns such as #FilmStrikeforClimate and the Culture Declares Emergency movement.⁴⁹
- Against this background there is common agreement across the industry that film production can be wasteful and resource intensive, and more measures are needed to reduce carbon emissions in line with targets.

‘As an industry we are incredibly wasteful. We are at the forefront of people’s imaginations and people’s minds [...] so we can be industry leaders.’

Environmental Coordinator source

- Despite legislation on climate change dating back over a decade, this remains a transitional period, characterised largely by voluntary actions, ahead of the arrival of more muscular regulation over industrial practices in the near future.
- Action is being taken in the UK production sector through two parallel approaches, which overlap but cannot claim to be fully complementary:
 - (a) UK Studio-backed productions working to PGA Green Production Guide standards underscored by global corporation CSR;
 - (b) independent productions taking advantage of albert/Greenshoot/Green Screen-style approaches.
- Attitudes and behaviour among industry professionals are changing in light of this, but views vary on the pace and effectiveness of such changes, and the division of responsibility across the sector:

‘Considering the scope of environmental impact that any film production makes, there’s huge opportunity for them to change and I don’t think that what they are doing is anywhere near as much as the impact they could have.’

Production crew source

‘The reality is, we’re paying lip service to this issue. It’s just when you’re in it you realise the waste. We will take over massive sites, build large sets and then demolish them the next day [...]

At the end of the day, we’re consuming too much. Let’s find another method of doing it. Even though these methods will cost, initially, a little more, we’re closing our eyes to the fact that we’re wasting money and resources.’

Production studio source

⁴⁸ Speaking at AtlanticLIVE event, October 2018. <https://youtu.be/JPUBpw1JIMo>

⁴⁹ <https://www.facebook.com/FilmStrikeforClimate> and <https://www.culturedeclares.org>

‘I’ve been increasingly frustrated by the lack of anything happening, really. It’s getting a tiny bit better. On the jobs where we’ve got somebody doing green stuff it is better, but it does vary massively depending on if you’ve got somebody pushing it.’

Production crew source

‘A lot of times you will have that above-the-line, somebody [for whom] this is really key [...] and they really want to see you do a lot of different things. And then you have really engaged and supportive below-the-line people, whether it’s lighting people who embrace LEDs and new technologies, to the genny op and electrical people who are willing to take a risk and use something other than a diesel generator to power their sets.’

Lisa Day, Environmental Sustainability Manager at The Walt Disney Company⁵⁰

- There is a wariness around the issue of sustainability in film production circles, including among US Studios active in the UK and the production studios and suppliers that service them. In this context there is a danger of disengagement from potential joint action if sustainability messaging and support initiatives are out of step with corporate thinking, commercial realities and the day-to-day practicalities of production.
- Among those working on productions of all sizes, it remains the case that positive action tends to be driven by committed individuals, who do not always have the authority, responsibility or reach to influence change across all departments.

‘It is very much a young person-led movement within the industry. And they don’t necessarily have the [influence] that someone with 30 years of experience has.’

Environmental Coordinator source

- There is a belief among those consulted that the scale of change required to meet current or future targets means that everyone has a responsibility to act. It cannot be left to a coalition of the willing.

⁵⁰ Speaking at AtlanticLIVE event, October 2018. <https://youtu.be/JPUBpw1JIMo>

5.2 Levers for change

‘[R]eal change requires many people to be informed and empowered. We have a model with five levers of change to help consumers make more sustainable choices, to change their behaviour.

Fortunately, that same model also works really well to help to create a necessary mindset change with colleagues.

Adapting your systems and processes is a start, but you also need to engage and empower people.’

Anniek Mauser, Sustainability Director, Unilever Benelux⁵¹

5.2.1 The preceding sections present a snapshot of some of the more noteworthy developments in the way that film production is addressing sustainability. It provides a starting point for thinking about a broader programme of research to inform strategic planning for cross-industry action needed at this moment and beyond.

5.2.2 One way to frame the next stage of research is to employ the Five Levers for Change conceptual model developed by Unilever. This helps when thinking about how to change behaviour at all levels, from individual practitioners, to productions and across the sector as a whole.⁵²

5.2.3 The model has two stages leading to the design and implementation of practical interventions. The first involves the systematic identification of the main barriers, triggers and motivators that hinder or help change to occur.

BARRIERS – what are the things that stop people from adopting a new behaviour?

TRIGGERS – how could we get people to start a new behaviour?

MOTIVATORS – what are the ways to help them stick with the new behaviour?

Five Levers for Change model, Unilever

⁵¹ <https://changeincontext.com/sustainable-change-is-hard-work-even-at-unilever/>

⁵² With thanks to Jo Coombes of AdGreen for an introduction to this model.
https://www.unilever.com/Images/slp_5-levers-for-change_tcm244-414399_en.pdf

5.2.4 Some of this evidence came to light through the present research, but the task remains unfinished. For example, the chief barriers to the adoption of sustainable practices cited by consultees, and apparent from the desk research, include additional time and costs; a natural tendency to stick with the tried and tested; a general lack of awareness and low prioritisation; and limited green infrastructure and supply chain options:

Additional time and costs

- There is a common perception that sustainable practices can be more time consuming than traditional methods (from planning and procurement to delivery), and therefore more costly.

‘It’s time and money. Because everything is booming and everyone is so busy, and everything is happening so last minute, people don’t have the time to look into things. If anything takes a little bit more effort than what they normally do, or if they think it’s going to be more expensive, they don’t bother.’

Production management source

‘I know quite how wasteful productions can be [...] I could see how difficult it was for productions even just to recycle rubbish on set. It was always so much easier to shove everything into a black plastic bag, put it in a bin and walk away from it.’

Production studio source

- Immediate and longer-term cost savings are rarely understood or acknowledged.

‘[T]here is a general lack of knowledge of the most effective ways to achieve carbon and cost savings and how carbon emissions are measured.’

Scoping Study on Carbon Reduction Strategies for the Craft and Digital Content Sectors of the Arts and Creative Industries in Scotland, Creative Carbon Scotland, 2017

- This is coupled with the assertion that green products and services often carry a price premium.

‘Anything that is green or has an environmental tag on it tends to be more expensive. So that’s an issue we face. Trying to get producers and production managers to buy into something that is going to cost more money.’

Environmental Coordinator source

- Cost is an issue at all budget levels, not just for smaller, independent productions.

‘Budgets are very tight in production now, so anything you’re talking about that’s going to cost extra money becomes an issue.’

Lisa Day, Environmental Sustainability Manager at The Walt Disney Company⁵³

‘In setting up a sound waste management plan, it should be able to save you money in the long run. But as soon as people see three different lines for waste rather than just one line for waste in the budget, they get worried.’

Environmental Coordinator source

‘The potential cost/benefit of being green is not as great as it could be.’

Environmental Coordinator source

‘Productions are always going to look for ways of cutting costs, and things like rubbish collection is going to come low down the priority list when you’re putting a budget together.’

Production studio source

‘Hopefully we’ll get to a position where it’s easier, quicker and cheaper to go the eco route. I don’t think we’re there yet.’

Trade association source

‘While there’s raised awareness [in the industry], how that translates on the ground depends on money and budgets.’

Trade association source

⁵³ Speaking at AtlanticLIVE event, October 2018. <https://youtu.be/JPUBpw1JIMo>

Sticking with the tried and tested

- Behavioural change always requires breaking free from the powerful clutches of established work patterns and settled ways of doing things.
- Although the industry continues to witness significant technological change, film production remains, in many important respects, quite a traditional enterprise.

‘It’s a very traditional industry. People have done things the way they’ve always done things.’

Production studio source

- There are compelling forces against risk taking by different departments, which leaves little room for the adoption of new approaches:

“People are used to doing things a certain way, and they know that it’s going to work. And now on production, the time that it takes to do stuff is absolutely critical. You only have a day in a location a lot of times, you have a lot of work to do [...]

So if something goes wrong, suddenly your power source goes down and that takes you a while to fix [...] you are literally bleeding tens of thousands of dollars having everything on hold [...]

So it does take a bit of bravery on the part of people working on the show to be willing to be that first person to step out and give something new a try.’

