

PLASTIC HERO

WHITEPAPER



Table of Contents

Abstract	3
Introduction	4
Massive Challenges	4
Now or Never	4
Not the Enemy	5
Executive Summary	6
Mission and Vision	6
Business Model	6
Recycling Process	7
Recycled Materials	7
Pyrolysis Process	8
Applications and Use-cases	9
Eco-Friendly Node Mining	9
Giving Back	9
Government Initiatives and Partnerships	9
Plastichero Project Features	10
Plastichero AI Robot	11
Plastichero Application	13
Plastichero Eco Points	13
Plastichero Shop	13
Plastichero Built-in Wallet	13
Plastichero Bridge	13
Technology	14
Blockchain Mainnet Features	14
Dual Delegated Proof of Stake Block Generation	14
Smart Contract Processing	18
3-Step Mainnet Process	18
Coin-Related APIs	19
Create	19
Transfer	19
Display Balance	20
Burn	20
Error Handling	20
Tokenomics	21
Mainnet PTH Coins	21
PTH Mainnet Coin Mining	21
Mined PTH Distribution	22
Coin Utility	22
Road Map	23
Disclaimer	24

Abstract

The plastic pollution crisis is an urgent issue that has negatively affected the environment in numerous devastating ways. These include overloaded dumps, landfills, harmful emissions released by incineration, and polluted marine ecosystems.

It is the irresponsible disposal of plastic materials and plastic incineration that leads to the crisis of climate change. Hence, we must make a real change.

To do so, we present Plastichero, a blockchain-based platform for reducing waste and promoting a circular economy. The project will accomplish this through robots where plastic waste can be deposited in exchange for Plastichero Eco Points, which can be converted to PTH tokens. Deposited plastic will be recycled to produce pyrolysis oil and high-quality plastic flakes and pellets.

Plastichero's own decentralized application (DApp) will be used to validate each deposit of plastic waste and to allocate Plastichero Eco Points accordingly. Plastichero Eco Points can be used to purchase food, beverages, and other items from participating stores and brands.

Transparency, transaction verification, security, immutability, accountability, and value transfer can be achieved by utilizing Plastichero's blockchain technology. Additionally, all data on users' DApp wallets, including QR code verification, will be stored in the blockchain.

Plastichero is its own blockchain mainnet project, and mined mainnet coins will be compatible with cryptocurrency wallets that support ERC-20 tokens through bridges.

Introduction

The earliest known records of mass plastic production can be traced back to the Second World War and then again from 1960-70. Humanity began to replace steel and paper materials with plastic as it was cheap, convenient, and versatile.

It is estimated that around 300 million tons of plastic waste are produced every year. Of this waste 50% is single-use plastic materials of which only 9% is recycled. What is worse is that plastic does not decompose as natural materials do, and so disposing it via dumping poses an even greater problem.

Massive Challenges

Plastic waste is also a major contributor to the climate crisis. The burning of plastic waste produces greenhouse gasses, such as carbon dioxide and methane, accelerating global heating.

Plastic materials have also polluted oceans, lakes, and rivers, endangering thousands of marine species on our planet. It is reported that approximately 8 to 10 million metric tons of plastic enter the ocean each year, resulting in an estimated 50 to 75 trillion microplastic pieces currently dispersed in the marine environment. At this rate, over 50 years, plastic waste could accumulate to an expanse exceeding 550,000 square kilometers.

Now or Never

We must act now before it is too late. According to the World Wildlife Fund, "the species extinction rate is estimated between 1,000 and 10,000 times higher than natural extinction rates – the rate of species extinctions that would occur if we humans were not around."

Plastic pollution is contributing to mass-death in the ocean, most visibly by ingestion, suffocation, and entanglement of hundreds of marine species. According to the World Economic Forum, in a business-as-usual scenario, the ocean is expected to contain more plastics than fish (by weight) by 2050. Science-based initiatives are needed to change course and halt the destruction of ecosystems by plastic pollution.

Not the Enemy

Plastic itself is not the enemy. It is a useful material for a wide variety of applications including packaging, building and construction, household and sports equipment, vehicles, electronics and agriculture.

However, it becomes harmful to the environment when improperly discarded. Proper management and recycling of plastic waste is a challenge, as it is generally more expensive and time-consuming than the alternatives, leaving consumers with inadequate motivation to recycle.

Executive Summary

Plastichero is pleased to present the executive summary of our company. Our goal is to work toward a more sustainable and green environment, beginning with South Korea. We intend to use blockchain technology to address plastic recycling issues.

Users, countries, businesses, environmental organizations, and, most importantly, the planet will benefit from the Plastichero project.

Mission and Vision

The Plastichero Project is always evolving to offer users useful rewards and make beneficial contributions to nations, companies, and environmental organizations. Participating in the initiative helps to establish a sustainable, green environment for future societies by using smart technology to alleviate the problem of plastic waste and promote the circular economy.

