

# Can game design help save the environment? A vision for a new economy...

This thought experiment is inspired by my educational background as a Philosopher and Historian, insights gained from working as a game designer for nearly 20 years and a deep concern about our current economy and environmental trajectory. A few years ago, I got the idea that the motivational mechanics of Free-to-Pay economies might inspire a way to motivate and communicate sustainable living on an individual level. The resulting vision of “The Eco Cash System,” I hope, could help inspire a solution to:

- Define and motivate a fair and sustainable way of life for everyone.
- Focus the global economic growth towards creating *better* rather than *more*, by operationalizing sustainability and quality as economic competition parameters on par with price.
- Help combat the unfathomable global economic inequality on an individual level.
- Be implementable over a relatively short time frame.

For those of you in a hurry, this is the short(er) outline version. For those interested in more in-depth argumentation, my 30-page article “The Eco Cash System” can be found in its full length on [www.ecocashsystem.dk](http://www.ecocashsystem.dk). If you find this interesting, please do share with your network.

## Introduction

Since 1970 – that is, in only 50 years – humanity has gone from annually consuming roughly 1 Earth worth of resources to consuming almost twice that today. This growth has happened within a capitalist paradigm, which has a number of clear motivational advantages, but sadly, also a great deal of negative side effects. We now need a new economical system which retains the advantages, but diminishes the negative traits.

Firstly, the system we need should be clearly understandable in its fundamental workings. Today everyone understands the idea of ownership, the exchange of money for goods or services and the individual's right and freedom to shape their own life and make their own fortune. This is something we would want to retain, and everyone – regardless of competence level or educational background – should be able to intuitively understand how to navigate the new system, making the new paradigm readily accessible for everyone.

In the same way, we want a system that leaves each individual with freedom, motivation, autonomy and control of their own lives and priorities. All of these are positive traits of capitalism and reasons why it has been so “successful.” However, while we need to retain the ideas of individual freedom and individual motivation, *we must also include the idea of individual responsibility.*

The formalization and operationalization of this responsibility – inspired by free-to-play game design – is meant to ensure that each individual pays the bill for their own life, in all aspects. This is what this new system proposes to add to the global economy. This is the core of the proposed paradigm shift.

To sum up these fundamentals, I've formulated "The Three Pillars of the Eco Cash System":

- *Each individual must be free to experience, interpret, prioritize and define what is "good" in life, as well as where and on what to spend their time and resources.*
- *Each individual must be motivated by and for themselves.*
- *Each individual is responsible for their own actions and the impact they have on the world around them.*

Comparing the Eco Cash system to traditional capitalism, the final pillar is the essential new ingredient added to fundamentally change an old recipe. While individual freedom and (especially) motivation is present in traditional capitalism, I would claim that responsibility is not – maybe in theory, but clearly not in reality. However, for this responsibility to be a fair demand towards all individuals across the globe, we must also adopt the fundamental idea of an equal right to exist. A right that I have sought to formulate in this way:

*All humans are born equal in their basic right to make a life on our planet, regardless of gender, skin color, sexual orientation, educational level, location, religion, ancestry, net worth or any other differentiating factor.*

Merging this fundamental right with the three pillars leaves us a vision of the Eco Cash System where:

*"You should be free to spend your resources and live your life as you wish, within the boundaries set by the fair individual share of the Earth's resources and the amount of money your life situation, time and skill allows you to earn."*

## **Free-to-Play Economy**

My main inspiration from Game Design comes from the multiple currency setups of Free-to-Play games. Here you'll find *Soft Currencies* (often gold coins) which are awarded to players often and whenever you play the game. They are *grindable*, as we say, meaning you can gain soft currency simply by playing more. In short: time, skill, effort and luck awards you soft currency – and, as such, it closely mirrors the relationship between money and work in the world today. The harder and longer you work, the more skilled and lucky you are, the more money you earn.

On the other hand, you have the *Hard Currencies* (often gems), which traditionally offer direct access to progression and privileges. These are rarely rewarded by the system and

only in limited amounts. It is a scarce resource that can only be acquired in large quantities by purchasing it for real world currency.

This leaves the players with two options: either you purchase Hard Currency for real world currency (effectively paying to play) or you adapt your playing patterns and progress more slowly through a combination of Soft Currency grind and patience.

## Introducing EcoCents

Similar to the Free-to-Play games, it is my proposition that we integrate a new global (hard) currency into the existing world economy, while we keep our current national currencies as soft currencies. For the purpose of this article, that hard currency is called *EcoCents*.

Our main issue is that we inhabit a planet that does not have infinite resources – far from it. The resources offered up by the planet have a hard limit. Therefore, this hard currency would be distributed evenly among individuals in an amount that mirrors the resources of the planet 1:1 – thereby defining the individual’s free and fair access to resources in a world of global sustainability.