Lisa Day, Environmental Sustainability Manager at The Walt Disney Company⁵⁴

‘It’s that comfort level. That this new light is going to look good on camera. Or this new sustainable building material is going to hold up and not start bending the day after you’ve built it and the day before you’ve got to shoot it.’

Shannon Bart, Sustainability Director, NBCUniversal⁵⁵

‘People in the industry do care and do want to make a change, but because the industry is made up of individual practitioners, we need the support of productions to be able to make the change. But there is also a feeling that people don’t want to stick their necks on the line too much.’

Production crew source

⁵⁴ Speaking at AtlanticLIVE event, October 2018. <https://youtu.be/JPUbPw1JIMo>

⁵⁵ Ibid.

- This is also tied to the notion that new practices can pose a threat to vested interests in traditional carbon-intensive methods, or feed anxiety about job security if new skills are called for:

‘Everyone needs to be reassured their jobs will be safe. And that’s the problem. They won’t risk their jobs.’

Trade association source

Lack of awareness and low prioritisation

- There is a pervasive lack of awareness about sustainability and what role individual practitioners can play, which albert carbon literacy training and similar initiatives address head-on (there is some evidence this is beginning to change).
- This leads to the issue having a low priority, unless positive action is encouraged and enforced on productions.
- Even where systems are in place, it may not always be easy to get crew to observe a waste management plan in a responsible way (“*this is the one thing that is very difficult to get people to buy into*”, according to one Environmental Coordinator source).
- The risk of cross-contamination in recycling areas is a perennial problem (e.g. food waste being intermingled with other waste).

Limited green infrastructure and supply chain options

- A lack of green facilities and technologies, whether on location or in studio spaces or backlots, means productions are limited in the actions they can take.
- Some production studios and suppliers have taken steps to reduce their own carbon emissions, while offering productions the opportunity to follow suit; but by no means all.

‘It tends to be the stuff that we don’t have control over that I find are the biggest hurdles. Not because [US] Studios don’t want to do it.’

Environmental Coordinator source

‘We can’t put [grid power hook-ups in Unit Bases]. It’s a piece of infrastructure that doesn’t belong to us. Because we rent and move around so much.’

Environmental Coordinator source

‘If [production] studios made it easier for productions to be green, then I do believe productions would look at it.’

Supply chain source

“The reality is, a production can only reduce its carbon footprint by about 10-15% before they reach barriers beyond their control. There is only so much ownership you have for a production that lasts in most cases less than a year. There are only so many things you can change.”

Trade association source

5.2.5 The present research has less to say on the question of what triggers are needed to help people adopt sustainable practices in the first place, and to motivate them to continue on subsequent productions.

5.2.6 This question can only be properly answered by looking in depth at the issue from particular perspectives in film production (along with a more detailed assessment of barriers than has been possible here).

5.2.7 That is because generic answers cannot usefully be translated into practical interventions and support programmes. Targeted action, informed by the practical realities of different types of production activity, are likely to be more successful than general initiatives. Practitioners working at different levels in film production, and within different departments, will face their own specific barriers, and require different triggers and motivators to help overcome them. There may be common elements, but bespoke support (including tools and resources) is more likely to succeed if it takes account of the specific circumstances and challenges of each production role and department.

5.2.8 It is also the case that agents other than the production management and crew have an important part to play, including production studios, facilities companies, public funders, local authorities, locations, trade associations and representative bodies, film financiers and the major US Studios (among others). The next phase of research needs to consider the barriers these players face, and the triggers and motivators that could bring about true cross-industry action to address sustainability in a meaningful way.

5.2.9 The second stage in applying the Five Levers for Change model involves developing an action-plan that takes account of the barriers, triggers and motivators identified. These are translated into five levers, which have been found by behavioural scientists to work best in concert to bring about desired changes.

5.2.10 To illustrate this, Table 5 begins the task of mapping out a set of research questions necessary to consolidate and extend existing approaches in pursuit of multilateral solutions across the whole sector. Action is already being taken using one or more of these levers, but it currently lacks:

- consistency of approach among those leading the way;
- universal buy-in across the full range of interested parties;
- targeting within specific crafts/ specialisms/ departments/ roles/ supply chain positions etc.

5.2.11 The questions in Table 5 are by no means exhaustive, and merit further discussion and input from a representative group of interested parties from across the industry.

Table 6: Five Levers for Change

Lever	Example research questions
<p>Lever 1: Make it UNDERSTOOD</p> <p>This lever raises awareness and encourages acceptance</p>	<ul style="list-style-type: none"> • Do people know about climate change and environmental sustainability in film production? • Do they believe it's relevant to them? • How relevant and effective are existing training and information sources? • Are there any gaps? • Are the right people getting the right messages (including those with budgetary responsibilities)?
<p>Lever 2: Make it EASY</p> <p>This lever establishes convenience and confidence</p>	<ul style="list-style-type: none"> • Do people know what to do and feel confident doing it? • Can they see it fitting into their professional practice? • Are the means to changing behaviour accessible and in their control (and if not, what do other players need to do?) • Are there good practice models that can be shared more widely?
<p>Lever 3: Make it DESIRABLE</p> <p>This lever is about connecting behaviour to professional goals, status and job satisfaction</p>	<ul style="list-style-type: none"> • Will doing this new behaviour fit with their actual or aspirational self-image? • Does it chime with how they relate to others in the industry, or want to? • What is the best way to promote a positive culture around sustainability in film production? • Is there a role for trade associations, representative bodies and other industry groups?
<p>Lever 4: Make it REWARDING</p> <p>This lever demonstrates the proof and payoff</p>	<ul style="list-style-type: none"> • Do people know when they're doing the behaviour 'right'? • Do they get some sort of reward for doing it? • How do you communicate the benefits of an intangible concept like carbon emission reduction, and link it directly to professional experience and rewards? • What may be needed in addition to certification systems?
<p>Lever 5: Make it a HABIT</p> <p>This lever is about reinforcing and reminding</p>	<ul style="list-style-type: none"> • Once people have made a change, what can be done to help them keep doing it? • How do you ensure production management and crew are able to carry good practice into new productions? • What is needed to make sustainability actions as commonplace as health & safety?

Source: adapted from Five Levers for Change, Unilever

5.2.12 The five levers model demonstrates why awareness raising is not sufficient on its own. Likewise, it is no good making support or green procurement options available if people are unaware of them or do not know how best to take advantage of them.

5.2.13 The model reminds us that behaviour needs to change for good, not just for the duration of a single production, and that the benefits of sustainable practices must be tangible, not just aspirational (in film production, cost savings are always going to be an important inducement, but there may be others).

5.2.14 A research programme along the lines outlined above would naturally complement albert Consortium's call for action in the 2018 Annual Report, by helping to flesh out the respective areas of responsibility outlined for different interest groups, in order to build consensus around what a workable division of labour looks like, and identifying the conditions necessary for success:

Funders and broadcasters:

Guide and stipulate sustainable alternatives

Productions:

Implement and request sustainable alternatives

Studio facilities, suppliers and locations:

Offer sustainable alternatives

Production departments:

Implement and innovate sustainable alternatives

Talent:

Champion sustainable alternatives

Albert Annual Report, 2018

5.2.15 In parallel to this, further effort is needed to collate standardised carbon footprinting data that is truly representative of all types of film production and shooting activity in the UK, at different budget levels, for the reasons set out in the Introduction.

5.2.16 This may be an unrealistic proposition given the limited number of film records currently held by albert and the reluctance of US Studios to share PGA Green Production Guide reporting or adopt a common standard in the UK.

5.2.17 As an alternative, and provided sufficient cross-industry goodwill exists, the next stage of research could fast track data collection by working with a sample of productions over a given period, collating a standardised dataset that would include anonymised records to respect the commercial in confidence nature of footprinting data. At the same time productions would be free to use any existing reporting system (such as albert or PGA Green) in line with their preferred approach, along with data pooled in the standardised dataset for the specific purpose of data modelling to inform cross-industry strategic planning.

5.2.18 Further detail on this needs to be worked out, requiring consultation across the industry, but would mark an important step along the way to ensuring that future action is evidence-led.

Appendices

Appendix 1: Carbon footprinting and certification

A1: albert

Calculator is hosted online (<https://calc.wearealbert.org/uk/>). Productions sign-up for free in pre-production and enter required information.