Business Model

The project aims to address the problem of plastic waste – first in South Korea, and then globally – through the use of AI Robots and blockchain technology. Plastichero will do this by recycling plastic waste into pyrolysis oil and clean plastic pellets and flakes.

Users will be able to recycle their plastic waste into the Plastichero AI Robots that will be accessible, easy-to-use, and innovative. Users will also have an interactive mobile application where they can track their Plastichero Points. As an incentive for user participation, Plastichero will offer users cryptocurrency-based rewards.

Plastichero will generate profit by creating valuable commodities from plastic waste deposited in its AI Robots. Through cooperation with carbon emission allocators and businesses that support outside reduction programs, the project is also investigating the prospect of operating a carbon emission business.

Recycling Process

The Plastichero project aims to solve the problem of plastic waste with an eco-friendly and cost-effective chemical method called pyrolysis. This process transforms waste plastic into clean pyrolysis oil, which can be used as an alternative to kerosene and light oil.

Plastichero can help create a circular economy by using pyrolysis oil to create new recycled products that are convertible back into pyrolysis oil. These recycled products could range from chairs and tables to garbage bins and more.

The project can generate profit by selling carbon emission rights, renewable pyrolysis oil, and high-purity plastic.

The Plastichero ecosystem and its distinct recycling method will eventually be implemented in more countries to support their own green industry initiatives.

Recycled Materials

Plastichero will employ mechanical and chemical recycling processes to create valuable commodities from plastic waste. These include high-quality plastic pellets and flakes for use in manufacturing, pyrolysis oil that can be used as alternative fuel, and hydrogen gas that can be supplied as a fuel to hydrogen stations.

Plastic pellets and flakes will be reclaimed from waste plastic by a mechanical recycling process called M-rPET. Plastic flakes are primarily used in the production of synthetic fibers for textiles, and are produced by sorting (by color and composition), grinding, washing, separating (by gravity) and dehydrating waste plastic. The resulting flakes are then packaged separately according to color and composition. Plastic pellets are used in the creation of a wide variety of plastic goods, particularly by injection molding. To create pellets, waste plastic goes through a similar process of crushing and washing before being extruded and cut into pellets.

A separate, pyrolysis-based chemical recycling method, C-rPET, will be used to produce pyrolysis oil and hydrogen from composite and film plastics. After crushing and washing waste, the waste material is subject to pyrolysis, a process of thermal degradation of organic materials under an inert atmosphere. Under pyrolysis, long carbon chains are thermally broken down into useful fractions; in this case, syngas and pyrolysis oil. Further processing will be applied to the syngas to produce 99.5% pure hydrogen gas, while pyrolysis oil is obtained through a final process of condensation.

Pyrolysis Process

Plastichero will use a state-of-the-art rotary kiln plant to produce pyrolysis oil free of heavy metals. The plant will have a processing capacity of 3,000 tons per year and does not require any pretreatment.

Applications and Use-cases

The most important use case for the pyrolysis oil produced is in the manufacturing of high-quality reusable plastic products. The project aims to achieve this by collaborating with manufacturers and promoting resource circulation.

Plastichero's pyrolysis oil has various applications, from fuel for large-scale demand sources like heating systems and power plants to being processed in oil refineries. The low-boiling carbides found in the oil can also be turned into naphtha through vacuum distillation.

Eco-Friendly Node Mining

The Plastichero project maintains an eco-friendly node mining system with energy-efficient nodes that are more akin to virtual machines than the conventional energy-intensive hardware associated with mining. Its energy efficiency will also improve over time as the mining difficulty will halve yearly.

Giving Back

Plastichero donates to charity to incentivize individuals and organizations to contribute to the project's sustainable waste management initiative. Furthermore, the project aims to fund research and communities through outreach programs and raise awareness about plastic waste reduction initiatives.

