

Sustainable Production Guide



Green lives here.

Film Production

NBC Universal Environmental Principles

At NBC Universal, we are committed to reducing our impact on the environment by changing our behavior in a real and measurable way.

We will improve our environmental performance by understanding our impact and applying the best proven practices to reduce that impact.

We will continue to educate ourselves.

We will embrace change and continuously look for new opportunities.

We will be transparent in our efforts, and share our successes and lessons learned.



It is our pleasure to share with you the first edition of our **Green is Universal Film Production Guide**. As part of our ongoing “Green is Universal” initiative, this document was created to help raise awareness to the environmental impact on everything we do. As a company, **NBC Universal** is committed to informing and entertaining our audiences and maintaining a green approach. We recognize that the film industry is uniquely positioned to lead the way when it comes to embracing sustainable practices. This guide is a great first step to help provide simple, yet meaningful eco-solutions to the production process for **Universal Pictures** and all of our production crews.

This guide focuses on the five areas of production that have the greatest environmental impact:

- Travel/Transportation
- Set Design/Construction
- Energy/Electric
- Kitchen/Craft Service/Catering/Water
- Waste/Recycling

To keep pace with the constant advances in the field of sustainability, we will frequently update the guide so you can be well informed on new measures for “greening” productions. As we receive new updates, we will pass them along to you. Additionally, NBC Universal’s Manager of Sustainable Production, Shannon Schaefer, is located on the Universal lot and available to assist with all sustainability issues and initiatives. We welcome your feedback and ask that you keep the “Green Is Universal” team informed on any new ideas or initiatives that contribute to greener productions. We wish you every success as you further explore sustainable practices in the film production business.

Best,

Donna Langley
Co-Chairman Universal Pictures

Jimmy Horowitz
President Universal Pictures

NBC Universal/Green is Universal Team

Launched in May 2007, “Green is Universal” is NBC Universal’s ongoing environmental initiative dedicated to raising environmental awareness, effecting positive change to the environment, and substantially greening its own operations. If you have comments or suggestions on how to improve this guide, please contact the Green is Universal team at greenisuniversal@nbcuni.com.

Essential Contacts

Questions, Comments and Feedback, Environmental Production Coordination, and Sustainable Vendor Recommendations

Shannon Schaefer

NBC Universal Manager of Sustainable Production
shannon.schaefer@nbcuni.com or 818-777-5648

Environmental, Health and Safety issues

German Gutierrez

Director

Environmental Health & Safety

german.gutierrez@nbcuni.com or 818-777-3372

Environmental, Health and Safety Issues

Paul Jordan

Vice President, Safety

Environmental Health & Safety, Film and TV Productions

paul.jordan@nbcuni.com or 818-777-2282

©NBC Universal, Inc. 2010

About this Guide

This guide is comprehensively arranged for your convenience. As you hire your crew, set up your production office, lock locations and finalize the shooting schedule, this guide will offer step-by-step advice about greening your production.

These steps include:

- How to start the conversation with your crew
- How to introduce the concept to your crew
- How to ask vendors to comply
- How to communicate what strategies are available for the individual departments (listed alphabetically on page 21)
- How to maintain momentum until wrap

Additional resources can be found at the back of this guide.

NBC Universal Manager of Sustainable Production

NBC Universal’s Manager of Sustainable Production, Shannon Schaefer, will help to implement sustainability programs across the film production process. She can be reached at shannon.schaefer@nbcuni.com and 818-777-5648.

Please contact her to:

- Provide feedback about the guide
- Suggest green vendors that have been successfully used on productions
- Exchange suggestions and answers about sustainability strategies for film production

Labor Relations

Nothing in this guide is intended to supersede or alter any of the terms or conditions of any applicable collective bargaining agreement. If you have any questions or concerns about any advice in this guide and its impact on any applicable collective bargaining agreement, please contact Michelle Bauman, Vice President Labor Counsel, at 818-777-3407.

A NOTE ABOUT SAFETY Also important to the production process is the safety and well-being of the cast, crew, contractors and vendors. NBC Universal is committed to providing a safe and healthy workplace for all our cast, crew, contractors and vendors, including at production locations. Green initiatives can help provide a safer and healthier work environment but the specific circumstances of your location, schedule and production should be taken into account before implementing the suggestions in this guide. They should never be put into practice when doing so would increase the risk of illness or injury to your cast and crew. No liability is assumed from the implementation or use of the recommendations, suggestions or best practices contained in this guide.

Table of Contents

NBC Universal Environmental Principles

Welcome Letter

Essential Contacts at NBC

03 About this Guide

NBC Universal Manager of Sustainable Production
Labor Relations
A Note About Safety

07 Pre-Production and Vendors

- 08 Building Support from Your Production Team
- 08 Helping Your Team To Understand the Goals
- 09 Creating Conditions that will help Your Team meet their Goals
- 10 Hiring Vendors

13 Production Offices, Transportation and Travel

- 14 Office Administration and Small Office Equipment
- 16 Kitchen and Water Usage
- 17 Waste and Recycling
- 18 Local Transportation Arrangements
- 19 Travel and Hotels

21 Production

Departments Listed Alphabetically

- 22 Camera
- 22 Catering/Craft Service
- 23 Construction/Art
- 24 Costume
- 25 Greens
- 25 Lighting/Grip
- 26 Locations
 - Recycling
 - Supplies
 - Crew Hydration on Set
- 27 Set Dressing/Props
- 27 Transportation/Energy (Generators)
 - About Biodiesel

29 Wrap and Post Production

- 29 Distribution of Universal Pictures Props/Set Dressing/
Sets at Wrap and Lock
- 29 Screening and Prepping for Editing
- 31 Recycling on the NBC Universal Lot
- 32 Generic Products: Paper, Bottles, Cans
- 32 Cardboard Boxes
- 33 Electronic Waste (e-waste): DVDs, CDs, Hazardous Waste
- 33 Batteries
- 33 Scrap Metal, Lawn Waste and Construction Debris

Appendices

36 Resources

- 36 General Environmental Information
- 37 Sustainable Film Production
- 37 Construction
- 38 Craft Service and Catering
- 38 Energy
- 38 Office

39 Glossary of Terms

46 Glossary of Certifications

56 Case Studies

- 56 Away We Go
- 58 Lipstick Jungle
- 59 Late Night with Jimmy Fallon

60 References

- 60 Research Contributors

Pre-Production and Vendors

- 08 Building Support from Your Production Team
 - 08 Helping Your Team to Understand the Goals
 - 09 Creating Conditions that will help Your Team meet their Goals
 - 10 Hiring Vendors
-

Building Support from Your Team

The greening of a production is more manageable when the executives in charge of production (Executive Producers, Unit Production Managers, Line Producers, Department Heads, etc.) support it.

- Make it clear to your core team that sustainability is important to you and your network, as well as to the industry.
- Urge producers, production managers and crew members to integrate sustainable production practices into their daily workflow.

- Set expectations for environmental sustainability with a few basic principles:
 - Rent instead of buy
 - Reuse instead of wreck
 - Recycle instead of dump
 - Turn it off instead of leaving it on
- Schedule a meeting with Shannon Schaefer, NBC Universal's Manager of Sustainable Production, shannon.schaefer@nbcuni.com or 818-777-5648.

Helping Your Team to Understand the Goals

Locking in the goals of a sustainable production at the outset will help you to organize a greener workflow and more effectively communicate your environmental goals to crew members.

- If you are new to the process, or working under extreme schedule pressure, start small. Focus your team on two or three areas or

departments where the impact will be greatest.

- Identify and distribute a set of standards to produce by. Start with this guide. Other guides for sustainable best practices include:
 - Producers Guild of America
 - Motion Picture Association of America
 - Filmmakers for Conservation

It's not Complicated

When you think about decreasing your environmental impact, focus on reducing three things: water, waste and energy. Inform your team of the areas with the highest environmental impact and focus on these categories as you look for ways to green the production:

- Travel/Transportation
- Studio/Set Design
- Remote Location Production
- Lighting/Energy
- Kitchen/Water
- Waste/Recycling

Creating Conditions that will help Your Team meet their Goals

- **Start early:** The best time to make the commitment to a green production is during production planning and the budgeting process.
- **Lock in the sustainable goals at the outset:** It will help organize your green production plan and effectively communicate your goals to all production team members.
 - Digitally distribute the environmental priorities so your team understands what the goals are and how they can be achieved.
- **Talk with your core team:** During early production staff meetings, discuss the reasons, the goals and the potential benefits of working more sustainably:
 - Reducing emissions and waste
 - Improving relations with the communities where production occurs
 - Contributing to a healthier workplace for crew and cast
 - Saving money
- **Ask for input:** Rely on your crew's expertise. Work with them to identify and understand their obstacles and opportunities for greener productions. They have the best insights into their processes and can offer innovative solutions to sustainability challenges in production.
- **Accountability:** Consider designating a few key production team members as the "sustainability coordinators" who will be primarily responsible for assisting with the implementation of green best practices and monitor the production's environmental footprint. This will provide the team with valuable assistance and help them reach their goals. Their tasks may include:
 - Liaising with Shannon Schaefer, NBC Universal's Manager of Sustainable Production, at shannon.schaefer@nbcuni.com to implement and track green practices on set.
 - Researching services and vendors that offer sustainable options, from transcribers and office supply stores to production services and equipment rental houses.
 - Analyzing the relative costs and benefits of sustainable resources (e.g. how many days would it take for a hybrid rental in a location city to pay for itself in fuel cost savings?).
 - Undertaking any extra steps added to the standard production process in an effort to be sustainable (e.g., manage recycling when local recycling is not available).
 - Measuring the production team's green achievements (e.g., how many plastic water bottles were not sent to local landfills) and sharing this information with the team to encourage more green activities.

Production Offices, Transportation and Travel

- 14 Office Administration and Small Office Equipment
 - 16 Kitchen and Water Usage
 - 17 Waste and Recycling
 - 18 Local Transportation Arrangements
 - 19 Travel and Hotels
-

Office Administration and Small Office Equipment

- After you have set sustainability goals with the core crew, and following the first round of hires, call an orientation meeting for the entire production crew to review the goals.
 - The production office can set the tone for the show as a whole by communicating a commitment to sustainability and encouraging the team to participate in that effort.
- Keep communications digital whenever possible and encourage your team to send and receive only digital documents.
- Share documents (schedules, scripts, rundowns, contact lists, maps, and production reports) within teams on shared folders online when appropriate.
- Purchase eco-friendly office supplies. Most major chains offer a large selection of environmentally friendly supplies.
 - Sustainable products may be made from partially recycled content, be biodegradable, recyclable, reusable, or carry a third party certification (see Appendices).
- Buy copy/printer paper with recycled content; 100% recycled is best.
- Set all printers and copy machines to double-sided settings.
- Refill printer cartridges instead of buying new ones.
- Save money and ink
 - Set printing preferences to the lowest resolution. You will find this option when you select FILE>PRINT>PROPERTIES>IMAGE RESOLUTION.
 - Use an eco-friendly font such as EcoFont—it can reduce ink usage by up to 20%.
- Plug computers and other electronics into “advanced” or “smart” power strips to save energy.

