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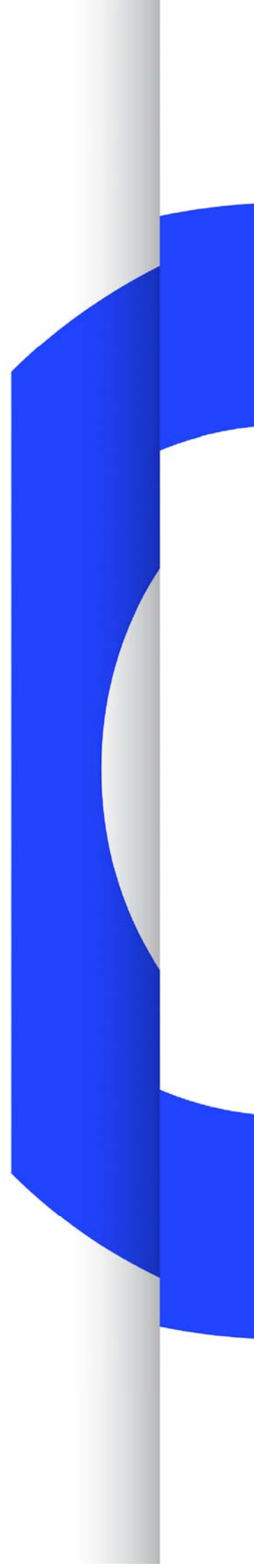
OPERATING EUROVISION AND EURORADIO

TR 031

SUSTAINABLE PRODUCTION

PRACTICAL STEPS TO IMPLEMENTATION

Geneva
November 2014



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Sustainable Production

Practical Steps to Implementation

<i>EBU Committee</i>	<i>First Issued</i>	<i>Revised</i>	<i>Re-issued</i>
SP-Green	2014		

Keywords: Sustainable production, carbon footprint, green broadcasting.

Scope

This guide is adapted from the "Programmes That Don't Cost The Earth" guide published by BAFTA in the UK. The original version can be found at:

<http://static.bafta.org/files/albert-programmes-that-dont-cost-the-earth-2011-3-1193.pdf>.

This is a practical guide to help you make your programme as sustainable as possible. In practice this means we want to make programmes to the same high standard as always but with the minimum negative impact on current and future generations. This guide tries to explain how to do the right thing when you're under no legal obligation to do so. We hope this approach will help not hinder your production. The guide is in sections which loosely follow the typical production cycle.

Every task you achieve will help make your show more sustainable - something that your cast, crew and audience will hopefully appreciate.

Evaluate individual suppliers and services based on their green credentials. But explain your goals to everyone in your supply chain and ask them what they can offer. Not every supplier will be able to achieve everything right now, but asking them the question is a first step.

An Essential Glossary

Greenhouse gases (GHGs)	carbon dioxide (CO ₂), methane (CH ₄) and nitrous oxide (N ₂ O), together with families of gases including hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).
Carbon emissions	same as Greenhouse gas emissions. Both terms are used interchangeably.
Carbon footprint	describes the amount of greenhouse gas (GHG) emissions caused by a particular activity or entity. It is generally measured in tonnes of <i>carbon dioxide equivalent</i> (CO ₂ e) which converts the impact of all other GHGs into the equivalent impact of carbon dioxide. General convention has been to use a 100 year timescale for this
Carbon calculator	a tool to help track carbon emissions and calculate a carbon footprint
Production carbon calculator	a carbon calculator designed specifically for TV production. It calculates the carbon footprint for the production based on

resources used e.g. transport, electricity, materials during pre-production, production and post-production.

1. Introduction

Sustainable production is making programmes in a way that has a positive impact on the people and places involved in their creation. This means:

- Minimising carbon emissions with an ultimate aim of zero emissions.
- Improving energy efficiency.
- Minimising waste to landfill, with an ultimate aim of zero waste to landfill.
- Sharing sustainable values with all suppliers, cast and crew.
- Seeking to improve performance trying to leave a positive legacy.

