MultiversX

xExchange

Energy, Batteries, and the New MEX Tokenomics Model

MultiversX Team - v2.0
Last update: 13 Dec. 2022

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This paper merely outlines current plans, which could change, and the success of which will depend on many factors outside MultiversX's control, including market-based factors and systemic industry challenges, among others. Any statements about future events are based solely on MultiversX's analysis of the issues described in this paper.

eGold (EGLD) incorporates no connection to physical gold, or gold derivative instruments. EGLD, MEX, XMEX and LKMEX are not a "stablecoin" and may be subject to a high degree of volatility. No recommendation is made herein as to the advisability of purchasing EGLD or MEX.

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Executive Summary

xExchange 2.0 (Maiar DEX 2.0) presents a set of significant improvements and benefits, while correcting the most important limitations residing in the previous economics model.

Here is a summary of the key insights xExchange 2.0 brings:

1. The total supply will be **capped**. The proposed emissions, amenable via governance in 5 years, will decrease year by year and will **be zero in 8 years**.

2. MEX will immediately be **3x less inflationary** (-65%) than in Maiar DEX 1.0.

3. xMEX (the new version of LKMEX or LKMEX v2) introduces the powerful concept of "energy", which builds on the v1 "time lock" concept to increment utility. In xExchange, users will enjoy many new benefits **simultaneously**:

    a. **Boosted APR** in Farms

    b. **Boosted APR** in Metastaking

    c. **Rewards from Metabonding - Exclusive** to xMEX holders only based on energy, not shared with EGLD stakers; no need to stake

    d. **Staking Rewards in xMEX - Exclusive** to xMEX holders only; no need to stake

    e. **Better Launchpad tiers** based on energy

    f. **Governance Power**

    g. **Earning** energy removal fees (50% burn and 50% direct distribution)

    h. **Earning** 0.10% of all swaps (50% burn and 50% direct distribution)

4. xMEX will be a **game changer** by shifting from a paradigm **prioritizing quantity** to a paradigm **prioritizing quality**: 100 xMEX with 0 energy has **no** utility and **no** power while 1 xMEX with 100 days of energy has **more** utility and **more** power.

5. Users who convert their LKMEX to xMEX will earn between 2x and 10x **more Metabonding rewards** during the first 3 months and earn an NFT that that will **guarantee a winning launchpad ticket**.

6. xMEX will bring a **robust and reinforcing value accrual mechanism** by which even exits from the energy paradigm benefit long-term contributors and holders: when users remove energy from their xMEX, up to 80% of the whole amount is redistributed to long-term contributors and holders.

7. xMEX core principle will be protected by being **non-transferable** in general, except in trusted setups like xExchange services and protocols whitelisted by governance or between wallets owned by the same person.

8. Complementary to xMEX, the new MEX will be the key entry point for the entire exchange ecosystem, serving as both a **payment** token, and **access** token, bringing recurring demand from projects and users who want to interact with and access the benefits brought by the exchange. Here are some of the specific benefits:

   a. **Fully transferable** and tradeable on xExchange, and other exchanges as well

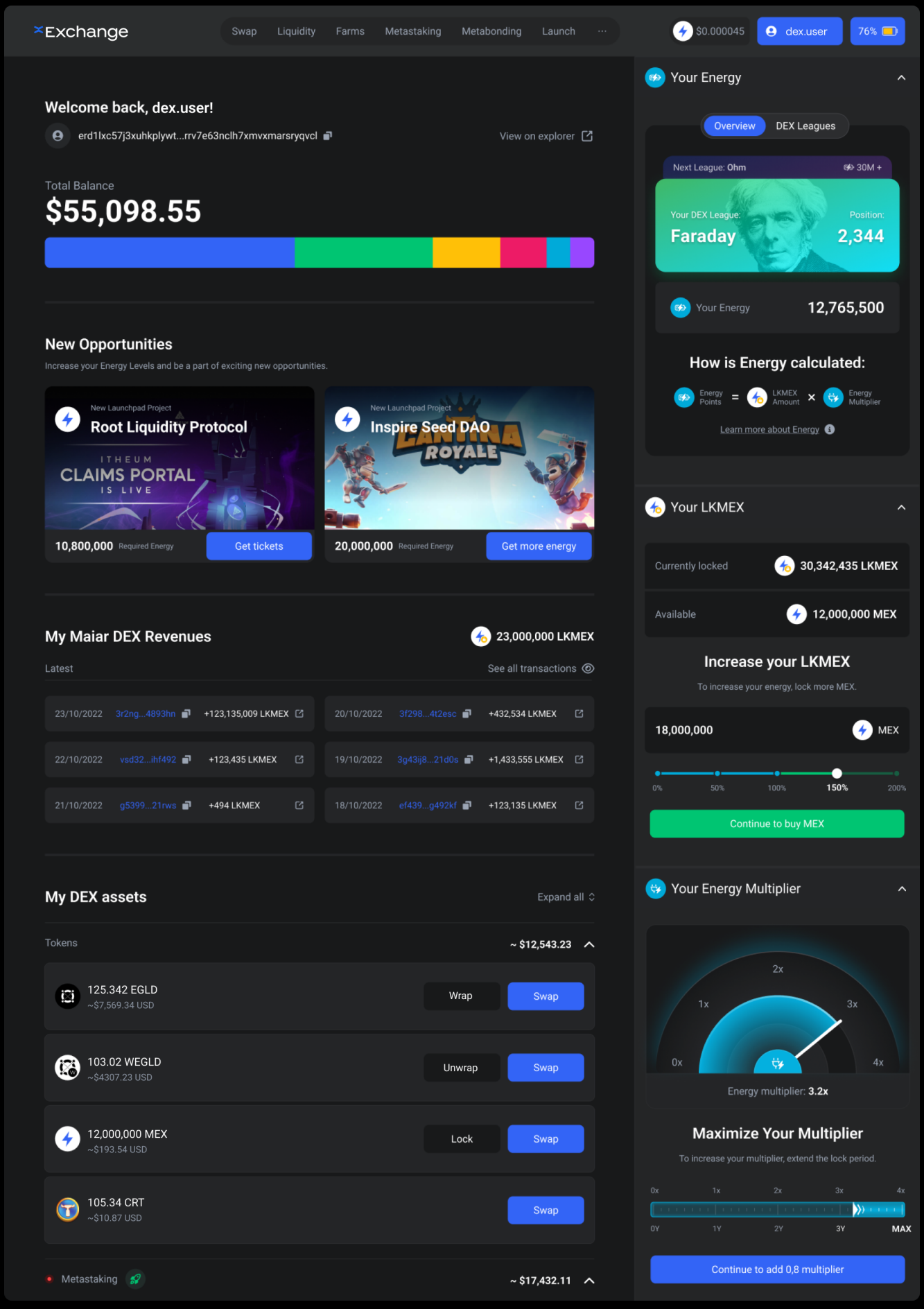
   b. **Buyable** with ON-RAMP options/solutions (Moonpay, Transak, Ramp, etc.)