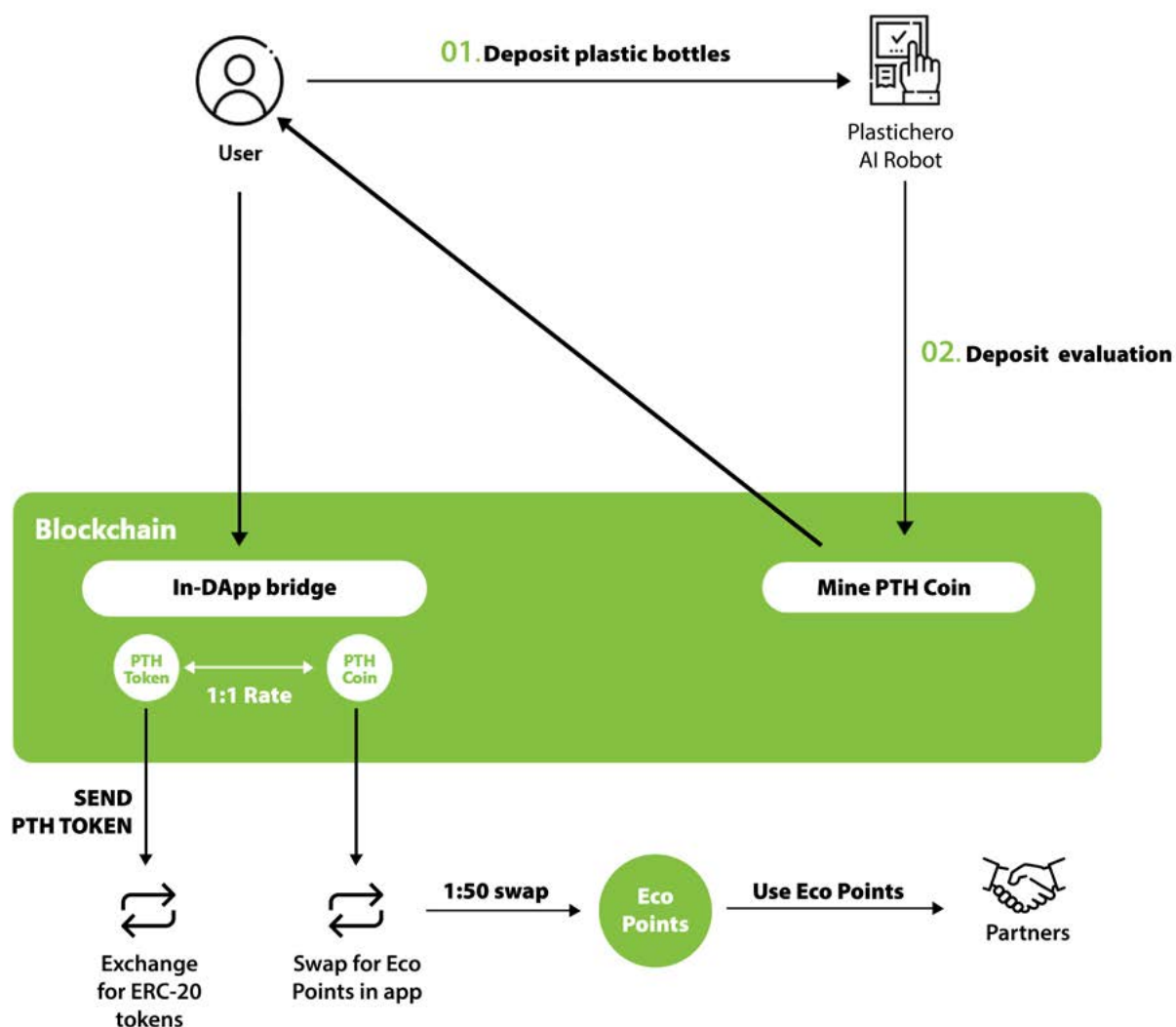
Government Initiatives and Partnerships

Plastichero intends to begin operations in South Korea before extending to other countries. South Korea now has a green industry initiative and a plan to become more environmentally friendly by 2050. Within the country, the project will collaborate with municipal governments, carbon emission allocation firms, and plant industries.

The Plastichero concept will eventually expand to other countries that prioritize the circular economy. We will work with international governments and sustainable businesses from around the world to help build a more sustainable future.

The project will initially be part of the South Korean government's green industry initiative, which aims to create export profits worth USD 81.3 billion by achieving carbon neutrality and replacing crude oil by 2050.

