

Sustainable Filmmaking Case Study

FEBRUARY 2024

*Once Upon a Time
in the Future
2121*

EKO FILM

SUSTAINABLE PRODUCTION PLATFORM

established as part of the "Connect 4 Environmental Sustainability in Film and the Media," supported by the British Council's Going Global Partnerships Programme



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Beginning...

Sustainable filmmaking practices have long been a key part of film production, particularly in the world's largest film industries, influenced by national regulations.

Like other sectors focused on environmental sustainability, these practices are primarily based on emission measurements, defined in terms of carbon dioxide, and referenced against global standards.

The data we use to highlight the benefits of sustainable practices in Türkiye are "approximate" results, derived by comparing information from local productions with national data and global reference values. We also note that carbon footprints and other emission calculations are always "approximate" and "average" due to the many variables involved. As we begin, we share some of the basic values in more easily understandable terms.

1 ton of carbon emissions

=



a round-trip flight from Istanbul to London



a 6,000 km journey by petrol car



2.5 tons of waste



charging 122 smartphones



producing 10 kg of red meat



2,500 cups of coffee



the annual average electricity consumption per person in Türkiye



Once Upon a Time in the Future: 2121



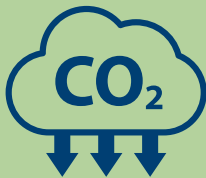
avoided the waste of **5,760** plastic PET cups of 250 ml each.



avoided the waste of **7,200** cardboard cups.



saved **121 kWh** of energy by preventing the use of **3,220** sheets of paper.



prevented approximately **9 tons of carbon emissions** by saving **3,340** liters of fuel.



avoided over **18 tons of wastewater** by not using a caravan.



Once Upon a Time Future: 2121 is a science fiction film directed by **Serpil Altın**. Completed in January 2022, the film was also launched as Türkiye's first sustainable green film initiative. It had its world premiere at the 29th International Adana Golden Boll Film Festival and has since been screened at several prestigious international festivals. The film has won a total of 11 awards, including Best Film, Best Director, and Best Actor, at notable events such as the 23rd Phoenix International Horror and Science Fiction Film Festival, 23rd Sci-Fi London Film Festival, 7th Cinema d'IDEA International Women's Film Festival, 6th Not Film Festival, 4th Sydney Science Fiction Film Festival, Scifian Festa in South Korea, 5th Berlin Women's Film Festival, 4th Brooklyn Science Fiction Film Festival, 3rd Astrophobia Film Festival, and the Ecuador International Freak Film Festival.

The film's sustainable production manager, **Korhan Uğur**, is also co-producer with Serpil Altın. The team developed sustainable production practices without direct support from any institution. They reached out to the Europe-based **Green Film Network** and used its open-access resources to adopt environmentally friendly production methods.

Established in 2017 by the **Trentino Film Fund and Commission**, Green Film was the first regional fund in Europe to recognize and certify production companies that prioritize eco-friendly practices. Since 2019, it has offered a rating guide and a labeling service, promoting environmental sustainability in filmmaking and providing guidance for best practices, now available to other regions as well.





The film is an eco-dystopian film that not only highlights the ongoing ecological crisis but also revives a genre that is relatively rare in Türkiye, making a significant contribution to the country's cinematic landscape. Set in the late 21st century, the film tells the story of a world devastated by climate change and famine, where the surviving humans live underground. As part of the climate-fiction genre, the film follows a family trying to survive in a future shaped by climate-induced famine. In this world, the "Famine Laws," established by the Young Administration, mandate the eradication of the older generation in exchange for introducing new life into the system. The family-comprising a woman, a man, a child, and a grandmother-sees their lives change with the birth of a new baby.



PRE-PRODUCTION

Meetings were held with department heads during the pre-production phase. Before starting on set, the team was briefed on the sustainability measures to be implemented, and the plan was outlined. Responsibilities were assigned to the production team to oversee and assist other crew members, providing them with guidance on key ideas. Actors were also informed about these practices and reminded to follow the sustainable production guidelines.

Many of the sustainability measures were put in place during that phase. **No plastic** was used in office work, and **digital sharing** was prioritized over printing.



Instead of disposable cups and plastic bottles for beverages, **reusable water bottles, camping bottles,** and **glass cups** were provided for everyone, including visitors.



The script and daily schedule were shared **digitally,** and efforts were made to **reduce the number of printed pages.**



The number of people in the crew was kept to a minimum, and **public transportation** was encouraged for commuting to the office.



A catering company offering **buffet-style** meals was hired for the crew.