   c. **Usable for payments** in xPortal SuperApp, xSpotlight NFT marketplaces, xMoney platform, and soon other places within the community

   d. **Top-up cards**, maximizing utility for the users

   e. **Usable as liquidity** in xExchange pools to earn trading fees and farm rewards

   f. **Entry point** to all xExchange energy based utilities/applications, through which it also brings a generous **bonus-pack** for those who convert MEX to xMEX (more details prior launch), so first-time users and exisiting users bringing more new energy into the system are rewarded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Swap
Liquidity
Farms
Metastaking
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Total Balance
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New Opportunities
Increase your Energy Levels and be a part of exciting new opportunities.
New Launchpad Project
Root Liquidity Protocol
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IS LIVE
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Get tickets
New Launchpad Project
Inspire Seed DAO
CANTINA
ROYALE
20,000,000 Required Energy
Get more energy
My Maiar DEX Revenues
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Latest
See all transactions
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Swap
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~ $17,432.11
Your Energy
Overview
DEX Leagues
Next League: Ohm
30M +
Your DEX League:
Faraday
Position:
2,344
Your Energy
12,765,500
How is Energy calculated:
Energy Points = LKMEX Amount × Energy Multiplier
Learn more about Energy
Your LKMEX
Currently locked
30,342,435 LKMEX
Available
12,000,000 MEX
Increase your LKMEX
To increase your energy, lock more MEX.
18,000,000
MEX
0%
50%
100%
150%
200%
Continue to buy MEX
Your Energy Multiplier
0x
1x
2x
3x
4x
Energy multiplier: 3.2x
Maximize Your Multiplier
To increase your multiplier, extend the lock period.
0Y
1Y
2Y
3Y
MAX
Continue to add 0,8 multiplier

1. Introduction

Decentralized exchanges have brought a significant breakthrough in bootstrapping liquidity provision mechanisms. However, all known DEX economics models presently suffer from a crippling affliction. There is a gross misalignment between the growth trajectory of these decentralized exchanges, and the value capture mechanisms of their native token. This may be the most significant open problem plaguing the entire DeFi ecosystem and threatening its long term sustainability and even survival. In this paper, we present a new economics structure and foundation that intends to solve this ecosystem wide problem.

xExchange is rearchitecting some of the key product elements to build a product that significantly improves the value accrual mechanisms for MEX and xMEX tokens, including a capped maximum supply for MEX tokens and a novel concept for xMEX tokens with wide foundational implications: the Energy they hold.

Advancements in the MultiversX protocol and its Smart Contract capabilities now make it possible for a solution to be put forward that will address the issues in a compelling manner.

2. xExchange: A Robust Foundation For MEX, xMEX via Energy

First, let's talk about the concept of a battery. For example, the battery of your smartphone. The first step is to insert the battery in your smartphone and then to charge it. Once the battery is full of energy, you can use your smartphone and benefit from it. The usage of your smartphone consumes the energy of the battery which after some time becomes discharged. At this point, you can either stop using your smartphone, or go for a new cycle: recharge the battery and use your smartphone again.

