



# EMPOWERING COMMUNITIES IN ENERGY MARKET

# Table of Contents:

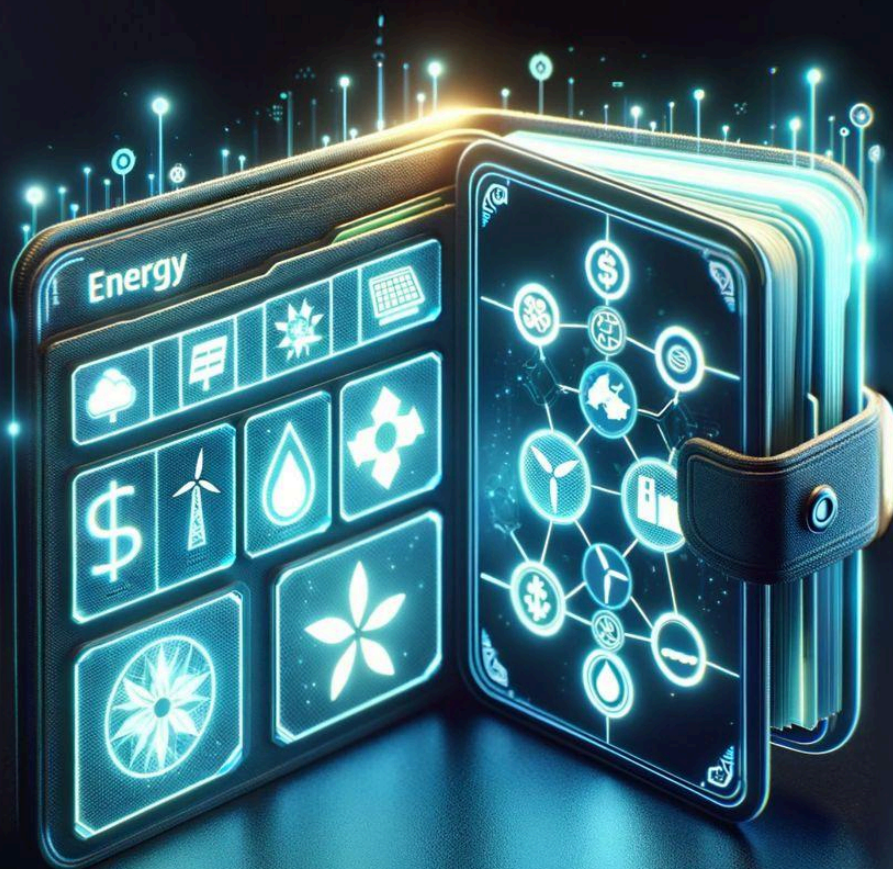
- 1. Our Vision**
- 2. Empowering community-driven energy**
- 3. Corporate vs Community-Driven Energy Markets**
- 4. DePin and RWA Tokenization**
  - A. The DePIN Landscape
  - B. DePIN market
  - C. Key Takeaways
  - D. DePIN Categories and Landscape
  - E. DePIN & RWA
- 5. C4E Technology and Infrastructure**
  - A. Layer 1 Smart Contract platform
  - B. C4E token utilities
  - C. C4E Technology Stack
- 6. C4E Products**
  - A. Billing and Trading
  - B. ChargEra EV Charging app
  - C. Blockchain
- 7. WEB3 - Future Products**
  - A. DeTrack
  - B. DeGEP
  - C. ChargEra.xyz and Marketplace
- 8. C4E Tokenomics**
- 9. Partners**
- 10. Roadmap**
- 11. Team**
- 12. Contact**



# Our Vision

In a world increasingly driven by sustainable and decentralized solutions, C4E stands at the forefront of an energy revolution. Our vision goes beyond just adapting to the future; we aim to actively shape it. We recognize that energy is not just a commodity, but the currency of the future. We envision a world where energy flows freely, governed by principles of accessibility, sustainability, and community empowerment.