A sustainable production must:

- Seek to reduce the negative environmental impact of programme production wherever possible.
- Share and embed sustainable values and behaviour with the cast, crew and supply chain.
- Promote sustainable production values to colleagues within the production or company, across the wider industry, and where appropriate, communicate these to the audience.
- Measure and monitor its environmental impact.

This guide provides a series of practical steps that can be used to achieve this. They each help by reducing energy consumption, using less materials and producing less waste, without affecting the quality of production made.

These are suggestions and it is not necessary to do them all. Which you choose will depend on your priorities, which makes the greatest difference to your production and how able you are to implement them.

2. How to implement Sustainable Practices

Sustainable Production requires changes to how individual productions are made and also changes at the organisational level.

The 3 most important factors needed are strong leadership, engaging the production teams and working with the supply chain.

- **Leadership** - make sustainability a priority and embed it into the strategy and aims of the organisation. Assist with converting strategy into actions.
- **Production teams** - help productions understand what they can achieve and supply them with resource and advice.
- **Suppliers** - tell your supply chain that you expect them to adopt sustainable practices when providing products and services. Give them advance notice and be specific.

2.1 The process

- **Measure** - monitor the organisation's energy, transport and water use plus waste recycling levels and set organisational targets. Measure the carbon footprint of individual productions e.g. using production carbon calculators.
- **Put into practice** - devise practical measures for implementing sustainable production practices e.g. fewer and more efficient buildings, video conferencing etc.

- **Engage staff** - explain benefits in accessible way and provide opportunities for feedback and ideas e.g. provide information and train people with production relevant advice.
- **Verify** - monitor progress and set goals.

2.2 The key principles

The three key principles, known as 'the three Rs' are in order of preference:

1. **Reduce**: don't use as much of anything. Whatever it is, use less.
2. **Reuse**: adapt what you've got rather than buying or making something new.
3. **Recycle**: if you have to throw something away then recycle it. Waste disposal - even recycling - is the last resort. If you've got waste which can't be recycled, then dispose of it responsibly.

2.3 Set your goals and communicate them

A sustainable production can only happen when the leadership commits to it, sets goals at an early stage and makes everyone in the team aware of them.

Every production should have a senior staff member responsible for environmental issues. Discuss your goals with the crew and suppliers before shooting begins, e.g. in production meetings. Examples: You can set measurable goals, for instance, for targets for reducing emissions, electricity consumption, travelling, waste and recycling.

At the first opportunity tell your cast, crew and supply chain that this will be a sustainable production. Make it clear that following these principles wherever possible is important.

Ask for everyone's help in achieving the goal. You may wish to offer some incentive for the best initiative. Similarly, unnecessarily poor behaviour should be challenged.

2.4 Gathering data and making measurements

In order to set measurable goals and to estimate your carbon footprint, you'll need to find sources of information and measurements.

Some of these will be in the direct control of the production team and others will require getting information from your landlord/ building manager and suppliers.

Some examples of useful data to collect are:

- Transport usage - car mileage, trains travel usage, flight data etc.
- Energy use - electricity usage, fuel oil, diesel.

This data is needed to calculate the carbon footprint of your production. To do this, you'll need some carbon conversion factors, some of which are specific to your country. They are used to calculate the equivalent tonnes of carbon dioxide emissions e.g. 1 litre of diesel burnt emits 26705 kg CO₂e. Alternatively, if you have a suitable production carbon calculator available, you can use this much more conveniently instead.

2.5 Use a carbon calculator for production

A carbon calculator is a tool used to calculate carbon footprint by inputting the requested data.

The answer produced will depend on the scope of the calculator, which method it uses in its calculation and the conversion factors it uses. This means that using different carbon calculators with the same data may produce different answers.

Some broadcast and film industry organisation have created carbon calculators specifically for production.

Albert is an online carbon calculator, originally created by the BBC, and now available through BAFTA (British Academy of Film and Television Arts) to UK production companies. Albert produces carbon footprints for individual programmes. It will show you where your biggest greenhouse gas impacts are likely to be and how they compare to other programmes.