What are Smart Strips?

“Smart strips” or “advanced power strips” monitor power consumption and will shut off equipment that’s not in use. They are ideal for computers, large appliances, desk lamps, and other office equipment, and each one can save \$1.60 to \$5.70 in electricity per month. You may need to ask your IT department to help you set them up.

- Purchase or rent computers, printers, and monitors that are energy efficient; look for the ENERGY STAR® label.
- Have all computers, printers, and monitors revert to power-saving mode when not in use.
- Buy rechargeable batteries and a battery charger for each department.

- Batteries should not be thrown in with the trash. Be sure to dispose of your batteries properly.
 - Contact the NBC Universal Environmental, Health and Safety department for instructions.
- Use laptops instead of desktop computers wherever possible; they use less energy.
- Consider using solar-powered cell-phone chargers and solar-panel-equipped computer bags and backpacks when available.
- Use CFL or LED bulbs wherever possible and keep replacements in stock. CFL bulbs contain traces of mercury; please dispose of them properly.
 - CFL bulbs contain traces of mercury. Dispose of them properly (contact the Environmental Health and Safety department for instructions).
- Ask your facilities manager or landlord to change HVAC filters regularly to ensure the equipment’s optimum efficiency.
- Keep thermostats two degrees higher (72°F/22°C) in summer and two degrees lower (68°F/20°C) in winter, except where the presence of videotape equipment prevents it.
- When arranging deliveries, look for the lowest impact transportation alternative by considering what speed/service is absolutely necessary. Consider these questions:
 - Can it be delivered electronically?
 - Can you use mail instead of express mail?
 - Can you use bike messengers or bike-powered cargo messengers instead of fuel-powered messenger services?

How to Set Your Computer to Sleep

Sleep mode can reduce a computer’s energy use by 60% to 70%.

To program your computer’s sleep setting, follow these steps:

FOR MAC

- Select “Apple Menu”
- Select “System Preferences” (OS X) or “Control Panels” (OS 9)
- Click on “Energy Saver”

FOR WINDOWS XP

- Right-click on the Desktop
- Select “Properties”
- Select “Screen Saver”
- Click on “Power”
- Set “Monitor Sleep” to 20 Minutes
- Set “System Sleep” to 30 Minutes

FOR WINDOWS VISTA

- Right-click on the Desktop
- Select “Properties”
- Select “Screen Saver”
- Click on “Settings” (lower right-hand corner near the ENERGY STAR® logo)
- Set “Monitor Sleep” to 20 Minutes
- Set “System Sleep” to 30 Minutes

- ❑ Implement virtual meetings using Telepresence, Skype, iChat, Sight Speed or WebX.
- ❑ Consider encouraging your team to use public transportation to commute to work, or ride a bike if possible (please use bike helmets.)
- ❑ Where possible, reserve the best parking spots for hybrid vehicles.
- ❑ Provide environmental facts and tips to the studio and equipment departments so that they can post them wherever crew members gather.
- ❑ Gather green wins and best practices as they are discovered, and offer positive reinforcement to team members and vendors who have successfully implemented green solutions.
- ❑ Share green achievements with NBC Universal Manager of Sustainable Production, Shannon Schaefer, shannon.schaefer@nbcuni.com.

Kitchen and Water Usage

- ❑ Reduce or eliminate plastic water bottles from your office by ordering water coolers using the five gallon jugs, a water filtration system, or a faucet filter in the kitchen area.
- ❑ Order reusable water bottles for cast and crew, making sure filtered water stations or dispensers are within easy reach. Stainless steel bottles are recommended.
 - Order compostable cups to have on hand for visitors.
- ❑ Purchase nontoxic cleaners. Most major chains now carry certified ecologically friendly brands. See the Glossary of Certifications included in the appendices.
- ❑ Ensure that all equipment and appliances are energy efficient.
 - Look for the ENERGY STAR® logo.
- ❑ Buy non-disposable plates, mugs, and utensils (consider resale or discount stores).
 - If shopping at a vintage store, avoid novelty/logo plates and mugs, which may contain lead-based pigments. Ceramic or plain china is always best.
 - If you must use disposable plates and utensils, order compostable kitchenware made from corn starch, potato starch or bagasse (sugarcane pulp).

FACT

With every ton of paper you recycle, **you save:**
 17 trees • 79 gallons of oil • 7,000 gallons of water • 41,000 kW of energy • 3 cubic yards of landfill space



©NBC Universal, Inc. 2010

- ❑ Organize a low-impact beverage service that includes shade-grown coffee and fair-trade products.
 - Place sugar/sweetener in a sugar bowl with a sealable lid instead of buying individual paper packets except in California where health laws require craft and catering services to use individual packets.
 - Use wooden stirrers rather than plastic.
- ❑ When ordering take-out for the office, ask the restaurant to leave out any unnecessary condiments, utensils or Styrofoam.

FACT

Ten percent of the average grocery bill pays for packaging. This is often more than the farmer receives.

www.ehso.com



Waste and Recycling

- ❑ If your landlord controls the waste disposal for the offices, ask them if they recycle or if they are willing to.
 - Include in your lease agreement that all waste will be recycled.
 - ❑ Ensure your waste hauler has paper/cardboard, metal, glass and plastic recycling options. Composting is recommended where available and when economical.
 - ❑ Use informative signage in the kitchen and other common areas to educate and encourage staff members to reduce, reuse and recycle.
 - ❑ Tips to assist recycling:
 - Clearly label recycling containers. If you are unsure of what can be recycled, the local Department of Sanitation will often provide a list of what your municipality recycles online.
 - Place a box for scrap paper near printers and copy machines.
 - To dispose of Electronic Waste contact your Environmental Health and Safety Representative for
- guidance about disposing of these items. Electronic Waste (e-waste) includes batteries, DVDs and CDs, electronic equipment of any kind, and CFL and fluorescent bulbs.
- Recycle ink cartridges: This is the perfect job for the sustainable coordinator to facilitate; make sure all departments know that they can send their empty ink cartridges to the designated person for proper recycling.

HAZARDOUS WASTE

Hazardous waste (waste oils, fuels, paints etc.) is handled by the Environmental Health and Safety department. In New York, please contact them through the Help Desk at 212-664-HELP (4357) and in Universal City, call 818-777-6955.

BATTERIES

NBC Universal offers battery recycling. Please contact your Environmental Health and Safety representative. In New York you can contact the department through the Help Desk at 212-664-HELP (4357) and in Universal City, call 818-777-8601.

Local Transportation Arrangements

- When available and affordable, reserve hybrids, flex fuel or fuel efficient (MPG average of 35 or above) vehicles for departments that have extensive driving requirements.
 - If your car rental company does not have a sufficient number of efficient cars available, ask when they will be adding to their fuel efficient fleet.
- Avoid SUVs (even hybrids) when you can find alternatives that get better mileage.
- Keep local public transportation maps and schedules in the production office.
- When public transportation isn't feasible, encourage carpooling or bike riding.
 - If there is no bike rack near your building, ask your landlord if one could be installed. OR ask if there is an empty but secure room or closet that can be made available for bike storage.
- Discourage idling for all trucks, cars and vans. Enforce this policy. Some communities limit idling time by law, so check local regulations. In New York City, for example, traffic enforcement agents now have expanded authority to issue tickets and have increased penalties for idling.
- Remind your team that fumes from idling can adversely affect their health.
- For talent, order car services that have hybrids or flex-fuel vehicles in their fleet whenever possible.

FACT

Every hour of idling **burns 7/10 of a gallon of fuel**. Idling for 10 seconds uses more gas than restarting the engine.

www.edf.org/page.cfm?tagID=22292



FACT

If every car in the United States carried one more passenger during its daily commute, **32 million gallons of gasoline would be saved** every day.

NRDC
www.nrdc.org/greengate/guides/driving.asp



Travel and Hotels

Efficient planning and smart budgeting are synonymous with sustainability.

- Consolidate locations when possible, and travel as few team members as possible.

LONG DISTANCE TRAVEL

- Contract with local personnel when possible will save you significant carbon emissions and money.
- Utilize rail travel instead of airplane flights when possible.
- Minimize the number of flights that must be taken, which is where the highest carbon emissions on any production occur.
- Avoid charter flights.
- Use airlines that invest in sustainability, those that:
 - Maintain energy-efficient fleets (Airbus A319, Boeing 787 Dreamliner).

- Invest in energy-efficient technology (e.g. alternative fuel use, installing “winglets” on larger planes).
- Offer a carbon offset option upon ticket purchase.
- Implement an on-board recycling program.
- Ask the NBC Universal Manager of Sustainable Production, Shannon Schaefer at shannon.schaefer@nbcuni.com for participating airlines.

- When booking airport transfers and car services, book hybrid, Flex-Fuel or any fuel efficient vehicles (mpg>35) when possible.

FACT

Recycling creates **six times as many jobs** as landfilling.

NPR
www.npr.org/templates/story/story.php?storyId=89169980



What Makes a Hotel “Greener”?

Hotel has outfitted rooms with **energy-efficient lighting fixtures** and appliances (meet ENERGY STAR® standards).

Hotel has implemented **paper saving strategies** such as using post-consumer recycled paper goods, and providing the option of paperless check-in and final billing.

Hotel uses **eco-friendly soaps** and cleaners.

Hotel provides the **option to decline daily linen and towel change**.

Hotel has implemented a **water conservation strategy**, such as low-flow showers and toilets.

Hotel has implemented a **facility-wide recycling** and/or composting program.

Hotel participates with a **food “rescue” organization** to collect excess, uneaten food.

Hotel uses **refillable toiletry dispensers**.

Hotel donates or **recycles unused amenities**.

Production

- 22 Camera
- 22 Catering/Craft Service
- 23 Construction/Art
- 24 Costume
- 25 Greens
- 25 Lighting/Grip
- 26 Locations
- 27 Set Dressing/Props
- 27 Transportation/Energy (Generators)

Wrap and Post Production

- 29 Distribution of Universal Pictures Props/
Set Dressing/Sets at Wrap and Lock
 - 29 Screening and Prepping for Editing
-

Production

Camera

- When shooting digitally, use memory sticks and/or hard drives instead of tape.
- When shooting film, consider a 3-perf system. Be sure to include Post Production in the conversation.
- Consider glass dichroic filters which last longer and are less wasteful.
- Use rechargeable batteries wherever possible and ensure that you have plenty of chargers.
- Donate partially used batteries to other productions or film schools.
- Follow Universal's policy for restocking and selling short ends and recans.
- Collect and recycle waste film.
 - Contact the NBC Universal Manager of Sustainable Production, Shannon Schaefer, shannon.schaefer@nbcuni.com for film recycling services in your area.