Plastichero Project Features



Plastichero AI Robot

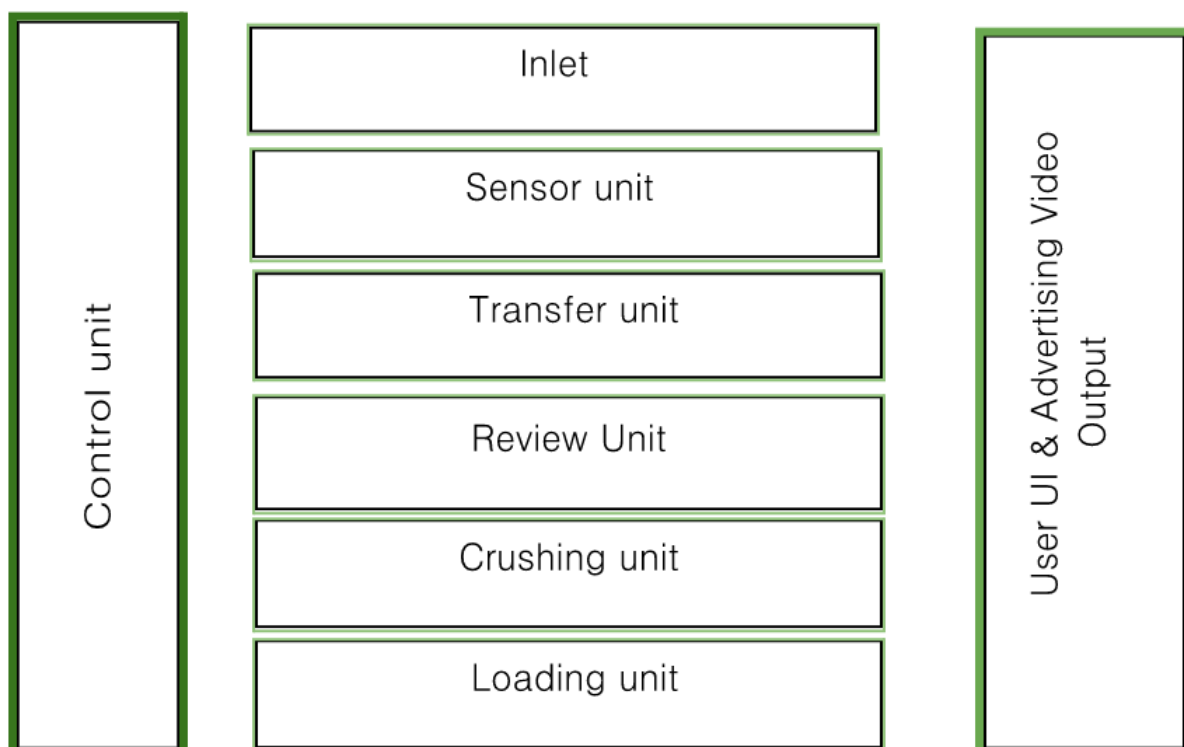
Before using the Plastichero AI Robot, users must create an account on the Plastichero mobile app. The app is available from Apple's App Store for iOS users and from Google Play for Android users. The app can be downloaded via a QR code conveniently located on the Plastichero AI Robot.

Users will deposit their plastic bottles in a nearby Plastichero AI robot, and receive PTH coins as a reward through the Plastichero application. Plastic bottles inside the robot will be collected, processed, and then recycled.

The Plastichero AI robots are composed of 8 units, as follows:

1. **Inlet:** Users will deposit their plastic bottles through the inlet on the robot. This inlet is built with safety sensors to ensure that users' hands are protected at all times.
2. **Sensor unit:** The unit senses the objects deposited into the inlet and enters the transfer unit. The inlet door is closed, and the sensor unit sends a signal to place the deposited object in the correct position. The transfer unit will read whether the object will be processed or returned.
3. **Transfer unit:** The transfer unit will send the deposited object to the review unit. Once reviewed, the transfer unit will send the object to the crushing unit if it is a plastic bottle. However, the transfer unit will open the inlet and return the object to the user if it is not a plastic bottle.
4. **Review Unit:** The review unit determines whether the deposited object is a plastic bottle via weight measurement and video analysis. This unit will deliver data to the Plastichero server, where it will apply AI vision technology.

5. **Crushing unit:** This unit will crush accepted plastic bottles to maximize storage capacity.
6. **Loading unit:** The crushed plastic bottles will enter the loading unit. When the unit's contents reach a certain level, the robot will send a signal to the control server requesting collection.
7. **Control unit:** The control unit operates and controls all procedures from steps 1 to 6. It also sends and receives data to and from the management/database system
8. **Robot External Screen:** An external screen on the robot that explains and guides the user through the plastic disposal process. This screen can also display advertisements.



Plastichero Application

The Plastichero application boasts several useful features. These include using Plastichero Eco Points to purchase PTH Tokens and items such as gift certificates or affiliate items. Additionally, users can use the built-in wallet inside the Plastichero application to store their coins and tokens. Furthermore, the application features a bridge for converting PTH mainnet coins into PTH Tokens (ERC-20), and also a feature for swapping PTH mainnet coins into Plastichero Eco Points.

Plastichero Eco Points

Plastichero Eco Points can be obtained in exchange for PTH mainnet coins, which users earn by depositing plastic in a Plastichero AI Robot. Plastichero Eco Points can be used in the Plastichero app to purchase products from a selection of partnered brands..

Plastichero Shop

These Plastichero Eco Points will allow users to purchase products within the Plastichero application for personal use or as gifts. The selection of products will vary from time to time and will increase as we gain more affiliates.

Plastichero Built-in Wallet

Furthermore, Plastichero's built-in wallet allows users to store their PTH mainnet coins and their PTH Tokens. Users will not need to use a separate wallet and will conveniently find all their Plastichero-related tokens within the application itself.

Plastichero Bridge

Through the Plastichero application, we will offer PTH mainnet coin holders the feature to bridge their PTH into PTH Tokens. The bridge will have a conversion ratio of 1 PTH:1 PTH Token. Users will be able to swap and trade their PTH Token with other ERC-20 tokens.

