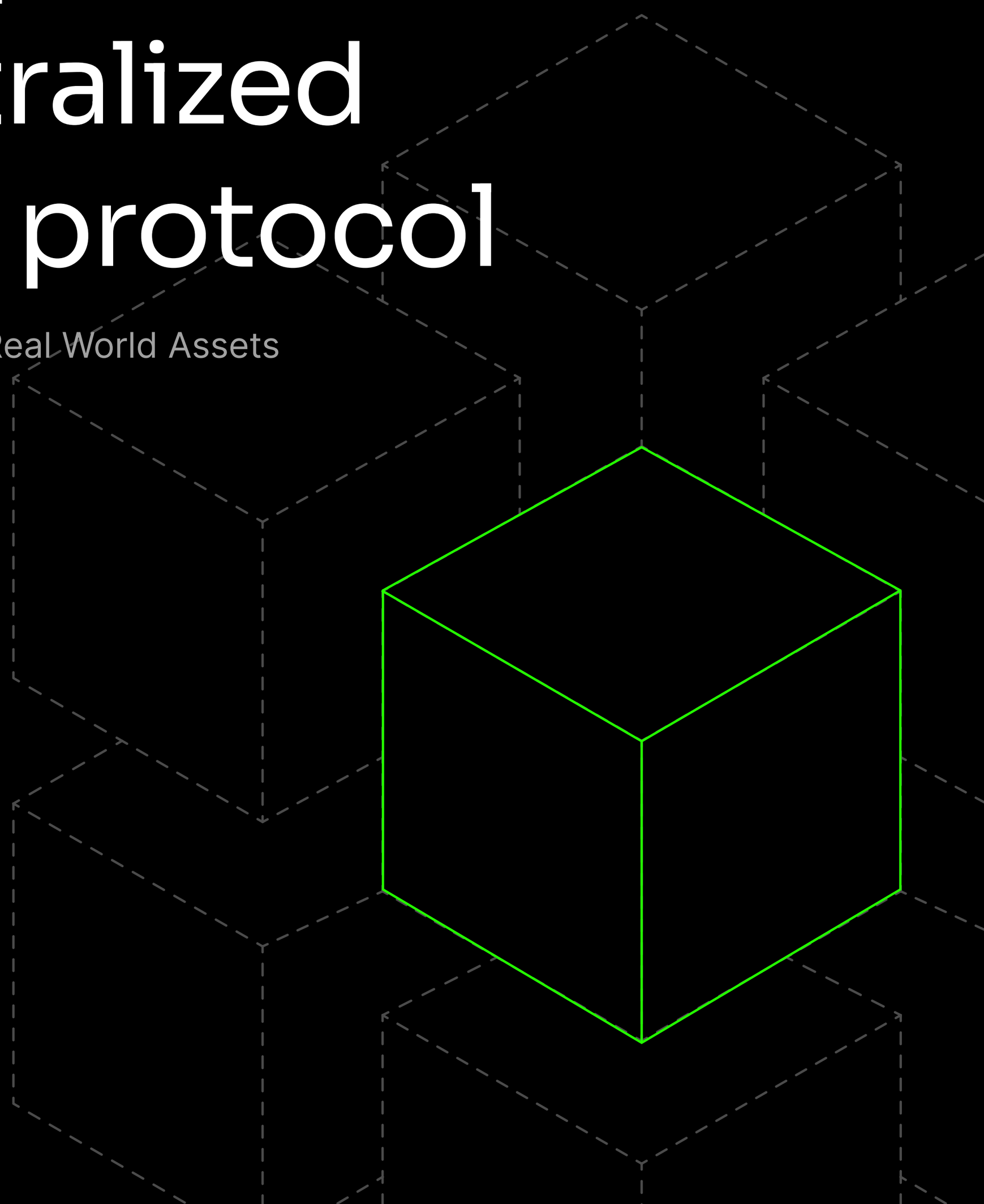
ecoPros

Litepaper

Own a piece of a decentralized energy protocol

Earn yield secured by Real World Assets



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Abstract

In recent years, centralized applications of an Energy-as-a-Service model emerged, proving that a new approach is required to scale the speed with which our planet transitions to clean energy sources.

ecoPros is a decentralized financing protocol for clean energy projects. Disconnected from traditional funding methods, the platform can be deployed to any country or region with enough funding reached. Web3 infrastructure is essential to the project's success at scale. It allows the protocol to move quicker, operate more efficiently, and offer incentives for users participating in the platform easily and transparently. To achieve this, ecoPros establishes the ecoPros DAO, which serves as a primary decision maker for the project that gives control over the future of clean energy funding to the community.

