

UPF COIN: the Unplastifying token

Plastic pollution is the result of a failing system. The world got used to using an indestructible material in a disposable way for its convenience. The companies that use this material are mostly interested in changing, from an environmental and reputational point of view (and in some cases pressed by regulations), since consumers are asking for solutions and responses to the environmental crisis.

Recycling is part of these improvement efforts, and although it is necessary, less than 9% of the plastic produced is actually recycled. Unplastify believes that the solution to the problem lies in “Unplastifying”: in reducing, minimizing and avoiding the use of disposable plastics.

Unplastifying processes could easily happen if there were effective alternatives and the transition costs were low, or, if companies had to internalize the costs -environmental and societal- related to the entire life cycle of the products they put on the market (externalities today). In reality conversion costs are high, externalities are ‘paid’ by the environment and society, and disposable plastic continues to be the material of choice.

UPF COIN is the token that gives value to Unplastifying, making it visible and traceable to generate an incentive towards change. UPF COIN is issued with purpose and with collective value. It is traceable because it will run on the blockchain and validation will depend on a decentralized network that will recognize transformation efforts. It is issued with purpose as each token will be backed by a tonne of validated avoided plastic. With collective value because it will be valued collectively when proving plastic reductions. The entities that are able to prove they have unplastified their products or operations will be able to mint UPF COIN. They will generate reputational value and will be able to sell tokens to other organizations searching to offset their footprint. In this way they will be able to recuperate the costs incurred when Unplastifying their operations. As the token community and market grows, incentives become aligned to an unplastified world.



Unplastify, April 2022.

“Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit -- in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.”

Garrett Hardin

The plastic problem

Plastic production increased tenfold since 1970, faster than any other raw material and almost 60% faster than global GDP ([IEA - Agencia Internacional de Energía, 2018](#)). 368 millions tonnes of plastic were produced in the world, in 2019.

As for projections the International Energy Agency estimates that plastic production will continue to rise and could reach 540 MMT in 2040 ([IEA - International Energy Agency, 2018](#)) - this means 147% growth versus 2019. These trends are based in two main drivers: (i) a larger share of oil will be used for plastic production due to restrictions for energetic uses ([Foresight, 2020](#)), and (ii) an increment in plastic consumption from developing countries following developed countries consumption patterns; the latter consuming up to 20 times their per capita consumption ([IEA - International Energy Agency, 2018](#))¹.



8 million tonnes of plastic end up in the ocean each year ([Jambeck et al. 2015](#)). Plastics do not biodegrade, plastics do not disappear.

Plastics not only affect more than 600 marine spaces, but also affect human beings and entering our food chain². According to Galloway, some additives found in plastic products are hazardous as they are listed as potential cancerogenous or mutagenic agents ([Galloway, 2015](#)).

The plastic problem is associated with multiple environmental, social, and economic costs called externalities. As Figure 1 presents, the cost of plastic externalities is estimated to be at least 10 times larger than its market price paid by plastic producers ([WWF, 2021](#)). This is, without considering the costs of post-consumer emissions, upstream and downstream health costs of the production process, and ecosystemic costs.

¹ According to study, the annual per capita consumption of plastics in Germany is 175.32 kg, while in the United States it is 124.18 kg; and instead, in Argentina 65.475 kg and in India 3.65 kg. ([Our World in Data](#))

² A study by the University of Newcastle ([Senathirajah y Palanisami, 2019](#)) concluded that a person might ingest approximately 5 grams of plastic each week, the equivalent to a credit card. (World Economic Forum, 2019).

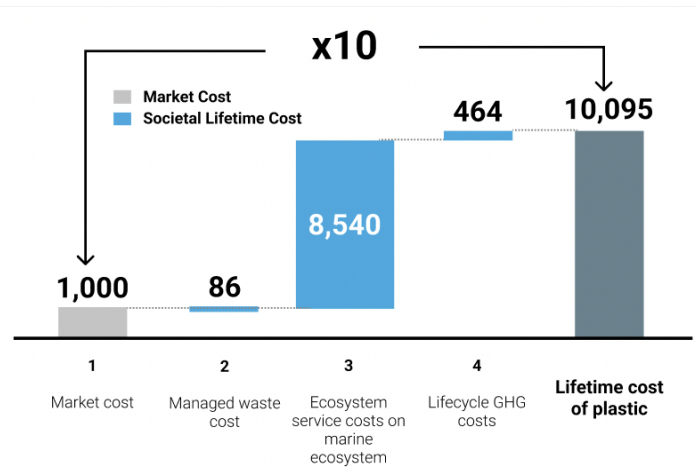


Figure 1: The plastic lifecycle cost per tonne in USD - Based in 2019 plastic production

Considering **the actions that arise to solve this problem**, it is worth noting that the initiatives are taking place at all levels: international, public, and private. In the International field, the issue has been strongly positioned in the agenda of the United Nations agenda³ and, in turn, multiple alliances, coalitions, and commitments have been created that integrate the efforts of nations, companies, and organizations.⁴ In the public sphere, there are more and more regulations related to plastic in the world, mainly within the framework of extended producer responsibility schemes that seek to ensure that producers internalize the management costs of their products at the end of their life cycle. Finally, in the private sector, particularly large mass consumption companies, some explicitly and others implicitly recognize themselves as part of the problem, and declare objectives and plans to mitigate their impact. Only a few of them set absolute reduction targets for the use of plastics (either virgin or recycled materials). According to one research, even if all the public commitments assumed by these sectors were met, between 2016 and 2019, the amount of plastic entering the oceans would be reduced by only 7%.⁵

Analyzing international initiatives, regulations and corporate efforts, it is evident that despite the inefficiencies of recycling as a solution, the focus is often placed there. Unfortunately, recycling is not the solution. While recycling rates vary by region, on average they do not exceed 10% of plastic waste.⁶



Of all the plastic ever produced, only 9% was recycled (Geyer et al, 2017).