Technology

Plastichero will use blockchain technology for transparency, transaction validation, and value transfers. All transaction data will be stored on the blockchain, starting from the QR code validation to the crediting of crypto-based credits to the user's DApp wallet.

Blockchain Mainnet Features

The Plastichero mainnet (PTH) boasts high scalability, fast transaction processing, and robust security functions thanks to its Dual Delegated Proof of Stake (DDPoS) consensus algorithm.

PTH mainnet supports nuanced smart contracts, which may be deployed in the user's preferred language through the REST API call method. Smart contracts are registered on the PTH blockchain after being approved by BPs, and are then ready to be deployed, eliminating the need for any batching tools or writing of complex scripts by users.

The Plastichero blockchain boasts a very high speed, generating a single block in only three seconds. The PTH blockchain employs two hashing algorithms, the widely used SHA 256 developed by the US National Security Agency and secp256k1, enabling fast and efficient computation with a capacity of 10,000 transactions per second.

Dual Delegated Proof of Stake Block Generation

The Dual Delegated Proof of Stake (DDPoS) mechanism generates blocks through a network of 21 nodes, including 17 master nodes and 4 monitor nodes. Master nodes are block producers (BPs), democratically elected by users to validate transactions and add new blocks to the blockchain. Monitor nodes are block observers (BOs), nodes that hold copies of the blockchain data but cannot generate blocks. Instead, they are responsible for identifying network congestion and other threats to the reliability and stability of the blockchain. Monitor nodes are randomly selected from the user population.

Under the DDPoS algorithm, the 21 nodes work together to produce a block every three seconds. The algorithm then takes 63 seconds to ensure the blocks are irreversible. The algorithm rarely has overheads, making it possible to optimize the time and bandwidth taken to verify the proof of the chain. This system ensures the integrity of the elected master nodes and the entire blockchain, even if collusion were to occur. Additionally, DDPoS does not incur any costs for the use of the blockchain.

DDPoS is an improvement over traditional proof-of-work (PoW) and proof-of-stake (PoS) methods as it decreases the risk of collusion among master nodes, facilitates inter-block communication, and participates in block generation, all while being faster and more efficient. The mechanism ensures that nodes are safe from attackers. Even if there is an attack on one of the master nodes (BPs), the monitor nodes (BOs) will work together to make sure the blockchain is not affected. The attacker also can't target a specific node because the BOs are randomly picked.