Introduction

ecoPros is a novel approach to funding clean energy projects across the globe. It enables anyone from a supported country to become an Energy User by registering, verifying their identity, and signing an EaaS subscription, with no on-chain collateral required. The protocol then enables available Installers to accept the order and receive funds for purchasing the hardware and fulfilling the project request. A trusted group of Auditors monitors the progress of an installation. Upon completion, the Energy User starts paying a subscription fee that is transferred back to the protocol and used as a stable APR for Investors.

What is Energy-as-a-Service?

Energy-as-a-Service is an umbrella term for a new energy supply model combining traditional energy services with novel software solutions. The ecoPros protocol bets on the EaaS movement as a natural next step in the global energy supply evolution.

EaaS for Energy Users

ecoPros connects Investors, Installers, Material Providers and Energy Users, and delivers a cost-effective alternative for existing energy supply solutions in selected countries. Instead of relying on private funding unavailable for an average consumer, ecoPros allows anyone to register and become an Investor and earn yield for funding clean energy installations by receiving a stable return from EaaS subscriptions signed by Energy Users.
A detailed explanation of how ecoPros funds the EaaS project can be found in the Protocol Phases section.

Content

1. ecoPros protocol

1.1 Introduction

ecoPros EaaS protocol is an on-chain participant-driven system for initiating, processing, and reconciling real-world Energy-as-a-Service subscriptions.

1.2 Agent Roles

Each agent has a set of types, with a Role type being the critical information deciding what actions are available to the Agent, how they should participate in the system, and what incentives they receive.

Investor

The Investor's role is to provide funds for EaaS funding pools. Each country might have a different set of parameters so that the Investor can pick from a list of supported countries based on their rationale.

They can also decide to allocate their capital to a Liquidity Pool to earn passive yield. The Liquidity Pool is a smart contract which automatically allocates the capital to all Country Pools based on the Liquidity Allocation Mode.

Installer

The Installer's main objective is to accept and fulfill Project Orders available on the protocol. From the protocol, they receive information about the available Projects, connect with Hardware Distributors to purchase material and gain a reputation by successfully finishing assigned Projects, thus gaining more attractive terms on the following Projects.

Material Provider

Material Providers provide the best material sales offers for Installers. They receive access to the ecoPros web platform directly and post their inventory. The protocol implements a small fee for every successful material sale. The materials for sale are then published on the platform and available for Installers to purchase. Material Providers receive a reward in the form of EPG tokens for successfully providing their services. They can use the EPG to promote their offers on the platform or stake EPG to reduce the fees paid for every material sale.

Country Manager

Country Managers are agents periodically elected by the ecoPros DAO. Their objective is to represent ecoPros in regions assigned to them. Country Managers earn rewards for sourcing and onboarding Material Providers, Installers, and Energy Users. Agent types like availability, location, and work transport are all important factors during Elections.

Country Managers receive monthly payouts for representing ecoPros and are required to dedicate sufficient time to fulfill the role responsibilities. Once elected, Country Managers must lock a protocol-defined amount of EPG tokens. If a malicious agent becomes a Country Manager, their EPG can be slashed by the vote of Auditors, and the elections will be triggered early to appoint a new Agent for the role.

Energy User

Energy Users can create Project Orders on the protocol, validate Project's progress, manage their subscription and see detailed information about the EaaS contract terms and conditions. In addition, by claiming and staking EPG tokens, Energy Users incentivise Installers to accept their Project Order faster by ranking it higher than other Project Orders.