Although it is positive that there are so many efforts aimed at solving the problem, these initiatives attack the symptom, seeking to eliminate plastic pollution, eliminating plastic waste, and improving recycling. Actually little is said about attacking the root of the problem, seeking to reduce the use of plastic or changing the human relationship with this material that is out of control, is overused, and is the main cause of the problem and the key to its solution.

³ The president of the 2008 UN General Assembly incorporated plastic pollution as one of the seven priority issues on the Agenda (ONU, 2018).
⁴ EU Circular Plastics Alliance, Alliance to End Plastic Waste, New Plastics Economy.
⁵ Breaking the Plastic Wave (Systemiq, 2020)
⁶ The historical average of recycling rate is 9% and the current rate is also 9%.

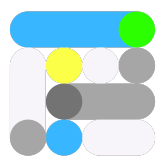
Unplastify

Unplastify is a social enterprise on a mission to change the human relationship with plastic. Unplastify accelerates systemic processes with individuals, organizations, companies and governments, minimizing the use of disposable plastic through the re-design of operations, habits, and norms.

It is based on the following premises:

- **The problem is not the material but its use and abuse.** Every year, each person in the world consumes 45 kgs of plastic and 42% of that is disposable packaging (Geyer et al, 2017). We use an indestructible material in a disposable way and we use it excessively.
- **Recycling is not THE solution, the key is prevention.** While it is necessary to recycle more and better, the only effective solution is to reduce - minimize the use of plastic through new innovative production and consumption models.
- **An Unplastified world is possible and necessary.** Our vision does not mean a world without plastic, but a world without disposable plastic. By changing the human relationship with plastic we can attack the root problem.

Like any economic system, the plastics economy is governed by incentives. Nowadays, the existing incentives encourage the continuity of its operation, since they do not consider the previously exposed environmental and social costs. That is why Unplastify creates and designs this token to align these incentives towards Unplastifying.



UPF COIN (UPFC) generates value to unplastifying processes making it visible and traceable while giving an incentive towards change.

Rationale

Plastic is a very convenient material: light, strong, cheap, ductile. Its industry developed exponentially in the last 50 years and the world became dependent on the material for its many uses in everyday life.

However, its low costs do not account for the environmental and social costs of its entire life cycle. There is a lack of alternatives and incentives for conversion. Alternative materials are not effective or competitive. In addition, organizations that rely so heavily on this material present high conversion costs.

The Reputational Value

The greatest incentive that the main actors of this system have towards conversion is reputational. As mentioned before, the large companies that inject single-use plastic into the market through their products make commitments to manage their future impact. Likewise,

these companies support and finance global initiatives to demonstrate their actions to tackle the problem. These initiatives focus on waste management, cleaning and recycling, but do not solve the root problem - redesigning the production chain to reduce the use of single-use plastics. This may be due to a conflict of interest: those who finance their efforts choose recycling over conversion. At the same time, many existing seals and certifications are experiencing a credibility crisis and need to improve their transparency standards⁷.

However, the reputational value of a company, exposed on social media and monitored by its consumers/users, is increasingly important. With the growth of networks, collective validation has become very important. Consumers choose brands that align with their interests and principles, and studies show that they are increasingly alarmed by plastic pollution⁸. New technology enables user validation and refutation of data in a simpler and faster way. Those statements that previously passed without question are now subject to collective validation by both, private users and fact checking third parties.

Therefore capitalizing on collective validation and public opinion through a decentralized and verifiable system will help to align incentives. This is precisely what the Blockchain technology allows.

Background

The carbon footprint scenario could be considered as a similar case to the plastic matter. Initially, companies did not have a record of their emissions and there were no carbon footprint measurement protocols. Around the 90s, the climate change and greenhouse gasses - GHG - issue started to gain relevance. The Kyoto Protocol⁹ (1997) arises so that states commit to reduce and avoid GHG emissions. As this issue gained popularity, several measurement protocols were established. Carbon credits were created as a compensation¹⁰ mechanism and governments and international organizations assumed greater commitments.

Today, facing the climate change crisis, regulatory risk, shareholder pressure and reputation, more and more entities are investing in carbon credits to offset their carbon footprint. In some cases they are required by regulations of the countries in which they operate, and in others they do so voluntarily. In this way, the carbon market grew and positioned¹¹.



Projections made by Unplastify indicate that disposable plastics will follow a similar path to that of the carbon market, but accelerated.

⁷ Bouslah et al. (2010) argue that first- and second-party certifications are not credible, due to inherent conflicts of interest, implying that standards that require third-party certification are superior to those where it is optional. ([Castka & Corbett, 2015](#))

⁸ According to a recent BCG survey, plastic is now considered the most negative material used for consumer items, with 65% of global consumers associating it with ocean pollution and 57% considering it harmful. Adrien Portafaix, Partner and Associate Director, Social Impact Practice, Boston Consulting Group” ([UN Treaty on Plastic Pollution, 2020](#))

⁹ The Protocol of the United Nations Framework Convention on Climate Change ([UNFCCC](#)). It is an international agreement that aims to reduce the emissions of six greenhouse gasses (GHG).