What does this all have to do with the xExchange native token, MEX, and its locked counterpart, xMEX? Using this metaphor, the MEX token once locked into xMEX, acts as the battery that doesn't have energy yet. This xMEX, the battery, can be then charged and filled with energy. This energy grants you numerous benefits as detailed later in the document. While enjoying the benefits, the energy is consumed until no energy remains in the xMEX. At this point, you can either unlock the xMEX and recover the MEX token, or go for a new cycle: recharge the xMEX and enjoy the benefits again.

Let's now be more specific.

Locking
1 MEX can be locked into 1 xMEX. This xMEX comes with 0 energy.

Charging
You will be given the choice to put either 1 year, 2 years or 4 years of energy in your xMEX.

1 xMEX	**1** year	**2** years	**4** years
Energy Points	**360** (= 360 x **1**)	**720** (= 360 x **2**)	**1440** (= 360 x **4**)

Benefits
Energy grants you numerous benefits in the xExchange as detailed later in the document. The more energy, the more benefits.

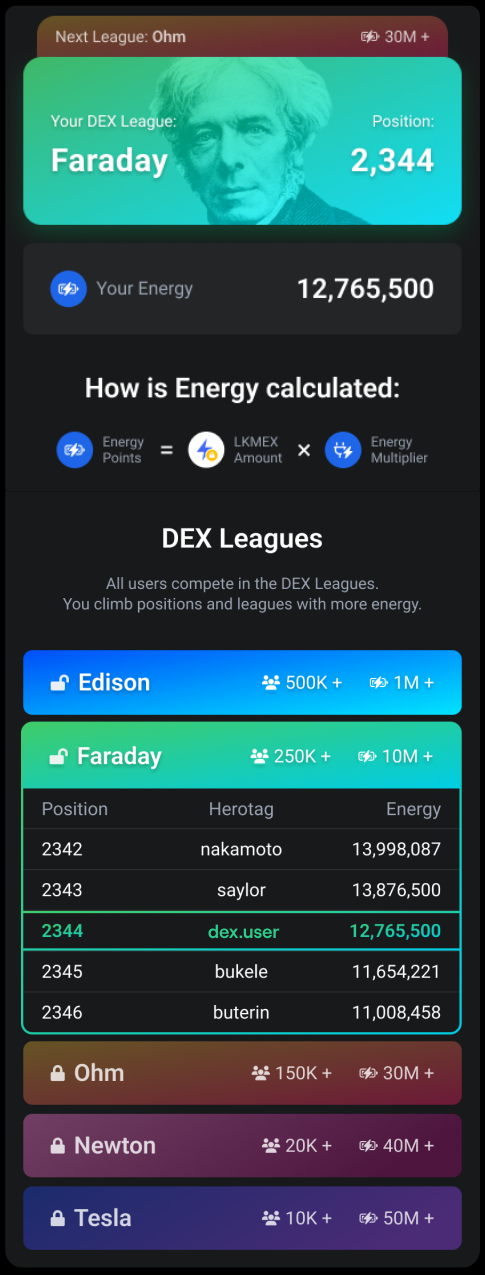
Discharging
While enjoying the benefits, the energy of each xMEX will decrease by one energy point each day until reaching 0 energy (more details in the Appendix).

Speeding the discharging
If you want to speed the discharge, you can remove some energy of your xMEX down to 0 years, 1 year or 2 years of energy by paying a removal fee, which grows with the amount of energy removed, up to 80% of the xMEX (more details in the Appendix).

The removal fee rewards the xMEX holders: 50% of the fee is burnt, which will have long-term value accrual benefits, and the other 50% goes directly to xMEX holders. This means the Energy is converted and not lost, that is the energy that one deliberately loses by fast discharging goes back into the system, to be distributed among the other participants, directly or indirectly.

Full energy removal requests take **10 days** (epochs) to process, and can be canceled at any time before that.

Recharging
Imagine you put energy in your xMEX and enjoyed the benefits for some time. Now your xMEX has less energy and grants fewer benefits. To regain benefits from your xMEX, you can increase its energy up to 1 year, 2 years or 4 years of energy.



Unlocking
When no energy remains in your xMEX, you can convert it back to MEX.

Transferability
In order to conserve its energy and protect its benefits, old LKMEX and new xMEX will no longer be transferable, being henceforth bound to the account where it was initially locked.

Some limited transfers for LKMEX and xMEX will still continue to be allowed:

- between two wallets for exceptional yet important cases (wallet compromised, etc.). Such transfers will come with constraints (more details in the Appendix).

- inside the xExchange, restricting them to specific operational transfers, for things like staking, adding liquidity, etc.

- inside other services & products beyond xExchange, which would have been authorized by the governance. Before the launch, projects will be able to submit a request **via Github** to be whitelisted (see Appendix for more details); note that only projects and Smart Contracts that serve as catalysts for user adoption and that bring valuable use cases will be considered eligible (for example use cases that go against the principles outlined above, where xMEX rules are overridden, re-enabling selling or buying will not be eligible). After the launch, pre-whitelisted projects and SCs will potentially be revisited through a governance call.