Carbon Clap is another production carbon calculator from Ecoprod and is used by TF1 in France. (<http://www.ecoprod.com>).

If you don't have access to a suitable carbon calculator, you can still set a target for each area and work to meet these.

3. In the office

Offices have the potential for quick wins which can set the tone for the rest of production and save you money.

3.1 The basics

Start with the room itself: if it's under-used for its size then ask your building manager or landlord if a smaller room is available.

Check whether there are any energy efficiency measures put in place by your landlord or building manager and if not, investigate putting some in place.

Use different forms of communication around the office to encourage staff to reduce, re-use or recycle (e.g. signs, leaflet, posters, info sheets etc.)

3.1.1 Lighting

If staff are able to control the lights, then make sure they turn them off wherever possible.

Encourage people to work in the same part of the room to reduce lighting. The last person to leave should be responsible for turning off all lights and equipment. Put up clear signs stating this.

3.1.2 Heating and air conditioning

Office temperatures are typically between 20°C (\pm 2°C) during the "heating season" and 24°C (\pm 2°C) in the "cooling season".

If the air conditioning is on, make sure all windows are shut. Opening them will conflict with the air conditioner and it will have to work harder to compensate, leading to greater energy use.

If you have control over heating levels then try to reduce the temperature and wear extra clothes instead. In summer, keep the use of air conditioning to a minimum.

3.2 Equipment

3.2.1 Computers

If you use a desktop PC, then set it to go into low power mode automatically after a set period of inactivity, say after 20 minutes. Shut down your PC at the end of the day or when you're going to be away from your desk for some time and switch off the monitor on the unit itself. Laptops use less energy than desktop PCs so wherever possible use them, ideally on battery power.

3.2.2 Other office equipment

TVs, DVD players, fax machines etc. all use power even if they are in standby. If any light or clock is visible on the equipment, it's using energy. Switch off any equipment (or remove the power plug from the mains socket if necessary) when it's not in use.

3.3 Consumables

3.3.1 Paper/printing

The less you print the better. Use laptops and projectors in meetings and ask people to use personal notebooks instead of writing on handouts which are then often thrown away. If you do print, then print double-sided with two sides to a page. Printing in draft mode uses less ink.

Check with your paper supplier that it is made from 100% recycled material and from a sustainable source. Look for certification programme marks such as FSC-approved, PEFC (Programme for the Endorsement of Forest Certification) or EU-label. Print scripts double-sided, ideally at all times but if not, then certainly for all versions prior to the final version. Consider whether every member of the team really needs to be given every version of the script. Can small changes be e-mailed instead? Ensure your team has access to paper recycling bins and encourage their use.

3.3.2 Printer cartridges

Printer cartridges are nearly always recyclable nowadays. Many cartridges come with instructions on how and where to recycle.

3.3.3 Envelopes

E-mail wherever possible but re-use envelopes when documents must be physically sent. Avoid excessive tape when sealing so they can be reused.

Recycle envelopes when they're no longer usable.

3.3.4 Tapes, DVDs, CDs etc.

If you still use tape or physical storage, re-using tapes rather than buying new ones every time can cut waste and save money.

3.3.5 Food and drink

Encourage your team to think about the amount of takeaway food and drink they buy as it often comes in containers which can't be recycled and the food is far less likely to be locally sourced.

Independent retailers who make and sell their own products should be supported as this is of benefit to the local economy. Plastic and polystyrene cups and disposable cutlery should be

reduced and staff should use their own mugs, plates and utensils where washing-up facilities are available.

3.3.6 Batteries

Use rechargeable batteries in remote controls and other portable equipment. Non-rechargeable batteries must be disposed of in special recycling bins and not in standard waste bins.

3.4 Recycling waste

Make sure that the office has recycling facilities such as paper, plastic and can recycling bins. Please follow the guidance on the bins to see what can and can't be recycled: if the wrong stuff goes in this "contaminates" the bin and risks all its contents going to landfill.