¹⁰ The first carbon market that existed, and one of the most established, is the EU that emerged in 2005. The EU regulates the carbon emissions allowed by the organizations. When these exceed the established emissions, they must acquire carbon credits from the market to offset their footprint.

¹¹ Carbon prices in the European Union reached a record after COP 26. Despite delays in the decisions of COP 26 in Glasgow, carbon prices in the EU have more than doubled the level of early 2021 after the UN climate conference, as they are accepted as tool for decarbonization. ([Ciat, 2021](#))

However, having the carbon scenario as background, UPFC seeks to strengthen the weaknesses of this market, such as transparency targets and the incentives for mitigation. A fundamental difference is that UPFC will not generate a future credit - or a credit system for the future - but will reward the conversion that has already happened and reduced plastics, although there may also be regulations and international commitments that promote it.

Positive trends

In the current scenario, there are plenty of challenges and a lack of incentives to change the plastic system. However, there are favorable trends that align with UPFC's vision. In recent years, the financial market has shown a growth in investments on assets that meet Environmental, Social and Governance standards known as ESG. Investments on ESG increased reaching \$30 trillion in 2019, growing 68% since 2014 ([McKisney, 2019](#)).

Moreover, in recent years regulations and incentives have appeared at the international, national, and sub-national levels. As for example, the UN proposal for a Global Treaty against Plastic Pollution presented in 2020 already has signatories from multiple sectors and representatives from the entire plastics industry chain ([UN Treaty on Plastic Pollution, 2020](#))¹².

It is important to mention that all these positive changes are taking place, thanks to responsible consumers. New generations are willing to spend more money on sustainable products ([Hiroshima University, 2021](#)) and they already changed their consumption patterns/habits based on the causes they support¹³.

UPFC

The plastic problem is out of control. There is a lack of incentives to combat the benefits of this material. Based on the favorable trends - the growing value of collective action and reputational value - Unplastify creates UPFC. UPFC is a token that makes conversion visible and tangible by aligning a system of incentives towards the solution.

Value Proposition

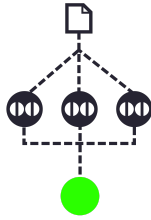
UPFC is a token ERC-20¹⁴, a crypto-active that generates tangible value to unplastifying processes making it visible and traceable while giving an incentive towards change.

1. It runs in blockchain, and it is issued by Unplastify in base to a Proof of Unplastify Work that demonstrates the avoided disposable plastic.
2. Issued with purpose: each UPFC minted equals 1 tonne of validated avoided plastic.
3. The value of this crypto-asset increases as the collective value of demonstrating plastic displacement grows.

¹² The Treaty recognizes plastic pollution as a transboundary problem, which must be addressed urgently, in a systemic way, to provide a response that addresses the root problem, and ending plastic pollution. The treaty includes upstream and downstream policies to limit the use of plastics.

¹³ A study conducted by McKinsey showed seventy percent of respondents trying to buy products from companies that they consider to be ethical. Eighty percent say they remember at least one scandal or controversy involving a company. 65 percent try to find out the origins of everything they buy: where it's made, what it's made of, and how it's made. About 80 percent refuse to buy products from companies involved in scandals. ([McKinsey, 2018](#))

¹⁴ In xDai Blockchain - More details in [UPFC in Blockchain - Technology](#)



The backup of 1 tonne of validated avoided plastic per each UPFC will be traceable, because it runs in the blockchain, and validated by the Validators Network.

How does it work

UPFC is minted according to the amount of validated avoided plastic. Those entities that want to obtain the UPFC tokens will have to demonstrate the Proof of Unplasticity Work. In order to prove the Unplasticity process they will have to present information and supporting documentation that demonstrates their displacement and the amount of plastic avoided between two periods (example: March 2022 vs. March 2023). During the validation process the data will be analyzed and its veracity will be verified. Those organizations whose applications are valid will receive as a reward the corresponding tokens and will be able to show them as a proof of their avoided plastic. The reward will be distributed between the Unplasticified organization, the Validators Network and UPF Decentralized Autonomous Organization (DAO).

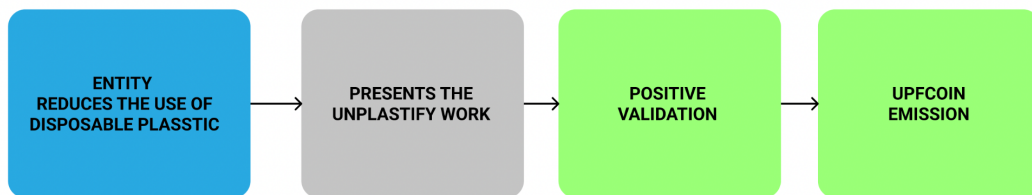
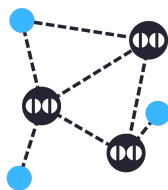


Figure 2: UPFC emission process

Governance - UPF DAO

UPFC begins with the idea of collective validation to diminish the current power distribution in the system, and generates a tool to empower the collective and change the incentives.



Since the beginning, UPFC was designed to be governed by a Decentralized Autonomous Organization: UPF DAO.

During the first stages Unplasticify will have full control of UPFC process and development. The Validation Protocol will be developed and optimized to be executed in the future by the external Validators Network that will run in blockchain and form part of UPF DAO.

As the community committed to this matter grows and actively participates in UPFC, the DAO will be formed, and Unplasticify will release control over UPFC to be ultimately governed completely by UPF DAO.

UPF DAO members will be: The Unplasticify Lab (the Unplasticify team dedicated to the project, developers, founders), advisors, investors, network developers and validators.