Our mission is to break down the barriers that have kept people and communities out of the energy market for too long. C4E uses blockchain technology to create new tools and platforms. These are designed to give developers, entrepreneurs, and everyday people more power. We're making it possible for everyone to take part in the energy sector, moving control from big companies to a system that's more open and community-led. At the same time, we're working on a more decentralized energy market, which will be stronger and more reliable.



# Empowering Community-Driven Energy

C4E is leading a new way in the energy sector, offering a range of tools that can be used worldwide for a decentralized, community-focused energy market. At the center of C4E's work is the use of blockchain technology, specially adapted for energy needs.

This technology is key to enabling people to trade energy with each other (P2P) and manage it more effectively. It uses smart contracts to make transactions automatic, clear, and secure. Another key part of our system is the DePIN framework, which connects physical energy elements, like solar panels and EV chargers, with the blockchain. This creates a seamless link between digital and physical components.

C4E also integrates IoT and AI technologies, allowing us to gather and smartly analyze data directly from energy equipment. This helps in making accurate predictions and improves how energy is distributed and used. To make our ecosystem even better, we've introduced a token economy. This rewards people for their participation and encourages a culture of earning through digital assets, benefiting the whole energy community.

Our toolkit is designed for a wide range of users, including developers, entrepreneurs, and everyday people. Developers get access to a Layer 1 Blockchain with advanced smart contract features and compatibility with Cosmos IBC communication, laying a strong foundation for dApp development.

Entrepreneurs will find innovative solutions for tracking energy data, billing, and issuing green energy certificates. For individuals, C4E offers easy-to-use platforms for EV charging, P2P energy trading, and efficient management of energy communities, making sustainable energy practices achievable for everyone.

# Corporate vs Community-Driven Energy Markets

Today's energy market, controlled mostly by large corporations, faces several big problems that affect people and communities. One major issue is that access to energy services is often limited, and these services don't offer much direct benefit to individual users.

Some of the main concerns are the risk to personal privacy, weaker security, less efficiency, and higher costs. Besides, the way our energy systems are built right now doesn't support a model where communities can take charge and grow in a decentralized way.

This corporate-led energy market is mostly closed off and not very reliable. It's designed mainly to increase corporate profits, not to meet the needs of consumers or protect the environment.

In contrast, community-driven energy markets like C4E offer a groundbreaking choice. This model belongs to the community and uses open-source technologies, which means everything is more transparent and trustworthy for everyone involved.

Different from the usual energy sector, this approach is decentralized. This allows for fairer, more democratic decision-making. By putting the needs and contributions of individuals first, the community-driven model not only makes energy access fairer but also reduces costs. It does this by using ideas like Decentralized Energy Communities, which focus on local and shared energy solutions.

## DePin and RWA Tokenization

### The DePIN Landscape

DePIN, which stands for Decentralized Physical Infrastructure Networks, is all about combining blockchain technology and token rewards with the building of physical infrastructure. This covers various areas like transportation, energy, and wireless networks.

This blend marks a big change from the old, centralized ways to a more democratic and efficient method. It's a key part of C4E's innovative strategy to change the energy sector and other areas too.



## DePIN Market

The market for Decentralized Physical Infrastructure Networks (DePIN), especially in areas like sensors and energy, is expected to grow significantly in the next few years.

A report by Messari shows that the current market value for DePIN is around \$2.2 trillion, and this is predicted to increase to \$3.5 trillion by 2028. This shows the growing importance and possibilities for DePIN in various fields.

**\$2.2 trillion**

Current total addressable market  
for DePIN

**\$3.5 trillion**

Projected to reach by 2028

Specifically, the DePIN Sensor and Energy Networks market is forecasted to reach a remarkable \$177 billion by 2028, growing at a compound annual growth rate (**CAGR**) of **22%**.