MEX, on the other hand, stays fully transferable and also tradeable on xExchange and other exchanges.

Indirect transferability

You will still be able to indirectly transfer an xMEX to any other wallet:

- You remove all the energy of your xMEX by paying a removal fee, unlock the xMEX into MEX, transfer the MEX to another wallet,
- Then the other wallet locks the MEX into xMEX and adds back the energy.

Energy of an account

Each address and account active on xExchange that owns some xMEX will have its energy calculated automatically and transparently by a Smart Contract so that the energy information of the account is available to be used by all xExchange components (farms, metabonding, etc.) as well as by other third parties.

Transition from LKMEX to xMEX

Once xExchange is live, your LKMEX will acquire the energy corresponding to its average unlock time and all the benefits that come along. However, its energy won't be removable and more energy cannot be added, unless you convert it to xMEX.

At any time, an LKMEX with X months of energy can be converted into an xMEX with 4x month lock period and 4x more energy. So if you convert LKMEX which unlocks in 2 months (on average), you will get an xMEX which unlocks in 8 months. Please note that this rule might be subject to changes.

Unique bonus rewards will be granted to users who convert **all** their LKMEX to xMEX within 30 days after the launch of xExchange:

- **Metabonding**: A boost between 2x and 10x on Metabonding rewards during the first 3 months. The boost will decrease with the percentage of LKMEX converted, so the sooner you convert, the better the boost.
- **xLaunchpad**: An NFT that will guarantee one of your launchpad ticket to be winning. This NFT won't be transferable.

A snapshot of LKMEX holders has already been taken just before this paper was published and the launchpad ticket NFT will be based only on this snapshot. For Metabonding bonus a different snapshot will be done after LKMEX becomes un-transferable.

2.1 xExchange v2.0: Benefits, Opportunities and the Utility of Energy

The entry point to all xExchange energy-based utilities is the MEX token. It is a transferable token that can be bought with on-ramp options or in xExchange or other exchanges and can be used for payments in xPortal SuperApp, xSpotlight NFT marketplaces, xMoney platform, and soon other places within the community. Besides, one can deposit MEX in the EGLD-MEX pool and earn trading fees and farming rewards.

With the MEX token comes its companion: the xMEX token. In xExchange, the actual benefits of xMEX have been rethought and numerous new benefits have been added, as summarized in the table below:

LKMEX Benefits in Maiar DEX 1.0

- MEX/LKMEX rewards for LKMEX stakers (shared with MEX stakers; need to stake)
- Metabonding rewards (shared with EGLD holders; need to stake)
- Farming EGLD-MEX LP

xMEX Benefits in xExchange (Maiar DEX 2.0)

- xMEX rewards for xMEX holders (only for xMEX holders; no need to stake)
- Metabonding rewards (only for xMEX holders; no need to stake)
- Farming EGLD-MEX LP and LP of other future MEX pools
- Max. capped supply
- xLaunchpad eligibility (based on energy)
- Boosting APR for selected farms
- Boosting APR for Metastaking
- Earning energy removal fees (50% burn and 50% direct distribution)
- Earning 0.10% of trading swaps (50% burn and 50% direct distribution)
- Participating in governance

All benefits shall become accessible from the start based on the energy of the account. All benefits will depend on the energy of the account without the need to allocate the energy or xMEX. Of course, the user needs to have boosted farming and/or metastaking positions in order for the energy to be applied, as explained below.

Let's now dive into each benefit in more detail.

a) Boosted APR in Farms
Some farms will be marked with a 'Boost' tag and propose a Boosted APR (more rewards that is) to farmers who have energy. The higher their energy, the higher the boost and the rewards. Farmers are now incentivized to hold their xMEX, add energy, and/or lock their MEX so they can earn more farm rewards.

Boosted Farms have Base Rewards distributed to all farmers and additional Boosted Rewards distributed to farmers who have energy. Each Boosted Farm has a Boost Factor setting that determines the amount of additional Energy Rewards that will be distributed:

$$\mathbf{TotalBoostedRewards = TotalBaseRewards \times BoostFactor}$$

The amount of Base Rewards the farmer is going to earn is defined by this formula:

$$\mathbf{BaseRewards = TotalBaseRewards \times \frac{FarmedLP}{TotalFarmedLP}}$$

The amount of Boosted Rewards the farmer is going to earn is defined by this formula:

$$\mathbf{BoostedRewards = TotalBoostedRewards \times \min\left(u \frac{FarmedLP}{TotalFarmedLP}, \frac{Energy}{TotalEnergy}\right)}$$

where **u** is a constant chosen at the farm level.