Actors Involved and Value Proposition

UPFC proposes a change in the incentives of this economic system of plastics. Below, the stakeholders are briefly described and their interaction with UPFC is presented.

I. Unplastified Entities

Those entities using disposable plastic in their products, operations, or services that have implemented different methods to avoid or reduce it, will be able to demonstrate and capitalize their conversion. Therefore, they will present their Unplastify Work to be validated, and once verified, they will receive the corresponding tokens to the avoided plastic. Immediately after, they might communicate their reductions achieved to tackle plastic pollution. Reputational value will be benefited from this and also, the entity's value.

In case of companies, only companies of goods and services¹⁵, will be able to mint UPFC. These organizations use semi-finished products, containers and packaging, or consumer goods. This companies might be of any scale and category:

- Products (ex: cleaning, food, personal hygiene)
- Services (ex: hotel, gastronomy, consultancy)

Although some companies have various roles in the production chain, companies in the primary sector, the petrochemical industry (produce plastic pellets), transformers (transform pellets in products), or recyclers, will not be able to mint, if they do not also fulfill the role of mass consumption as described.

UPFC rewards the conversion made and supports it with traceability. As the token appreciates, its conversion costs can be offset by selling it on the market to investors, or companies looking to mitigate its impact (detailed below).

II. Alternative Companies

These companies manufacture goods and services that replace single-use plastics. They will be able to promote UPFC to their clients as an additional reward complementing their goods or services implementation. Once their clients have chosen them as an alternative to plastic, UPFC will certify their plastic reductions. This option is exclusive for companies that provide goods and services to other companies (B2B). Companies that offer alternatives to the individual final consumer (B2C) will not be able to mint.

UPFC enhances the value proposition of Alternative Companies, by providing a shared benefit. In these cases, the minted UPFC will be distributed 50%-50% between the Alternatives Company and the Unplastified Company.

As plastic avoidance becomes more valuable, the tokens will serve to offset their customers' conversion costs. Alternative Companies will be allies in Unplastify processes. Their contribution will be compensated as plastic reduction becomes more valuable, thus encouraging its growth.

¹⁵ For the purposes of this document, the plastic industry includes various sub-industries or sectors according to the products obtained throughout the production chain: 'Primary sector', 'petrochemical sector', 'transforming industry', 'enterprises of consumer goods and services', 'plastic recycling industry'.

III. Crypto Investors

Here are the reasons why individuals or entities will invest in UPFC: (i) to contribute economically to unplastify processes (giving back money to the company that minted the token; reducing unplastify costs), (ii) to bet on the valuation of UPFC, or (iii) both.

Those entities investing in UPFC, will be able to communicate their possession and investment in UPFC, showing their support to Unplastify mission in their balance sheets and communication pieces. They will also be able to accept UPFC in the partial payment of products and services and in this way, stimulate the use of the token. (These companies will not be mitigating the impact, but simply valuing and making the token visible, the process to mitigate the plastic footprint is described below).

IV. Entities that Mitigate Plastic Footprint

Those entities that still cannot modify their products, services or operations, and seek to mitigate their plastic footprint, to become Plastic Neutral, will be able to buy UPFC from those companies that have obtained their tokens for their own Unplastify Works, or from those who own UPFC in the market. These acquired UPFCs will be exchanged for an NFT that will demonstrate their mitigation, and the corresponding UPFCs will be burned (Details in [Burning and impact mitigation](#))

V. Validators

In the first version, Unplastify will be in charge of the validation of the Unplastify Work. Once the validation process has been systematized, external validators will start verifying the Unplastify Work. Validators will be a key to this process. For each Unplastify Work there must be a minimum of 3 validators. This number will grow as the size of the applications grows, forming a Validation Network that will be within the framework of the UPF DAO.

Those who want to be part of this Validation Network must obtain a training certificate from UPF DAO. Their incentive to join will be the purpose and the rewards they will receive for the validations carried out, regardless of whether their results were positive or negative. A percentage of the stake of the applicant company will be distributed among the validators of that Unplastify Work. To add an incentive, within the participating validators, 50% of the total validation reward will be given to one of the validators randomly and the remaining 50% will be distributed among all the others.

VI. Government

Once the UPFC incentive system has been established and a critical mass of operations has been generated, governments willing to join the system will be able to work collaboratively:

- Encouraging the transition to alternative models, Unplastified;
- Limiting the use of disposable plastics, especially single-use ones;
- Granting tax benefits to those entities that demonstrate Unplastify processes through UPFC.

UPF DAO will be able to allocate its own tokens (of those that UPF DAO receives each time new tokens are minted) to governments so that they can use them to support and develop this type of programs.

Proof of Unplastify

UPFC is minted based on the verified Proof of Unplastify Work.



The Proof of Unplastify is the demonstration of avoided plastics in products, goods, and services of an organization.

The measurement of plastics used by an organization is carried out in accordance with the Plastic Footprint Protocol.

The Plastic Footprint is made up of three scopes:



Primary

Packaging in direct contact with the products or disposable plastic products used by companies in services.



Secondary

Packaging that packs the products for transfer to the point of sale/use or from the point of sale/use.



Tertiary

Logistics and packaging used in the production of products. (Of this, the applicant companies might issue only the 50%)

Plastic Footprint

The Plastic Footprint measures an organization's plastic consumption in its products, services and/or operations. Measuring the Plastic Footprint before (P1) and after (P2) the conversion to avoid the use of plastics, that results in the Unplastify Footprint, which represents the plastic avoided by this transformation process.