This huge growth shows that there's a rising demand for decentralized solutions in the energy market. DePIN is set to bring big changes in how energy is distributed, managed, and used. It's paving the way for a more efficient, sustainable, and community-focused energy system.

## Key Takeaways

The DePIN infrastructure is characterized by its:

**Functionality:** It makes managing real-world assets (like properties and natural resources) more efficient and transparent. This is done through tokenization (converting assets into digital tokens) and automated smart contracts.

**Benefits:** It makes systems more resilient and reliable. It also supports governance driven by community needs and encourages eco-friendly, innovative solutions.

**Application:** DePIN is changing many sectors, like energy, transportation, and urban development. It does this by spreading control more evenly (decentralizing) and using digital technology to transform these areas.

# DePIN Categories and Landscape

**Physical Resource Networks (PRNs):** These focus on location-based decentralized resources in connectivity, mobility, and energy sectors.

**Digital Resource Networks (DRNs):** These networks involve fungible digital resources like computing power and shared bandwidth, not tied to specific locations.



DePIN Projects	Chain	Category	MC (M)
Filecoin	Native	Server	\$2,794
Akash	Cosmos	Server	\$544
Helium /Helium IoT	Solana	Sensor	\$875
Helium Mobile	Solana	Wireless	\$338
DIMO	Polygon	Sensor	\$76
HiveMapper	Solana	Sensor	\$58
Sentinel dVPN	Cosmos	Servers	\$32
C4E	Cosmos	Energy, Sensor	\$1*

\* MarketCap at listing price

Source: DePIN scanner

## DePIN and RWA

In C4E's world of blockchain technology and the DePIN framework, turning Real-World Assets (like properties or natural resources) into digital tokens is a game-changing move. This process opens up new possibilities like making assets easier to trade (liquidity), allowing people to own parts of assets (fractional ownership), and offering varied investment options that were once only in the traditional financial world.

C4E is creating a beneficial environment where these digital tokens work well, become more liquid (easier to trade), and bring more efficiency in using capital. With its cutting-edge blockchain and DePIN technology, C4E is in a great position to lead this trend in the energy sector.

Reports from firms like 21.co show the growing importance of tokenized assets. The market, currently worth about \$116 billion, is expected to soar to an incredible \$10 trillion by 2030. This is because traditional financial groups are starting to use blockchain technology more and more.

This growth path is also seen in the RWA report titled 'Tokenization of Real-World Assets.' This report explains how this trend could be transformative in various sectors."

This version maintains the essence of your original message but presents the information in a more straightforward and easily digestible format.



# C4E Technology and Infrastructure

## Layer 1 Smart Contract platform

The C4E blockchain is a major step forward in decentralized energy systems. It's built as a Layer 1 Smart Contract platform and uses the powerful Cosmos Inter-Blockchain Communication (IBC) protocol, along with decentralized finance (DeFi) applications made just for the energy sector. This setup lets both individuals and entrepreneurs create cutting-edge decentralized apps (dApps) for managing and distributing energy.

Smart contracts are at the heart of the C4E network. They make transactions and interactions automated, secure, and efficient. There's also a comprehensive Software Development Kit (SDK) available, giving developers the tools they need to build and launch their own energy-focused dApps.