As with the hard currency of free-to-play games, this would leave each individual with the following two options: either you purchase more resources (effectively paying to overspend) or you adapt your living and spending patterns to align with living sustainably.

## EcoCent Circulation

This Eco Cash System would include the creation of a single, centralized, non-profit and non-political organization to govern the distribution of EcoCents and all that comes with this – let us call it *The Foundation*. The function of this entity and EcoCent circulation are outlined here in the 5 steps below.



*The circulation of EcoCents – from The Foundation through consumers and companies and ultimately back to The Foundation. This (simplified) model is outlined over 5 steps.*

### Step 1: EcoCent Distribution

The Foundation would hand out EcoCents every month and *only* to individual citizens of the world. Following the principle of “an equal right to exist,” each individual would get an equal amount, with the total amount of EcoCents distributed matching the total resources that can be sustainably extracted from the Earth within the same period.

### Step 2: EcoCent Spending

We’re all used to making currency transactions in return for a product or service and we have the technology and infrastructure in place to do so. With the introduction of EcoCents, every transaction of currency in return for a product or service that has *any* form of resource consumption or creates *any* form of pollution would be accompanied by an additional transaction in EcoCents. This means that all prices would become a set of numbers: the monetary cost and EcoCent cost of the product.

Whenever consumers purchase a product or service, they pay an EcoCent cost equal to the seller’s EcoCent expense to deliver that product. This cost is an accumulation of all expenses to create and deliver the product. In this way, companies can access and accumulate EcoCents to pay their own suppliers – retaining an interest in keeping the EcoCent cost as low as possible to remain competitive, while still reclaiming the full amount spent to avoid accumulating an EcoCash deficit which would have to be compensated for.

### Step 3: From Sales to Manufacturing

Companies – from supermarkets to airlines – would be spending the EcoCents acquired from their clients on making purchases of their own when paying their suppliers. In this way, EcoCents migrate to the manufacturing companies who supply everything from packaged food and cleaning agents to automobile parts and airplanes.

This also means that, while we would still be able to have “free” services, such as social media, where users pay with their privacy and time instead of money, they would likely only be “free” in terms of classic monetary transactions. With the Eco Cash system implemented, users would most likely have to pay their fair share of the EcoCents consumed by the company on server parks, electricity, office spaces, coffee, toilet paper for their employees and so on.

Obviously, many companies have divisions across different steps in this cycle and often use elements from other companies within the same step, effectively creating loops within this simplified model. However, ultimately, manufacturing of goods relies on resources somehow being extracted from the Earth.

#### Step 4: Extracting resources from the Earth

As the companies pay for their raw materials, energy consumption and many other things, the EcoCents would funnel down into the Extraction Industries that lay the foundation for all products. Examples of these industries would be mining, fossil fuel, foresting, fishing, farming and many others – all of which extract resources from the Earth, be it finite or regenerative.

While these companies would require some services and manufactured goods to support the extraction itself (and would therefore pay some EcoCents back to the Manufacturing and Sales level), their ultimate resource is the Earth itself – our common foundation.

#### Step 5: Returning the resources to The Foundation

For this reason, these Extraction Companies would pay a set EcoCent price – based on scientific analysis and set by The Foundation – for the ecological impact, resource extraction and potential pollution. This would be paid to The Foundation, which would thereby essentially recollect the EcoCents distributed among the world's population.

This recompense of EcoCents should aim to match the ecological impact in all aspects – such as (but not limited to) pollution, extraction of non-regenerative resources, reduction in wildlife population and habitats, impact on biodiversity, degradation of soil quality and so on.

This also means that these companies would be interested in minimizing any unnecessary resource extraction or pollution. This is because any unsold/unused resources and/or unnecessary pollution would lead to an EcoCent deficit that again would have to be compensated for, and which would in turn reduce the company's ability to compete.

In the ideal case, all individuals and companies should be able to balance their EcoCent gain and consumption. However, there will be a need for the system to be able to handle EcoCent overspending – both willful and accidental due to unforeseen events.

### **Overspending**

It would be an utopian thought that we would all be able to switch to a sustainable way of life overnight. Especially in some countries, such a shift will mean a fundamental change in the way we live and consume resources. To give a few examples: While the Earth Overshoot Day was August 1st in 2022 from a global perspective, Denmark (my home country) overshot on March 28th and The United States was even earlier on March 13th. On the other side of the scale, we find a country like Indonesia with an overshoot day of December 3rd.