All farm rewards will be given in xMEX with 4 years of energy, but users will be given the choice to reduce it to 2 years, 1 year or 0 year of energy by paying the adequate energy removal fee.

b) Boosted APR in Metastaking
The same principles from Boosted APR in Farms will be applied for Metastaking, where based on energy and the amount staked, more rewards can be earned.

c) Metabonding
Based on the energy of an account, all Metabonding rewards will be split between xMEX holders. Metabonding rewards will no longer go to EGLD stakers, so 100% of the Metabonding rewards will only go to xMEX holders (based on energy). Also there is no need to stake or deposit xMEX in order to be eligible to receive Metabonding rewards. Anyone who has xMEX and some energy will be automatically eligible to claim Metabonding rewards each week.

d) xLaunchpad (Maiar Launchpad)

New launchpad tiers for energy are introduced: the tier of an account determines the maximum number of lottery tickets the account owner can buy for a listing, and the tier is based on the energy of the account. The EGLD tiers, based on the EGLD staked by the account, will continue to run in parallel with tiers based on energy. Therefore, an account cumulates the number of tickets it is eligible for from both tiers.

e) Fees Pool

A Fees Pool will be created and will receive all the fees paid by users when interacting with the xExchange. These fees will be claimable as weekly rewards by xMEX holders, based on their energy.

Each time users swap, a 0.3% fee is charged:

- 0.2% will go to liquidity providers

- 0.1% will go to xMEX holders:
  - 50% directly by being sent to the Fees Pool
  - 50% indirectly by being burned

Each time users speed up the discharge of theirxMEX, an energy removal fee is charged and goes to xMEX holders:

- 50% directly by being sent to the Fees Pool
- 50% indirectly by being burned

f) xMEX staking rewards for xMEX holders

In Maiar DEX 1.0, users could stake their LKMEX in the MEX/LKMEX farm to earn MEX or LKMEX rewards. These rewards were shared with the users who stake their MEX in the farm.

Once xExchange is live, users won't need to stake their xMEX anymore in order to receive these rewards, holding will be sufficient. All rewards will go to xMEX holders. The more energy, the more rewards will be received.

xMEX staking rewards for xMEX holders will be capped to a maximum of 5% from the total emission and be given in xMEX with 4 years of energy (possible to reduce it to 2 years, 1 year or 0 year of energy by paying the adequate energy removal fee). The rest of 95% from total emission will go to farms like MEX/EGLD, etc.

g) Governance

The energy accumulated by an account based on the amount of xMEX will translate into the governance power of that account.

Announcing the first governance vote after xExchange goes live will be a very important event. xMEX holders will be able to influence xExchange design and the utility of the native token.

Example: Initially, the removal fee will be split 50%-50% between a burn and a redistribution to xMEX holders. But maybe there is a better ratio that a governance vote could determine by choosing between several options, e.g. (1) 40%-60%, (2) 50%-50% and (3) 60%-40%.

The proposed governance mechanism must be resilient to various known threat vectors that would effectively defeat and nullify the entire benefits of governance, such as:

- Misalignment of incentives - ensuring that voters are only incentivized to vote for the option they believe to be the best for the xExchange.
- Vampire attacks - preventing entities from bribing users and influencing their votes.
- Plutocracy attacks - controlling the extent to which the governance power can be accumulated by the few accounts with greatest energy.

h) Others

Energy will be used on all future features of xExchange: lottery, dual-yield farms, lending, etc.

3. Tokenomics

The new economics model will use emission to specifically align (I) those who contribute by providing liquidity, with (II) those who contribute by joining the ecosystem, buying the token, and locking it to access the different benefits it offers.

During the first year of the Maiar DEX, the MEX emissions started at 5,000,000 MEX/block and quickly decreased to stabilize at 1,000,000 MEX/block for the remainder of the year. For the second and following years, emissions will considerably decrease (see table below) in order to ensure a max capped supply for MEX and create a strong premise for value creation and accrual around the xExchange (Maiar DEX 2.0) and MEX token.

Year	MEX / block	Decrease (%)
1st	**>1,000,000**	
2nd	**350,000**	**-65%**
3rd	**260,000**	**-26%**
4th	**200,000**	**-23%**
5th	**160,000**	**-20%**
6th	**120,000**	**-25%**
7th	**80,000**	**-33%**
8th	**50,000**	**-37%**

At the end of the 5th year, we envision that the governance counsel will submit the following two options for general MEX holders voting:

a) Pursuing the decrease of emissions as planned from the 6th year as in the above table, reaching 0% inflation model at the end of the 8th year. No additional MEX will henceforth be created.

b) Opting for a Minimal Viable Inflation model (MVI) to adjust the decrease of emissions to the maturity of the MEX ecosystem, emitting only the minimal amount of MEX to ensure sufficient incentives for liquidity providers. For example, if liquidity providers have become completely self-sustaining from fees, then the MEX emission will be set to 0.

3.2 Burns, and Other Deflationary Mechanics

Burn mechanisms are a great way to create value by introducing scarcity. There are several ways we intend to implement a contractionary monetary policy in order to counterbalance new emission, and reinforce value accrual.

- 50% of the fee when energy is removed from an xMEX will be burnt.
- 50% of the swap fee going to xMEX holders will be burnt.
- 100% of the 1% fee when withdrawing from a farm during the first 48-72 hours will be burnt.
- Others: new community farms, new pairs based on auctions, lottery pools, etc.

4. Future work: New Features and Sovereign Shards

Caveat emptor: Please note that while this entire section provides a very significant and high impact step forward for xExchange, it is still subject to discussion, will very likely change, and is explored for major potential future releases, without a specifically defined date.