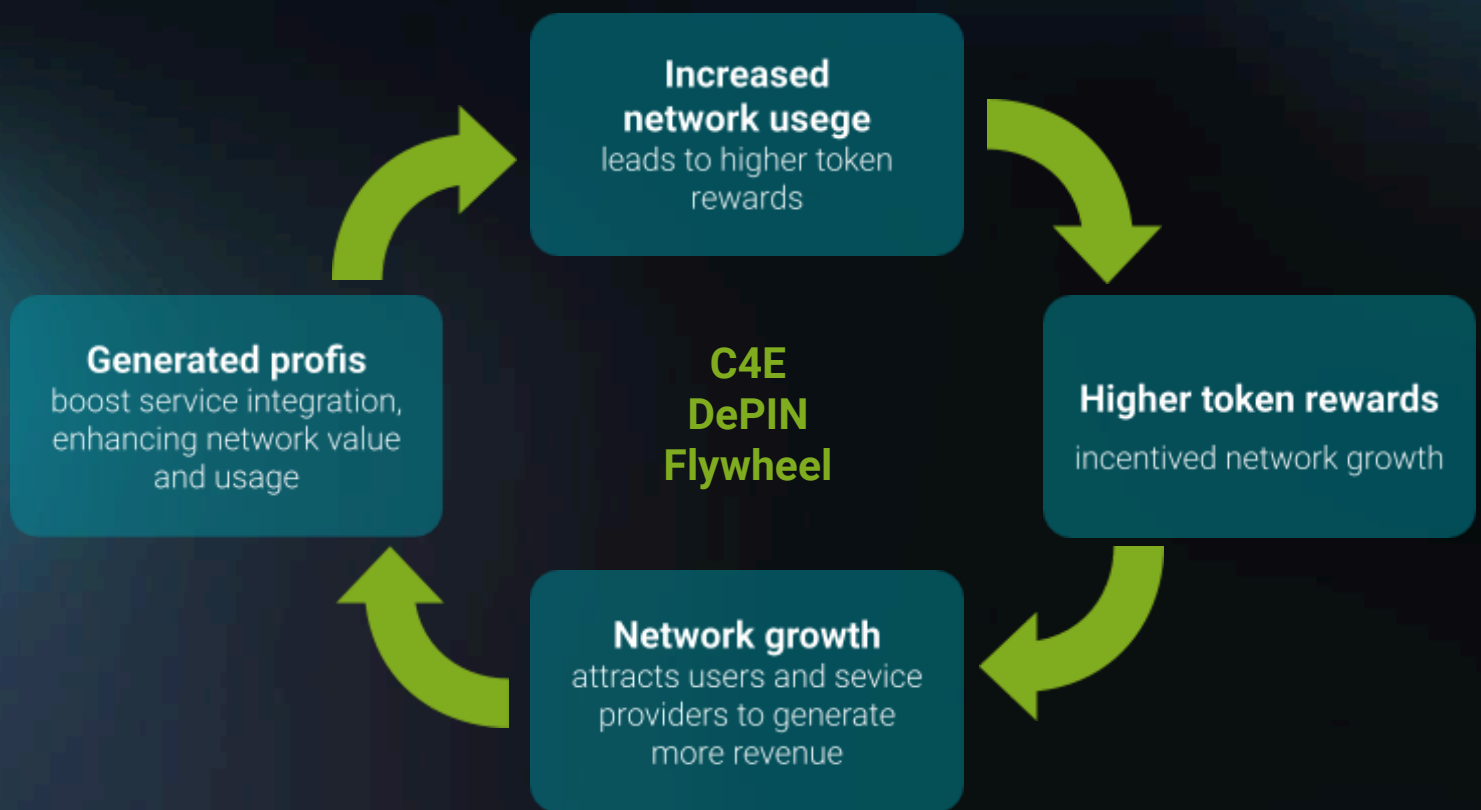
A standout feature of the C4E blockchain is its community-based governance. This democratic style makes sure decisions reflect what the community wants and needs, promoting ownership and active involvement from everyone. The DePIN token also plays a big role, motivating and rewarding those who contribute to the ecosystem.

Choosing Cosmos and a Layer 1 blockchain for C4E was a strategic decision. It provides a specialized, independent blockchain solution that meets the specific needs of the energy sector.

The platform is highly scalable, handling up to 10,000 transactions per second, ready for the network's growing needs. Another important aspect is interoperability, made possible through Cosmos' IBC. This allows for smooth communication and exchanges between different blockchain networks.