4. Transport

How you travel and where you travel to will have a big impact on your production's carbon footprint. Consider whether you need to travel at all, other than for filming and other core production activities.

Encourage your team to follow these three steps:

4.1 Travel as little as possible

Ask yourself if a physical meeting is really necessary. Could the meeting be held via a phone or video conference?

Schedule meetings to allow attendees to use public transport and hold them in locations that require the minimum amount of travel for the majority of attendees.

For filming, find locations that are as near as possible to where most staff are based. Ideally they should be accessible via public transport. If long journeys are unavoidable, ensure use of accommodation as near as possible to the location. Avoid the risk of the need for a return visit to the site by ensuring enough time has been allowed to film everything in one trip. Try to use people and services such as catering which are based near to your location.

The best way of cutting commuter travel emissions is to work at home. If any of your team is able and willing to work from home then this is an easy way to cut your team's personal transport emissions and possibly improve quality of life.

4.2 Use modes of transport with the lowest GHG emissions

Some forms of transport have a greater environmental impact than others. Trains and coaches are generally by far the least harmful while cars and planes have the highest carbon emissions. You need to travel as many of your kilometres as possible in the least-damaging vehicles. For example, four people on a domestic flight will have over six times the carbon impact of making the same journey together in a typical car.

In general, smaller cars are less polluting than larger ones. Hybrid cars are better for urban journeys.

Avoid air travel for all but the most unavoidable journeys. Consider rail as an alternative to air travel. Cheaper tickets are often available by booking early.

Whatever the vehicle, encourage efficient driving techniques. This saves fuel, is better for the vehicles and will save money.

4.3 Use the smallest number of vehicles possible

The more people who share vehicles to get to the same destination, the lower your carbon footprint will be. It cuts the number of journeys made, the amount of fuel used and therefore can save money. The best example of this would be using coaches and minibuses to take cast and crew en masse to a location.

Plan routes as carefully as possible to pick up the maximum number of passengers - including cast members - in the smallest number of vehicles.

Where car travel is the only option, encourage car sharing. One way to organise car sharing is to plot (using an online map) the postcodes of everyone who uses a car or who wants a lift and to work out a route where the maximum number of people can be picked up en route.

Only use taxis as a last resort, such as when public transport has stopped.

4.3.1 Dispatch vehicles

Moving tapes and scripts by dispatch is environmentally inefficient.

If the item really needs urgent dispatch, ask that it be carried by the most low-emission vehicle available. Motorbikes have lower carbon emissions than a typical car. Emergency journeys usually require a dedicated trip by the couriers so try to avoid last-minute bookings.

5. Sets props and wardrobe

5.1 Props, costumes, furniture and set dressing

If you have access to existing costumes or props then try to repair or adapt them rather than buying new goods. Buy second-hand goods when you can if you have to purchase anything. We know that in some instances it may be cheaper to buy rather than hire props. If that's the case please consider the best way to re-use the item after use. If possible store the item for future use. If not, then you could sell the item or donate it to charity rather than throwing it away.

Consider what chemicals are being used to clean clothes. If this is being done by a supplier such as a dry cleaner, ask them what policies they have aimed at reducing the number of harmful chemicals used.

If any items have to be made from scratch, consider the source of the material used. Many products and services are now compliant with certain codes of sustainable practice which means you can use them with confidence. For example, if something is made of wood, look for signs that it is FSC (Forest Stewardship Council) or PEFC certified. For numerous products from cotton to coffee, a Fair Trade logo is a good sign.

5.2 Sets

If you need to construct sets then try to re-use existing construction materials rather than buying fresh stock. If you do have to construct new sets, ask your suppliers if they can provide sustainably sourced timber. Consider how the set will be disposed of after use.

5.3 Paint

Many paints contain volatile organic compounds (VOCs) which are damaging to the environment.

Ask your suppliers about low - and zero- VOC paints which use water instead of chemicals.

