Landfill: Designing for Low-Carbon Pleasures

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EXTENDED ABSTRACT

Landfill (2026) is a durational deck-building videogame hosted on *Solar Server*, a solar-powered web server created to host low-carbon games. This paper details the design and production of the game and details its' inspiration from Marxist de-growth philosophies that call to transform the economic sphere from the capitalist demand for scaling up to socialist planned scaling down. Rather than viewing degrowth as a sad or terrible constraint, it can instead allow for new frames of pleasure (Soper 2020). We argue that videogames, a leisure activity that currently has high carbon emissions, can be a part of envisioning and creating a post-growth future by using renewable energy alongside new design constraints. Turning away from high-fidelity graphics, ever-increasing file sizes and frame rates, videogames can offer pleasurable and other various affective experiences utilizing creative constraints.

Though there is theming of environment and climate in *Landfill*, the design takes from Ben Abraham that a truly eco-conscious game is "already aware of its carbon emissions, has already reduced its carbon footprint, has already decoupled itself from the resource extractive aspects of the games industry" (Abraham 2022, 82). The games' environmental intervention lies in the modes it is created and shared, leaving a much smaller carbon footprint than most digital games. *Landfill* leaves behind popular notions of green games or eco-games being persuasive or educational to the player, teaching them or moving them to real-life environmentalist behaviour. Instead, using an autonomous and solar-powered set up with games designed to be low-carbon, allows us to focus on the pleasure of playing the game, rather than particular perceived or desired social repercussions.

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Eco-socialist scholar Kohei Saito is a proponent of degrowth, arguing that the continuation of capitalism, even as it increases available renewable energy, will still increase environmental destruction. He details 'the growth trap', the fact that as the economy grows, the range of human economic activity grows too: "the volume of resource and energy consumption also grows, making it difficult to reduce carbon dioxide emissions… In other words, even green economic growth may cause increases in carbon emissions and resource use in direct proportion to its success…" (Saito 2020, 38). The transformation from a growth-oriented economy to degrowth, for Saito, should be democratically planned, rather than through crisis and collapse as we're headed now. Through a planned economy, some sectors would shrink, like arms manufacturing, advertising, private airplane travel, etc..) while some will be planned to actually grow and revalued in society, such as carework, health care, and renewable energy. A degrowth planned economy would entail less work, alongside more meaningful work, and allow for more time for pleasurable activities. Soper (2020) takes up the pleasure generated from post-growth, and our approach to Landfill's design closely aligns with it. She argues that the transition away from carbon-intensive consumption does not have to be framed as sacrifice, but can open space for new forms of pleasure and creativity. Working within the constraints of solar power, limited storage, and small-scale computation allowed us to experiment with an "alternative hedonism." The game moves towards the idea that low-carbon games can cultivate pleasure, creativity, and engagement without relying on didactic messaging or ever-increasing scale, showing that sustainable practices and pleasurable play can coexist in environmental games.

Landfill is the second game made for Solar Server. It is a systems-focused game that aims to reconstruct the deck-builder type of game from common designs like combat to a theme of composting and renewing land. Unlike most deck-builders, the player begins with too many cards and composts them as they play to streamline a unique deck. Furthermore, the game aims to bring players to awareness of real-life weather effects by having in-game changing abilities based on their real-life local weather. We use the geolocation of the player to determine the weather in their area and change ability modifiers for the cards, as one of the goals of Solar Server is to not obfuscate the effects of the climate on our technology.

The game unfolds as a durational experience. Players can only complete a few rounds per day, and the game then locks them out until the next day, continuing this cycle for a full week. This pacing resists the binge-play rhythms common in digital games and instead encourages a slower, more measured engagement while experiencing the changes of the weather over the period of playtime. It operates akin to a rogue-lite, returning to the same levels but with an upgraded deck. The cards themselves reflect various natural phenomena, broken into five different groupings. Scoring in the game is also cumulative over several rounds, meaning that decisions made in early parts of a ritual continue to have effects throughout, underlining the effect of small decisions aggregating over time. The gameplay loop is broken up and slowed down. In this way, we iterated on design techniques that may allow videogames to be a part of the degrowth movement.

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