Auditor

Auditors provide real-world checks for the protocol. By taking advantage of the Trust model, the protocol relies on Auditors to provide information about the real world. While protocols like Chainlink offer a wide range of information about the world, like weather data, currency prices, or stock action, the ecoPros protocol has to process and validate information points that are more opaque and uncertain. Auditors can claim EPG for contributing to the voting process where their vote results on the same side as the consensus. Additionally, they earn a passive yield on each ongoing EaaS subscription, where their vote influenced the successful completion of the project, thus incentivising Auditors to vote in the best interest of the protocol. In case a malicious agent is elected for the role of an Auditor, other Auditors may decide to request a vote against the agent and, upon verification, have the malicious agent's EPG stake slashed and their Auditor privileges removed.

To illustrate how Auditors work within the protocol, it is best to follow a real example of how Auditors operate. The example can be found in the **1.3 Trust Model** section.

1.3 Trust model

An ideal scenario for any decentralized protocol is maintaining a zero-trust policy between participants. Many good examples of systems like these exist and function already.
A zero-trust approach can be achieved by containing every parameter of the system on-chain.

To receive truthful information about the real world, protocols like Chainlink emerged, offering a range of information about the world, like weather data, currency prices, stock action, and much more. To provide trustworthy information, protocols like Chainlink offer a reputation mechanism. Furthermore, it also disincentives providers from being insincere by requiring them to lock a set amount of tokens and, once the protocol realizes a participant lied, slashing locked tokens and reputation points.

The ecoPros protocol provides a similar approach tailored to the system's needs. Firstly, each Agent's identity is verified by being verified and having a Unique Identity Proof assigned permanently.

Example: Verify that the documents provided by the Agent are valid

Auditors receive a signal about documents that the Agent has provided. In this example, it is an employment contract of an Energy User that requests to be approved for an EaaS contract. The protocol opens a thread on the private contact channel, and with a specific time limit set, all eligible Agents discuss the best way to verify the contract. The participants may decide that it is appropriate to call the company mentioned on the contract as an employer.

However, in most cases, since the Energy User is bound by the law to provide truthful information, the consensus vote decides that the contract details align with what the Energy User has provided as their legibility information. All Auditors vote and a significant majority confirms the document's validity.

1.4 Liquidity Allocation model

The Liquidity Allocation model specifies how capital is distributed across all Country and Project Pools. The model is driven by assumptions, without which its reliable functioning is impossible:

1. Each Investor is validated using Unique Identity Proof

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2. Most Investors act rationally when investing their funds

1.5 Yield generation models

All funding pools offer two models for generating yield from the invested capital. Each has its benefits and risks, and depending on the protocol conditions and needs, one option may be favorable over another for some Investors.

Investors may invest in multiple funding pools and select a different yield generation model for each.

Flat yield

A flat yield generation model generates yield in a supplied stablecoin only. Investors can reliably receive rewards in a supported stablecoin. The yield percentage offered by this model is also less volatile, as it does not benefit from incentives offered by the Hybrid yield model.

Hybrid yield

In a hybrid yield model, Investors earn rewards in stablecoins and EPG tokens. This model benefits from additional market incentives based on the protocol's supply and demand.

In scenarios with more demand for Projects that have not yet been provided with the necessary capital, the yield generated by the hybrid model increases to attract more Investors to the funding pool. In most situations, this model offers greater rewards than the Flat yield model, but since the rewards fluctuate dynamically, it is less predictable long-term.

1.6 EaaS Contract Valuation

To calculate a value of a single Project, an entire Pool, or a total system value, the protocol implements a formula that considers the following parameters:

- **Net Contract Value**, a total calculated value of a contract

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- **Duration** (in months) for which the contract has been signed

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- **Monthly Fee** value and equals to the contracted value paid by the Energy User

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- **Early Cancellation Penalt** adjustment

- **Cancellation Risk** metric based on a score given to the Project by Auditors

1.7 Real World Assets

A crucial part of the protocol is the ability of Energy Users to prove their eligibility with methods already utilized in Web2 projects. Apart from verifying the Energy User's identity using Unique Identity Proof, the protocol must also validate their ability to pay EaaS contract fees on time.

Materials purchased for every Project are verified, and their metadata, including purchase confirmation, is stored on-chain.

Real-World Assets origination

An eligible user can post an asset generation request to create a Real World Asset on the protocol. To properly store the asset, the request must contain the purchase confirmation document or other documents confirming the ownership of the asset and its location. In addition, all asset generation requests must pass the Auditors' verification before they can be used on the protocol.