A Standard user account is used to submit data; a Reviewer account from the same company/ production office double checks the information; for TV productions, a Broadcaster account user can review footprints for work they have commissioned; an Auditor account allows for independent verification of data.

Information is requested about the following aspects of production activity:

- Spaces
- On location
- Travel and transport
- Other fuels
- Materials
- Disposal
- Accommodation
- Postproduction

The initial data entry generates a carbon footprint prediction. Users then pledge to take certain actions to reduce their production footprint.

After the production wraps, a final footprint is calculated based on user inputted data. The final footprint is only approved once the Auditor has signed it off.

Certification is optional. Productions can receive a one-, two- or three-star rating depending on what actions they put into practice.

The star rating is based on a certification scoresheet, which varies according to the type of production (a maximum of 195 points are available for the most impactful productions).

The score sheet has 55 best practice items, across 16 categories of activity. The largest number of points are available for learning activities (e.g. has the production achieved a 10% carbon reduction against the relevant genre/production method or a previous series?); vehicle policy (e.g. If applicable, has the production reduced international air travel and / or mainland UK air travel?) and communication (e.g. Does the editorial content of the production contain any on-screen messaging regarding sustainability or environmental issues?):

Table A1: albert certification scoresheet categories

Category	albert points available	%
Learning	25	13
Vehicle policy	22	11
Communication	17	9
Accommodation and crews	15	8
House power	15	8
Power generation	14	7
Design and construction	13	7
Catering	10	5
Management	10	5
Office environment, consumables and waste	9	5
Planning	9	5
Lighting	9	5
Waste	8	4
Edit	7	4
Additional activity	6	3
Office buildings	6	3
Total	195	100

Source: albert Consortium

Table A2: High scoring best practices

Category	Best practices	Points
Communication	Does the editorial content of the production contain any on-screen messaging regarding sustainability or environmental issues?	10
House Power	Is mains power used from a 100% renewable sourced energy tariff?	10
Power Generation	Have low-carbon power generators been used? (e.g. waste vegetable oil generators, fuel cells or solar)	10
Accommodation & Crews	Has the production used local crews and/or equipment to reduce travel and accommodation cost?	10
Learning	Has the production achieved a 10% carbon reduction against the relevant genre/production method or a previous series?	10
Vehicle Policy	If applicable, has the production reduced international air travel and / or mainland UK air travel?	8
Lighting	Have low energy lights been used during the shoot?	7
Vehicle Policy	Have low-carbon emitting vehicles been used to transport cast and crew? (e.g. Unit Drivers, Hire cars, Taxis, Couriers)	7
Planning	Will any of the production staff or crew attend free Carbon Literacy training?	6
Additional activity	Will any additional activities be undertaken and will they reduce carbon emissions or promote sustainability?	6
Learning	Have you created audience or industry facing comms about the productions approach to sustainability?	6

Source: albert Consortium

Productions achieving 30% of the total points available achieve a one-star rating; a score of 45% of the available points secures a two-star rating and a three-star rating requires 60% or more points.

Activity that scores points will either reduce carbon emissions; and/or share best practice with production and supply chain; and/or promoting sustainable production ideals more widely. A number of actions are mandatory to achieve albert certification.

Information supplied for certification is independently audited. Productions must provide documentary evidence for a random selection of actions they have pledged to undertake.

Once the certification rating has been awarded, the albert certification badge can be displayed on screen.

A2: PGA Green Production Guide and EMA Green Seal

‘About ten years ago we came together with the Producers Guild of America and their PGA Green Committee, the six major studios at that time and the Producers Guild, and we created the sustainable production alliance [...]

The more we could align the things we were doing and align the tools we were using, the faster we could spread sustainability through our industry.’

Lisa Day, Environmental Sustainability Manager at The Walt Disney Company⁵⁶

PGA Green Production Guide offers a suite of three sustainability tools:

- Production Environment Accounting Report (PEAR), a carbon calculator.
- Production Environmental Actions Checklist (PEACH), a list of best practices linked to the award of EMA Green Seal ratings.
- Production Lumber Worksheet (PLUM), tracking the source and use of construction lumber.

All three tools are based on spreadsheet templates available for free online.

PEAR originally launched in 2011. Current version developed for PGA Green by ENVIRON International Corporation and updated in 2014.

Carbon calculator to measure environmental impact based on data about utilities, haulage and travel. The spreadsheet has tabs for six different carbon emissions sources:

Electricity

Total electricity used for all locations

Natural Gas and Heating

Total natural gas and/or heating oil used for all locations, if appropriate

Fuel

Fuel used for equipment (e.g., generators) and vehicles

Hotels & Housing

Number of days and location of hotels, houses and condos rented during the production

Commercial air travel

Passenger miles and routes (if applicable) travelled on commercial airlines

Charter & helicopter flights

Fuel, hours or distance travelled on charter jets and helicopters

⁵⁶ Speaking at AtlanticLIVE event, October 2018. <https://youtu.be/JPUbPw1JIMo>

PEAR also tracks waste management, donations, and procurement of consumables like water and paper, and the spreadsheet includes additional tabs for environmental accounting and report metrics in these areas.

Having populated the relevant data, the spreadsheet auto-generates an Environmental Accounting Report that includes:

- Carbon Footprint Summary providing a CO2 emissions total in metric tons and breakdown by source (utilities, fuel, air and housing), and CO2 emissions per shooting day for feature productions (with breakdown by source);
- Comparison of production footprint with equivalent annual energy use from homes, annual emissions from vehicles, gallons of gasoline and the number of trees grown for ten years;
- Overview of other measures for waste diversion, recycled paper content, water bottle usage and donations.

Two spreadsheets are available for PEACH (PEACH and PEACH+). Productions select one or the other to complete, depending on the level of their sustainability ambitions. PEACH contains 93 best practice items while PEACH+ is more comprehensive and incorporates 181 additional items.

Both require input from HoDs and coordinators in all main departments. It is the overall responsibility of a named Sustainable Production Representative (SPR), who completes data entry at Prep and again at wrap.

Points are scored according to which best practices are adopted at wrap.

The spreadsheet auto generates a dashboard summarising the points scored in each department.

It also allows free text explanation for actions taken or not, and to identify any good practice not listed in the template.

PEACH actions incorporate the EMA Green Seal Checklist, so productions can complete the form and submit to EMA to be considered for an award.

There is a non-refundable \$150 application fee for each Green Seal submission. A score of 75 points means achieves EMA Green Seal; 125 points are required for the Gold Seal.

To date in 2019, EMA has awarded Green and Gold Seals to 180 productions, 52 of which were feature films (table A3). 62% of these film awards were for Gold Seal (Table A4).

Table A3: EMA Green and Gold Seal Awards in 2019

Department	All productions	%	Feature films	%
Green Seal awards (75+ points)	97	54	20	38
Gold Seal awards (125+ points)	83	46	32	62

Source: EMA

Table A4: EMA Green and Gold Seal Awards for feature films, by studio in 2019

Studio	Green Seal	%	Gold Seal	%	Total
Disney	3	30	7	70	10
Fox	4	40	6	60	10
NBCUniversal	5	50	5	50	10
Warner Bros	5	56	4	44	9
Sony Pictures	1	13	7	87	8
Paramount	2	40	3	60	5
Total	20	38	32	62	52

Source: EMA

<https://www.green4ema.org/>

Environmental Media Association (EMA) is a non-profit organisation that campaigns on environmental sustainability through celebrity role-modelling, social media messaging and dedicated programmes including the EMA Green Seal for Production, EMA Seals for Hospitality, Fitness and Business, EMA School garden program and large-scale events.

EMA Green Seal is a recognition programme for feature and TV productions, based on self-assessment using the PEACH and PEACH+ tools in the Green Production Guide.