When you've finished with the paint make sure you either store it safely in some form of lockable "chemsafe" or dispose of it correctly by contacting a registered waste management company. Don't let it enter any storm drains as it will enter and pollute the water supply.

5.4 Make-up, hair and hygiene supplies

Consider whether the products you use are organic, Fair Trade or have been tested on animals. Choose those with the minimum - and easily recycled - packaging. Use washable towels and minimise the use of cleaning solvents by using bio-degradable cleaning supplies.

6. In the studio

6.1 Lighting

Most energy use in the studio is due to lighting and the air conditioning needed to keep the studio cool. As a rule, for every unit of energy used to illuminate a tungsten light bulb, another is needed to power the cooling.

You will need to cut the use of tungsten lighting to make big in-roads into your studio power consumption. The alternative is Low Energy Lighting (LEL), which uses a fraction of the power used by tungsten and doesn't generate any significant heat. LEL types include LED, fluorescent and discharge. The quality of LELs has improved significantly in recent years.

Your Lighting Director will no doubt have a view on what types of LEL are suitable for your production. Talk to them as early as possible to explain that you'd like to use as much LEL as is suitable.

Try to get a meter reading for how much power you use on a typical studio day. This will give you a figure to aim below and can be used in the production carbon calculator if you are using one. If you cannot get a meter reading then ask your Lighting Director to estimate the energy used on a typical studio day.

Behavioural changes such as turning off lights and equipment when they are not in use will also help cut your power usage. Doors should be kept shut to avoid wasting air conditioning.

The BBC has produced a complete guide to the use of low-energy lighting. See http://downloads.bbc.co.uk/outreach/BBC_LEL_Guidelines_2014.pdf

6.2 Batteries

For batteries used in talkback units, use rechargeable batteries. Non-rechargeable batteries should be disposed of in battery recycling bins and not in general waste.

6.3 General

Ensure there are adequate recycling facilities on the studio floor and technical gallery for paper, plastic and cans. Store lighting kit such as filters and gauzes for later re-use and dispose of any

waste through a registered waste management company.

7. On location

Location work can have a lower carbon footprint as it typically requires fewer sets and there's likely to be less lighting and air conditioning needed. It can, however, mean a lot of travel, overnight stays, waste disposal and fuel burnt in generators.

7.1 Before you go

Consider the impact your work will have on any wildlife or vegetation on site. It must be left in at least the same condition as when you arrived.

Ensure everyone is aware of the location travel plan well in advance and make it clear that group travel is expected where practical.

Accommodation should be as close to the location(s) as possible to reduce travel. Ask your accommodation provider about their environmental policy. Using independent hotels helps fund the local economy.

7.2 Getting there

Please see §3 for a full guide on lowering your travel footprint. Ask all drivers to keep a note of mileage over the entire location period - you'll need this when you come to calculate the carbon footprint at the end of your run.

7.3 Energy

There are two main power sources on location: mains electricity and power generators. If you're using mains electricity then ask the site manager for a meter reading. This will help compare energy consumption on location with that in the studio.

If you use power generators then try to calculate the 'right size' load so that you are not wasting fuel and power unnecessarily. Get the real power requirements from contractors as over specifying the generator size means that is not working as efficiently as it should be.

Consider what you're using the generator for. If, for example, it's being used to keep food refrigerated overnight then it's a very carbon heavy (and expensive) way of preserving what may be only a small amount of food. If generators are powering trailers, ask your cast to share trailers.

Some power generators are more efficient than others. Ask potential suppliers for details of how much diesel their generators typically use per kilowatt-hour.

Investigate alternatives to diesel generators e.g. waste vegetable oil generators, solar generators, hydrogen fuel cells and methanol fuel cells. Their suitability may depend on your location and its climate. Media Greenhouse have produced a comprehensive guide to power sources on location including alternatives to diesel. See <http://m.mediagreenhouse.co.uk/00925/0099/Sustainable-Power-for-the-Screen-Arts-on-Location.pdf>.

7.4 Catering

The main impacts from food and drink are from farming, transportation (referred to as 'food miles', energy use in cooking and waste generated.