Catering/Craft Service

- Ask your catering and craft service to provide tableware and silverware instead of disposable plastic and paper products when possible. When this is not feasible ask for compostable utensils and plates/bowls, and napkins with recycled paper content.
- Ask your caterer to price out organic and local meals.
 - If a comprehensive local or organic menu is too expensive, consider featuring an organic meal as the day's special.
 - Ask your designated "green" crew member to look for local farmers' markets and provide a list for your catering and craft service providers.
- Ensure craft service provides recycling containers for paper, cans/bottles and compostables. Make sure they are clearly marked and readily available.
- Donate excess food. Locate a non-profit that is able to pick up the refrigerated and protected food, assess its quality and distribute it safely.
 - Contact Shannon Schaefer, NBC Universal Manager of Sustainable Production at shannon.schaefer@nbcuni.com or Environmental, Health and Safety (EHS) to confirm that your food donation plan adheres to NBC Universal's health and safety guidelines.

Buying local produce for craft/catering

Buy local whenever possible. Virtually every town has a farmers' market.

<http://apps.ams.usda.gov/FarmersMarkets/>

Construction/Art

- Build all set walls and pieces with resource conservation, disassembly and recoverability in mind. For example, use screws instead of staples and avoid adhesive wherever possible.
- At the start of the build, designate a recycling "center" and provide carts for bottles/cans/scrap wood and paper. Designate one area for large scrap wood that can be used for future builds.
 - Use a waste carter who provides wood recycling.
- Reuse set materials from past productions when possible.
- Ask the studio to see if there are ready-made items in their storage that could be used for your production (like platforms).
- Use platforms made of steel scaffolding rather than wood.
- Call salvage companies for set materials such as flats, sinks, cabinets etc.
- Ask your vendor if they stock Forest Stewardship Council (FSC) or
- Sustainable Forestry Initiative (SFI) certified wood whenever possible (see glossary for definition).
- Avoid luan when possible; its overuse has contributed to the destruction of vital natural habitats. If you must use it, source FSC certified luan.
- Use sustainable sourcing for recycled flooring, carpets, fabrics and wall coverings whenever possible.
- Rent or buy carpet made from 100% recycled PET (Polyethylene terephthalate) plastic bottles.
- Instead of plastic molds, use a homosote-type product or plaster/rubber mix to mold a variety of different textures and shapes.
- Use low-volatile organic compound (VOC) or no-VOC non-toxic paint/adhesive/varnish (see glossary for definitions).
- Avoid products with the following toxic compounds:
 - Formaldehyde
 - Polyvinyl chloride
 - Phthalate plasticizers
 - Brominated flame retardants (when possible)
 - Chromium
 - Chromate copper arsenate

Sustainable Wood

Illegal logging is a persistent global problem that impacts the environment by threatening natural habitats, depleting natural resources such as food and medicine (in addition to wood) and undermines the natural structure of the land. Not-for-profit organizations like the Forest Stewardship Council (FSC) and Sustainable Forest Initiative (SFI) work with countries and their governments to manage and conserve their forests. This helps to keep habitats and natural resources intact without compromising the availability of an essential commodity.

- Buy recyclable gallon cans instead of five gallon buckets.
- Do not throw away left over paint. Donate partially used cans or contact your paint supplier for proper disposal instructions.

- If shooting on the lot, contact Hazardous Waste at 818-777-6955 for proper disposal. If you are not shooting on the lot, contact your Environmental Health and Safety Representative for instructions.

Costume

- Rent costumes from the Studio Costume department whenever possible.
- Use vintage and resale stores when possible.
- Buy clothes made from organic cotton.
 - Look for the United States Department of Agriculture (USDA) or Organic Trade Association (OTA) logo.
- Because proposed costumes are often printed out for review, take these steps:
 - Ask your production office to provide recycling for printer cartridges or an ink refill service.
 - Use paper that has recycled content, 100% is best.
 - When possible distribute pictures digitally.

- Ask your dry cleaner to only use a single plastic bag when returning multiple items.
- Supply your own semi-permanent plastic or cloth garment bags instead of using single use plastic bags.
- Ask your dry cleaner if they can provide reusable garment bags instead of plastic.
- Return wire hangers to the dry cleaner.
- Donate hangers and garment bags to upcoming productions.

NEW TECHNOLOGY FOR DRY CLEANING

- Use an alternative to traditional dry cleaning that is more eco-friendly:
 - “Wet dry cleaning” is the best eco-alternative. It uses computer-controlled machines to gently launder with water and biodegradable solvents.
 - CO₂ cleaning uses compressed liquid CO₂ (often itself recycled) to clean clothes.
 - Hydrocarbon dry cleaning and silicone-based method (also called the green earth method) are also options but are chemical based.

STANDARD CLEANING

- When possible, request an ENERGY STAR® appliance for your wardrobe department.
- Use cold-water washes unless clothing is extra dirty.
- Buy phosphate-free, plant-based or Castile soaps for laundry and choose fragrance-free detergents.

Greens

- Use plants native to the location.
- Wherever available, choose plants grown organically and pesticide-free.
- Use organic mulch instead of the standard kind that often uses industrialized petroleum waste.
- Return plastic pots to the nursery for reuse.
- When production has wrapped, donate plants to community groups or gardens.

Lighting/Grip

- Use the latest tier generators (3 and 4), which are available at Universal Transportation. Tier 3 engines are technologically superior to tier 1 and tier 2 as these models are more efficient and better for the environment. www.epa.gov/cleandiesel
- Shut off all generators when not in use.
- When possible use grid electricity, or prioritize grid tie-in over generators.
- Consider ways to reduce power needs such as Flex-fills, bounce cards, fewer cranes, more collapsible reflectors, chimeras, etc.
- A well managed system of Kino Flo's on a DMX lighting board to control the fixtures will lower energy costs, reduce heat and air-conditioning needs and will result in less lamp and gel replacements.
- For practicals and work lights, integrate low-impact lighting alternatives such as LEDs, “Lite-Panels” and CFLs wherever possible.
 - CFL bulbs contain mercury so discard properly by contacting your Environmental Health and Safety department for proper disposal instructions.
- Provide containers for expendables that can be reused. Label clearly and encourage reuse when possible.
- Collect gels that can no longer be reused on set. If your recycling center can take mixed, unmarked plastic you can recycle them. Otherwise, donate to a film school or cultural organization that is able to repurpose them.
 - For proper donation procedures, contact the NBC Universal Manager of Sustainable Production, Shannon Schaefer at shannon.schaefer@nbcuni.com.
 - Black wrap can be recycled with metals or donated to a local film school.
 - Duvatine cannot be recycled but remaining material can be donated to a local film school.
- Try to find adhesives made from natural, nontoxic materials (no petroleum based products).

Locations

RECYCLING

- Ensure your waste hauler includes recycling services.
 - When hiring a waste carter, ask them if they deliver their trash to a facility (called a MURF) that will cater to “single source recycling” services. This is where bottles/cans/paper are sorted at the waste facility rather than at the production site and will eliminate the need for trash sorting by the crew.
- Stipulate in the contract that all waste is guaranteed to be recycled.
- Insist on weekly tonnage reports for the waste and recycled materials.
- If having separate dumpsters for recycling on location does not make financial sense, have recycling bags/bins around the set.
- Have craft service designate recycling “centers” at base camp and near set.
- Ensure containers are clearly marked and, if possible, use transparent bags for ease of recycling.
- Ask catering and craft service to provide recycling bins and store them each night after the shoot.

- If you have hired a post-shoot cleaning crew, ask them to pick up bottles/cans and take them to be recycled.
- Assign a PA who is responsible for ensuring that bottles and cans are put in a separate bin for recycling.

SUPPLIES

- Purchase non-toxic cleaning supplies. Many of these can be found in major supermarket chains.
 - Look for “third party” certification seals that indicate a product has been manufactured responsibly. See Glossary of Certifications in the Appendices.

CREW HYDRATION ON SET

- Ask your beverage vendor to supply five-gallon water jugs and a water dispenser instead of individual plastic bottles. If a water source is available, consider using a filtration system.
- Place watering stations throughout base camp and on set.
- Assign someone to set up the watering stations when the first crew arrives on set—not just when craft service arrives.
- Provide the production crew with reusable water bottles.
 - If water bottles are not budgeted, use paper cups rather than plastic.

Set Dressing/Props

- Rent or reuse set dressing from your own and other productions when possible.
- Ask the studio to see what is in their storage.
- When possible use a hybrid for extensive shopping trips.
- Use reusable bags when shopping for set decoration materials and props.
- Recycle cardboard boxes—save them for returns if there is room to store.
- Ask your vendors and sources to reduce packaging or use environmentally friendly packaging that is compostable, biodegradable or recyclable.
 - No plastic bags
 - No Styrofoam, ever
- Use eco-packaging materials that contain high post-consumer recycled content.
- Use low-resolution settings when printing out images.

Transportation/Energy (Generators)

- Use the latest tier generators (3 and 4), which are available at Universal Transportation. Tier 3 engines are technologically superior to tier 1 and tier 2 as these models are more efficient and better for the environment.
www.epa.gov/cleandiesel/
- Shut off all generators when not in use.
- When possible use grid electricity, or prioritize grid tie-in over generators.
- Discourage idling. Communicate to your crew that this is an existing NBC Universal policy. They should also be made aware that fumes from idling can adversely affect their health.
 - A 2006 study demonstrated that truck cabins can become self-contaminated from engine emissions during extended idling and that truck pollution

concentrations were significantly higher inside the cab (sometimes exceeding US EPA ambient air quality standards). *Idling Gets You Nowhere, The Health, Environmental and Economic Impacts of Engine Idling in New York City. EDF, February 2009*

- In New York City, Traffic Enforcement Agents (TEA) now have expanded authority to issue tickets at increased penalties for idling and ticketing authority has been extended to the Department of Parks and the Department of Sanitation. It is now more likely that you will be ticketed if caught idling more than one minute.
- If shooting on location, ask Locations to identify a climate controlled area where the drivers can wait in readiness. This is commonly referred to as the “driver ready room”.