The comparison of one period (P1) and the next (P2) is made from the difference between the plastic consumption ratios per unit of product or operation. We call the Plastic Consumption Ratio the Unplastify Ratio when it is negative.

$$\text{Ratio } P1 \text{ (tn/unit)} - \text{Ratio } P2 \text{ (tn/unit)} = \text{Unplastify Ratio (tn)}$$

To establish the Unplastify Footprint the Unplastify Ratio is multiplied by last period sales, period post-conversion (P2).

$$\text{Unplastify Ratio (tn/unit)} * \text{Sales P2 (unit)} = \text{Unplastify Footprint (tn)}$$

Unplastify Work submission (preliminary)

When presenting the Unplastify Work, the first period (P1) must be over the plastic consumption of the 12 months previous to the conversion. The second period (P2) must be of at least 6 months and validate that the operation was maintained.

Those organizations that submit their Unplastify Work applying toUPFC, will have to present backup documentation of the changes made in their operations -products or services- and stake a fee in UPFC. In case the Proof of Unplastify is positively verified and proved, the stake is given back to the organization. On the contrary, the stake is used to sustain the Validators Network and UPF DAO.¹⁶

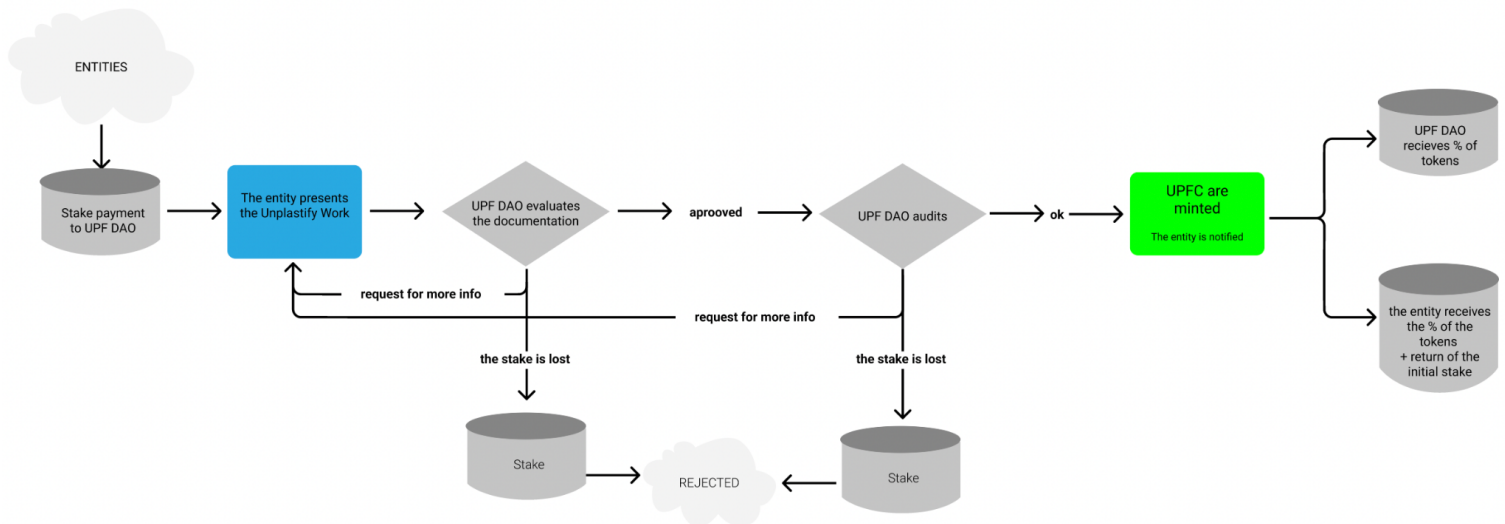
Validation Process

The method to validate the Unplastify Work is determined by the Plastic Footprint Measurement. The validation process follows this protocol:

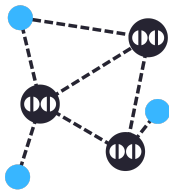
1. The applicant organization registers on the platform - TBD.
2. To submit the Unplastify Work the organization takes the corresponding fee according to the size of the Unplastify Work.
3. The applicant accesses the questionnaire where they will share specific and standardized data that demonstrates their Unplastify Work.
4. The corresponding supporting documentation to backup the conversion is requested and presented.
5. Validators from the Validators Network are randomly selected to validate the case.¹⁷
6. The assigned validators analyze the information and supportive documentation.
7. In case of a positive result of the Unplastify Work, a verification process of the analyzed information proceeds.
8. If the Unplastify Work is proved, the corresponding tokens are minted.
 - a. In case of a negative validation, validators may request additional information and documentation to the applicant through the platform, and the process returns to point 6.
 - b. If the final result is negative, the application is withdrawn and the organization loses the stake.

¹⁶ In the first stage of development in order to incentivize more applicants there will be no fee.

¹⁷ As is described later, the first instance of the process will be validated by Unplastify.



The first version will be held by Unplasty, the validation process and minting will be done by Unplasty. During this period, the Validation Protocol will be designed, developed and tested, in order to be optimized and systematized to be traduced in a system operated by the Validators Network in WEB3.



All submissions, transactions and validations are fully or partially recorded in the blockchain.

Furthermore, in this first version, only the key data of the Unplasty Work presented by organizations will be published and shared in the blockchain in order to support the minting while avoiding the dissemination of information that could be sensitive to companies.

With the improvements of the process the information stored in the blockchain will be sophisticated to always pursue transparency, scalability and data security.

Issuance Scheme

The validation is determined positive when at least 90% of the validators considered the Unplasty Work valid.