Actions taken by production, transportation and construction departments represent the largest share of the total points available (Table A5), and the highest scoring best practices are listed in Table A6:

Table A5: PEACH (and PEACH+) scoring by department

Department	PEACH points available	%
Production	28	14
Transportation	25	13
Construction	21	11
Catering	18	9
Craft Service	16	8
Electric	13	7
Locations	12	6
Accounting	9	5
Camera	8	4
Props	8	4
Set decoration	8	4
Costume and Wardrobe	6	3
Assistant Directors	5	3
Greens	5	3
Sound	5	3
Special effects	4	2
Make-up	3	2
Art	2	1
Grip	2	1
Hair	2	1
Total	200	100

Source: PGA Green Production Environmental Accounting Checklist (PEACH)

Table A6: Top scoring best practices, PEACH

Action area	Best practices	Points	Dept.
On screen	Have writers incorporated dialogue or action that portrays or advocates for environmental responsibility? If Yes, briefly describe the storyline and include scene or episode number(s) if applicable.	5	Production
Administration	Did you track the production's environmental impact using an accepted methodology (i.e., PEAR, albert)?	5	Accounting
Energy	Was at least 30% of your lighting package energy efficient set lighting such as LEDs? If Yes, confirm who provided the percentage.	5	Camera
Catering	Did you implement a plan to reduce red meat and/or participate regularly in a completely vegetarian day (e.g. Meatless Mondays)? If Yes, please explain.	5	Catering
Waste management	Was leftover food donated to local food banks and/or charities? If Yes, provide names of recipients.	5	Catering
Materials	Did you use FSC Certified Lauan/meranti or a vetted sustainable alternative (e.g., RevolutionPly)? If Yes, include supplier name	5	Construction
Materials	Were the majority of sets built with reused or repurposed set materials or modular blocks, or was minimal set construction done? If Yes, please explain.	5	Construction
Waste management	Were sets and set materials given to another production or vetted non-profits for reuse? If Yes, include recipient(s) and describe donated materials.	5	Construction
Waste management	On location, did you significantly reduce individual bottles of water by supplying water jugs?	5	Craft service
Energy	Was at least 30% of your lighting package energy efficient set lighting such as LEDs? If Yes, confirm who provided the percentage.	5	Electric
Energy	On location, did you utilize house power or tie into the grid instead of using generators? If Yes, provide examples.	5	Electric
Waste management	Was compost collected on location? If Yes, include compost vendor name.	5	Locations
On screen	On screen, did you incorporate sustainable behaviors? e.g., reusable water bottles and shopping bags. If Yes, provide examples.	5	Props
On screen	Did you incorporate sustainable behaviors on-screen? e.g., recycling bins, environmental themed messaging in background. If Yes, provide examples.	5	Set decoration
Energy	Were low-carbon fuels such as biodiesel (B20 or greater) or renewable diesel used in generators and trucks? If Yes, include vendor and/or product name.	5	Transportation

Table A6: Top scoring best practices, PEACH continued

Action area	Best practices	Points	Dept.
Energy	Did you use solar powered trailers that can run without tying in or using generators? If Yes, include vendor, make, and model.	5	Transportation
Waste management	Did you ensure recyclables were collected at each location? If Yes, include waste vendor name.	4	Locations
Energy	For base camp, did you tie into the electric grid?	4	Transportation

Source: EMA

PLUM is a spreadsheet tool completed by the Construction Coordinator for tracking the use of Lauan/Meranti plywood and its alternatives (e.g. RevPly), measuring the extent to which productions use sources that are sustainably harvested, recycled, reclaimed or reused. The focus is on plywood because of its impact on biodiversity.

Appendix 2: Green is Universal summaries

Fast & Furious Presents: Hobbs & Shaw (EMA Gold Seal award)

- Dedicated sustainability manager for London shoot
- Compost and recycling programme in the office and on set.
- Crew provided with reusable water bottles to reduce the use of plastic.
- 100% recycled content paper was used where available.
- Heaters ran on renewable diesel made from 100% used cooking oil.
- Construction team donated a truck full of dirty polystyrene from their sets to Scenery Salvage to be recycled and reused.
- Costume department donated over \$45,000 worth of wardrobe to TR Aid, Smart Works, Suited and Booted, Whitechapel Mission, and Smalls for All.
- Crew also held a clothing and toiletry drive for the Croydon Refugee Day Centre.

Yesterday (EMA Gold Seal award)

- Production team set up a comprehensive recycling and composting program and established digital distribution for scripts and schedules.
- When printing was necessary, they used 100% recycled content paper.
- Provided crew with green tips and facts on call sheets, as well as contests between the different departments during production.
- Cast and crew were supplied with reusable water bottles.
- Set was lit with a large amount of LED set lighting.
- Transportation implemented a strict no-idling policy for their drivers and many crew used public transport.
- Set Decoration team incorporated environmental messaging on screen, including environmental posters on the school set.
- Donated 2,860 lbs of excess catering and set decoration food to City Harvest London.
- Costumes, Set Dec, and Props donated several boxes of clothing and home goods to the non-profits Dress for Success and British Heart Foundation.
- Construction department donated \$6,000 worth of leather tapestries to a Firefighting Charity fundraiser.

Mary Queen of Scots (EMA Gold Seal award)

- Comprehensive recycling program in their offices and on set.
- Production office used 100% recycled content paper and electronic distribution for a significant amount of their paperwork.
- Many office and construction materials were passed onto them from the Universal Pictures' film Jurassic World: Fallen Kingdom.
- Reusable water bottles were distributed to crew at the start of production.
- The Sound Department used nearly all 99.9% rechargeable batteries throughout the entire film.
- Props Department donated 10 boxes of props and furniture to the Phyllis Tuckwell Hospice.
- Production donated historical research books, clothing, and shoes to the Sam Beare Hospice shop, and any non-perishable food from the film was donated to Runnymede Foodbank.
- The film's director, Josie Rourke, donated 112 trees to Trees for Life on behalf of the cast and crew, to be planted in the Scottish Highlands, one of the filming locations in the movie.

Johnny English Strikes Again (EMA Gold Seal award)

- Lighting package on the film was roughly 75% LED.
- Production used biodiesel made from used cooking oil to heat marquees.
- The production office used 100% recycled content paper and crew significantly reduced single use plastics by bringing their custom Johnny English water bottles to set every day.
- The production team implemented a recycling and compost program both in the office and on set, including custom signage to help educate crew.
- Production ran a friendly green competition among departments for the duration of the shoot.
- The Wardrobe department won the official "gold star" for their green efforts, including their donation of \$20,000 worth of costumes to the Trinity Hospice Charity.
- Catering and Set Dressing donated 800 lbs. of excess food to City Harvest, equaling 667 meals to those in need.

Mamma Mia! Here We Go Again (EMA Gold Seal award)

- Production partnered with local company Charlie Spotless to educate crew and implement a waste diversion program that included recycling, composting, and waste-to-energy. This effort resulted in a 99% diversion rate for on set waste, meaning zero materials were sent to landfill.
- Heaters were powered with biodiesel from OnBio made from used cooking oil.
- Crew had reusable water bottles and most office paper contained 100% recycled content.
- Majority of the set lights were LEDs.
- Production donated clothing, shoes, and household items to Cancer Research, Changing Pathways, and Help Refugees.
- Excess catering was donated to the local non-profit City Harvest, who in turn served it to Londoners in need.

Jurassic World: Fallen Kingdom (EMA Gold Seal award)

- UK cast and crew were supplied with reusable water bottles.
- Production office carried 100% white recycled content paper, and saved paper by only printing upon request.
- Production created customized “dinosaur-themed” signage for their recycling bins.
- The majority of cast vehicles were hybrids, and approximately 75% of the UK lighting package was LED.
- Jurassic World: Fallen Kingdom helped to launch a UK food donation program for excess catering. The production and NBCUniversal sustainability team worked together to partner with the non-profit organization City Harvest London to successfully donate over 320 lbs of food throughout the course of production.

Darkest Hour (EMA Green Seal award)

- Offices were set up to minimize waste. Best practices included recycling, plumbed in water coolers, and replacing disposable food service products with washable glasses, dishes, and cutlery.
- On set, reusable bottles were supplied to crew
- As a period drama, nearly all set dressing and props were obtained second hand, reducing the need to purchase new. When building sets, the construction team utilized sustainable building materials such as FSC Certified Plywood.
- In wrap, sets from the film’s “War Rooms” found a second life on the RMS Queen Mary, where they will be transformed into a restaurant.
- Set Dressing and production supplies such as shelving and furniture were donated to three local non-profits: Shelter (housing assistance,) Dad’s House (food bank), and the British Heart Foundation.