FILMING



WASTE MANAGEMENT

As with any shift to a new system, there were some challenges. One of the biggest challenge was the strong habit of **using plastic bottles and cups**. It quickly became clear just how difficult it was to change this behavior. Despite the production team's best efforts to keep plastic off the set, some crew members were caught trying to sneak bottles and cups in early on. Small penalties were introduced for bringing plastic onto set, and gradually, this helped the team break the habit.

A system was put in place to **separate and recycle unavoidable waste** on set. Separate bins were set up for **glass, paper, metal, and batteries**. These recyclables were collected in coordination with the Kartal Municipality, and the waste was stored in bins provided by the municipal team. When the bins were full, the municipality was notified for pick-up.





WASTE MANAGEMENT

From the preparation phase through to the final day of filming, water bottles were provided to everyone, including visitors. SuCo., the supplier, was chosen for their compact and portable design. This not only helped reduce plastic waste but also prevented leftover water from being wasted.



As a result, around **5,760 plastic 250 ml bottles** that would have been used by the 45-person crew over 18 days were avoided. For tea and coffee service, camping bottles and glass cups were used instead of disposable cups, preventing the need for **7,200 cardboard/plastic cups**.





WASTE MANAGEMENT

- ✔ Throughout the filming process, the team tried to minimize paper use. **Digital sharing** was prioritized, and the number of pages printed was kept to a minimum.

- ✔ The script was **only printed in three copies** – one for the director, one for the assistant director, and one for the actors' room.

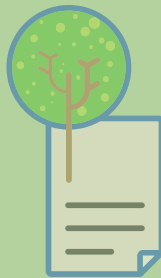
- ✔ This saved a total of **3,220 sheets of paper**, including 2,500 for the script and 720 for the daily schedule.

- ✔ By reducing the use of printed paper, about **121 kWh of energy** was saved, which is roughly equivalent to the **average electricity consumption of one person in Türkiye** for 11 days.

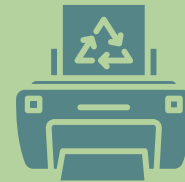




WASTE MANAGEMENT



On average, **24 trees** are cut down to produce **one ton of paper**, which is equivalent to around **200,000 A4 sheets**.



In cases where paper use was unavoidable, **recycled paper** was used to help reduce natural resource and energy consumption in the production process.

Using one ton of recycled paper prevents the cutting of **17 pine trees**, saves **1,750 liters of fuel**, and avoids the waste of **38,8 tons of water**.



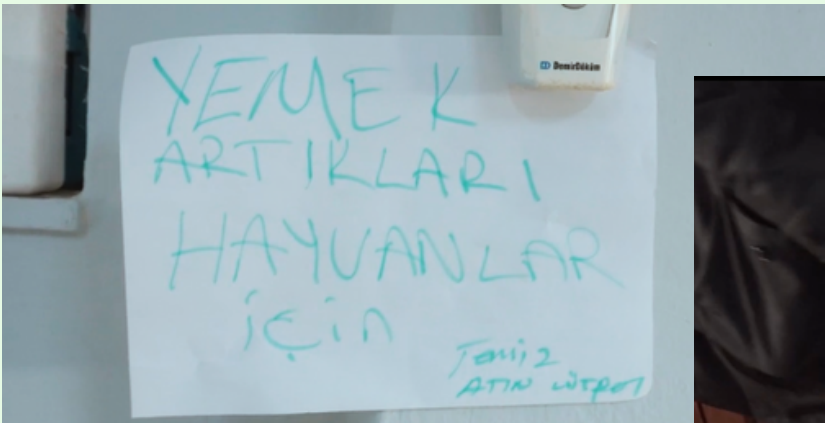
Reusable serving trays and other materials were used during meal distribution to minimize waste.



The food was prepared in a catering company's kitchen **200 meters** from the filming location.



Food waste was kept to a minimum, with any leftovers collected separately and donated to **animal shelters** by the production team.





The food choices on set were also considered in terms of their carbon footprint. Changing dietary habits, however, is one of the more difficult challenges in film production. Given the environmental impact of industrial farming, which significantly contributes to greenhouse gas emissions and raises ethical concerns, **plant-based diets** are increasingly being recommended.

Yet, convincing the crew to embrace a more plant-based menu was difficult. Many team members insisted on having meat at least once a day, so the menu was adjusted to meet this request in order to keep morale high. To further reduce meat consumption, **offering a greater variety of delicious and satisfying plant-based alternatives** likely requires additional encouragement.





SET CONSTRUCTION



The design of the film's set focused on **reusing** materials and promoting **upcycling**.