<b>Blockchain</b>	Layer 1
<b>Scalability</b>	Up to 10 kTPS
<b>Interoperability</b>	IBC
<b>Efficiency</b>	Proof of Stake
<b>CosmWASM</b>	Smart contract
<b>Governance</b>	Community DAO

# C4E Token Utilities



**Transaction Fees:** In the C4E network, transactions are paid for using C4E tokens. This payment method helps keep transactions running smoothly and keeps the network safe and secure.

**Staking:** People who own C4E tokens can 'stake' them, which means they commit their tokens to help with the network's validation process. By staking, they not only enhance the network's security but also get a chance to earn rewards. This process is in line with the Proof of Stake mechanism, a modern way of validating transactions.

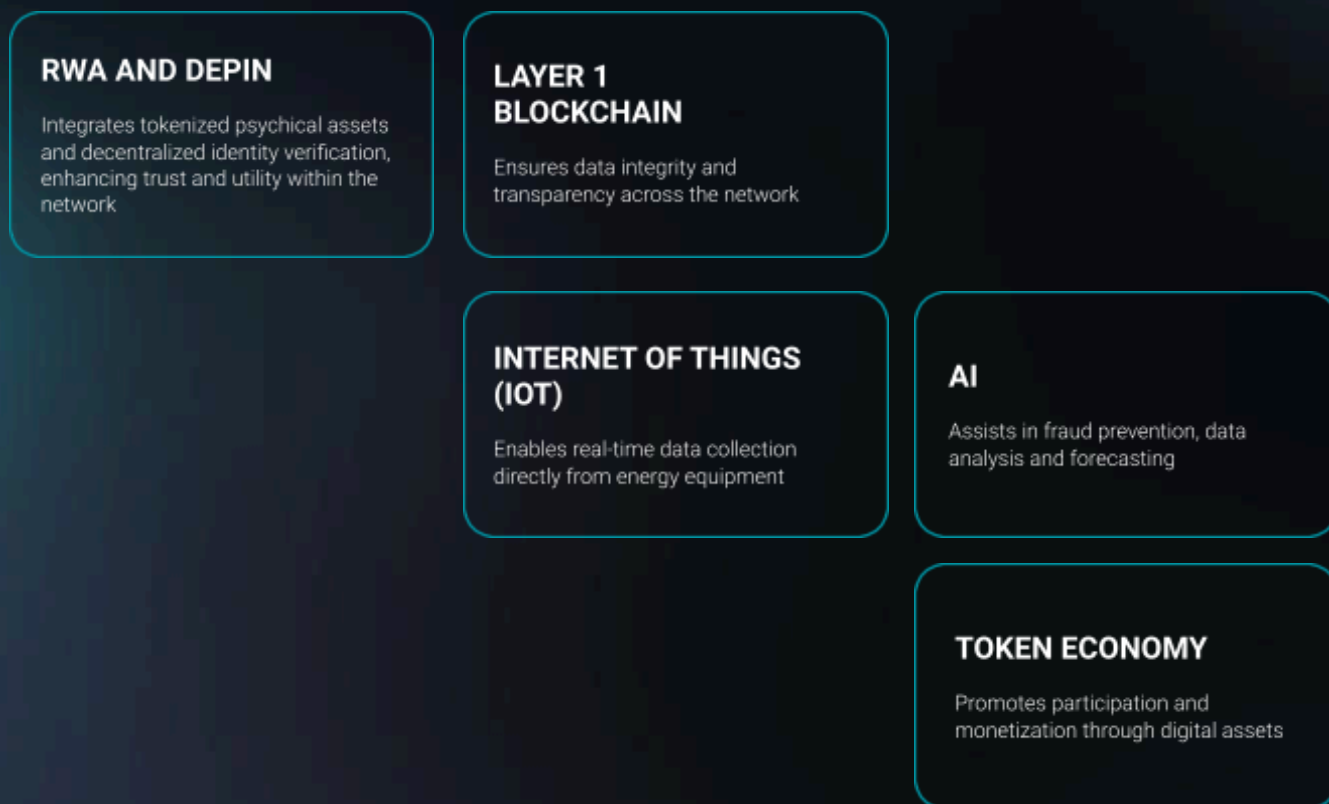
**Governance:** Holding C4E tokens also means having a say in how the network is run. Token holders get voting rights, allowing them to be actively involved in making decisions about how the network develops and changes over time.