Appendix 3: US Studios, CSR and sustainability

NBCUniversal

From the Green Is Universal web site

<http://www.greenisuniversal.com/learn/about-us/film-production/>

'Universal Pictures and Focus Features are committed to reducing the environmental impact from filmmaking activities. To assist in this effort, NBCUniversal developed a Sustainable Production Program which empowers our film divisions to integrate sustainable best practices across their productions.'

At the foundation of the program are easy to use infographics which illustrate sustainable production best practices. These practices span across all production operations and equip filmmakers and crewmembers with the tools to take action and reduce impact. To view the infographics and learn more about our sustainability program, click here. To find more sustainable production tools and resources, check out GreenProductionGuide.com.'

Universal Studio Lot follows Green Is Universal, and has policies in the following areas:

- *Commuting*
- *Dining recycling Program*
- *EV charging on the Lot*
- *Food Donation Program*
- *LED set lighting*
- *Transportation dept.*
- *Zero waste recycling Program*

<https://www.universalstudioslot.com/green-is-universal>

From the NBCUniversal Sustainable Production Guide (http://www.greenisuniversal.com/site-content/uploads/2011/04/NBCU_GIUTVGuide.pdf):

'NBC UNIVERSAL OFFSETS FOR FILM AND TELEVISION POLICY

NBC Universal has prioritized the reduction of environmental impacts of the production process over the purchasing of GHG offsets. There are many benefits to this strategy (local, community, national, planet). Once a full emissions impact reduction plan has been implemented and all efforts have been made to reduce the GHG impact of a production, then the purchase of an offset to bring the production to carbon- neutral status may be supported.'

Paramount Pictures

<https://www.paramount.com/giving-back-news/tags/119/environment>

“The Green Team is a 15-member coalition, representing every major division within the company, working towards a three-pronged strategy:

- *Educate employees to live the most sustainable lives possible*
- *Ensuring the lot operates in an environmentally sustainable way*
- *Ecologically responsible content and production*

ENVIRONMENT

Whether around the studio lot, on location for production or in our daily lives “Green. It’s paramount to us.”

Green. It’s paramount to us.

Paramount’s green initiative encourages eco-friendly behavior and business practices throughout the company. The Green Action Team, a coalition of employees representing a range of departments, drives the effort and has spearheaded a variety of projects.

Highlights include:

- ***E-waste and cellphone recycling***
Each year, employees turn in hundreds of items including old VCRs, telephones, computers, televisions & other electrical equipment. The safe recycling of these items prevent hazardous materials from entering our landfills. In celebration of Earth Day, the Green Action Team organized a cell phone recycling drive on the lot. Collection bins were placed at the main studio gates and food service locations, collecting dozens of old phones & chargers.
- ***Green volunteering***
In coordination with the Paramount Volunteer Crew, employees spend hundreds of volunteer hours working on various environmentally friendly projects, including mulching & harvesting at a community garden, cleaning up the beach and the LA River, and planting trees at local schools.
- ***Electric vehicle charging stations***
In 2012, Paramount installed four electric vehicle charging stalls on the studio lot. These charging stations are available for use 24 hours a day/7 days a week and open to all Paramount Pictures’ employees and guests. Why drive electric? Electric vehicles emit few to zero emissions while driving on battery power.”

Sony Pictures

<https://www.sonypictures.com/corp/corporateimpact.html>

SUSTAINABILITY

“Sony Pictures is committed to playing our part towards greater environmental responsibility. We believe in leaving our world better than we found it, aiming to reduce our ecological footprint by pursuing policies and actions that combat climate change, preserve natural resources and protect the health and safety of our community. We have several programs in place that support our sustainability goals.

Road to Zero is Sony’s global environmental plan, striving to achieve a zero environmental footprint throughout the life cycle of our products and business activities. For more information about Sony Corporation’s global environmental initiatives, visit the environmental section of Sony’s CSR Web site.

Sony Pictures and its productions are committed to minimizing their impact on the environment by modeling sustainable behaviors both behind the scenes and on-screen. To support our corporate environmental targets, our Sustainability team works with features and television shows under its Sustainable Production Program, establishing environmental impact-reduction strategies at the core of each production’s operations. Further, we take opportunities to positively portray sustainable behaviors on-screen, when appropriate.”

SONY PICTURES ENTERTAINMENT SUSTAINABILITY

<http://www.sonypicturesgreenerworld.com/about>

MISSION

“Through ‘Sony Pictures A Greener World,’ the environmental initiative of Sony Pictures Entertainment (SPE), the studio seeks to reduce its ecological footprint by pursuing sustainable activities and partnerships that combat climate change, preserve natural resources and protect the health and safety of our communities around the world. By engaging with its employees, partners and customers, SPE is focused on improving its environmental sustainability throughout all of stages of its business, including film and television productions, as well as supply chain, facilities, distribution, and procurement choices.

Sony Pictures’ efforts contribute toward Road to Zero, Sony Corporation’s global environmental plan, which aims to achieve a zero environmental footprint throughout the lifecycle of the Company’s products and business activities by the year 2050. Sony Corporation recognizes the importance of preserving the natural environment for future generations, thereby ensuring a healthy and sustainable planet for all. For more information on Sony Corporation’s environmental efforts, visit www.sony.net/eco.

As part of its Sustainable Production Program, the studio’s Sustainability Department works with its direct production features and U.S.-based Sony Pictures Television scripted television shows to support Sony Pictures’ corporate environmental targets. Establishing environmental impact-reduction strategies is at the core of each production’s operations. Further, on-screen opportunities are seized when content-appropriate to positively portray sustainable behaviors.

OUR MISSION:**CARBON**

Complete a Production Environmental Accounting Report.

BEST PRACTICES

Adhere to environmental impact-reduction actions by department; complete checklists, and support industry eco-friendly vendors.

ON-SCREEN

Raise awareness by modeling sustainable behaviors and showcasing eco-messaging.

LUMBER

Purchase FSC Lauan (meranti), Revolution Ply® and/or other approved, environmentally-sustainable ply products.

FOOD/WATER

Donate excess, unserved food and request waste vendor to compost food waste. Reduce to strive to eliminate disposable water bottle purchases.

ALTERNATIVE POWER

Reduce the use of fossil fuels and promote alternatives, specifically solar and renewable fuels to lower carbon emissions. Encourage the use of energy-efficient technology such as LEDs.”

‘In 2001, Sony Pictures Studios (SPS) was certified under ISO 14001, a systematic framework for managing the impacts an organization has upon the environment. SPS has since maintained that certification each year since, actually expanding certification to additional Sony Pictures sites worldwide. SPS remains the first and only major studio certified to this international standard.

Key priorities that make up the ISO 14001 commitment include:

Management commitment

Reduction of environmental impacts through:

- Water Conservation*
- Energy Management*
- Waste Management & Reduction*
- Pollution Prevention*

Compliance with legal and corporate requirements

Employee engagement”

(http://www.sonypicturesgreenerworld.com/green_ops/iso-14001)

The Walt Disney Company

<https://www.thewaltdisneycompany.com/environment/>

A COMMITMENT TO THE PLANET

'At Disney, our commitment to environmental stewardship focuses on using resources wisely as we operate and grow our business. We also provide philanthropic grants and expertise to save wildlife, inspire action, and protect the planet.'

Our commitment to environmental stewardship focuses on using resources wisely and protecting the planet as we operate and grow our business. Scarcity of natural resources and threats to ecosystems and biodiversity are serious environmental issues. These challenges demand fundamental changes in the way society, including the private sector, uses natural resources. We strive to meet our long-term goal of attaining a "zero" state of net greenhouse gas emissions and waste, while conserving water resources when and wherever we can.

In 2018, we successfully reduced our net emissions by 44%. By 2020, we aim to reduce net emissions by 50%.

In 2018, we diverted 54% of waste from landfills and incineration. By 2020, we aim to divert 60% of waste.

In 2018, we reduced potable water consumption by 5.8% compared to the 2013 baseline.

Plastic use:

By 2019, the company will eliminate single-use plastic straws and plastic stirrers at all owned and operated locations across the globe.

"Conservation isn't just the business of a few people. It's a matter that concerns all of us," said Walt Disney, and the Company's commitment to environmental stewardship today is as strong as it was when Walt spoke these words.'