1.8 Unique Identity Proof

All Agents must pass a full KYC/AML check before receiving full access to the platform. After successfully verifying, the Agent receives a token representing an anonymised pointer to the identity provided during the verification. What is important is that while there is no way to identify a person or entity from the metadata stored on-chain, one real-world entity is allowed to have at most one Unique Identity Proof.

1.9 Barriers for general Web3 adoption

The current adoption of Web3 projects is still in its early stages. Most consumers are reluctant to learn about the next web, and thus far, the barrier of entry is still too high for most users. Take, for example, the process of signing in to most Web3 projects: a user is presented with a "Connect" button. It is unclear for many what clicking on the button entails; users are used to "Signing up", "Registering", "Joining", or "Applying"; verbs intuitive and familiar enough to direct user action towards the desired action flow.

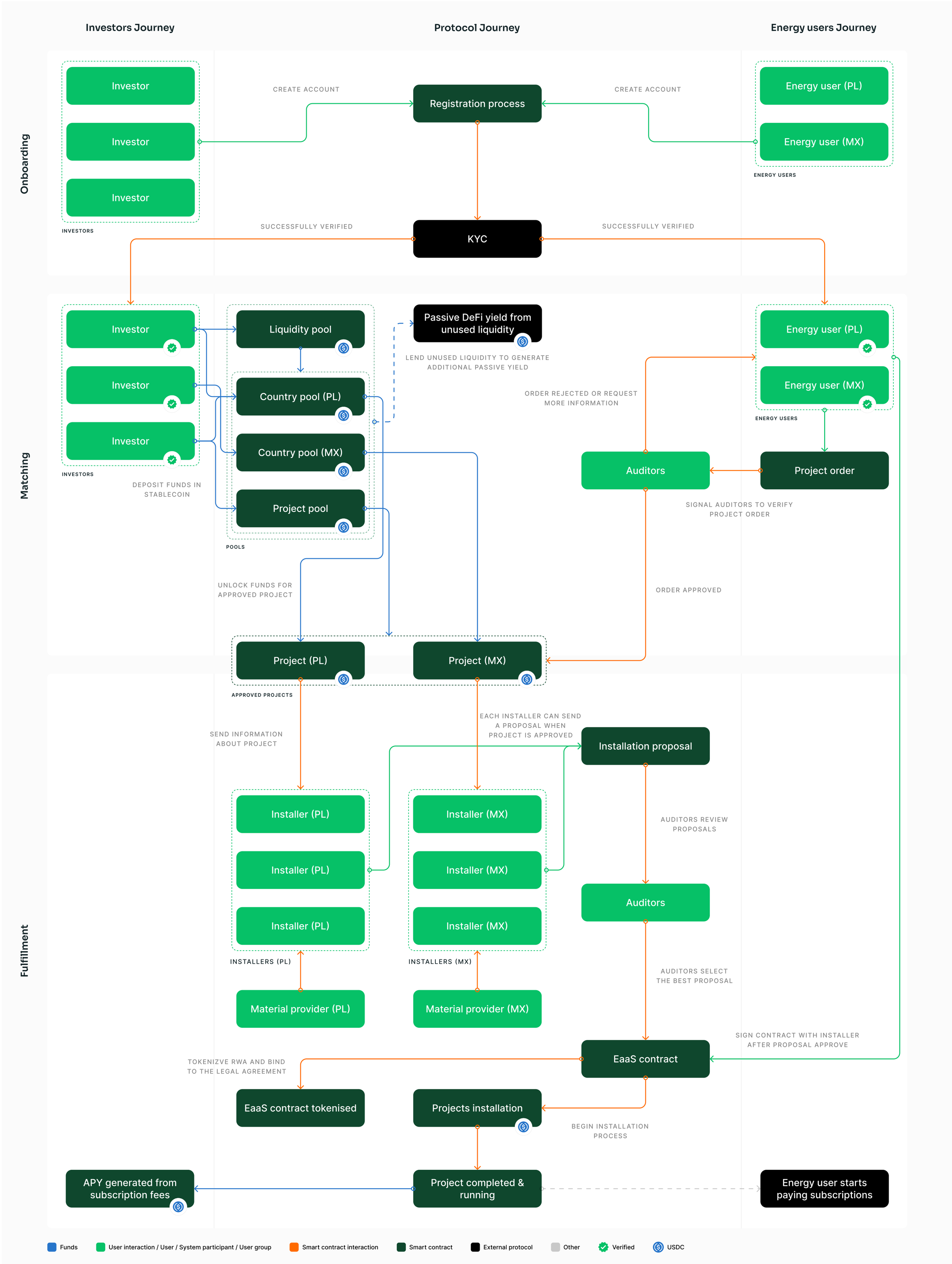
To minimize the friction required for an average consumer, the evolution of the ecoPros protocol follows an incremental decentralization approach described below.