**Product Discounts and Access to Services:** C4E tokens can be used to get discounts on products and services within the C4E ecosystem. This encourages people to use and keep the tokens circulating, making them more valuable for users. Products such as DeTrack, DeEC, DeGEP, and ChargEra are examples of what can be accessed with these tokens.

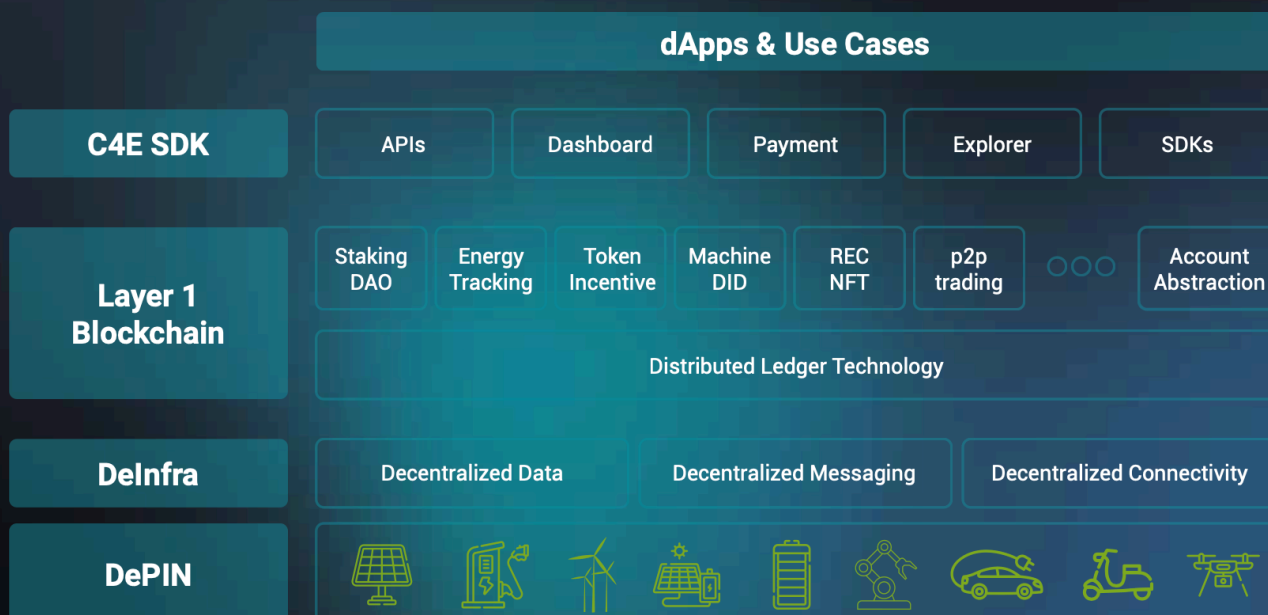
**DePIN Incentives:** tokens are used as incentives. They encourage people to contribute to and get involved with the network, which helps it grow and stay sustainable.

**Ecosystem Rewards:** People who are actively involved in the ecosystem, like developers, validators, and users, can earn tokens as rewards. This not only motivates more participation but also helps keep the community dynamic and thriving.

# C4E Technology Stack



The key technologies behind C4E's innovative approach to managing energy in a decentralized way include several important parts. These are the C4E SDK (Software Development Kit), a strong Layer 1 Blockchain, the creative DeInfra framework, and the groundbreaking DePIN model. Each of these elements is made to work together smoothly. They provide a platform that is not only seamless and secure but also efficient. This platform is perfect for developing and launching decentralized energy applications.