One Step Beyond: About Biodiesel

- Biodiesel is fuel manufactured from plant materials rather than a carbon source. It was first approved for use by the trucking industry in 1998 and is now used in more than 600 major U.S. fleets.
 - The American Lung Association maintains that biodiesel emissions are 90% less toxic than petro-diesel and its use reduces incidents of health hazards such as asthma, emphysema, and lung cancer.
 - Always check with your production equipment vendors to see if they will consider using biodiesel, or if they have used it in the past.
 - Biodiesel is available in blends that range from B5 (5% biodiesel/95% standard diesel) to B99 (99% biodiesel/1% standard diesel). The blends most commonly used in major fleets are B5 to B10.
 - Opt for biodiesel manufactured from domestic soy with a BQ9000 accreditation from the National Biodiesel Accreditation Program. For more information and a map showing biodiesel providers nationwide, visit www.biodiesel.org.
 - Some biodiesel blends can flush the engine's internal systems, so filters should be monitored and possibly changed more frequently during the first few months of use.
 - With proper fuel-tank maintenance, biodiesel blends of B20 or lower can be used in any diesel engine without reducing reliability or durability. (EPA)
 - Biodiesel should NOT be used in higher blends in temperatures below 40 degrees, for risk of gelling or waxing in the tank.
-

Wrap and Post Production

Distribution of Universal Pictures Props/ Set Dressing/Sets at Wrap and Lock

ONCE A PRODUCTION WRAPS

Any purchased, rented, or manufactured assets should be documented in the ARTS (Asset Tracking and Recovery) application.

The ARTS application will have a complete inventory of all assets valued over \$100 or deemed "hero" and their disposition.

While the assets are in storage, the Universal Marketing and Publicity teams can request items for premieres, promotional opportunities and sweepstakes via the ARTS database.

ONCE A PRODUCTION LOCKS

Universal Archives selects items for the permanent collection.

Afterwards, items are selected from the remaining inventory and sent to the Universal Prop House and Costume Department and made available to rent to internal and third party clients.

Any remaining items can be sold at employee sales or donated to various charities.

When set walls are ready to strike, Universal contacts upcoming productions to see if some or all of the walls can be reused.

Doors, windows, shutters (anything useable) are donated to local organizations like Habitat for Humanity.

All electronics (TVs, DVD players, stereos, etc), back office items (tables, chairs, refrigerators, coffee makers, printers, paper, storage boxes, etc.) and wardrobe department items (washers, dryers, dye bins, wardrobe racks) are kept in storage to be reallocated to new productions on loan.

If you have been given permission to dispose of materials, consider donating all items to local schools, nonprofits, or salvage organizations.

Screening and Prepping for Editing

- Use digital dailies only.
- When possible keep script drafts in digital form.
- If using an outside post-production house, ask if they recycle or utilize energy-conservation methods (such as dimmers, LEDs and CFLs, smart strips, etc.).
- Recycle your electronic waste (DVDs, videos).
- Turn off heavy metal electronics when not in use.

Recycling on the NBC Universal Lot

32 Generic Products: Paper, Bottles, Cans

32 Cardboard Boxes

33 Electronic Waste (e-waste): DVDs, CDs,
Hazardous Waste

33 Batteries

33 Scrap Metal, Lawn Waste and Construction Debris

Recycling on the NBC Universal Lot

NBC Universal recycles all types of materials. Keep in mind that all trash collected from the lot is transported to a material recovery facility offsite where it is hand sorted and processed using the latest recovery technologies. This results in over 70% of all regular trash from Universal being recycled in some way and kept out of landfills. If you still have questions about recycling please call 818-777-2979.

Generic Products: Paper, Bottles, Cans

- Obtain a bin large enough to hold your recyclables for one week. These can be acquired through your office supply vendor or the Studio Storeroom at 818-777-2730. Ensure they are properly labeled for recycling.
- If you are in an office and would like to schedule a pick up of existing bins, call the Recycling Hotline at 818-777-2979 or email NBC Universal Maintenance department. Remember to provide your location information, including building, floor, suite etc.
- Make sure that the bins are full before calling for pickup.
- Bins containing recyclables from Sound Stages are picked up Friday mornings between 6:00 AM and 9:00 AM. Please place your containers outside the stage near the stage door for pickup.
- Shredded paper must be placed inside a plastic bag and placed near the standard bins.
- Cardboard boxes are not recycled through this program.

Cardboard Boxes

- Flatten all boxes, label as “trash” and NBC Universal’s janitorial staff will pick them up.

Electronic Waste (e-waste): DVDs, CDs, Hazardous Waste

- Electronic waste (e-waste), DVDs and CDs, and hazardous waste (waste oils, fuels, paints etc.) should be delivered to the Hazardous Materials department in Building 4250-1.
- Contact Mark Danon at 818-777-6955 with questions or if you expect to generate a significant quantity of unusual waste.

Batteries

- For battery collection containers contact the Audio/Visual department at 818-777-8601.

Scrap Metal, Lawn Waste and Construction Debris

- Scrap metal, lawn waste and construction debris can be recycled in large volumes, but this requires specific arrangements.
- Contact your facilities representative for more information.
- Put smaller volumes in the regular trash.

Appendices

36 Resources

39 Glossary of Terms

46 Glossary of Certifications

56 Case Studies

60 References

Resources

The names of the resources listed here are provided to production crews to help facilitate green principles and practices.

GENERAL ENVIRONMENTAL INFORMATION

California Air Resource Board (CARB): This government site, part of the California EPA, provides information about air quality, policies and ways to reduce our environmental impacts. www.arb.ca.gov

Council on the Environment of New York City: The New York advocacy group's site offers information about recycling, farmers' market locations and community gardens, as well as "green living". www.cenyc.org

Earth 911: This easy to use website provides environmental information about waste reduction, re-use and recycling for metals, plastic, glass, automotive construction, paper and hazardous materials. It is also a convenient tool for locating recycling centers in the US by address or zip code. www.earth911.com

Environmental Defense Fund (EDF): A not-for-profit organization, EDF's site provides information about sustainable strategies from food preparation to construction, and updated information about environmental policy. www.edf.org

Environmental Protection Agency: The government's EPA website contain information about environmental issues, new technologies and updated information about recent laws and regulations. www.epa.gov

Greenopia: This site provides consumers with the information to make daily decisions that reduce their impact on the environment through their green business directories, product directories and in the form of green ratings and rankings. Available for the Los Angeles, New York City and San Francisco regions, it will extend its service to over 25 additional US cities in the near future. www.greenopia.com

Green Seal: Green Seal provides science-based environmental certification standards that are credible and transparent. Their standards help consumers make responsible choices that positively impact business behavior and improve quality of life. www.greenseal.org

National Resources Defense Council (NRDC): The website from the environmental action group with 1.2 million members. It contains guides for improved sustainable living (including lighting, plastics, food consumption, energy and business operations) in addition to updates about sustainable technology, policy, news and issues. www.nrdc.org

SUSTAINABLE FILM PRODUCTION

Code of Best Practices for Sustainable Filmmaking: Created by producers and professors at the Center for Environmental Filmmaking at American University, these guidelines were designed for use by documentary producers. They are useful for greening the productions of any non-fiction programming, and offer especially practical advice for location shooting.

www.centerforsocialmedia.org/resources/publications/greenfilm

Environmental Media Association (EMA): For almost 20 years, acting as a liaison between the entertainment industry and the environmental community, the Environmental Media Association (EMA) has helped inspire people to reduce air pollution, ensure clean water for drinking and recreation, protect endangered species, preserve open spaces, minimize waste, promote a safe food supply and live environmentally sustainable lives. www.ema-online.org

Green Screen Toronto: Green Screen Toronto's goal is to create a set of sustainable best practices leading to a certification program for the Toronto film and television industry. It will use a third party verification mechanism to accredit green-abiding productions. The project includes Green Best Practice Guide and Resource Guide for Ontario-based productions. www.greenscreentoronto.com

PGA Green: The Producer Guild of America's on-line presence provides a place where producers and production professionals can share resources on how to green productions. PGA members and non-members can check out green guidelines, best practices, green vendors and more. www.pgagreen.org

Setting Entertainment toward Sustainability (SETS): The Philadelphia Film Commission's initiative to provide the local industry with local resources and guides to create more sustainable productions. www.film.org/film/greenerSETS

CONSTRUCTION

Forest Stewardship Council: This non-profit organization is devoted to encouraging responsible management of the world's forests. Their websites provides factual information as well as resource locators for building materials, paper, wood and furniture made with FSC products. www.fsc.org

Sustainable Forestry Initiative: Similar to the FSC, the Sustainable Forestry Initiative (SFI) promotes sustainable forest management in North America and supports responsible procurement globally. Their site offers factual information as well as resource locators for SFI products. www.sfiprogram.org

US Green Building Council: Developers of the LEED building rating system, this non-profit organization is dedicated to sustainable building design and construction. The site contains information on the latest advances in sustainable construction and construction supplies. www.usgbc.org

CRAFT SERVICE AND CATERING

Council for the Environment of New York City (CENYC) Greenmarket: Council on the Environment of New York City's map of local greenmarkets that can be passed on to catering and craft service providers. www.cenyc.org/greenmarket

Rock and Wrap It Up Food Donations: An organization that provides a national network of food donation sites. www.rockandwrapitup.org

USDA Organic: Website for USDA's National Organic Program that regulates the standards for any farm, wild crop harvesting or handling operation that wants to sell an agricultural product as organically produced. Sources include facts sheets about organic labeling, regulation and policies. www.ams.usda.gov/nop

ENERGY

ENERGY STAR®: This government-backed program helps businesses and individuals protect the environment through superior energy efficiency. It offers information on 60 categories of appliances that affect everything from food service to office equipment to lighting. It also provides details of appliances and electronics that are eligible for the ENERGY STAR®. www.energystar.gov

United States Department of Energy: Use the USDOE site for updates about science and technology, energy sources, energy efficiency, pricing and trends. www.energy.gov

OFFICE

Eco Font: Free, downloadable font that will reduce ink consumption by 20%. www.ecofont.eu

Appendix

Glossary of Terms

The definitions included in this Glossary of Terms are an expanded version of the terminology used through out the guide.

Air Conditioning, Heating, and Refrigeration Institute (AHRI): AHRI is a trade organization that represents members of the Air Conditioning, Heating, and Refrigeration equipment industries. In partnership with the Consortium for Energy Efficiency (CEE), AHRI establishes standards (efficiency, safety, etc.) and tests the equipment to certify it is in compliance. Their CEE/AHRI Verified Directory identifies a list of products (less than 65 Mbtuh) that the manufacturer represents as meeting energy performance tiers established by the CEE. All products identified by the Directory are ENERGY STAR® qualified, but not necessarily certified. For the logo image please refer to the Glossary of Certifications. www.ahrinet.org

Bamboo: A natural flooring that comes from fast-growing grass with hard stalks. It has a short growing cycle, quickly reaching maturity and replenishing itself, and will regrow after harvesting. It is very strong and durable (superior to many hardwood species), and is available in a range of colors.