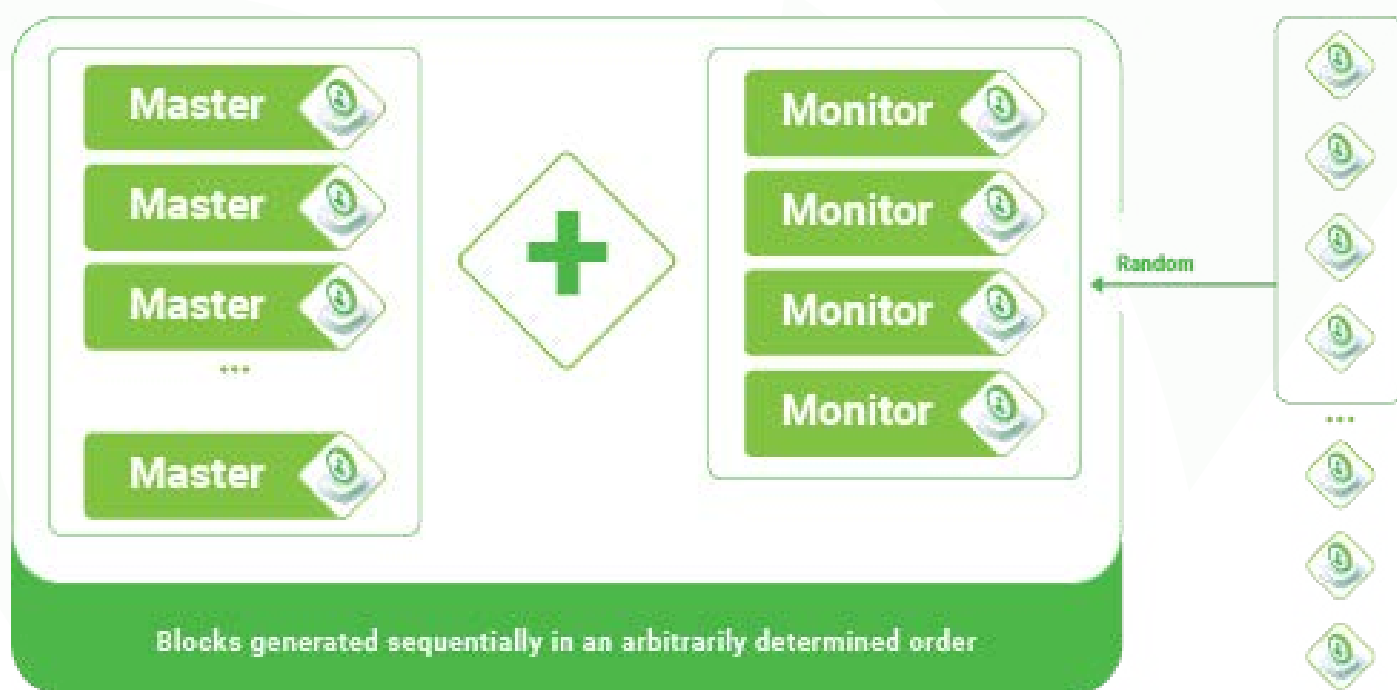
Delegate Nodes

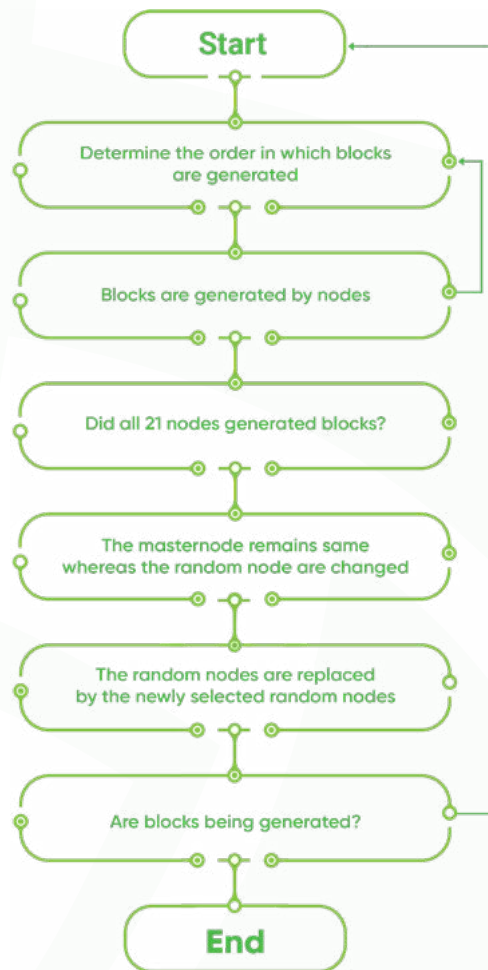


**17 Master Nodes
(Block Producers)**

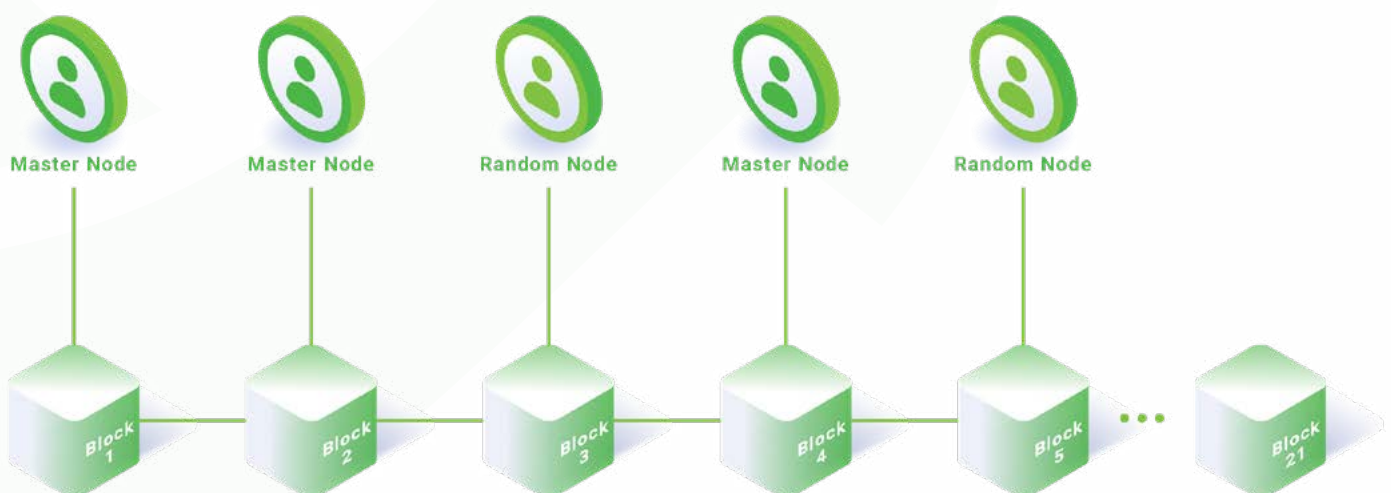


**4 Monitor Nodes
(Block Observers)**





The flowchart above illustrates the process of block generation using the DDPoS algorithm. 17 master nodes (BPs) and 4 monitor nodes (BOs) are selected to generate blocks. After the algorithm defines the sequence of the nodes, all 21 nodes begin working together to generate blocks. In the next step, the four monitor nodes (BOs) are replaced, again by random selection from the general population of nodes. The sequence of the 21 nodes is again determined by the algorithm, and the process is repeated.