WarnerMedia

<http://www.timewarner.com/company/corporate-responsibility>

'Our company prides itself on being the place where the world's most talented creators and journalists tell their stories. Purposeful Storytelling is about our diverse and original content that helps to deepen the conversation on issues that matter in society.

Engaging with Impact is about the many rich and varied ways we engage with our communities, including helping to develop the next generation of storytellers from diverse backgrounds. It is also about how our employees give back, which is a key part of our culture.

Creating Responsibly and Sustainably means we act ethically and with integrity and work to reduce our environmental impact as we serve an increasingly global audience.

Tracking Our Impact

- *Making films and television shows with a smaller environmental footprint*
- *Safer studios and facilities*
- *Collaboration across our industry to support diverse enterprises*

Impact Highlights

- *\$1.75m in energy cost reductions in 2016*
- *17% decrease in direct and energy-indirect GHG emissions from 2013 to 2015*
- *\$1.09m in energy cost reductions in 2015*
- *20+ countries where we have offices that participated in the 2016 Earth Day Power Down in a coordinated effort to conserve energy'*

Appendix 4: Green developments in UK production studios

Pinewood Group

‘Dedicated to contributing to a sustainable future for the screen-based industries, the Pinewood Group now leads the way in sustainable film and TV studios.’⁵⁷

The Pinewood Group web site has a page setting out their sustainability initiatives. The company has committed to a 50% reduction in carbon emissions from 2010/11 baseline by 2030.

Energy

‘Energy is important to everyone at the studio, from lighting sets to heating offices, everyone uses energy each day. As a studio, we try to use energy as sustainably as possible and we’ve invested in renewable energies and energy efficient technologies.’

- Pinewood takes a number of steps to minimise its own energy use on the site.
- Productions are billed separately for their energy use, so in theory there is a financial incentive to reduce power consumption.
- Productions shooting on the lot must use Pinewood MBS lighting, the first albert affiliated supplier, which has made significant investment in low energy LED lighting.
- Solar panels are available on K Block and Q Block at Pinewood Studios, which can generate up to 32kW per hour.
- The Pinewood Group does not currently use a 100% renewable energy supplier but is considering the option when the current contract ends.

Transport

‘Sustainable travel is better for the environment and for our roads and Pinewood promotes the use of sustainable modes of transport to and from the studios for visitors, staff and clients.’

- The Pinewood site operates an integrated transport plan, including shuttle buses to four nearest stations, removing an estimated 100k car journeys from the road annually. This reduces environmental impact and minimises disruption to local residents and businesses.
- The Group also provides electric vehicle charging points at Pinewood and Shepperton studios.

⁵⁷ All quotes in this section are taken from: <https://www.pinewoodgroup.com/studios/pinewood-studios/sustainability>

Waste

'We aim to reduce the amount of waste we create and to increase the amount that is recycled. Purpose-built recycling centres at both Pinewood and Shepperton ensure the maximum amount of material is sent for recycling, the number of lorry movements are reduced and that no waste is sent to landfill.'

- Waste management for the company and tenants is undertaken by a contractor. The broker guarantees zero waste to landfill.
- Productions are responsible for managing their own waste.

Warner Bros. Studios Leavesden

‘Warner Bros. Studios Leavesden is fully committed to promoting good sustainability practice, to reduce the environmental impacts of all our activities and to assist and encourage our clients and partners to do the same.’⁵⁸

Warner Bros. Studios Leavesden has a web page describing its principal sustainability initiatives. The Studios’ approach aligns with its parent company’s corporate social responsibility policies.

WBSL is responsible for the sustainability of its own activities on site, while visiting productions manage their own waste and energy use in studio and workshop spaces.

WBSL encourages the adoption of more environmentally friendly practices wherever possible, by advising and assisting clients. This has included working with local charities to enable productions to donate assets to good causes.

Energy

- Utilities are billed separately in sound stages and workshops but are included in office rental charges.
- 100% of electricity used on site is sourced from a renewable supplier (up from 73% renewable under the previous contract).
- WBSL has undergone extensive re-development since 2010, and all buildings are certified as good or very good by BREEAM (the sustainability assessment method). New builds are designed for maximum efficiency to save energy and water.
- Low energy LED lighting is being retrofitted across the site.
- Productions use WBSL’s lighting division for filming, and the company has invested heavily in LED (and will continue to do so on a demand-led basis).
- No mains power supply is currently available for use by productions on the studio’s extensive backlot, but WBSL has begun a programme to introduce power source hook-ups to reduce the amount of generators on site.

Transport

‘We care about the impact we have on the environment and strive to reduce our Co2 emissions by promoting the use of public transport, use of electric vehicles with multiple EV charging points on-site and running a cycle to work scheme for employees.’

- The on-site multi-storey car park has 24 EV charging points.

⁵⁸ All quotes in this section are taken from: <https://www.wbsl.com/studios/about/sustainability/>

Waste

‘We are passionate about preserving the environment through effective waste management and recycling schemes across the site. We ensure the maximum amount of material is sent for recycling and are proud to say we are a zero-landfill site.’

- WBSL operates comprehensive recycling schemes across the site and has a dedicated recycling centre.
- WBSL staff are provided with stainless steel reusable water bottles to reduce single-use plastics.
- Waste management is included in the rental price of offices used by visiting productions. In rented stages and workshops, productions are responsible for waste management.
- WBSL has approved four waste management companies for productions to choose from, guaranteeing the destination of waste leaving the site.
- All WBSL company waste is either recycled or burned and converted into energy. Most waste from productions is treated similarly, but a small proportion that includes polystyrene used in set building goes to landfill (as there are currently no alternatives for disposal).

Z Studios: The VECTAR Project

<https://www.vectarproject.co.uk>

‘The VECTAR Project has been created to be a first in true carbon neutral studio film production in the city region, employing technology and work methods that will ensure minimal impact on the planet without compromising quality of content.’

Tom Henderson, Director, The VECTAR Project

The VECTAR Project is leading the re-development of Z Film Studios in Heaton Mersey, Stockport, with advice from The Tyndall Centre for Climate Change Research at the University of Manchester.

Project mission:

1. To be completely carbon neutral by 2020
2. To adopt a number of leading-edge technologies, eliminating carbon emissions in the facility and providing new support facilities which will allow any production or film company to reduce the resources they consume
3. To work with clients and provide them with the tools to enforce positive alignment across all their advertising agencies, film companies, directors and crew – so that there is little or no excuse to waste resources the planet cannot afford
4. To act as a development centre to provide the template for other facilities both in the UK and overseas to adopt a comprehensive approach to improving the global performance of the industry in helping to save the planet

The project involves upgrading the existing site and facilities housed in a 30-year-old building. The first phase, supported and part-funded Greater Manchester GC Business Growth Hub, included upgrading studio lighting to ultra-efficient LED and installing a 11kWp rooftop solar system.

By 2020 the facility will produce all its own energy. Once complete, the switch to full LED lighting is expected to reduce the studio’s annual carbon emissions by 72 tonnes (saving more than £32,000 a year). The solar system will reduce emissions by a further 1.9 tonnes and (saving an additional £1,000 a year), and there are plans to expand this significantly in future.

Other developments include moving to paperless production (scripts, shooting boards and production documentation will exist live on digital devices); providing a 10GB high-speed data network at the facility as an alternative to hard drives (and dispensing with the need for a DIT); plastic-free catering in the studio using locally sourced, plant-based food; and implementing a rainwater reclamation system.

Funding is currently being sought for subsequent development phases involving the latest technology, including replacing conventional constructed sets with virtual ‘digital sets’ and reducing air and other travel by using 8K 3D cameras in sound stages and other areas to allow executives and key creative talent to be ‘virtually’ on set.

Other studios

The Bottleyard Studios, Bristol

- Owned and managed by Bristol City Council. Approach to sustainability is linked to Council policies.
- Has a dedicated page to 'Sustainable practices' (<https://www.thebottleyard.com/about/sustainable-practices>)
- Supports albert and is included in a case studies on albert web site.
- Advises productions on sourcing local crew and suppliers, and assists with set repurposing and storage.
- Undergoing a rolling programme updating facility lighting to LED, and has solar power generating capacity.

