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Transitioning to Sustainable Production across the UK Theatre Sector

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Introduction

This policy briefing is based on research conducted by Professor Roberta Mock into sustainable practice in UK [theatre production](#). The project focused on three different theatre productions staged in the summer of 2022 in England and Scotland, working with participants to understand their use of circular economy principles and other sustainable practices.¹ While the impact of the theatre sector on carbon emissions is relatively small, the government's [Net Zero Strategy](#) has set out ambitions for all sectors to reduce their carbon emissions by 2050.² In June 2023, the Government's Creative Industries Sector Vision set out plans to help the sector reach its net zero commitments, and there are already growing initiatives to meet this. [PEC's own research has examined](#) the ways that the creative industries are addressing net zero and wider environmental challenges through decarbonizing their activities and promoting social and environmental change.

The theatre subsector faces specific challenges to achieving net zero goals, including extensive use of costumes and props, lighting, and other elements of production. Theatre organisations are alive to these challenges, with both the [National Theatre](#) and the [National Theatre of Scotland](#) having extensive sustainability action plans, while regional theatre companies like [Bristol Old Vic](#) and [Dundee Repertory](#) have outlined clear environmental policies in recent years.

In addition, the publication of the [Theatre Green Book](#) has given theatres much-needed sustainability guidance. Co-developed by theatre makers and sustainability experts, the *Green Book* aims to provide a common standard for people working in theatre production. It is now widely valued and trusted by theatre companies and is included as a resource on the Arts Council England Investment Principles Resource Hub. Professor Mock's paper, [Transitioning to Sustainable Production across the UK Theatre Sector](#), presents in-depth case studies of the challenges and opportunities that theatres face in making low-carbon, low-waste productions at different scales.

¹ According to the UN, sustainability is defined as 'meeting the needs of the present without compromising the ability of future generations to meet their own needs.' (<https://www.un.org/en/academic-impact/sustainability>). A circular economy is one where 'materials never become waste and nature is regenerated. In a circular economy, products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting.' (<https://www.ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>).

² "Net zero" refers to the aim of negating the amount of greenhouse gases caused by human activity.

1. Methodology

The research consisted of a mixed methods study, focusing especially on three qualitative case studies of different scale theatre productions staged in the summer of 2022: *All's Well That Ends Well* by the RSC, *River Land* by Theatre Alibi, and *Exodus* by the National Theatre of Scotland (a touring production). The study's definition of "theatre" encompasses the building where performances are held, a distinct aesthetic form of performance, and an organisation that produces these performances. "Production" refers specifically to the making of a performance, including processes like design, procurement, construction, and storage. The study largely excluded consideration of the carbon footprint of the fabric of theatre buildings themselves.

Each production used the *Theatre Green Book* as its benchmark for sustainable practice and appointed a Sustainability Champion who was a point of contact for the project investigators. The Sustainability Champions were in turn supported by external Expert Mentors with experience of making environmentally friendly productions. All participants in the study were offered Carbon Literacy Training (CLT) to upskill them in green issues, which was accredited by the [Carbon Literacy Project](#).

The project researchers attended key "green milestone" meetings to understand how productions were working towards *Green Book* guidelines. These meetings were accompanied by two online "Greening Theatre (Bring Your Own) Coffee Mornings" where study participants from across the theatre companies discussed the challenges they faced making low carbon productions. This research additionally included further qualitative interviews with other participants in the productions and an online survey of individuals working with the *Green Book*. The project team analysed participants' Carbon Literacy submissions.

2. Key challenges and opportunities

The report emphasises that the sustainability of productions is a result of complex decision making by multiple individuals and teams. Each of the participating theatres achieved real progress in adapting their production practices to be more carbon neutral and found the *Theatre Green Book* helped improve their practices. The researchers suggest that the *Green Book* is already helping to form a 'new creative ecology', with a high level of awareness throughout the sector about the guidelines and an increasing number of theatre companies mentioning it within their environmental policies.

However, the study highlights several challenges that still need to be tackled to further the cause of greener productions. The case studies show that there is a lack of 'accessible, free, context-appropriate, reliable tools to measure, report and evaluate environmental impacts' designed for theatre. The varied demands of different productions can affect the range and quality of data collected, making comparison between productions tricky. However, the researchers found that the *Green Book* is encouraging people working in theatre productions to be more aware of sustainable practices and accountability.