BDIH: German certification of natural raw material such as plant oils, fats and waxes, herbal extracts and essential oils and aromatic materials from controlled biological cultivation or controlled biological wild collection. For the logo image please refer to the Glossary of Certifications. www.kontrollierte-naturkosmetik.de

Better Environmental Sustainability Targets (BEST) Battery Certification: International initiative for the purpose of standardizing environmental performance goals for lead battery manufacturers. This voluntary certification program rewards lead battery manufacturers who meet strict environmental performance standards and agree to take back used batteries for environmentally sound recycling. Participating battery companies that meet these standards qualify to place the BEST eco-label on their products. Accredited auditors conduct annual assessments to verify compliance with these minimum performance standards. For the logo image please refer to the Glossary of Certifications. www.bestbattery.org/

Biodiesel: A biodegradable fuel derived from animal fats and vegetable oils, used as a total or partial substitute for petroleum diesel in standard diesel engines. Biodiesel is available in "blends" that range from B5 (5% biodiesel/95% standard diesel) to B99 (99% biodiesel/1% standard diesel). The American Lung Association maintains that biodiesel emissions are 90% less toxic than petro-diesel and its use reduces incidents of health hazards such as asthma, emphysema and lung cancer. For more information about Biodiesel visit, www.biodiesel.org

Biodegradable: Materials that break down and decompose into elements found in nature within a relatively short amount of time when exposed to air, moisture and bacteria or other organisms. In contrast to "compostable," which means it will degrade through actively managed compost process. There are numerous certification bodies (see the Glossary of Certifications for details) for "biodegradable," including:

- Cradle to Cradle Certification www.c2ccertified.com
- Design for the Environment www.epa.gov/dfc
- Green Seal www.green seal.org

Biodegradable Products Institute (BPI): BPI identifies and certifies disposable products that are used in food service and cafeteria programs and will biodegrade and compost satisfactorily in actively managed industrial compost facilities. The organization uses American Society for Testing and Materials specifications (ASTM) to approve products for their "Compostable Logo" effort. For the logo image please refer to the Glossary of Certifications. www.bpiworld.org/

Bird-Friendly Smithsonian Migratory Bird Center Certification: To prevent deforestation and the removal of natural bird habitats due to farming, the coffee must be grown under a minimum shade cover of 40% under at least ten different species of shade trees; other certification features include 100% USDA certified organic; fair prices for the producers; pollution control at mills; adequate wages, housing and healthcare for workers. For the logo image please refer to the Glossary of Certifications. www.nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Coffee/roaster.cfm

Bioplastics: Plastic-like materials often made from cornstarch, sugarcane or potatoes. Often used for products such as “Bioware” dishware and utensils designed to be composted rather than recycled or deposited in landfills. The most well known is Poly Lactic-Acid or “PLA.”

California Air Quality Resources Board (CARB): CARB is the state agency charged with cleaning the air in California. Regulations adopted by the board address emissions from chemically formulated (e.g. formaldehyde) consumer products, composite wood products (e.g. hardwood plywood, particleboard, and MDF), engines and many other sources. For the logo image please refer to the Glossary of Certifications. For more information, contact them at 916-322-2990 or visit www.arb.ca.gov

California Sustainable Carpet Standard: A standard developed by the State of California that measures VOC emission and formaldehyde, recycled content, and disposal methods, among other requirements, for carpets. There are two levels: gold and platinum. There are several certification bodies that will certify products as California compliant, including:

- Scientific Certification Systems (SCS) www.scs-certified.com/gbc/index.php
- NSF International www.nsf.org/business/sustainability/product_carpet.asp?program=Sustainability

Carbon dioxide cleaning: This dry cleaning process uses compressed liquid CO₂—often itself recycled—to clean clothes.

Certified Organic: Organic matter (such as produce) grown without the use of harmful pesticides and synthetic fertilizers. This protects workers and prevents these chemicals from absorbing into water systems, the soil and into the food chain. There are numerous certification bodies for “organic,” including:

- U.S. Dept. of Agr. (USDA) Organic www.ams.usda.gov/AMSv1.0/nop
- Demeter Certified Biodynamic www.demeter-usa.org/
- ECOCERT www.ecocert.com/?lang=en

Chlorofluorocarbons (CFCs): CFC is a type of compound which when reacting to sunlight (photochemical reaction) breaks down and reacts with the ozone layer. CFCs are used as aerosol propellants, refrigerants, and solvents, and in the manufacture of rigid packaging foam. A commonly encountered commercial name for these compounds is Freon. In July 1992, EPA issued a final rule implementing the phase out of CFCs to gradually reduce the production of these chemicals and to phase them out completely as of January 1, 2000 (2002 for methyl chloroform).

Compact Fluorescent Lights (CFLs): These are fluorescent bulbs designed to replace conventional incandescent light bulbs. CFLs emit light through a glass tube, and are energy-efficient, often using up to 75% less energy than incandescent bulbs. CFLs can also last up to 10 times longer.

Compostable: Solid food and plant based matter that breaks down by the natural biological processes during composting to yield CO₂, water, inorganic compounds and biomass at a rate consistent with other known compostable materials. Plus it leaves no visible, distinguishable or toxic residue. In contrast to “biodegradable,” which degrades without the composting process. Examples of this type of material include: bagasse or PLA materials.

Consortium for Energy Efficiency (CEE) and Air Conditioning, Heating, and Refrigeration Institute (AHRI) Certified: This certification identifies a list of air conditioning/heating/refrigeration products that meets energy performance tiers established by the Consortium for Energy Efficiency (CEE). The CEE/AHRI Verified Directory identifies a list of air conditioning/heating/refrigeration products (less than 65 Mbtuh) that the manufacturer represents as meeting energy performance tiers established by the Consortium for Energy Efficiency (CEE).

All products identified by the Directory are ENERGY STAR® qualified, but not necessarily certified. www.ceedirectory.org/ceedirectory/pages/cee/ceeDirectoryMain.aspx

Cork: A natural flooring that comes from the bark of the cork oak tree. Cork can be stripped every 10 years without harm to the tree. It is springy and resilient.

Cradle to Cradle®: Products are certified at four levels (basic, silver, gold, or platinum) based upon achievement against criteria in multiple categories: safety to human and environmental health; recyclability or compostability; recycled or renewable content; use of renewable energy; water stewardship; and social responsibility. For the logo image please refer to the Glossary of Certifications. www.c2ccertified.com

Demeter (Certified Biodynamic): Requires restricted use of synthetic fertilizers and pesticides. Responsible farming practices, like implementing energy and water saving techniques and preserving areas like rain forests, are promoted. Farm must follow standards for three years before they are awarded the certification. For the logo image please refer to the Glossary of Certifications. www.demeter-usa.org

Design for the Environment (DfE): The Design for the Environment (DfE) logo is the Environmental Protection Agency’s mark of excellence for chemical-based products. The DfE Program taps EPA’s chemical and toxicological expertise to evaluate products, awarding the DfE logo to those that perform well and contain the safest possible ingredients. For the logo image please refer to the Glossary of Certifications. www.epa.gov/dfc

ECOCERT: ECOCERT is a control and certification organization for Organic Farming whose standards conform to USDA Organic standard. ECOCERT additionally defines standards and certifies in the field of food safety and quality as well fair trade. Based in France, but currently carries out inspections and certification services in over 80 countries outside the EU, on all continents. For the logo image please refer to the Glossary of Certifications. www.ecocert.com

ECOCERT Fair Trade (EFT): ECOCERT requires conditions that break down the principles of fair trade into objective standards. It provides for guaranteed minimum prices and producer support and imposes strict good agricultural practices (an organic certification is required). For the logo image please refer to the Glossary of Certifications. www.ecocert.com/EFT-commodity-chains.html

ENERGY STAR®: The U.S. EPA ENERGY STAR® certification indicates energy efficiency. Certified products consume equal to or less than the ENERGY STAR’s® maximum energy consumption benchmark for that product category. Energy savings range among products but can be 41% less than federal standards. This applies to appliances, home electronics, light bulbs, and office equipment. For the logo image please refer to the Glossary of Certifications. www.energystar.gov

ENERGY STAR® 5.0 Certification: The U.S. EPA ENERGY STAR® certification for desktop/integrated desktop and notebook computers, products must meet stringent TEC requirements for estimated annual energy consumption, including for “idle,” “sleep” and “off” modes. These requirements ensure energy savings when computers are being used and performing a range of tasks, as well as when they are turned off or into a low power mode. ENERGY STAR® qualified computers must also have efficient internal or external power supplies. For the logo image please refer to the Glossary of Certifications. www.energystar.gov

ENERGY STAR® Labeled Hotel: A designation granted by the U.S. EPA to hotels that have purchased ENERGY STAR® qualified products and have energy-efficient management practices in place. www.energystar.gov/index.cfm?c=hospitality.bus_hospitality

EPEAT (Electronic Products Environmental Assessment Tool): EPEAT evaluates computer desktops, laptops, and monitors based on 51 environmental criteria including ENERGY STAR® compliance. Registered products are rated Gold, Silver or Bronze depending on the percentage of 28 optional criteria they meet above the baseline criteria. For the logo image please refer to the Glossary of Certifications. www.epeat.net/

Fair trade coffee: Farmers and artisans earn a livable wage for their products and have safe working conditions. The certification body (see the Glossary of Certifications for details) for “fair trade” includes:

- TransFair Fair Trade Certified www.transfairusa.org

Flex-Fuel vehicle: A flexible-fuel vehicle (FFV) (or “dual-fuel vehicle”) is an alternative fuel vehicle with an internal combustion engine designed to run on more than one fuel combined in the same fuel tank. The most common combination is gasoline blended with either ethanol or methanol fuel. Flex-fuel vehicles are distinguished from bi-fuel vehicles, where two fuels are stored in separate tanks and the engine runs on one fuel at a time. For example, compressed natural gas (CNG), liquefied petroleum gas (LPG), or hydrogen.