Smart Contract Processing

Through APIs, the Plastichero mainnet streamlines smart contract processing and execution. The mainnet enables developers to call an API directly from their development environment, making the process faster and more stable.

When compared to the traditional process of creating and executing smart contracts in other networks, this is significantly easier. Developers have traditionally been required to upload their code to the mainnet's server, which complicates the process.

3-Step Mainnet Process

The PTH mainnet has a 3-step process architecture. When a DApp or service requires smart contracts, it can make use of the REST API call method and create a request in the PTH Web API. From the PTH Web API, the request interacts with a PTH node in the PTH blockchain where a new block is written to be stored permanently. After creation, every new block is registered in the PTH node.



Coin-Related APIs

Create

Developers can call the following function to create a token.

- \$token->create_token (\$required_auth, \$name, \$symbol_name, \$publisher, \$init_amount);

Argument Description

required_auth	Creatinguser'sactivekey
Name	Tokenname
symbol_name	Tokensymbol
Publisher	AccountIDoftheuser
init_amount	Initialamount

Transfer

Developers can call the following function to send tokens to another user.

- \$token-> transfer_token (\$required_auth,\$from,\$to,\$amount,\$symbol_name,\$memo);

Argument Description

required_auth	activekeyofsendinguser
From	AccountIDofsendinguser
To	AccountIDofreceivinguser
Amount	Tokenamounttobesent
symbol_name	Tokensymbol
Memo	Memo

Display Balance

Developers can call the following function to check one's token balance.

- `$token-> get_token_balance ($account);`

Argument Description

Account	Tokenowner'saccount
---------	---------------------

Burn

Developers can call the following function to delete tokens in one's possession. This function is commonly called to reduce the total amount of tokens in circulation.

- `$token-> burn_token ($required_auth,$account,$amount,$symbol_name);`

Argument Description

required_auth	activekeyofTokenowner'saccount
Account	Tokenowner'saccountID
Amount	Numberoftokenstobeerased
symbol_name	Tokensymbol

Error handling

Developers will receive this result because of an error from a previously called function.

- `$response = $token-> burn_token ($required_auth,$account,$amount,$symbol_name);`

The following result value is called as a result;

```

If ($response->status== " success ")// success
{
}
else // fail
{
$code = $response->result->cause->payload->error->code;
$message = $response->result->cause->payload->error->message;
}

```

Tokenomics

Mainnet PTH Coins

Our PTH mainnet coin will have a pivotal role in our ecosystem, particularly as a utility coin. While our original intention is for PTH to function as a utility coin, we believe that as people begin to install our App and join our cause, our coin will gain monetary value. Detailed policies and guidelines on the mining process will be determined by the block producers and observers in the future. The common policy creation will be based on both an applicant's vote and their PTH holding amount.

PTH Mainnet Coin Mining

All Plastichero nodes are bundled with a Plastichero AI Robot. Each Plastichero AI Robot includes 8 nodes, of which 4 belong to the buyer and 4 belong to Plastichero Global. Plastichero nodes mine PTH in two ways:

Firstly, nodes automatically mine a fixed amount of PTH per day. As of 2024, this is currently 180 PTH per node, per day. As each Plastichero AI Robot is equipped with 8 nodes, each AI Robot will mine 1440 PTH per day.

Secondly, a reward of 1 PTH is mined whenever a user deposits plastic waste in the Plastichero AI Robot. There is no limit to the amount of PTH that users of the Plastichero AI Robot can mine through this method.

PTH mining is subject to a halving. Initially, the daily mining reward for a single node was 360 PTH. Following the first PTH halving in January 2024, this was reduced to 180 PTH. The second halving will take place two years later, on January 1, 2026. Subsequent halvings will take place at four year intervals, beginning on January 1, 2030, then January 1, 2034, and so on.

Note: From the 2026 halving onwards, PTH rewards mined by depositing plastic waste in the Plastichero AI Robot will also be subject to the halving. This means that in 2026, the PTH reward for plastic deposits will be reduced to 0.5 PTH; then 0.25 PTH in 2030, and so on.

Mined PTH Distribution

The PTH mined by each node will be distributed differently, depending on whether the node belongs to Plastichero Global, or a third party (i.e. a Plastichero AI Robot owner).

Third party-owned nodes:

Of the 8 nodes included with each Plastichero AI Robot, 4 are third-party owned - i.e. they belong to the buyer of the Plastichero AI Robot. This means that the Plastichero AI Robot will mine 720 PTH (= 4 nodes x 180 PTH) per day. This PTH will be distributed as follows.