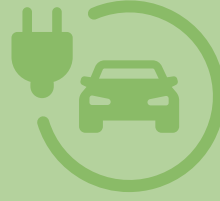
Modified decorations and props from previous sets accounted for 40% of the overall design.



30% of the materials were sourced from **recycled materials** of other productions.



Thanks to the dedicated efforts of the film's art director, Özüdoğru Cici, wooden panels from previous sets were carefully dismantled and stored for reuse, contributing to the creation of a **sustainable new set**.



ENERGY EFFICIENCY and REDUCING FUEL USE

As a science fiction film shot in a studio, *Once Upon the Future: 2121* would typically have relied on high-wattage lights consuming **40-50 kWh**, requiring a generator that burns approximately **80 liters of diesel** per day.



However, the film's director of photography, Kaan Çalışkan, used energy-efficient **LED lighting**, reducing energy consumption to just **10 kWh**.



This switch led to a remarkable **70% reduction in electricity use**.



ENERGY EFFICIENCY and REDUCING FUEL USE



No generators were used throughout shooting, saving an estimated **1,440 liters of fuel**.



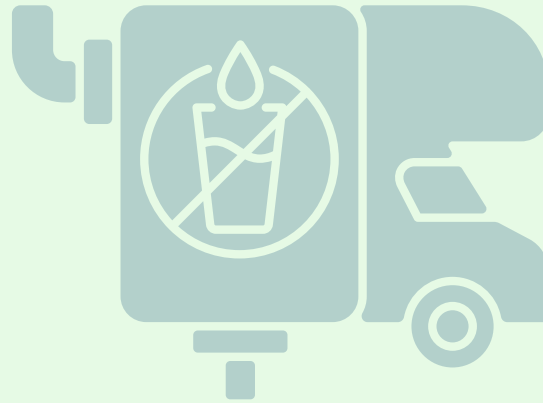
Instead of the usual four shuttle buses for crew transport, only two were used, cutting fuel consumption by about **800 liters**.



Additionally, by avoiding the use of at least three trailers typically needed on most sets, **another 1,100 liters** of fuel was saved.



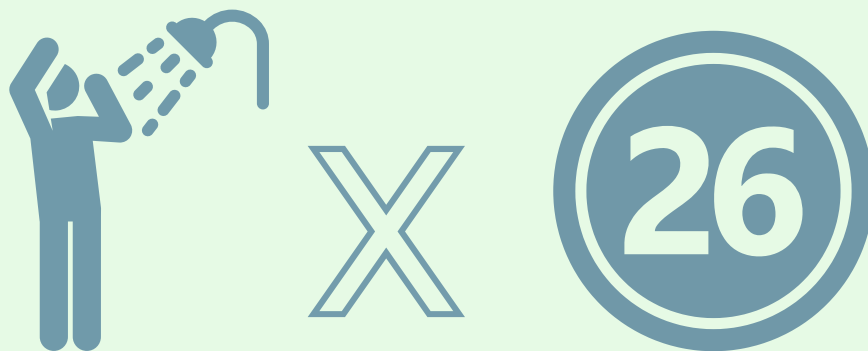
In total, **3,340 liters** of fuel were conserved, preventing roughly **9 tons of carbon emissions**.



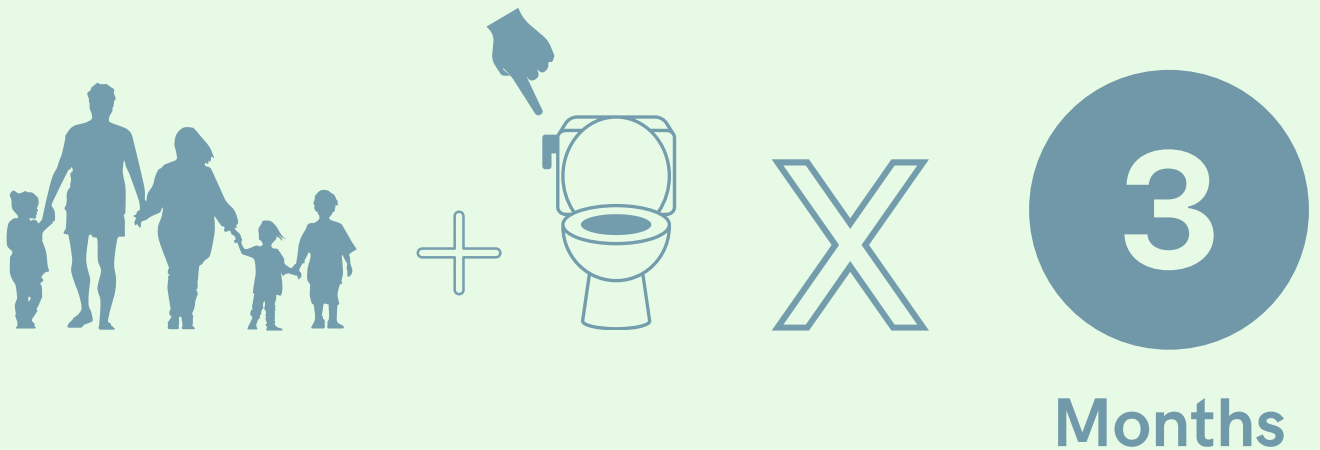
The crew avoided trailers for lead actors, makeup, and costume departments on set. This contributed to fuel and energy savings, as well as the prevention of wastewater. Typically, these trailers require fuel for the generators that power them during transport and on location. Dressing room trailers usually have a **200-liter wastewater tank**, while toilet trailers can hold up to **2 tons of wastewater**.