Ealing Studios, London

- Took part in pilot during development of BS 8909 and featured as a case study.
- Member of albert's Creative Energy scheme, and working with albert on model for zero carbon, zero waste studio.

Film City Glasgow, Glasgow

- Film City Glasgow was awarded funding from Glasgow City Council and Creative Scotland for a Programme For Sustainability (<http://www.filmcityglasgow.com/PFS>)
- Enabled studios to change the way the facility operates and inspire the wider screen industries in conserving energy and reducing emissions.
- Included publishing tips on sustainable location shooting in Scotland, a sustainable procurement policy, travel plan and environmental policy.

The Maidstone Studios, Kent

- Worked with Screen South and Greenshoot on a case study for the Sustainability in Vision report for Cine-Regio published in 2014.
- Recommendations for future activity included development of a sustainability policy; launching a green procurement campaign and maintain a database of green suppliers; allocating tasks to a green studio coordinator; undertake energy and fuel reduction programme; and institute a recycling scheme.

Mercian Studios, Birmingham

- Planned new studio development currently seeking finance.
- Led by Steven Knight, who has green ambitions for the project:

'I want [the studio] to be green. We will contribute to the grid, rather than withdraw from it, by burning biomass. We can have bird sanctuaries on the roofs of the studios. There will be no plastic bottles. Every vehicle that's under the control of the studio will be electric.'

Steven Knight

Space Studios, Manchester

- Makes reference to albert on web site ("Space Studios Manchester is working with albert to promote environmental sustainability in the broadcast industry.")

Sunbeam Studios, London

- Takes a proactive to sustainability (<http://www.sunbeamstudios.com/sustainability/>)
- Manage eco-measures through 8 steps of Refuse, Reduce, Reuse, Rehome, Recycle, Replace, Rot & Respect.
- Member of albert's Creative Energy scheme.
- Initiatives include free re-cycling for visiting productions; upcycling unwanted assets and resources to local projects; Fair Trade procurement; encourage use of push bikes and foot power for deliveries and pick-ups whenever possible; catering using healthy, locally-sourced food; use hybrid vehicles, and organise client's taxis to be hybrids whenever possible; host education events and train assistants on sustainability policy.

Twickenham Studio

- Home to Karma Crew & Creative, a London- based multi-platform video production company and digital content provider offering a full film and production service to agencies, broadcasters and direct to brand. "We are committed to sustainability, both environmental and educational. We are a low energy use company."

Appendix 5: Dresd case study

‘We provide the broadcast industry with a viable, cost-effective and sustainable alternative to set waste being sent to landfill or waste to energy. We are a certified albert supplier and recommended by the BBC, helping to support an environmentally sustainable future for the TV and film industries.’⁵⁹

Based in South Wales, Dresd offers a number of sustainable production services. The company has studio space on four stages, along with workshops and other spaces for hire by productions.

In addition, Dresd supports productions (whether using its site or shooting elsewhere) with the aim of achieving zero waste to landfill by:

- overseeing and monitoring the production process, ensuring that sustainable best practice methods are adopted;
- collaborating with productions to identify sustainable materials and possible routes of re-distribution;
- encouraging the design of sets to increase their reusability and lifespan (building with recycling in mind);
- helping to ensure materials can be donated to charity;
- Provides a waste report at the end of production to feed into footprinting and certification paperwork.

Dresd also offers a set clearance service, with complete derig and site clearance. This includes asset collection, with the potential for costs to be offset against any reusable props acquired by Dresd. Materials collected by the company can be hired back into the industry, offering a cheaper option for productions than buying new and reducing consumption.

The site has 50,000 sq ft of secure physical storage for all set materials, alongside containers and other storage. Goods that are no longer needed by productions are automatically sorted and stored by Dresd.

⁵⁹ <http://www.dresd.co.uk/>

Appendix 6: albert, PGA Green Production Guide, AdGreen, Creative Carbon Scotland and Julie's Bicycle

albert Consortium

<https://wearealbert.org>

Established 2011, emerging from a carbon calculator developed for BBC productions, and governed by an industry consortium led by BAFTA. Funded by industry fees, enabling all resources, tools and training to remain free of charge at point of use.

albert objectives:

1. To enable every part of the screen industry to eliminate waste and carbon emissions from production
2. To empower industry creatives to make editorial content that supports a vision for a sustainable future

The commissioning directorate (BBC, ITV, C4, Sky and Netflix) supports the development and implementation of albert's strategy and industry wide objectives.

The wider consortium supports the creation of albert's strategic projects, tools and initiatives. Consortium membership includes commissioning directorate members plus Elephant House Studios, Hat Trick, Warner Bros, Endemol Shine Group, IMG, Freemantle, Viacom, Tinopolis, UKTV, all3media and NBCUniversal.

The albert consortium currently works with three industry partners providing specific green services: Green Tomato Cars, Sargent Disc and Good Energy.

albert also extends its reach via:

- Ambassadors (individual creatives who take a proactive role in sustainability),
- International Partners (Screen Greening, Ireland; Focus op Groen, Netherlands; Greener Screen, UAE; Reel Green, Canada)
- Affiliates (Aurora Media, Bad Wolf, Blast! Films, Bronte Film & TV, Cactus TV, Caryn Mandabach, Crackit Productions, Curve Media, Darral MacQueen, Envy Post Production, Evolutions, Expectation Entertainment, Films@59, Five Apples, Fulwell 73, Icon Films, Input Media, ITN Productions, IWC Media, Keo, Kindle Entertainment, Locate Productions, Me and You Productions, October Films, Open Mike Productions, Plimsoll Productions, Raise the Roof, RDF, Rough Cut, Sid Gentle, Silverback, Sister Pictures, Splice, Suite TV, True North, Vice)

In addition to the carbon calculator and certification system (see Appendix 1), albert offers a full range of complementary services:

- Carbon literacy training and events around the UK (sessions on sustainable production, and on-screen representation);
- Production Handbook on the albert web site tailored for different departments (Production, Producers + Directors, Lighting + Camera, Sound, Post Houses, Production Design, Costume, Hair + Make-up, Studio Facilities); supported by case studies;
- Planet Placement guide to content creation with on-screen sustainability messaging;
- Creative energy scheme with Good Energy (currently adopted by Argonon, Babycow Productions, Bad Wolf Studios, BAFTA, Band Films, Blast Productions, Cactus, CPL, Directors UK, Dog Years, Ealing Studios, eOne, Films @ 59, Greenwich Studios, Halo Post, IWC Media, Kode, Lime, LS Productions, Mammoth Screen, Neal Street Productions, One of Us, Rawcut, Rocking Horse Pictures, Sargent-Disc, Silverback, Snow Years, Splice Post, Studio Lambert, Sunbeam Studios, Take 2, The Edge, The Edit, The Farm Group, The Incentive, The Purity Works, Windfall Films and Zigcam Films);
- Education partnership with screen education institutions delivering 'Applied Skills for a Sustainable Screen Industry' module (Arts University Bournemouth, Birmingham City University, Canterbury Christ Church University, Confetti Institute of Creative Technologies, University for the Creative Arts, University of East Anglia, Glasgow Caledonian University, University of Hertfordshire, National Film and Television School, Learning on Screen, University of Leeds, University of Lincoln, London College of Communication, Staffordshire University, London College of Communication, Sheffield Hallam University, UWTSD Swansea College of Art);
- Carbon offsetting scheme offering advice about the process and market providers through 'offset club' meetings hosted every six months.

PGA Green Production Guide

<https://www.greenproductionguide.com>

Developed from the work of PGA Green, which started life as a chapter of East Coast PGA members in 2007 before becoming a PGA national committee in 2009.

The Guide was developed in 2010 with seed funding from a number of major studios. It now has primary support from Disney, Amblin Partners, 20th Century Fox, NBCUniversal, Paramount Pictures, Sony Pictures Entertainment, Warner Bros, Amazon Studios, HBO, Netflix, CBS & Participant Media.

Intended as a resource for production professionals looking to reduce their environmental impacts and carbon emissions.

Works in partnership with other organisations, including Environmental Media Association, Rocky Mountain Institute, and the albert Consortium led by BAFTA.