- 83.33% (150 PTH per day) will be distributed to the node owner. Of this, an automatic 10% donation will be made to charity (15 PTH per day). The node owner will therefore receive a maximum of 135 PTH per day through mining.
- The remaining 16.67% (30 PTH per day) will be used by Plastichero Global as follows:
 - 10.83% (19.5 PTH) will go to Plastichero's operational expenses
 - 4.17% (7.5 PTH) will help fund further development of the Plastichero ecosystem
 - 1.67% (3 PTH) will fund the Plastichero referrals program

Third party-owned nodes:

100% of PTH mined (180 PTH per day) by Plastichero Global-owned nodes will be used to fund the installation and maintenance of Plastichero AI Robots, including energy and internet costs as well as costs of collecting plastic deposited in the AI Robots.

Coin Utility

Bridging to Ethereum:

Users can swap their PTH mainnet coins for PTH (ERC-20) token through our bridge. There is a conversion ratio of 1 PTH: 1 PTH (ERC-20). After bridging, users will be free to use PTH (ERC-20) and swap through any service that accepts PTH (ERC-20).

Staking:

PTH (ERC-20) can be staked to receive staking rewards. The staking mechanism is structured similarly to ZENTU staking.

Liquidity provision:

Users can use their PTH (ERC-20) to provide liquidity to liquidity pools on decentralized exchanges.

Road Map

2021: Establish the Plastichero Company

Q1: Develop Plastichero's strategic plan

Q2: Establish an in-house development team and company operations

Q4: Commence PTH mainnet development

2022: Commence Development of PTH Nodes

Q2: Start PTH Node development

2023: Launch Node Mining, Exchange Listing, and Smart Contract Development

Q1: Equip AI Robot with PTH nodes

Q3: List PTH on global exchanges

Q4: Commence development of PTH mainnet smart contract

2024: Expand PTH Platform

Q1: Begin global market penetration and expansion

Q2: Test PTH mainnet smart contract

Q4: Commence PTH mainnet smart contract service

Disclaimer

Please read the entirety of the “Disclaimer” section carefully. All information presented in this Whitepaper (henceforward referred to as “The Document”) is the sole property of Plastichero (henceforward referred to as “The Company” or “We”). All Rights Reserved. This Document was created for informational purposes only. Any unauthorized duplication, copy, or distribution of this Document by any person, organization, or entity is prohibited unless authorized by The Company.

Any mistranslation or alteration of any of the information as a result of unauthorized copying will not be at the fault of the company. In the event of any conflict in meaning, accuracy, or variation between any part of this Document and any other translated version, the original Document in English will stand.

Please note that The Company does not assure the complete accuracy of all the information expressed in this Document and has not been verified and approved by any authority ahead of publishing. Hence, Plastichero holds no responsibility for any of the information, opinion, idea, or statement presented in this Document.

Moreover, We reserve the right to modify, replace or change any information in The Document, and hold no obligation whatsoever to pre-inform the public. Hence, the readers hold the responsibility of leveling with the changes in This Document. We will not be held responsible for any action taken by any individual or entity based on the Document and information implied, expressed, or presented in The Document.

No Representations or Guarantees

Please note that The Company does not guarantee the prices, values, or allocations of the tokens rewarded. Readers acknowledge that We hold no power or influence over the tokens, and consequently bear no responsibility for any losses faced in the trading or exchanging of tokens in any way or form, and disclaim any liability or accountability in the foreseeable future.

Market performances of tokens have no guarantee of any results, furthermore, no information in this Document interpreted by the reader as a "prediction" or "projection" guarantees any prospects of results. Readers are advised to bear responsibility for the results.

Not a Security Token

The Company wishes to inform the reader that We do not sell Security Tokens. This means that the possession of any PTH tokens will not indicate holding a stake or sum of any place or platform.

This is to prevent any possible legal action on token-holders of Plastichero, especially in territories with strict security token regulations. Moreover, no information expressed in this Document should be regarded as security token sale advice.

Sales Restrictions

Readers of this Document should ensure a clear and complete understanding that purchasing, trading, or holding cryptocurrency tokens is not legal in certain jurisdictions, thus availability may be limited. Furthermore, in adherence to the Anti-Money Laundering (AML) and Know-Your-Customer (KYC) standards, only confirmed identities of individuals and parties will be invited to participate.

It should also be noted that Plastichero reserves the sole right to deny any partaker under the age of 18 or those who reside in geographical locations where the buying, trading, and holding of Cryptocurrency tokens are against the law. We do not guarantee the legality of purchasing any such tokens.

It is the responsibility of the individual or participant to confirm eligibility to participate in the token purchasing sale, thus validating that they are in a legal and lawful capacity to hold cryptocurrency tokens. It is advised with best intentions that participants consult certified legal and financial advice before purchasing or trading cryptocurrency tokens.