Because transitioning into sustainable living will take time, this framework includes a mechanism to make individualized overspending possible (to some extent). However, it does so in a way which ensures that this should balance out over time and the initial overconsumption in certain countries would, in fact, be compensated for by generating green

investments and ensuring an automatic redistribution of wealth in return for less resource consumption in other parts of the world. On top of that, these changes would also help combat the extreme global inequality in wealth and pollution.

Again the solution is inspired by the game industry – namely by the auction houses found in MMO games and the concept of “diminishing returns,” which is often used when balancing game mechanics.

## **EcoCent Trading**

In order to handle the issue of overspending, the proposed solution is to introduce a global Eco Cash Exchange under the control of The Foundation. Here individuals may trade EcoCents in return for traditional currency, with The Foundation working as an intermediary. In effect, this would allow individuals to exchange small amounts of Hard Currency (EcoCents) for larger amounts of (otherwise grindable) Soft Currency (Money) or vice versa.

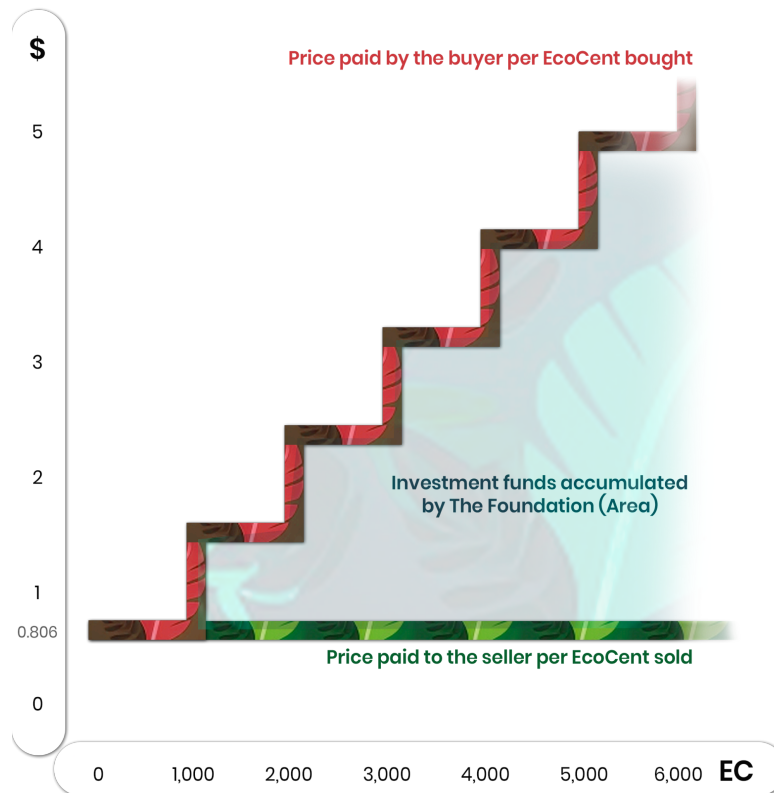
Overall, this hard currency trading would likely result in a significant transferral of monetary wealth from “first world” individuals (not states) to the population of developing countries, as people in richer countries would spend soft currency (money) to allow and compensate for “overspending,” while individuals in developing countries with a current smaller environmental footprint can sell their excess EcoCents to increase their living standards here and now. Over time, this should level out as “first world” individuals become accustomed to sustainability and rising living standards will result in more people around the globe being able to consume their own fair EcoCent allowance.

The EcoCash Trading price would be set by The Foundation (rather than by supply and demand) for a number of reasons, but primarily to make sure that the traditional soft currency economy cannot govern the EcoCent hard currency economy.

The proposition here is to again look at game design and the concept of diminishing returns. Individuals may trade EcoCents at the base price to begin with, however, buyers will experience an ever increasing price the more they buy, until the diminishing returns periodically resets. This ensures that wealthy individuals cannot circumvent the system through excessively purchasing EcoCent resource rights. Balanced properly, this should allow for some overconsumption until sustainability becomes the norm, but prevent ridiculous overspending as is sometimes seen with (for instance) the super rich. This increased price of overspending will nudge individuals towards sustainable living, as taking individual responsibility for your overconsumption will be expensive and require you to work and earn more, instead of “just” managing your consumption and way of life.

By requiring a similar payment, governed by diminishing returns, from companies and other organizations to compensate for overspending, these organizations will also be motivated towards minimizing waste and optimizing production. The reason is that paying to compensate for not meeting their responsibility will hurt their ability to compete on the global market more than investing in sustainability. Effectively, sustainability and product quality should become governing competition parameters.

On the other side of the equation are the EcoCent sellers. They will always be paid the fixed base price, contrary to the EcoCent buyers who will pay an increasing price per EcoCent due to the diminishing returns policy. This will likely result in a considerable accumulation of funds within The Foundation – funds that total the difference between the price paid by EcoCent buyers and the amount of funds paid to EcoCent sellers.