4.1 xExchange v3.0: Expanding Opportunities and Utility

Several compelling features are currently in the research phase. Some will eventually be implemented and some will not, so please keep in mind that even if they are presented here they will not necessarily be implemented like this or at all.

Lottery for Grand Causes

The concept proposes a new method to capture and redistribute value, as a way to fundraise for global causes/NGOs through the MultiversX (Elrond) ecosystem and xExchange. As with all successful previous fundraising efforts, the global mission needs to be aligned with the individual's basic motivation. We believe that, with this proposed model, we not only incentivize individual participation, we generate broader community involvement among cause ambassadors and NGOs.

This is a no-loss lottery where 50% of the prize pool will be donated to the cause/NGO of the current lottery and 50% goes to the rewards pool. Each lottery will use only 50% of any amount existing in the rewards pool at the end of each lottery so that the rewards pool at any time has funds in it.

Here is a proposed method of how we could redistribute 50% of the rewards pool, by offering a reward to every participant:

Position of participants	Prize Allocation
Winner	**5%**
Next 0.1%	**3%**
Next 0.4%	**7%**
Next 2.5%	**15%**
Next 22%	**30%**
Next 75%	**40%**

The prizes for each lottery round come from these sources:

- Ticket Purchases: 100% of the price paid by people buying tickets that week goes into the prize pool.
- Projects Sponsoring: Projects and other types of sponsors can sponsor a lottery: 50% of the funds could go to the prize pool and 50% to the cause/NGO, or other mechanisms could be imagined as doubling the amount donated.
- MEX Injections: A total of 100,000,000 MEX (confirmed and set through goverance) from the treasury is added to the lottery pool for each lottery.

Based on the amount of energy of a user participating in the lottery, he receives a chance multiplier depending on the amount of energy: e.g. 5% - 50% increase chance to win.

Lending Pools
Based on the amount of energy of an account, that account will be eligible to participate in lending pools with boosted APR.

Price Discovery for Liquidity Pools
When a project creates a liquidity pool for its token, it will be able to benefit from the Price Discovering mechanism already in place for the xLaunchpad. This will provide the project with more accurate price initialisation for its token.

xBridges expansion
Support for BNB Chain in addition to Ethereum. Bridge more assets (BTC, BUSD, USDT, BNB, etc.) and add more pairs (BTC/USDC, USDC/BUSD, USDT/BUSD, ETH/USDC, BNB/USDC, BTC/EGLD, etc.)

xExchange Improvement Proposals (XIPs)
The community will be able to propose and discuss improvements for xExchange. While improvements proposed by the community won't be guaranteed to be implemented, the community will now be part of the thought process and will likely be a great source of feedback, innovation and value for xExchange.

Strategic Fund
A Strategic Fund will be created and used for strategically fostering the development, growth and security of xExchange. Some examples of use of the fund:

- for financing innovation contests (e.g. hackathons)
- for rewarding valuable community contributions (e.g. testing, feedback, tooling...)
- for punctually incentivizing specific usage of xExchange
- for security bounties and asset insurance.

Reputation System for Governance

Experience system based levels, enhanced by gamification and users actions and interactions with the DEX: participation into previous governance votes, providing liquidity, claiming rewards, staking, etc.

Limit orders and Range orders

The limit order functionality is a major tool moving the xExchange forward, narrowing the gap between options offered by CEXs and xExchange. It offers more flexibility and efficiency to DEX traders. Unlike a market order, which is executed immediately at the last market price with potential slippage, a limit order is executed at a predefined price as soon as it is reached. Market orders are used by default in all automated market maker-based DEXs. They are simple and straightforward for beginners. A market order is guaranteed to be executed or fail due to parameters, such as the maximum price impact. In turn, limit orders are intended for more advanced traders.

Concentrated Liquidity

First introduced by Uniswap v3, concentrated liquidity aims to boost capital efficiency, and to make up for the inadequacy of the original x*y = k formula underlying the standard automated market maker model. Within the new model, liquidity can be allocated to a price interval, resulting in what is called a concentrated liquidity position. LPs can open as many positions in the pool as they wish, thereby creating unique price curves aligned with their personal view of the market using what are known as range orders. Or we could concentrate liquidity around an internal oracle price.

Dual Yield Farms and Alliance Farms

Each existing farm can accept, in addition to the MEX token, a second reward token so that the farm becomes a dual-yield farm. Any project can boost its farm this way with its own token or any token (EGLD or USDC for example).

There is also the option to create new Dual Yield farms where the rewards are any 2 tokens (so no need to have MEX as a reward token).

4.2 xExchange v4.0: Sovereign Shards and Beyond

Introduction

Perhaps by far the most ambitious step in the xExchange roadmap, will be its elevation to a separate and sovereign application, with its own Sovereign Shard. Granting it this type weight would immediately and drastically change its positioning, utility, and value.

The substantial change in positioning would, in fact, bring a material change in token economics, granting it a strong added advantage in utility across the ecosystem, and a new more solid legal substance, setting a robust foundation for maximum utility, growth, and long term sustainability.