The tokens minted will be distributed between the applicant entity, the validators and UPF DAO - 93% goes to the applicant entity, and 7% is distributed to sustain the structure of UPFC: 2% to the validators¹⁸, and 5% to UPF DAO (Figure 4). The 7% corresponds to the stake that the entity pays in order to present the Unplasty Work, which in case of being issued, is given back to the organization.¹⁹

¹⁸ This 2% will be distributed among the participating validators: 50% of the total validation reward to one of the validators randomly and the remaining 50% will be distributed among all the others.

¹⁹ In the first stage (v1.0) 20% will remain in UPF DAO since it will be in charge of validation, and this will decrease as the versions progress.

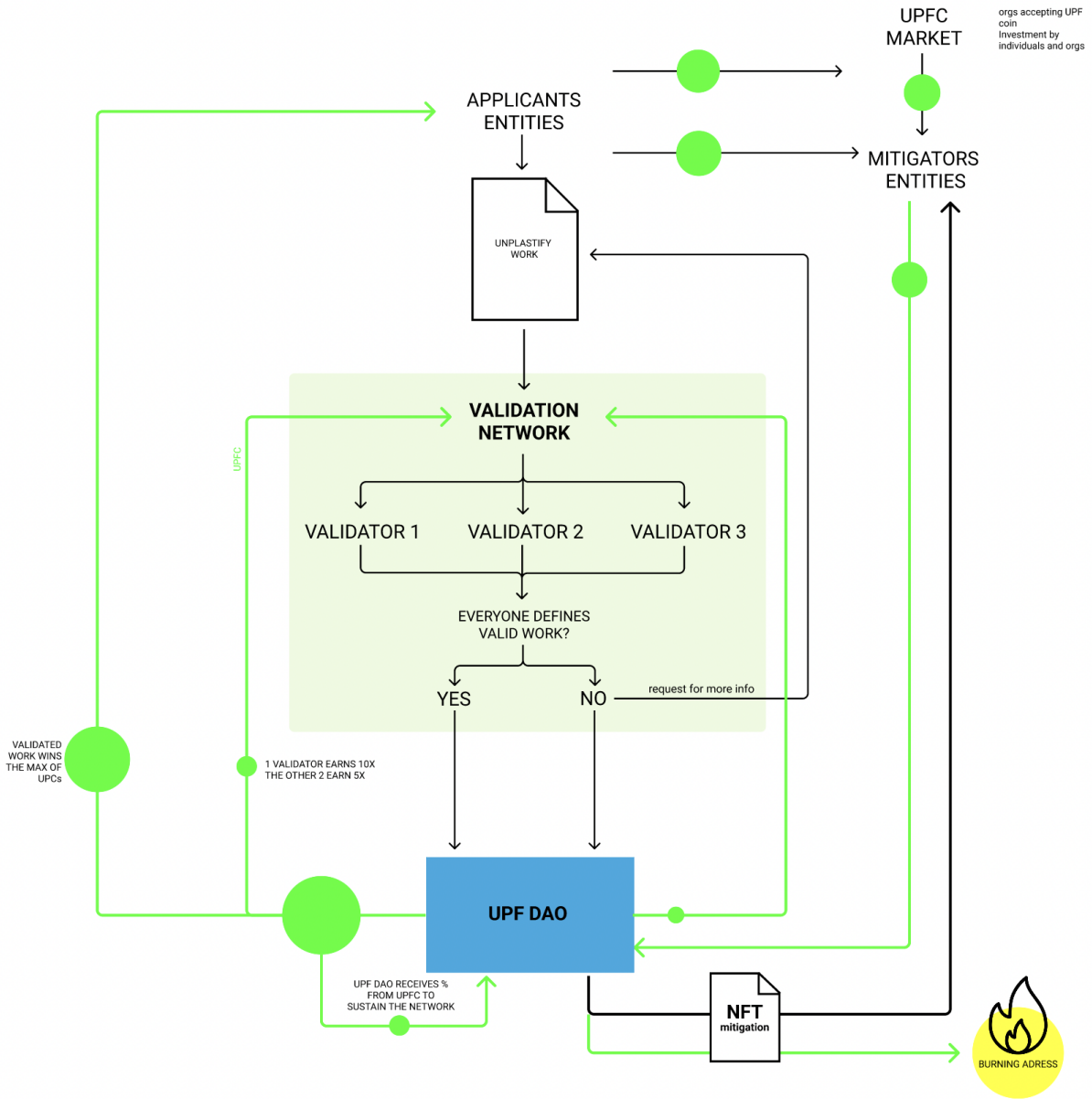


Figure 4: UPFC Emission Scheme

Tokenomics - Economics

Drivers

The main incentive for companies to mint or purchase UPFC is the need to show better sustainability practices in a transparent and third-party validated manner. UPFC is equivalent to one ton of plastic avoided and by running on Blockchain it will be verified by decentralized third parties and recorded in a traceable way. Therefore, the main purpose of UPFC is aligned to the main need of companies seeking this solution.

The purchase and sale may result from different incentives such as:

- Improve reputation and respond to ESG.
- Mitigate the impact of plastic on the environment.
- Returns on investments / Mitigation of the costs made to unplastify operations
- Incentivize universal unplastification.
- Speculation on prices of purposeful tokens.
- Governments may also enter the market to encourage Unplastification processes.

At the same time, the growth in crypto assets and cryptocurrencies investment as well as the use of blockchain to solve social and environmental issues is taking off in recent years.²⁰

The value

UPFC uses blockchain technology to incentivize Unplastifying worldwide.