*The difference between the money paid by EcoCent buyers and the funds returned to EcoCent sellers would be significant (the area between the two graphs). These funds would be invested by The Foundation with the purpose of increasing the health of the planet and the quality of life that comes with sustainable living. This will be covered in the section on The Foundation and its investments below.*

## Creating Investments

With these funds, The Foundation would become a global investment force, with the following objective: to operate and invest perpetually with the sole purpose of *increasing the health of the planet and the quality of life that comes with sustainable living*.

This should create a continuous flow of investment in the broad field of sustainability, which would also be able to help alleviate some of the undeniable consequences of transitioning to sustainable living – primarily the reduction in consumption and thus loss of jobs in certain sectors – by ensuring large new investments in sustainable production methods and other areas.

To help focus the investments to the hardest hit areas, the proposition is to create a flow of investments that can be outlined as follows:

Step #1 - Local Investment: Funds coming directly from EcoCent trading would be invested in the geographical area from which they originate. The areas which will see the largest reduction in consumption are likely to initially see the largest purchases of EcoCents to allow individuals to overspend during the transition to sustainable living. This also means that these areas will see the largest funds gathered for initial investments to help compensate for the reduction in consumption.

Step #2 - Global Investment: Funds coming in as “return on investments” (from Step #1) will be “unlocked” for global investment, as well as environmental efforts which will never deliver any return on investment. These investments are truly aimed at the central purpose of “increasing the health of the planet and quality of life that comes with sustainable living.”

In this way, The Foundation is intended to ensure an increase in global investments over time that are not driven or funded by nations or politics, but rather by individuals and their responsibility to “pay the bill” for their own way of life.

## **EcoCent Cost, Product Quality and Reusability**

By adding a “write-off” period to all products, which gradually lowers the EcoCent cost of products sold as second hand or even as a reusable materials, the Eco Cash System should also help support secondhand trading, upcycling and recycling of materials. At the same time, it would also make the true environmental impact of purchasing new vs. second hand apparent to all consumers.

Purchasing a secondhand bike would cost you less money, as well as fewer EcoCents as it has already been created and used for a part of its expected lifetime and write-off period. Moving on further – beyond the full write-off period – we could see products being sold for zero EcoCents, making secondhand purchases a good way of transitioning into sustainable living.

At the same time, these materials would become a “gold mine,” as they would allow companies to lower their EcoCent production costs as recycled materials would be cheaper (in EcoCents) than new materials extracted from the Earth.

In a similar fashion, upcycling designers would be able to create “new” furniture and many other things at very low EcoCent costs, enabling them to actively compete against larger corporations creating new, cheap goods – as they would offer consumers a clear and different value proposition of a (likely) higher monetary cost, but much lower EcoCent cost.

The impact of the Eco Cash System on these areas would likely be massive and could potentially lead to the creation of whole new industries in the area of re- and upcycling that would be able to compete on the new market terms, where sustainability, durability and quality would be governing parameters valued by all consumers.

## A last note

I hope you've found this thought experiment interesting and perhaps worth sharing. In the full paper, I go more in depth and also consider implementation and other things and I hope you've been inspired to now read it in full. However, both there and here, my concluding hypothesis is this:

By adding a new "hard" currency, EcoCents, to our economy, we should be able to accommodate and operationalize the three pillars of Individual freedom, Individual motivation and Individual responsibility, as well as the underlying axiom that all humans are born equal in their basic right to live on our shared planet. This task requires no new technologies or hypothetical moonshots, but rather it requires that we recognize the unsustainability of our current economic paradigm, accept the inevitability of future change and choose to act.

Through a system like this, I propose that we can transition gradually into global sustainability and, in doing so, help counter the increasing global inequality, which is best showcased by the extremely unfair fact that, [according to the IMF](#)<sup>1</sup>, 1% of the global population owns 38% of global wealth and emits 17% of global CO<sub>2</sub>. The redistribution of wealth through Eco Cash trading could increase the living standards in developing countries and secure vast investments into a sustainable economy, which would likely lead to a stronger and more stable global economy at the end of the century.

In this era of the Anthropocene, we must accept that mankind needs to be the master of our own fate and act responsibly for our own sake and that of future generations. This is not just about the planet or whether Mother Earth will survive the onslaught of mankind. She will endure and has already existed through worse catastrophes than the rise of man. This is about the present and future existence of mankind and how we shape our lives and the world we live in – both socially and environmentally. It is about the fact that, with rationality, thought and free will comes responsibility. We are responsible for the world we create for ourselves and for the children we put into this world. *You are responsible.*

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<sup>1</sup> <https://www.imf.org/en/Publications/fandd/issues/2022/03/Global-inequalities-Stanley>