1.10 Protocol development phases

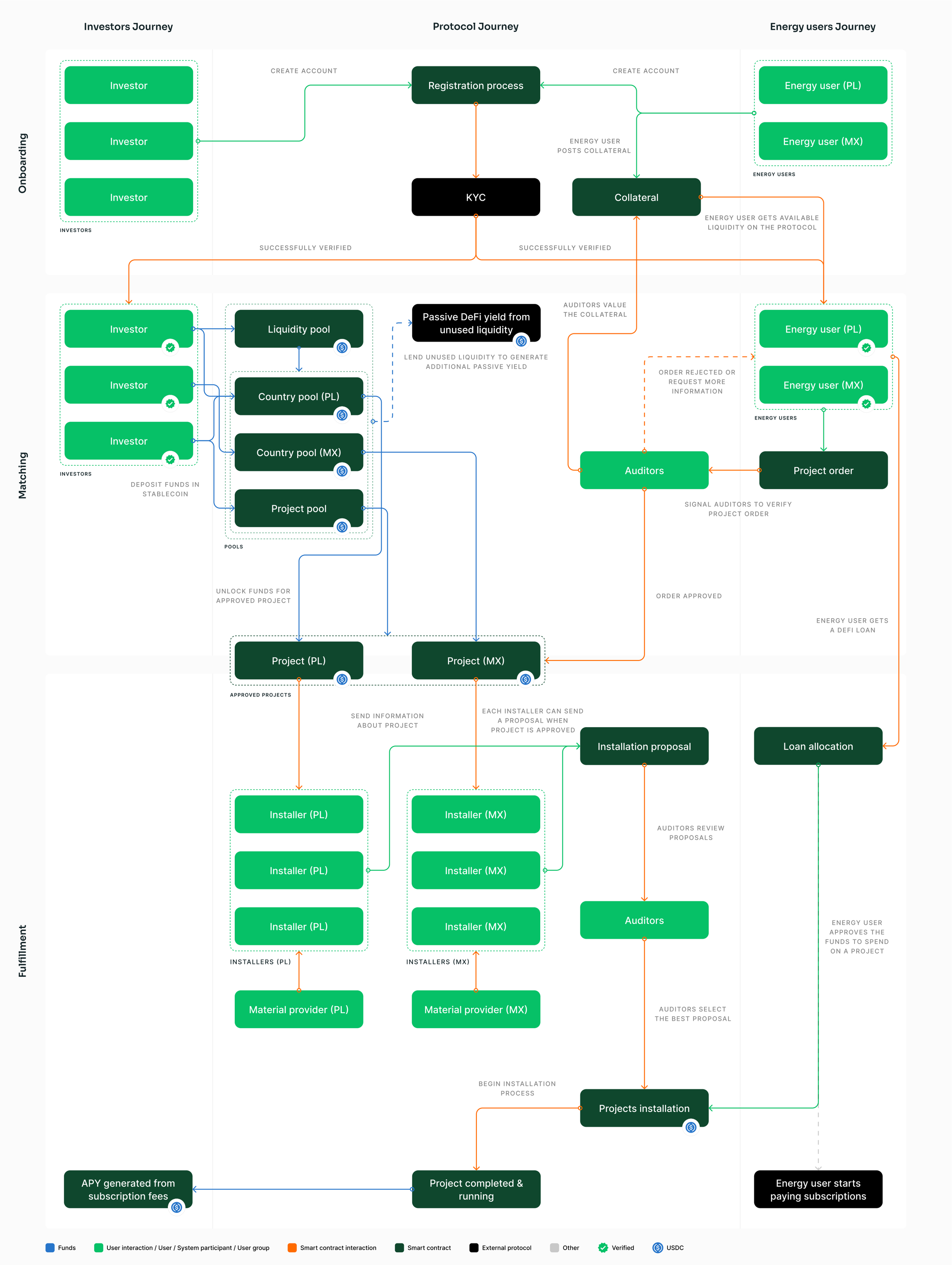
ecoPros protocol is implemented with an incremental decentralization approach. Described below are three phases, aiming to approach complete decentralization and infinite scalability by phase 3.