FloorScore®: FloorScore, developed by the Resilient Floor Covering Institute (RFCI) in conjunction with Scientific Certification Systems (SCS), tests and certifies hard surface flooring and flooring adhesive products for compliance with rigorous indoor air quality emissions requirements. Individual volatile organic compounds (VOCs) are evaluated using health-based specifications. Flooring and adhesives that earn FloorScore certification earn a legitimately enhanced market position, distinguished by the FloorScore certification label. For the logo image please refer to the Glossary of Certifications. www.scs-certified.com/gbc/floorscore.php

Forest Stewardship Council (FSC): A certification from FSC ensures that fresh cut timber and virgin pulp comes from well-managed forests, as opposed to areas that have been clear-cut. For the logo image please refer to the Glossary of Certifications. www.fscus.org

Global Organic Textile Standard: This label covers production, processing, manufacturing, packaging, exportation, importation and distribution. They require no formaldehyde, heavy metals, toxic dyes or chlorine bleach. For the logo image please refer to the Glossary of Certifications. www.global-standard.org

Green Globe: Green Globe provides third party certification for sustainable travel and tourism. Based on stringent Australian guidelines, it certifies properties around the world that have reduced greenhouse gas emissions, improved energy efficiency, reduced resource consumption and waste, and have shown social responsibility. www.ec3global.com/products-programs/green-globe/member-search/Default.aspx

Greenhouse Gases: Gases released into the atmosphere, which absorb and reemit infrared radiation, warming the earth’s atmosphere and contributing to the long-term climate change known as global warming. Carbon dioxide and methane are two of the most well-known greenhouse gases.

GREENGUARD (GEI): This certification designates products with low chemical emissions that contribute to indoor air quality. For the logo image please refer to the Glossary of Certifications. www.greenguard.org/

Green Leaf™ Eco-Rating Program: A certification program by Audubon International, a not-for-profit organization, which rates lodging establishments on four main criteria: energy efficiency, pollution prevention, environmental management and resource conservation. Currently mostly active in Canada, but starting to certify U.S. properties. www.greenleaf.auduboninternational.org/

Green Seal™ (Services): A product with this seal means it has less impact on the environment and human health and that the product works as well as others in its class, and has been evaluated without bias or conflict of interest. See the Glossary of Terms for a complete description. And for the logo image please refer to the Glossary of Certifications. www.greenseal.org

Green Seal™ (Lodging): Environmental Standard for Lodging Properties – Green Seal™ provides third party certification for products and services. The lodging certification focuses on waste minimization, energy conservation and management, management of water resources, pollution prevention, and organizational commitment like environmentally sensitive purchasing. For the logo image please refer to the Glossary of Certifications. www.greenseal.org/findaproduct/lodging_properties.cfm

Greenpeace Guide to Greener Electronics: This Greenpeace Guide ranks major electronics manufacturers on their use of chemical toxins, how they handle e-waste, and on their energy and greenhouse gas policies. www.greenpeace.org/international/campaigns/toxics/electronics

Greywater: Wastewater generated from domestic processes such as dishwashing, laundry and bathing. Can be made suitable for non-consumable uses, such as irrigation, through relatively simple filtration and treatment. Also commonly called “reclaimed” water.

HVAC System Commissioning: This is a process to verify that HVAC systems for buildings are designed for, and are operating at, optimal efficiency and performance. Special contractors called “commissioners” are engaged to help design, and later analyze and report on, the HVAC system’s performance.

Hybrid vehicle: A vehicle that uses two or more different power sources (usually gas-electric) to move the vehicle, which increases fuel efficiency significantly. Most commonly refers to hybrid electric vehicles (HEVs), which combine an internal combustion engine and an electric motor. Other power sources may include hydrogen, propane, compressed natural gas (CNG), and solar energy.

Indoor air quality (IAQ): A term used to describe the quality of air within buildings as it relates to health. Indoor air quality is an important issue because many people spend up to 90% of their time indoors at home, work or school. Poor indoor air quality can be caused by a number of factors, including inadequate ventilation or excessive emissions of volatile organic compounds from flooring, furniture, paints, etc. There are numerous certification bodies that will certify low VOC office furniture, including:

- GREENGUARD Environmental Institute
- Scientific Certification Systems (SCS) Indoor Advantage
- Business and Institutional Furniture Manufacturer’s Association (BIFMA) e3-2008 Furniture Sustainability Standard, level™ Certification Program
- Cradle to Cradle Certification

Leaping Bunny: Leaping Bunny ensures that neither companies nor their laboratories, or suppliers use new animal testing in any phase of product development. For the logo image please refer to the Glossary of Certifications. www.leapingbunny.org

Light Emitting Diodes (LEDs): A highly efficient light source, LEDs are semiconductors. They operate with less heat, and are more resistant to normal wear than conventional incandescents, thus increasing lifespan significantly.

Linoleum: A floor covering made from natural materials including ground flax seeds, pine resins, wood flour and ground cork. This mixture is then combined with a jute backing to form “linoleum.”

Luan: A generic term for plywood made from tropical forests. It is often logged illegally with devastating consequences for forests and wildlife.

Natural gas: A gaseous fuel, which must be stored onboard a vehicle in either a compressed gaseous form (compressed natural gas, CNG) or liquefied (liquefied natural gas, LNG). CNG and LNG are considered alternative fuels under the Energy Policy Act of 1992. Compared with vehicles fueled by conventional diesel and gasoline, natural gas vehicles can produce significantly lower amounts of harmful emissions such as nitrogen oxides, particulate matter and toxic and carcinogenic pollutants as well as the greenhouse gas carbon dioxide. Although most natural gas is extracted from gas and oil wells, CNG and LNG are considered alternative fuels under the Energy Policy Act of 1992.

Natural Products Association: This certification program defines natural content as items that include at least 95% all-natural ingredients and contain only synthetic ingredients specifically allowed that do not have suspected human health risks. The seal appears on eligible personal care and home care products. For the logo image please refer to the Glossary of Certifications. Visit the website for product listing. www.naturalproductsassoc.org

No Added Formaldehyde (NAF): Wood that contains no added formaldehyde.

Organically/Biodynamic grown coffee: This coffee is grown without the use of harmful pesticides and synthetic fertilizers. This protects workers and prevents these chemicals from absorbing into water systems, the soil and the food chain.

- USDA Organic www.ams.usda.gov/AMSV1.0/nop
- Demeter Certified Biodynamic www.demeter-usa.org/
- ECOCERT www.ecocert.com/?lang=en

Phosphates: Minerals added to cleaners to soften water. Phosphates act as fertilizers, and when cleaning products containing phosphates go down the drain; they can be discharged into rivers, lakes or oceans. In lakes and rivers especially, phosphates cause a rapid growth of algae, resulting in pollution of the water.

Post-consumer Waste Recycled Content: Content that has been manufactured from materials recycled after use in commerce, as opposed to materials left over from manufacturing processes.

Rainforest Alliance Certified: This seal identifies coffee that is grown with shade cover; there is restricted use of synthetic pesticides; soil and water conservation practices are implemented; and there are just wages, adequate housing and healthcare for workers. For the logo image please refer to the Glossary of Certifications.
www.rainforest-alliance.org/

RoHS (Restriction of Hazardous Substances) Directive: RoHS bans from the EU market any new electrical and electronic equipment containing more than mandated maximum levels of lead, cadmium, mercury, hexavalent chromium and two flame-retardants. RoHS covers everything in a computer except for the batteries, which are regulated separately.

Silicone-based cleaning: Also called the “GreenEarth” method, this process uses silicone to clean and degrades within days in the environment to silica and trace amounts of water and CO₂. Believed to produce nontoxic, non-hazardous waste.

SmartWay or SmartWay Elite: This EPA program scores vehicles in their Green Vehicle Guide with an Air Pollution Score and a Greenhouse Gas Score on a scale of 1–10. For the SmartWay designation, a vehicle must receive a 6 or better on both scores, and have a total score of at least 13. SmartWay Elite is given to those vehicles that score 9 or better on both scores. For the logo image please refer to the Glossary of Certifications.
www.epa.gov/greenvehicles/Index.do

Shade Grown Coffee: This traditional method of growing coffee in shade means that rainforests are not being removed to grow coffee, providing habitat for birds and other wildlife, as well as preserving forests. Other certifications include:

- Smithsonian Migratory Bird Center “Bird-Friendly” Certified
www.nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Coffee/roaster.cfm
- Rainforest Alliance Certified www.rainforest-alliance.org/

Sustainable Carpet Standard (ANSI/NSF 140): A standard developed by the American National Standards Institute (ANSI) that measures VOC emission and formaldehyde, recycled content and disposal methods, among other requirements, for carpets. The Sustainable Carpet Standard has three levels: silver, gold and platinum. There are numerous certification bodies that will certify products as ANSI/NSF-140 compliant, including (see Glossary of Certifications for details):

- Scientific Certification Systems (SCS) www.scs-certified.com/gbc/index.php
- NSF International
www.nsf.org/business/sustainability/product_carpet.asp?program=Sustainability

Sustainable Forestry Initiative (SFI): SFI Inc. is an independent, charitable organization working within the US and Canada dedicated to promoting sustainable forest management. SFI works with conservation groups, local communities, resource professionals, landowners, organizations and individuals who share their passion for responsible forest management. SFI’s forest certification standards promote sustainable forest management, including measures to protect water quality, biodiversity, wildlife habitat, species at risk, and Forests with Exceptional Conservation Value. For the logo image please refer to the Glossary of Certifications. www.sfiprogram.org

Sustainable furniture: There are numerous certification bodies for sustainable, low VOC furniture, including:

- GREENGUARD Environmental Institute www.greenguard.org
- Scientific Certification Systems (SCS) Indoor Advantage
www.scs-certified.com/gbc/indooradvantage.php

- Business and Institutional Furniture Manufacturer’s Association (BIFMA) e3-2008 Furniture Sustainability Standard, level™ Certification Program
www.nsf.org/business/sustainability/product_furniture.asp?program=Sustainability
- Cradle to Cradle Certification www.c2ccertified.com/

TransFair Fair Trade Certified: Farmers and artisans earn a livable wage for their products and have safe working conditions. Genetically modified organism (GMOs) is prohibited and Integrated Pest Management (IPM) is encouraged. www.transfairusa.org

Ultra Low Sulfur Diesel (ULSD): A cleaner-burning diesel fuel containing a maximum 15 parts per million (ppm) sulfur.

Upcycling: The creation of a new product manufactured from a waste material at the end of its service life.

U.S. EPA Waste Division: The U.S. EPA Waste division has guidelines and resources for recycling and disposal of all types of batteries. See:
www.epa.gov/waste/conserves/materials/battery.htm and
www.epa.gov/osw/hazard/wastetypes/universal/batteries.htm

U.S. EPA Tier Emission Standards for Nonroad Equipment: The U.S. EPA nonroad engine regulations are structured as a 4-tiered progression. Tier 3 standards phased in from 2006 to 2008. The Tier 4 standards will reduce emissions of particulate matter (PM) and nitrogen oxides (NOx) from nonroad diesel engines by more than 90 percent.
www.epa.gov/nonroad-diesel/regulations.htm#5

U.S. EPA Tier Emission Standards for Generators: The U.S. EPA nonroad engine regulations are structured as a 4-tiered progression. Tier 3 standards phased in from 2006 to 2008. Tier 4 standards are to be phased in from 2008-2015, and require that emissions of particulate matters (PM) and NOx be further reduced over Tier 3 requirements by about 90%.
www.epa.gov/nonroad-diesel/regulations.htm#5

Vinyl Flooring: A floor covering made from petroleum by-products. It is sometimes confused with linoleum because of their similar appearance.