Green Production Guide features a searchable database of vendors offering green products and services. Also offers a range of free resources:

- Cost benefit analysis report, April 2014
- FAQs
- Useful links
- List of EMA Green Seal recipients
- Research reports

The PGA Green Production Guide Toolkit contains the PEAR, PEACH and PLUM tools described in Appendix 1 along with:

- Practical guidance and an introduction to greening production, as well as e-memo templates, flyers and signage and donations guidance;
- Infographics for best practice in offices, production studios and on location.

AdGreen

<https://www.adgreen-apa.net>

‘AdGreen exists to support the advertising industry’s transition to environmentally sustainable production methods; working in collaboration with trade bodies and other industry organisations to accelerate the adoption of best practice.’

www.adgreen-apa.net

Inspired by the work of albert, Jo Coombes (Head of Production at LS Productions, formerly a freelance production manager) started AdGreen in 2014 to help improve sustainability practices in the advertising industry.

AdGreen receives strategic support from the APA but is currently unfunded and relies on the voluntary efforts of individual practitioners.

AdGreen’s vision is for all UK advertising content to reflect sustainable living and be made in a way that benefits both people and planet, delivered against the following objectives:

- To reduce the environmental impact of the production process**
- To allow consumers to engage with sustainable living via the content we are producing**

The AdGreen website provides free access to a range of practical production tips and resources, as well as an email newsletter and social media presence:

- How to Add Green to Your Shoot: Takes you through the key bits of the site
- Get Inspired By Others: Case studies from production staff going green on real jobs
- Five Easy Things: Start with these to reduce waste
- Office Checklist: Get your house in order and tell your staff and freelancers
- Resources: Including printable bin signage, text for your call sheet, rehoming directory for props, sets, costume, food and more
- Switch to Renewables: Make a big change and get green power for your office
- Sustainable Production Agreement: Use this to make commitments on your shoot and communicate to the ad agency
- FAQ: Answers on recycling, reusing drives, water bottles, carbon offsetting and more

The project has grown and now co-hosts a regular programme of events, networking opportunities and training in collaboration with albert, APA and IPA. This includes two Green Production Get Togethers per year; Green Zone at the annual Focus trade show; and APA Masterclasses.

Creative Carbon Scotland

<https://www.creativecarbonscotland.com>

Creative Carbon Scotland provides Creative Scotland's Regularly Funded Organisations (RFOs) with advice about sustainability and accreditation. Since April 2018, Creative Scotland has required all RFO to develop plans to reduce the carbon emissions related to at least one aspect of their activities. Organisations supported through Open Project Funding and Targeted Funding are also encouraged to do the same.

Creative Carbon Scotland works across the arts with individuals and organisations including:

- Artists, craftspeople, technicians and producers
- Visual art and craft galleries, studios and workshops
- Literature organisations, publishers and libraries
- Theatres
- Music venues
- Screen production companies and cinemas
- Touring companies
- National performing arts companies
- Festivals
- Arts agencies
- Funding bodies and local authorities

Creative Carbon Scotland provides training in carbon measurement, reporting and reduction, and provide free tools and resources including for carbon counting and a web-based expenses claim system to track travel-related carbon emissions. Creative Carbon Scotland also works at a strategic level.

Julie's Bicycle

<https://www.juliesbicycle.com>

Julie's Bicycle has three elements to its offer:

1. Consultancy, carbon calculation (Creative IG Tools) and certification (Creative Green Programme);
2. Manages environmental reporting for ACE NPOs (around 800 organisations in England. Pilot project looking at target setting for around 30 NPOs);
3. Policy and strategy (including working with local authorities and GLA).

Offers its Creative Green tools for free, and encourages venues to switch to renewable energy suppliers (through the Creative Energy scheme with albert).

Carbon and environmental calculator designed to help organisations record and understand the impacts of venue, office, tour, production, event or festival. Includes measures of energy use, water consumption, waste generation and recycling, travel and production materials. Results inform a bespoke environmental strategy and organisational priorities.

Creative Green certification recognises and celebrates environmental best practice of events, venues, museums, galleries, festivals and offices. Organisations are awarded between one and five stars based on points awarded for commitment, understanding and improvement.

Enrollment fees begin at £1,250 + VAT, and include:

- Training and learning workshops
- Access good practice and learning from peers
- Marketing of sustainability achievements
- Independent assessment of environmental performance
- Support from Julie's Bicycle environmental experts
- Entry to the Creative Green Awards

Certificated organisations include a number of film exhibitors: Curzon Cinemas and Tyneside Cinema as well as mixed arts venues like HOME and The Barbican. Julie's Bicycle is currently working with Curzon cinemas on a consultancy basis, including advising about the sustainability of new build sites.

Appendix 7: Green Screen

‘Green Screen provides any production with a simple, practical and cost saving environmental programme, helping to make our industry more sustainable.’

www.green-screen.org.uk

Earliest iteration of the scheme was launched in 2009 by Film London with funding from Creative Skillset.

Environmental consultancy Greenshoot was involved at an early stage and formally joined as sustainability partner in 2014. Scheme is supported by the London Filming Partnership and London’s Borough Film Services.

Online platform www.green-screen.org.uk launched in 2016, with the aim of creating a simple, easy-to-use online sustainability process for productions.

The scheme is open to TV commercials and productions, shorts and feature films.

Productions pay an administration and assessment fee of up to £485 depending on production size and budget.

Once registered, productions gain access to sustainability resource guides and tools (including a bespoke crew memo), along with tips tailored for each production department.

Process begins during the development or pre-production stage, when the producer commits to implementing an environmental management system based on the principles of ISO 14001 and BS 8909.

The management system involves measuring and monitoring activity against objectives set out in an environmental action plan using a PLAN-DO-ACT model. Evidence, including carbon footprinting using Greenshoot’s proprietary carbon calculator, is uploaded to Green Screen as part of the certification process.

Two certification levels are currently available: Green (entry level) and Silver (introduced in early 2019). A Gold level is planned.

Certification is dependent on meeting a set of mandatory requirements in addition to achievement against a production’s own action plan.

Entry level (Green) mandatory requirements:

1. The producer will complete this Environmental Policy which will generate the Crew Memo that goes on the first day's call sheet.
2. Appoint a Green Steward to oversee the environmental programme and a green contact in each dept.
3. Implement a production recycling programme.
4. Won't use polystyrene in the catering dept.
5. Donate any unwanted production assets (food, props, clothes, etc.) to charity.
6. Implement a 'Switch Off' energy reduction campaign.
7. Implement a no-idling policy for all vehicles.

The production must also choose a minimum of 3 strategies from the following;

We will distribute call sheets, MOs and RAs electronically.

We will always print and copy double sided (if printing is essential).

We will eliminate plastic water bottles by providing water coolers and personal canisters.

We will recycle all batteries.

We will donate any unwanted scenic flats to film schools

We will run a composting programme for all food waste.

We will organise car-pooling or minibuses when travelling to set.

We will hire a portable biodiesel or solar generator.

We will reduce food miles, buying locally.

We will use rechargeable batteries.

Productions can also use additional Greenshoot Consultancy services for industry training and education and bespoke environmental onset strategies.

Intermediate level (Silver) mandatory requirements:

8. Eliminate plastic water bottles by providing water coolers and personal canisters and/or ask crew to bring water canisters from home.
9. Distribute call sheets, MOs and RAs electronically.
10. Complete the Silver level tracking form (Silver offers productions to take part in industry research programmes including energy and fuel tracking, waste and single use plastic bottles).

Taking on a green runner/steward is the most important requirement, and over 240 new entrants have been trained in sustainable production under the scheme. As part of the certification process, producers recruit a trained green runner/ steward from a list maintained by Green Screen.

Productions meeting all mandatory requirements and their own action plan goals are awarded the official Green Screen stamp, for display on screen and in promotional materials.

Between January 2016 and June 2019, 304 productions signed up to Green Screen. 291 achieved Green level certification, and one achieved Silver level. The majority of certified productions are television commercials (239, 82%).

Since 2016, 17 Film London microwave films have been certified, along with 7 independent films, 8 films supported by the BFI Film Fund and 7 student or short films.

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About Bigger Picture Research

Bigger Picture Research is a consultancy run by Jim Barratt providing research, evaluation and strategic planning services to the creative industries, arts and culture sectors.



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