Phase 1: Getting started with an SPV

Phase 2: Transitioning to a decentralized model



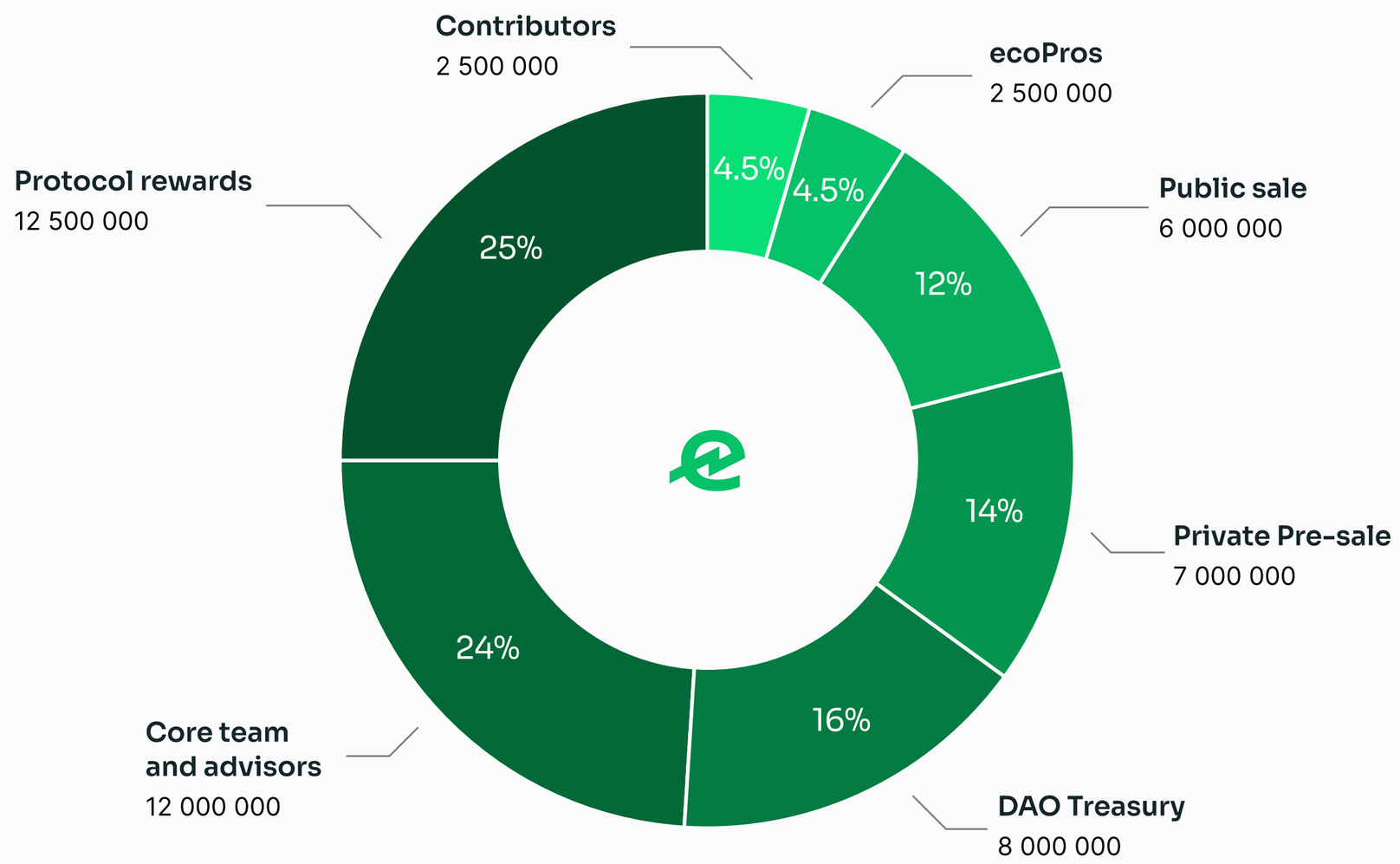
Phase 3: A fully decentralized and permissionless protocol