Wet cleaning: This dry cleaning process uses computer-controlled machines to gently launder with water and biodegradable solvents.

Glossary of Certifications

The certifications below are a listing of the most commonly used certification labels. This listing is an informative tool and not an endorsement.

CERTIFICATION: **AIR CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)**
 in partnership with Consortium for Energy Efficiency (CEE)
www.ahrinet.org

PRODUCTS

Air conditioning, heating and refrigeration

GUARANTEES

AHRI is a trade organization that represents members of the Air Conditioning, Heating, and Refrigeration equipment industries. AHRI establishes standards (efficiency, safety, etc.) and tests the equipment to certify it is in compliance. Their CEE/AHRI Verified Directory identifies a list of products (less than 65 Mbtuh) that the manufacturer represents as meeting energy performance tiers established by the Consortium for Energy Efficiency (CEE). All products identified by the Directory are ENERGY STAR® qualified, but not necessarily certified.



CERTIFICATION: **BDIH**
www.kontrollierte-naturkosmetik.de

PRODUCTS

Personal care products and cosmetics

GUARANTEES

German certification of natural raw material such as plant oils, fats and waxes, herbal extracts and essential oils and aromatic materials from controlled biological cultivation or controlled biological wild collection.



CERTIFICATION: **BETTER ENVIRONMENTAL SUSTAINABILITY TARGETS (BEST) BATTERY CERTIFICATION**
www.bestbattery.org

PRODUCTS

Batteries

GUARANTEES

International initiative for the purpose of standardizing environmental performance goals for lead battery manufacturers. This voluntary certification program rewards lead battery manufacturers who meet strict environmental performance standards and agree to take back used batteries for environmentally sound recycling. Participating battery companies that meet these standards qualify to place the BEST eco-label on their products. Accredited auditors conduct annual assessments to verify compliance with these minimum performance standards.



CERTIFICATION: **BIODEGRADABLE PRODUCTS INSTITUTE (BPI)**
www.bpiworld.org

PRODUCTS

Compostable Bags, Foodservice, Resins, Packaging, Sheet and Roll Products

GUARANTEES

Designed to identify and certify disposable products that are used in food service and cafeteria programs and will biodegrade and compost satisfactorily in actively managed industrial compost facilities.

BPI uses American Society for Testing and Materials specifications (ASTM) to approve products for their “Compostable Logo” effort.



CERTIFICATION: **BIRD-FRIENDLY SMITHSONIAN MIGRATORY BIRD CENTER**
www.nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Coffee/roaster.cfm

PRODUCTS

Coffee

GUARANTEES

To prevent deforestation and the removal of natural bird habitats due to farming, the coffee must be grown under a minimum shade cover of 40% under at least ten different species of shade trees; other certification features include 100% USDA certified organic; fair prices for the producers; pollution control at mills; adequate wages, housing and health-care for workers.



CERTIFICATION: **CALIFORNIA AIR QUALITY RESOURCES BOARD (CARB)**
www.arb.ca.gov

PRODUCTS

Composite wood products

GUARANTEES

CARB is the state agency charged with cleaning the air in California. Regulations adopted by the board address emissions from chemically formulated (i.e. formaldehyde) consumer products, composite wood products (i.e. hardwood plywood, particleboard, and MDF), engines and many other sources. For more information, contact them at 916-322-2990.

California Environmental Protection Agency
 **Air Resources Board**

CERTIFICATION: **CRADLE TO CRADLE®**
www.c2ccertified.com (Cradle to Cradle Certified™ is a certification mark of MBDC)

PRODUCTS

Applies to products in all categories and industries, including cleaning, personal care, baby and child care, beverages, fabrics, office furniture, building & construction, packaging, etc.

GUARANTEES

Products are certified at four levels (basic, silver, gold, or platinum) based upon achievement against criteria in multiple categories: safety to human and environmental health; recyclability or compostability; recycled or renewable content; use of renewable energy; water stewardship; and social responsibility.



CERTIFICATION: **DEMETER (CERTIFIED BIODYNAMIC)**
www.demeter-usa.org

PRODUCTS

Food, coffee, tea, dairy, produce, oils, meats, breads, grains, personal care products, cosmetics and wine.

GUARANTEES

Restricted use of synthetic fertilizers and pesticides. Responsible farming practices, like implementing energy and water saving techniques and preserving areas like rain forests, are promoted. Farm must follow standards for three years before they are awarded the certification.



CERTIFICATION: **DESIGN FOR THE ENVIRONMENT (DFE) (US EPA)**
www.epa.gov/dfe

PRODUCTS

Cleaning Products, biological-based products, industrial coatings, inks, odor removal, field paint and tire additives

GUARANTEES

The Design for the Environment (DfE) logo is the Environmental Protection Agency's mark of excellence for chemical-based products. The DfE Program taps EPA's chemical and toxicological expertise to evaluate products, awarding the DfE logo to those that perform well and contain the safest possible ingredients.



CERTIFICATION: **ECOCERT**
www.ecocert.com

PRODUCTS

Primarily certifies food and food products, but also certifies cosmetics, detergents, perfumes, and textiles.

The company inspects about 70% of the organic food industry in France and about 30% worldwide.

GUARANTEES

ECOCERT is a control and certification organization for Organic Farming whose standards conform to USDA Organic standard. Ecocert additionally defines standards and certifies in the field of food safety and quality as well fair trade. Ecocert is based in France, but currently carries out inspections and certification services in over 80 countries outside the EU, on all continents.



CERTIFICATION: **ECOCERT FAIR TRADE (EFT)**
www.ecocert.com/EFT-commodity-chains.html

PRODUCTS

Certain foods, Cosmetics and Textiles

GUARANTEES

Ecocert requires conditions that break down the principles of fair trade into objective standards. It provides for guaranteed minimum prices and producer support and imposes strict good agricultural practices (an organic certification is required).



CERTIFICATION: **ENERGY STAR® (U.S. EPA)**
www.energystar.gov

PRODUCTS

Appliances, home electronics, light bulbs, office equipment

GUARANTEES

Products consume equal to or less than the ENERGY STAR®'s maximum energy consumption benchmark for that product category. Energy savings range among products, but can be as high as 41% less than federal standards.



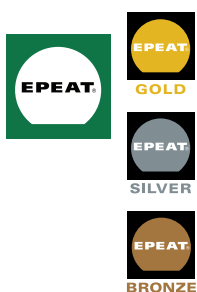
CERTIFICATION: **EPEAT (ELECTRONIC PRODUCTS ENVIRONMENTAL ASSESSMENT TOOL)**
www.epeat.net

PRODUCTS

Desktops, laptops and monitors

GUARANTEES

EPEAT evaluates computer desktops, laptops, and monitors based on 51 environmental criteria including ENERGY STAR® compliance. Registered products are rated Gold, Silver or Bronze depending on the percentage of 28 optional criteria they meet above the baseline criteria.



CERTIFICATION: **FLOORSCORE®**
www.scs-certified.com/gbc/floorscore.php

PRODUCTS

Flooring and Flooring Adhesives

GUARANTEES

FloorScore, developed by the Resilient Floor Covering Institute (RFCI) in conjunction with Scientific Certification Systems (SCS), tests and certifies hard surface flooring and flooring adhesive products for compliance with rigorous indoor air quality emissions requirements. Individual volatile organic compounds (VOCs) are evaluated using health-based specifications. Flooring and adhesives that earn FloorScore certification earn a legitimately enhanced market position, distinguished by the FloorScore certification label.



CERTIFICATION: **FOREST STEWARDSHIP COUNCIL (FSC) CERTIFIED**
www.fscus.org

PRODUCTS

Wood and paper products

GUARANTEES

This certification ensures that fresh cut timber and virgin pulp comes from well-managed forests, as opposed to areas that have been clear-cut.



CERTIFICATION: **GLOBAL ORGANIC TEXTILE STANDARD**
www.global-standard.org

PRODUCTS

Textiles (including, but not limited to, fiber products, yarns, fabrics and clothes)

GUARANTEES

This label covers production, processing, manufacturing, packaging, exportation, importation and distribution. They require no formaldehyde, heavy metals, toxic dyes or chlorine bleach.



CERTIFICATION: **GREEN SEAL**
www.greenseal.org

PRODUCTS

Cleaning products, construction materials, equipment and systems, hospitality services, facility operations and maintenance, office products, personal care products and transportation

GUARANTEES

A Green Seal-Certified mark on a product means that it has gone through a stringent process to prove that it has less impact on the environment and human health. The Green Seal means that the product works as well as others in its class, and that it has been evaluated without bias or conflict of interest. Listing of Green Seal-certified products and services can be found on their site.



CERTIFICATION: **GREENGUARD**
www.greenguard.org/

PRODUCTS

Low-emitting interior building materials, furnishings and finish systems, including paints

GUARANTEES

This certification designates products with low chemical emissions that contribute to indoor air quality.



CERTIFICATION: **LEAPING BUNNY**
www.leapingbunny.org

PRODUCTS

Cleaning products, personal care products and cosmetics

GUARANTEES

Leaping Bunny ensures that neither companies nor their laboratories, or suppliers use no new animal testing in any phase of product development.



CERTIFICATION: **NATURAL PRODUCTS ASSOCIATION**
www.naturalproductsassoc.org

PRODUCTS

Personal care products and cosmetics

GUARANTEES

This certification program defines natural content as items that include at least 95% all-natural ingredients and contain only synthetic ingredients specifically allowed that do not have suspected human health risks. The seal appears on eligible personal care and home care products. Visit the website for product listing.



CERTIFICATION: **RAINFOREST ALLIANCE CERTIFIED**
www.rainforest-alliance.org/

PRODUCTS

Coffee, tea, chocolate, paper, fruit, nuts and travel

GUARANTEES

This seal identifies coffee that is grown with shade cover; there is restricted use of synthetic pesticides; soil and water conservation practices are implemented; and there are just wages, adequate housing and healthcare for workers.



CERTIFICATION: **SMARTWAY (U.S. EPA)**
www.epa.gov/smartway/vehicles/smartway-certified.htm

PRODUCTS

Passenger vehicles

GUARANTEES

Smartway scores vehicles in Green Vehicle Guide with an Air Pollution Score and a Greenhouse Gas Score on a scale of 1–10. For the SmartWay designation, a vehicle must receive a 6 or better on both scores, and have a total score of at least 13. SmartWay Elite is given to those vehicles that score 9 or better on both scores.