Defining a Sovereign Shard

A Sovereign Shard is a sovereign asynchronous minimalist version of the MultiversX (Elrond) blockchain, with its own validators and token economics incentives, ultimately connected to the MultiversX (Elrond) rootchain via a bridge. Such a Sovereign Shard opens maximum design flexibility, custom configurations, coupled with a simple and fast process of bootstrapping a new sovereign blockchain in a few minutes, while having the great benefit of being able to leverage the entire MultiversX (Elrond) tooling and infrastructure.

In addition to immediate tooling and rich customization flexibility, Sovereign Shard will also bring several other possible modules such as ZK Rollups and ZK Proofs, granting them unlimited and inexpensive scalability, coupled with privacy where needed. For Nation states, banks, enterprise institutions, and exciting new startups, Sovereign Shards are the dawn of a new iteration phase. Perhaps the first one offering proper, much needed tools that enable a clear and distinct path for exploration.

On why

Any sufficiently advanced and scalable system, whether in nature, society, or computation, will by necessity, be sharded. There are synchronous and asynchronous methods of sharding. MultiversX (Elrond) has already created a robust scalable synchronous architecture that can dynamically expand with the demand of the network.

However, a complementary and new need has become obvious during the recent months:
a need for specialized, customizable, separated chains that can immediately accommodate a distinct type of demand which need not be synchronously connected with the MultiversX rootchain.

In the grand scheme of things, this solves a few important and necessary matters: (I) works as an immediate complementary scaling method by rerouting part of the bandwidth coming via specialized large scale use cases, from the rootchain, to more specialized sidechains, (II) potentially adds considerable utility and demand for the MEX token by making it the native token of the Sovereign Shard, and making it a requirement for staking and processing of transactions of this new Sovereign Shard, (III) opens a completely new and rapid iteration phase for state level, enterprise level, and startup level use cases, that would require separation, and customization such as privacy level or permission level, (IV) provides a clear legal delineation and more robust legal substance to ensure that dapp tokens weigh overwhelmingly toward a utility token qualification rather than a security token one, and (V) is future proof and compatible with major subsequent ZK rollups and ZK proof upgrades.

Important questions and answers

a) Will this change require new architecture design for the xExchange (Maiar DEX 2.0)?
The elegance and strength of this potential new upgrade is that no major architecture change is necessary to redeploy the xExchange on a Sovereign Shard, while this will only enhance the value proposition, feature set, scalability, and composability of the new xExchange product.

b) How will the economics model change with this new utility?
A new slightly modified token economics model, similar to that of the EGLD will have to be put in place to ensure (I) effective incentivization, (II) proper security and attack prevention, (III) and a complementary/multiplicative value creation effect contributing to the MultiversX (Elrond) ecosystem and EGLD token. The new model shall be treated as a next complementary iteration of the model presented above.