A dressing room trailer, typically used by 1-2 actors, needs to be emptied every 2-3 days, resulting in approximately **1,800 liters of wastewater over 18 days**. Toilet trailers, used by a crew of 50, fill up in just 2 days, leading to around **18 tons of wastewater over the course of an 18-day shoot**.

1,800 liters of wastewater is equivalent to the amount of water used for **26 showers**.



18 tons of wastewater is equivalent to **3 months of toilet water** consumption for a family of four.





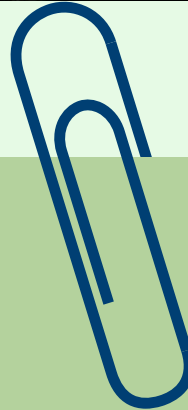
POST-PRODUCTION



All set pieces and props were carefully dismantled and **stored on-site for potential re-use** in future productions.



In contrast to previous projects where thousands of printed posters and materials were produced, no physical posters were created. Only **digital posters** were used, effectively reducing waste and conserving resources.



Despite being a science fiction film, many of the costumes could be easily **repurposed for everyday wear** with minor adjustments. Items like sweatpants were suitable for casual use, while others, such as work uniforms, were practical for daily life. The costumes were **distributed to those in need**, with some being sent to village schools.

BENEFITS, CHALLENGES, and KEY TAKEAWAYS

Adopting sustainable practices on set takes time because it requires **changing long-established habits.**



It was initially challenging for the crew to adapt to these new methods, especially given the fast-paced nature of the production.



Many crew members were reluctant to embrace the changes, so to help overcome this resistance, the team regularly reminded everyone of the positive impacts of sustainable filmmaking.



To encourage the team, a reward-and-punishment system was introduced.



Those who violated the sustainability rules treated the crew to baklava, which led to plenty of baklava being shared—especially during the first few days. Crew members who used public transportation to get to the set were rewarded for their efforts.

BENEFITS, CHALLENGES, and KEY TAKEAWAYS

By adopting eco-friendly filmmaking practices, significant savings were achieved.



Using sustainable methods instead of conventional ones allowed the film to be completed **on a lower budget**.



The decision to **eliminate generators, trailers, and trucks** resulted in savings on fuel, transportation, and travel costs.



While the initial investment in **LED lights** was higher, overall costs were still reduced due to the substantial savings on fuel.



However, when factoring in the weekly rental and fuel costs for the generator truck, using LED lights proved to be more cost-effective, ultimately leading to a **20% reduction in the overall budget**.



From the crew

"Our country is still in the early stages when it comes to sustainable practices, though on a global scale, environmentally friendly production methods aren't much more advanced. The impact of film sets on the environment and the importance of sustainable filmmaking are only beginning to be recognized. Under the pressure of a consumption-driven capitalist system, humanity hasn't fully embraced this reality yet. It's a gradual process, but eventually, people will come to understand the urgency. Making a film with sustainable principles is not something that can just be marketed; it requires a genuine commitment to the planet and the future. That's the belief and passion that motivated us. However, it would be beneficial if governments introduced regulations to enforce this. Without such measures, it risks remaining a romantic notion. We will only truly understand the gravity of the situation when our planet is beyond repair, and life becomes unsustainable. And by then, it will be far too late."

Korhan Uğur
Serpil Altın Film, Producer

Report by

Dr. Ekin Gündüz Özdemirci

Contributed by

Korhan Uğur
Funda Apa Aslan
Tankurt Mekik
Ersin Gök

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