Production of vegetarian food rather than meat is better for the environment. (See <http://www.bbc.co.uk/bloom/actions/eatinglessbeef.shtml> among others). In brief, this is due both to the methane produced by animals and the effects of deforestation caused by the growth of animal feed. You may therefore wish to buy meat-free products wherever possible. If you do still want to include meat then try to source it locally, reducing food miles.

Buy as much of your food as possible from local catering firms. This financially benefits the area where you're filming and reduces your food miles.

Explain to your caterers that you would like both the food and the way in which it is delivered, packaged and prepared to be as sustainable as possible. Ask for food which is local and in season so as to reduce imports.

If there must be imported food, attempt to purchase fair trade goods. Buy in bulk to reduce packaging. But don't order more than you need, particularly if any of it is fresh and has to be stored overnight on site.

If there's anything left over ask your caterers if they have any arrangements with local charities. If this isn't possible then ensure the waste is separated for recycling.

Plates, bottles, cups and utensils also create waste. Make some rules and stick to them: no polystyrene or plastic cups, bottles or utensils and no paper plates. Ask for re-usable ones instead. If washable cups and plates are not suitable, use biodegradable cutlery.

Give your cast and crew re-usable water containers with their names on and provide central sources of water for refilling them. Ask everyone including your leading cast and technical staff to ensure they use them: if senior figures are visibly using personal water bottles then others will follow. These measures don't have to cost more. Extra costs caused by sustainable catering can be offset by reduced waste disposal costs.

7.5 Waste disposal

Some waste is inevitable. Ensure there are clearly-marked recycling and composting facilities for food waste, plastic, glass and paper/cardboard. For added impact, mark the non-recyclable waste bin as "landfill".

Ensure that whoever is responsible for collecting your waste is a registered waste management company. The firm should ideally have a minimum of kilometres to travel to the refuse centre.

7.6 General

If your set is large then provide bicycles to get people around. As with all behavioural changes, getting the top people to use them is likely to have a big effect on other cast and crew. Try to provide somewhere where cast and crew can keep warm together and in return ask that there is no car engine idling on set.

If you need any fire effects please consult your crew specialist to discuss the most environmentally-friendly way of doing this. Propane gas is seen as cleaner than liquid fuel but please be guided by your experts.

8. Post Production and show launch

The bulk of post-production is carried out within an office-type environment and as a result all the guidelines discussed in §2 equally apply here. The same care over turning lights and equipment off should be applied to edit suites as they typically require the same power as boiling a kettle.

Avoid making unnecessary physical review copies by uploading footage online where possible.

Apply your sustainability policy to any publicity around the production. For example, any printed material should be on recycled paper. Consider where you're going to hold any launch event and check the venue's own policy on sustainability. Does it match the standards you used throughout production? Is it easily accessible by public transport?

Small gifts are frequently given away at launch events. If these are considered essential then aim for them to be re-usable or at least recyclable in order to avoid creating unnecessary waste.

As you near the end of production, compare your actual usage with the target you set at the start of your production. If you are using a carbon calculator, compare your actual footprint based on real data with your earlier prediction.

Finally, if you believe that your production methods were, as far as possible, sustainable then tell people about it. Sustainability is an increasingly important issue in broadcasting. It's likely that critics, colleagues and your audience will be interested in knowing why and how you made your production in the way that you did.

9. Further Information

More information is available from:

- Tech 3367; Sustainable Production Overview provides an introduction to sustainable production.
- The EBU's Sustainable Technology In Broadcasting group <https://tech.ebu.ch/groups/green>
- The Media Greenhouse website, <http://mediagreenhouse.co.uk> from BAFTA is full of useful and practical information on sustainable production.

Links to other organisations:

- www.greenfilminitiative.de
- www.ecoprod.com
- www.pgagreen.org
- www.greenproductionguide.com/
- www.sonypictures.com/green/
- www.greenisuniversal.com/
- thewaltdisneycompany.com/citizenship/environmental-stewardship