CERTIFICATION: **SCIENTIFIC CERTIFICATION SYSTEM (SCS)**
www.scs-certified.com/gbc/index.php

PRODUCTS

Agricultural production, food processing and handling, forestry, fisheries, flowers and plants, energy, green building, product manufacturing and corporate social responsibility.

GUARANTEES

For over two decades, Scientific Certification Systems (SCS) has developed internationally recognized standards and certification programs. SCS is a global leader in third-party environmental, sustainability, and food quality claims.



CERTIFICATION: **SUSTAINABLE FORESTRY INITIATIVE (SFI)**
www.sfiprogram.org

PRODUCTS

Wood and paper products

GUARANTEES

SFI Inc. is an independent, charitable organization working within the US and Canada dedicated to promoting sustainable forest management. SFI works with conservation groups, local communities, resource professionals, landowners, organizations and individuals who share their passion for responsible forest management. SFI's forest certification standards promote sustainable forest management, including measures to protect water quality, biodiversity, wildlife habitat, species at risk, and Forests with Exceptional Conservation Value.



CERTIFICATION: **TRANSFAIR FAIR TRADE CERTIFIED**
www.transfairusa.org

PRODUCTS

Crafts, artisanal imports, coffee, tea, herbs, fruit, flowers, honey and chocolate

GUARANTEES

Farmers and artisans earn a livable wage for their products and have safe working conditions. Genetically modified organism (GMOs) is prohibited and Integrated Pest Management (IPM) is encouraged.



Case Studies

Away We Go

FILM/TV TYPE: **FEATURE FILM**
LOCATIONS: **FL, CT, AZ**

The Focus Features film, *Away We Go*, was the subject of a pilot experiment in the reduction of carbon emissions and environmental impacts of a feature film production in the spring and summer of 2008.

In addition to striving to reduce their environmental footprint, the producers and green consultants also wanted to stimulate awareness among vendors and partners that would lead to the spread of green attitudes beyond the production.

By prioritizing five principal areas of the production (transportation, energy, waste, construction/set materials and catering/craft service) the production crew was able to achieve substantial reductions in greenhouse gas emissions as well as other environmental impacts.

To try to help reduce the carbon emissions and environmental impacts in transportation (local) and travel (long-distance) on *Away We Go*, while also making the production more efficient overall, the production crew reduced the number of shoot locations, rented hybrid vehicles when available and reduced truck idling time, among other initiatives.

In order to reduce energy used in generators and production vehicles, they pioneered the use of biodiesel, chosen because, at that time, it was the least controversial in terms of source.

For waste management, they hired contractors with experience in recycling and removing separate waste streams in order to direct a substantial portion of their waste away from landfills. Based on averages derived from sample weeks of waste monitoring, it was determined that they succeeded in redirecting 49% of their waste away from landfills toward recycling and composting.

Finally, construction chiefs and art directors made an effort to favor low-VOC (volatile organic compounds) paints, and set materials were donated to organizations that could make future use of them.

The carbon emissions from the *Away We Go* movie production was calculated and verified to be approximately 975 metric tons of CO₂.

Highlights of the production's carbon-reduction achievements:

- On location in Connecticut, B5 biodiesel was used (a blend in which 5% of the fuel is reprocessed, reclaimed fry grease).
- In Florida, B99 biodiesel blend (again, from soy) was used to operate non-critical generators. There were no operational or maintenance issues with these generators.
- In Arizona, the fuel used on set was B5 biodiesel (5% of the blend was derived from soy).

- Including the fuel used to power the generators and vehicles, a total of 18,094 gallons of diesel fuel was used. 36.3% of this fuel (6,570 gallons) was a biodiesel blend that ranged from 5% to 99%, which equates to 2,209 gallons of pure biodiesel consumed during the production.
- The blended biodiesel average cost was 12.7% less than standard diesel fuel.
- In terms of the carbon emissions generated by combustion, biodiesel fuel emits 8.5% less carbon per unit than regular diesel fuel.
- Had the production used blended biodiesel fuel exclusively, the production could have saved approximately \$33,000 more in fuel costs.
- Hybrid rental cars were driven 45% of the total rental car miles driven during the production.
- Prius hybrid car service was used 32% of the time. This service would have been used more often had there been wider availability.
- Using hybrid cars saved the production \$15-\$41 against each hybrid rental in fuel cost.
- 150 hybrid rental cars were used during the shoot.
- Whenever hybrid vehicles were not available, the production crew rented compact, low-MPG cars. They used public transportation and car-pooling whenever possible for commuting to and from the production office.

The *Away We Go* production crew implemented numerous other environmentally beneficial strategies. They distributed branded reusable aluminum water bottles to members of the cast and crew and provided refilling stations on all locations. The crew was able to avoid sending approximately 13,500 plastic water bottles to landfills over the course of the production.

The production used 3-perf film stock which uses 25% less stock and 25% less chemicals in manufacture and processing.

Craft services purchased organic food from local purveyors throughout the shoot, generating economic benefits to local farms and suppliers of organic ingredients. Plastic plates, cups and utensils were replaced with sugar and corn-based dinnerware, keeping hundreds of pounds of plastic and Styrofoam out of landfills.

The wardrobe department used low-energy washers and dryers every night for the maintenance of costumes.

The audio department used both recyclable and rechargeable batteries whenever possible (and as per regulations, disposed of all other batteries properly).

The production crew adopted sustainable habits in the production office, programming copiers and printers to double-sided settings, using porcelain plates and mugs, stainless steel utensils, and installing Compact Fluorescent Light bulbs for task lighting wherever possible (Note: CFL bulbs contain mercury and also must be disposed of properly—contact your Environment Health and Safety department for details.)

Efforts in waste redirection produced substantial results. In Connecticut, which had the central office and the majority of shooting locations, the production generated an estimated 53,991 pounds of waste, which was separated into 19,986 pounds of compost, 6,361 pounds of recyclable material and 27,643 pounds of general waste. An estimated 49% of all waste was diverted from landfills.

The positive environmental results of the *Away We Go* production crew's efforts far exceed the carbon emissions reductions measured. They have helped blaze a trail for their industry colleagues, as well as pioneering and refining sustainability strategies for future production crews.

Lipstick Jungle

FILM/TV TYPE: **SCRIPTED EPISODIC DRAMA SERIES**
LOCATIONS: **BROADWAY STAGES, BROOKLYN, NY**

The *Lipstick Jungle* crew was already in production on its second season when they began their environmental impacts monitoring and reduction program in 2008.

The producers implemented a recycling program that led to recycling 600 lbs of paper, plastic, glass and cans per week.

They purchased green office and cleaning supplies for the production office.

They up graded their catering and craft services to green menus, integrating local, organic produce and baked goods. They also used bio-based utensils and plates when permanent plates and stainless steel utensils were not an option.

They reduced the use of plastic water bottles by installing five-gallon water dispensers and provided cast and crew with reusable water bottles.

The art department recycled all paper generated in designing the show and donated materials to artists and educators through Materials for the Arts.

The travel department switched to hybrid rental vehicles when possible and the crew used public transportation commuting to the set whenever the schedule allowed. They established a no-idling policy when shooting on the streets of New York. The transportation captain was close to signing a deal to purchase B20, a 20% biodiesel fuel blend, for on-location trucks and generators. Unfortunately the series reached the end of its production schedule before this could be implemented.

The audio department used rechargeable batteries wherever possible and recycled those that could not be reused.

Environmental elements were also woven into the *Lipstick Jungle* set. The scenic department used low-VOC (low volatile organic compound) paints for sets and donated extra paint to local schools. The crew also donated paints to a high school drama department.

During the second season, one of the principal characters, fashion designer Victory Ford, renovated her store and workspace using "reclaimed and recycled" materials and environmental resources.

Her office was decorated with a reclaimed chandelier and couch, as well as recycled paper sculptural light fixtures and bamboo display cases for dresses and accessories.

Late Night with Jimmy Fallon

FILM/TV TYPE: **TALK/VARIETY SHOW WITH NEW STUDIO BUILD**
LOCATION: **30 ROCKEFELLER PLAZA STUDIO 6C**

The production and set design crews for the *Jimmy Fallon Show* were inspired to try to create a more environmentally friendly set for their new show launch in New York in early 2009. In their plans for studio design and set construction, they left no opportunity for environmental improvements unexploited.

They acquired and refurbished classic plush movie theater seats that had previously been used at Radio City Music Hall, and refitted those for the studio balcony area instead of purchasing new audience seating.

They installed carpet made from 100% recycled PET plastic bottles, and integrated CFL and LED overhead lighting wherever possible.

Set pieces were constructed from FSC-certified wood and the interview area features sustainable bamboo floors and a refurbished desk from the set designer's own house.

Set décor included doors reclaimed from local salvage stores.

Paints were either low-VOC or no-VOC brands.

Metal platforms were used for the band instead of wood and colored LED accent lighting was integrated into the look of the music stage.

Like the other shows at 30 Rockefeller Plaza, they benefit from the green initiatives underway at the NBC Universal commissary (where recycling has been expanded and local, organic produce and other foods are now available. They have also added "green" menu options, integrating local, organic produce and baked goods. The commissary has also introduced bio-based cups and plates).

All of these efforts combine to make *Late Night with Jimmy Fallon* a more sustainable production overall.

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.

References

ENERGY STAR®

www.energystar.gov

EPA Waste Wise

www.epa.gov

Forest Stewardship Council

www.fsc.org

Greater Philadelphia Film Office SETS (Setting Entertainment Toward Sustainability), 2009

www.film.org/film/greenerSETS

Green Hotels Association

www.greenhotels.com

Green Screen Toronto

Green Practices Handbook
Environmental Options for the
Film-Based Industries, 2009 Guide
www.greenscreentoronto.com

Green Seal

www.greenseal.org

Greenopia

www.greenopia.com/USA

NYSERDA

A Municipal Official's Guide to Diesel
Idling Reduction in New York State
www.nyserda.org

United States Department of Energy

www.energy.gov

United States Department of Transportation

www.dot.gov

USDA Organic

www.usda.gov

RESEARCH CONTRIBUTORS

30 Rock

Away We Go

Late Night with Jimmy Fallon

Lipstick Jungle

Nightly News

It's Complicated

Get Him To The Greek

Green Media Solutions

Saturday Night Live

This guide meets certification requirements established by the Forest Stewardship Council (FSC), a nonprofit entity that supports environmentally appropriate, socially beneficial and economically viable management of the world's forest.

This brochure is printed on recycled paper that contains 100% Post Consumer Waste.





Green lives here.

©NBC Universal, Inc. 2010