The research found that the participating theatres were able to adapt their budgets to *Green*

Book standards with no extra cost, though it concedes that each of the theatres benefited from subsidies and had access to their own storage. The research also found that adapting to sustainable production practices results in higher workloads, which puts freelancers at a significant disadvantage, and increases labour costs. Organisations have started to address this problem. The National Theatre, for example, announced last year that it would provide additional payments to freelance designers and directors to meet sustainability challenges. However, ensuring that all employers are aware of this problem is crucial, and something that Equity's [Green New Deal Network](#) has underlined. The Creative PEC has made the case for lifelong training for creative workers, and the report *Transitioning to Sustainable Theatre Production* shows that environmental skills might be part of that.

Other challenges highlighted in the paper relate to collaboration. The researchers emphasise that having good-quality, regional shared storage can help theatres to pool resources and ensure that different elements of production can be easily reused. They point to the example of the "Sustainability Hub" initiated by Theatre Alibi's Rachael Duthie to service south-west England. There is also an opportunity to make it easier for organisations to share best practices outside of their sector, especially with related industries like film and television. Finally, the research notes that there is an opportunity to engage audiences in green practices, particularly as a source of specialist knowledge and support.

3. Policy Recommendations

The following policy recommendations are drawn directly from the research paper. They are aimed at funders, theatre companies, and national, devolved and local governments.

1. Offer meaningful incentives to theatre companies or organisations that can demonstrate reduced environmental impact in all aspects of theatre staging and production. This might take the form of [grants or tax credits](#) to support positive environmental changes.
2. Encourage theatres to commit to the sustainable practice described in *The Theatre Green Book*.
3. Invest in creating shared storage and borrowing facilities to contain and repurpose construction materials, props, furniture, costumes, and other equipment. Funding should be offered to theatre organisations that maintain their own storage facilities as regional hubs.
4. Create tools to enable theatre companies to measure and track their environmental impact with minimal expertise. Carbon measurements should take into account the particularities of circular economy principles.
5. Capture all aspects of carbon emissions, taking into account: travel, freight, energy and water use, waste, cleaning products, maintenance, data management.
6. Establish local networks to support low carbon and low waste theatre by sharing procurement and energy purchasing, collective fundraising, knowledge exchange, and community building.
7. Ensure that fees and remuneration for freelancers are increased to reflect the time

needed to undertake sustainable production practices.

8. Support Continuing Professional Development (CPD) in sustainable production and Carbon Literacy Training (CLT) that are both accessible and specific to the theatre sector. Schemes should be accredited, with recognition both inside and outside the theatre sector, and ideally take the form of digital badges that can be easily transferred.
9. Involve audience members in the drive to net zero to foster a shared sense of responsibility, and in turn encourage demand for more sustainable practices.
10. Directly invest in the refurbishment and resourcing of small and medium scale venues to reduce the freighting of equipment when touring.
11. Subsidise the development and use of eco-friendly materials and technology for the sector.
12. Facilitate cross-sector cooperation to address barriers to sustainable production, such as strengthening supply chains, developing sustainable materials and supporting good work for everyone involved in the production chain.

Appendix: the case studies

- **Theatre Alibi** succeeded in making sure nearly 100% of *River Land's* sets and scenery were recycled from elsewhere and acquired 73% of its costumes second-hand. Once production had finished, almost all production materials were reused or recycled and the majority went back into the company's stock. The company's leadership ensured sustainability was the responsibility of all team members.
- **The Royal Shakespeare Company** succeeded in exceeding the *Green Book* baseline target for sustainability, despite the complexity of the production of *All's Well That Ends Well*. 62% of sets, scenery and costumes had a previous life and 89% of props and furniture by weight were from reused or recycled sources. After production had ended, 87% of sets and scenery, 100% of larger props and furniture by weight, and 95% of costumes and technical equipment were likely to be reused or recycled. The production team emphasized the importance of including actors in the process and having a proper inventory of materials from the start. The minimalist production ended up coming under budget.
- **National Theatre of Scotland (NTS)** embeds commitments to *Green Book* standards into contracts with designers and follows the guide's 'intermediate' standards for all productions. For *Exodus*, 95% of sets, scenery, sound, video and lighting equipment by weight were either reused or recycled, as were 77% of costumes. Participants found that working closely with set builders was key to keeping production sustainable. As a touring production, NTS captured carbon calculations for freight and travel, but found it hard to know how to use the data. Given the varying requirements of different tours, making meaningful comparisons between productions proved difficult.