2. EPG token

EPG is a governance token (ERC-20) with an initial supply cap of 50,000,000. The token is currently not inflationary, but it is possible that in a few years, ecoPros DAO may collectively decide that it is more beneficial to the protocol to introduce an inflationary mechanism to continue rewarding protocol participants or to introduce an additional reward mechanism.

2.1 Token distribution



Initial token supply 50 000 000

Token Distribution		Token supply
25%	Protocol rewards This allocation is reserved for all contribution rewards granted by the protocol for all participants and future reward programmes. Funds are allocated to a dedicated Rewards smart contract and are solely used by the protocol reward mechanism.	12 500 000
24%	Core team and advisors Tokens allocated for the core team members and advisors. Core team members are subject to 5-year unlock schedules, while Advisors are subject to 3-year unlock schedules. All allocations include an initial 6-month lock-up and an 18-month transfer restriction.	12 000 000
16%	DAO Treasury Funds allocated for the DAO treasury. Once the DAO is functional, all funds will be unlocked and governed by the community, where the governance participants can decide how and when to utilize these funds. The community can, for example, decide to allocate funds as grants for various community programmes, to a new rewards programme, or as additional market liquidity.	8 000 000

14%	**Private Pre-sale** Tokens sold to early investors. This portion of the tokens has a 3-year unlock schedule, an initial lock-up of 12 months and a transfer restriction of 18 months.	7 000 000
12%	**Public sale** The public sale tokens will be distributed as a public sale programme and have an initial lock-up of 6 months and a 1-year unlock schedule.	6 000 000
4.5%	**ecoPros** Organisation created to be fully in the hands of the ecoPros DAO ultimately. This allocation has a 4 year unlock schedule, with an initial lock-up of 12 months.	2 500 000
4.5%	**Contributors** Allocated for contribution rewards, such as Discord community management, social media activity, ambassador programmes, and more.	2 500 000

2.2 Token utility

EPG is essential to the functioning of ecoPros protocol; it serves as a governance token in ecoPros DAO and is used for all agent incentives within the protocol. For Investors, it provides an additional APY in a Hybrid yield model and the Liquidity Pool. Installers are rewarded for successfully delivering Project installations and can stake their EPG on approved Projects to gain trust and have a higher possibility of being accepted for the job. Material providers can stake EPG or use it to promote their sale offers. Country Managers stake EPG to maintain protocol trust and receive EPG for fulfilling their responsibilities.

3. ecoPros DAO

3.1 Introduction

The ecoPros DAO was created to build a community around our core mission, vision, and values. It is powered by the ecoPros Governance token (EPG), a central point of the network. The token exists as a utility for incentive alignment amongst the participants. Apart from the protocol utility, token holders can vote for or against Proposals in the ecoPros DAO.

3.2 Values

Mission

Accelerating clean energy adoption with DeFi. While there has been a lot of progress towards a sustainable future and clean energy systems are becoming cheaper to build and install, there are still many opportunities to accelerate the transition to clean energy. The Web3 revolution allows us to let anyone invest in sustainability projects on-chain and help individuals and companies transition from unsustainable energy sources faster.

Vision

Empower clean energy installers with the tools needed to create a global decentralised energy system. We will do this by creating a decentralized investing platform that allows any Web3 user to invest their capital to build clean energy systems across the globe.

3.3 Governance

The ecoPros community governs via the ecoPros Governance token (EPG) and the ecoPros DAO. Participating in the governance process is restricted to ecoPros DAO members. The membership may be granted by being rewarded for an active bounty with EPG or by directly purchasing EPG from the market.