1 UPFC = 1 ton

It is a digital asset -token- designed to prevent the use and entry of single-use plastic into the economy in pursuit of a world free of disposable plastic. Each UPFC is equivalent to one ton of plastic avoided.

Giving a commercial and intrinsic value to deplastification creates the incentives to start working towards a world where single-use plastic is significantly less present. This helps to find a decentralized and scalable solution in order to tackle the problem globally.

The UPFC ecosystem is composed of production (mining) and supply, demand and burning.

Production (mining) and supply

The entities that unplastify operations and validate it will obtain one UPFC for each ton of disposable plastic avoided. From the beginning, those will be the holders and the first suppliers of UPFC and will be able to start interacting in the available markets. As soon as UPFC is issued it will be sent to a wallet belonging to the entity and it will be free to carry out any transactions.

²⁰ Over the past five years, the promise of blockchain technology has swept the world of social impact, with many innovators experimenting to find use cases for this secure technology. This has resulted in hundreds of new organizations, companies and initiatives focused on blockchain. ([Blockchain for Social Impact Report](#), 2019)

V1.0

Actors	Small Unplasticified Entities
	Individual Investors

In the first stage, the entities that mint UPFC will be *Small Unplasticified Entities* that seek to care for the environment, working on sustainability issues and naturally pursue ways to contribute to Unplasticify. Among them, small entities and entrepreneurs with low conversion costs. In turn, these will be the first suppliers of UPFC that might sell them to offset the costs incurred in the conversion or simply interact with the market.

As *Individual Investors* become UPFC holders, they will also become sellers.

V2.0

Actors	Small Unplasticified Entities	Validators
	Medium Unplasticified Entities	Institutional Investors
	Individual Investors	UPF DAO

In the second stage, once UPFC acquires value and is in greater demand, the *Small Unplasticified Entities* will be joined by medium-sized Unplasticifiers -*Medium Unplasticified Entities*-. Companies, government entities and organizations, motivated by the desire to reduce the use of disposable plastics, whose transformation costs are not so low, but they will do it knowing that they will later be able to sell these tokens and recover the cost of conversion. They will be producing UPFC and will be able to be sellers.

Consequently, there will be a greater amount of UPFC issued and a slightly consolidated market, therefore dynamism in buying and selling. Other sellers will be: *Validators*, individuals who make up the Validation Network and verify the Unplasticify Works; *Individual Investors* and *Institutional Investors* who have been accumulating UPFC and finally, *UPF DAO*, which will be able to start selling part of its holdings.

Considerations at this stage:

- a. Increased utility of the token
- b. Decrease in the total amount of tokens in circulation, this will create scarcity

These two factors result in an increase in price, which will lead to an increase in supply.

V3.0

Actors	Small Unplasticified Entities	Validators
	Medium Unplasticified Entities	Institutional Investors
	Large Unplasticified Entities	UPF DAO
	Individual Investors	

Finally, the entities that mint in V2.0 will be joined by *Large Unplasticified Entities* with a high impact Plastic Footprint - achieving UPFC massification. These entities will use UPFC mining to declare their commitment to the environment in response to new regulations that will emerge, the importance of public opinion, and the value of ESG for shareholders. Once this widespread effect is achieved, UPFC will be positioned as an international symbol of avoided disposable plastics.

Ultimately, as UPFC is adopted and recognized globally and Unplastifying processes become increasingly complex and costly, companies will seek to offer their UPFC in order to recover the investment of conversion. Suppliers may be Unplastified entities, *Individual* and *Institutional Investors*, *Validators* and *UPF DAO*.

Demand

V1.0

Actors demanding UPFC	Individual Investors
	Unplastified Entities
	Entities Align to the Purpose

In the first instance, the demand will be driven by those *Individual Investors* who believe in the value of the project and that demand UPFC in the expectation that its value will increase. Those *Unplastified Entities* that need UPFC to "stake" for presenting the Unplastify Work will also demand UPFC. *Entities aligned to the Purpose*, to the mission of Unplastifying the world and seek to demonstrate their support to the initiative by purchasing UPFC.

V2.0

Actors demanding UPFC		
Individual Investors		Institutional investors
Unplastified Entities		Governments
Entities Align to the Purpose		NGO's
Mitigators Entities		

In this maturity stage, *Mitigating Entities* that want to be plastic neutral are added to the previous ones. They will purchase UPFC from the market to deliver to UPF DAO in exchange for an NFT that supports their mitigation claiming the amount mitigated and the year. *Institutional Investors* (companies and financial players) with speculative and reputational intentions will also emerge at this stage.

Governments will be able to use UPFC as a tool to encourage sustainable policies such as accepting UPFC in exchange for tax reductions or awarding UPFC for actions that prove plastic reductions.

NGOs could demand UPFC to participate in an unplastified economy and hold UPFC that tracks the Unplastifying processes of companies.

Burning and impact mitigation

The process for a company to mitigate its plastic footprint begins by purchasing tokens from those UPFC holders. These tokens must be delivered to UPF DAO (in the first stage to Unplastify) who will mint in return a NFT crediting the amount of mitigated plastic and proceed to burn the corresponding tokens. Companies that mitigate their plastic footprint will be able to use the NFT to communicate their commitment and action.²¹

²¹ NFTS to mitigate plastic footprint will be available from version 2.0 and will be managed by UPF DAO.



Token burning generates scarcity, valorizing the network's worth.