5. Appendix

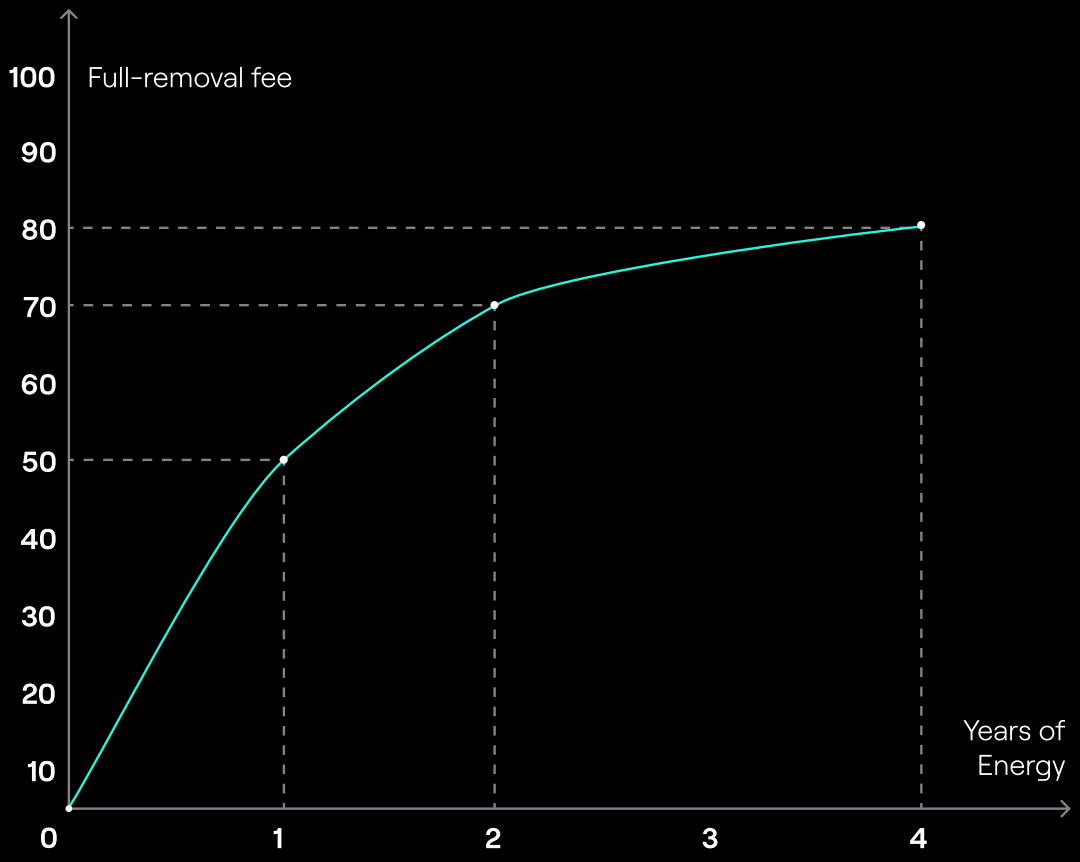
5.1 Removing energy

a) Full removal

The energy of a xMEX can be fully removed by paying a full-removal fee. The more energy the xMEX has, the higher the fee. In particular:

- For a xMEX with **1 year** of energy, the full-removal fee is **50%**.
- For a xMEX with **2 years** of energy, the full-removal fee is **70%**.
- For a xMEX with **4 years** of energy, the full-removal fee is **80%**.

In between, the fee is linearly interpolated. Here is the complete graph:



The full-removal fee increases slower and slower with the energy. From 0 years of energy to 1 year of energy, the fee increases by 50%, while from 1 year of energy to 2 years of energy, the fee only increases by 20%.

b) Partial removal
In order to add more flexibility, the energy of a xMEX can be partially removed.

If a user has a xMEX with 3 years of energy, he should pay the same overall fee whether he removes all the energy at once or rather removes 1 year of energy first and then removes all the remaining energy. This gives the equality:

$$1 - fee_{full,\,3} = (1 - fee_{partial}) \times (1 - fee_{full,\,2})$$

where $fee_{full,\,3}$ is the fee for fully removing the energy of a xMEX with 3 years of energy

and $fee_{full,\,2}$ the fee for fully removing the energy of a xMEX with 2 years of energy.

From this equality, we can deduce the fee for removing 1 year of energy from a xMEX with 3 years of energy:

$$fee_{partial} = \frac{fee_{full,\,3} - fee_{full,\,2}}{1 - fee_{full,\,2}} = \frac{75\% - 70\%}{100\% - 70\%} \approx 17\%$$

More generally, if a user wants to turn a xMEX with X years of energy into a xMEX with Y years of energy (X > Y), the partial-removal fee will be:

$$fee_{partial} = \frac{fee_{full,\,X} - fee_{full,\,Y}}{1 - fee_{full,\,Y}}$$

where $fee_{full,\,X}$ is the fee for fully removing the energy of a xMEX with X years of energy

and $fee_{full,\,Y}$ the fee for fully removing the energy of a xMEX with Y year of energy.

Reference table: When about to transform an xMEX with X years of energy into an xMEX with Y years of energy, you might be wondering which partial-removal fee you are going to pay. Here is a table with the most frequent combinations of X and Y:

	To 2Y of energy	To 1Y of energy	To 0Y of energy
From 4Y of energy	**33% fee**	**60% fee**	**80% fee**
From 3Y of energy	**17% fee**	**50% fee**	**75% fee**
From 2Y of energy	-	**40% fee**	**70% fee**
From 1Y of energy	-	-	**50% fee**

Remark: The more energy your xMEX has, the cheaper it is to remove a part of its energy, e.g. removing 1 year of energy from an xMEX with 3 years of energy is cheaper than removing 1 year of energy from an xMEX with 2 years of energy.

5.2 xMEX transfers between two wallets

Transferring xMEX will be enabled between wallets owned by the same person for exceptional yet important cases (wallet compromised, moving from a hot wallet to a cold wallet, etc.).

This will work thanks to a dedicated smart contract. The user sends his xMEX to it, and specifies the destination wallet. The xMEX can then be withdrawn 30 days later by the destination wallet.

Additional constraints might be added in the future if the transferring feature is gamed and not only used for transfers between wallets owned by the same person as intended.

5.3 Governance power

The greater the energy of an account, the higher its governance power.

Example:

- An account with 4 energy has a governance power of 4
- An account with 9 energy has a governance power of 9
- An account with 100 energy has a governance power of 100

5.4 Whitelisting 3rd party SCs and projects

Whitelisted projects will be given a transferRole to the wrappedxMEX tokenID, which is a token that does not have energy and is used only by whitelisted projects.

The whitelisted projects will need to wrap the xMEX they want to deposit or use. By wrapping it, the xMEX will temporarily "lose" its energy but the energy can be recovered and regained by unWraping it back.

Projects will be able to use the wrappedxMEX to deposit and use in the whitelisted Smart Contracts. Users who will get/claim wrappedxMEX will need to unWrap it in order to gain its original energy and convert it back to xMEX in order to enter liquidity or farms.

wrappedxMEX does not have the benefits of the xMEX, only after unwrapping it you gain all the benefits.