UPFC in Blockchain - Technology

The use of blockchain technology for this project responds to the search for radical transparency and traceability. This applies to all operations related to the ecosystem generated: token transfers and transactions that can occur in the ecosystem or a DAO, such as the validation or rejection of the Unplastify Work application.

In this instance, a fungible token based on the ERC-20 standards was chosen as a technological framework. The starting point is the assumption that each ton of plastic avoided has the same value and that it can well be represented by a token.

The choice of a blockchain that hosts the UPFC contract is not a minor issue, since it must comply with several key points to take into account:

1. The spirit of this project implies a concern and care for environmental resources. This is why it would be ironic to use a blockchain that implies power consumption as considerable as those that comply with the “proof of work” protocol.
2. It must be a blockchain that is compatible with the ethereum virtual machine for a number of reasons:
 - a. Leverage the standards already defined in ERC-20.
 - b. Allow easy transmission of liquidity from Ethereum main net to facilitate project growth.
 - c. Have a development ready in case it is decided to transfer the project to Ethereum after a change of protocol of this network towards POS, which may not be too far away.
3. The need for affordable transactions leads to an affordable blockchain in terms of operational costs. This will guarantee the agility in the issuance and transfer of the token, but also to project the feasibility of decentralizing the governance of the project in a DAO without significantly modifying the cost matrix.
4. The fundamental need to build an Unplastifying community leads to a blockchain with an active community in the development and maintenance of DAO frameworks such as Aragon, DAOhaus among others.

For these reasons, the contract deployment has been made in the xDai blockchain since it complies with all these key axioms, in addition to being one of the most popular Ethereum side chains to date.

With this technological framework, escalating the decentralization of the project will depend solely on the intention of the community and the advantages provided by blockchain technology will be palpable in every dimension of the project.

Stages and Projection

The estimated growth of the plastic production worldwide according to the WEF is 3.5-3.8% per year between 2015 and 2050.²² This means that the UPFC goal must be even more ambitious.

In order to achieve this goal, UPFC must become a regional recognized token in the first 5 years. It must be recognized by world organizations within the next 10 years and be known as the tool to Unplastify the world.

Milestones (including specific benchmarks)

- Local and Regional Alliances (Sistema B Latam, IDB)
- Global Alliances (B Lab, World Bank, IMF, UN, Ellen MacArthur)
- Continental Alliances or trade blocs (Mercosur, EU, LATAM, NAFTA, and more)

Versions

MVP: The MVP includes the idea development, and the development of UPFC in a first stage. www.upfcoin.org is created and the hosting blockchain (xDai) and the type of token (ERC-20) are defined. The first 12,153 tokens are issued based on the Unplastify Work proved by Unplastify in the last three years -since the creation of the company-.²³ Part of the tokens are held by Unplastify, and others distributed between investors, developers, and actors in the ecosystem. The first entities will begin to apply to receive UPFC.

This version will include the prototype of the Unplastify Work Validation Protocol. The milestones in this stage will be the launch of the platform for entities to present their Unplastify Work. At first, this methodology will be tested by Unplastify, and next will be held by the first validators of the network. Also, the training of the first 20 validators of the Validation Network working on a hybrid platform in WEB2/WEB3. Clients will be invited to mint and a contest will be organized to reach more companies with the objective of minting 197 tonnes of validated avoided plastics. Local alliances will collaborate with this objective, and low-impact promoters will be minting. It could also include a contest as an incentive for companies to participate. And already advanced in this stage, an alliance with B System Latam is projected.

V 1.0: The Unplastify Work Validation Protocol launched and running in WEB3. The significant 'internal' milestone in this version will be the creation of the DAO and the scale of the Validators Network, which will lead to an optimized version of the analyses of the Unplastify Work, and more capacity to process this documentation. This stage will be nourished by alliances with international organizations, such as B Lab - and multinational companies will begin to demand UPFC.

V 2.0: A full version, updated and optimized of the Unplastify Work Validation Protocol running in WEB3 will be the opening to this stage. The Validators Network will be growing faster. The burning of UPFC tokens and the exchange for NFTS will become popular in this version.

Furthermore, through alliances with exchanges, the token will be integrated and recognized in different exchanges to ensure positioning.

²² WWF International & Dalberg Advisors, 2021

²³ Done in Dec, 2021

V 3.0: With the Validators Network consolidated, the governance of the UPF DAO begins to be distributed. The UPF Plastic Footprint Measurement Protocol is recognized and positioned as the plastic measurement.

As a milestone in this version, it is estimated that the new UN SDGs should specifically include the plastics issue. It can be considered that UPFC enters a stage of maturity when it is recognized by organizations such as the United Nation, the World Bank, the World Economic Forum and other organizations of the same nature.

UPFC will continue to evolve with the market and as global unplastifying is required.. UPF DAO will grow and develop to continue the infinite strategy to Unplastify the world.

Stages / Emission

years	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Versions	MVP			v1.0		v2.0			v3.0		
MINTED	12.153	25	120	1,300	8,100	12,150	18,275	28,478	73,921	132,847	261,201
TOTAL EMISSION			157	1,457	9,557	21,707	39,982	68,460	142,380	275,227	536,428
TOTAL UNPLASTIFIED	12	25	145	1,470	9,740	23,530	53,185	116,573	278,588	616,103	1,360,560
Milestones	Idea Development - Smart Contract Deployed in xDai	Contest - incentives - Incentives for individuals to be validators	Strategic alliances Sistema B - Latam	DAO	Strategic Alliance BLab - Global	Alliance with exchanges and positioning	Strategic alliance with international org.		UPF Plastic Footprint Measurement Protocol is recognized globally		New UN SDGs include the plastics issue.



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