# C4E Products

As C4E leads the way in decentralized energy solutions, we're thrilled to reveal some groundbreaking products that are nearly ready for tokenization. These innovations are set to change the way communities use, manage, and benefit from sustainable energy. Our progress has been significant – we earned \$90,000 in revenue in 2023, and with these new products almost ready, we're looking at a projected revenue of over \$500,000 for 2024.

These upcoming products reflect our dedication to using blockchain technology in the energy field. They incorporate IoT and AI for better data gathering and analysis, and promote a token economy to encourage more people and investments in green energy. While we're keeping the details under wraps for now, these products are designed to be scalable and community-focused. They will offer new ways for energy trading, management, and use – all in line with our goal for a decentralized and democratic energy future.

## Billing and Trading



The C4E solution makes energy trading and billing much simpler, providing a smooth experience for everyone involved. Users get a system that's not only good at handling transactions quickly and efficiently but also makes sure that billing is clear and accurate. This platform is great for both energy providers and consumers. It's a key part of C4E's goal to support community-based energy systems with smarter and more sustainable energy options.

Additionally, the C4E platform plays a crucial role in fostering energy communities. By enabling these communities to manage and trade energy among themselves, it creates a more interconnected and supportive network. This not only empowers local energy production and consumption but also encourages the adoption of renewable energy sources. In energy communities, members can benefit from shared resources, collective decision-making, and reduced energy costs. The C4E solution thereby contributes to building stronger, more resilient, and environmentally conscious communities, aligned with the broader vision of sustainable and inclusive energy development.

## ChargEra EV Charging app



As the global electric vehicle (EV) market grows, so does the need for easy-to-use and accessible charging stations. This change opens up a great chance for businesses to expand beyond their main services. Our ChargEra solution is designed to meet this need. It's not just a way to provide charging for EV owners; it also creates a new way for hosts to make money. It's an opportunity for businesses to tap into the booming EV market and benefit from it.

ChargEra is a concept that lets businesses offer electric vehicle (EV) charging with chargers that accurately measure how much energy is used. What makes it really clever is its simplicity and wide applicability. Our chargers work with the Open Charge Point Protocol (OCPP). This protocol is a type of open-source communication standard used by EV charging stations and network software companies. In simple terms, any EV charging station that follows the OCPP standard can be set up to work with any other software that also follows OCPP. This means our ChargEra solution can work with most chargers available in the market.

## Blockchain



Our Layer 1 Blockchain highlights the strength of automated smart contracts and the guarantee of unchangeable data. This blockchain system is carefully built to support a decentralized structure, making sure transactions across its network are smooth and secure. Its integration with the Cosmos Ecosystem allows it to work well with different blockchain platforms, improving both its ability to handle more users and operations efficiently.

Notably, observatory.zone has recognized C4E as one of the most decentralized blockchains out there. This recognition emphasizes our dedication to keeping our network widely distributed, secure, and transparent. C4E is committed to creating an energy trading environment that is open and fair for everyone.

# WEB3 - Future Products

## DeTrack

DeTrack marks a major step forward in energy management, using the powerful C4E blockchain to revolutionize how we track and bill energy in a decentralized way. This product is a perfect example of how blockchain technology can be smoothly incorporated into the energy field. It provides unmatched transparency, efficiency, and ease of use in monitoring energy consumption and distribution. DeTrack is all about making energy data more accessible and understandable, which is crucial in today's world where managing energy smartly and sustainably is more important than ever.



## Core Features of DeTrack

**Enhanced Transparency and Security:** Thanks to blockchain technology, every energy transaction in DeTrack is recorded in a way that can't be changed, keeping the data safe and intact. This greatly improves the security and reliability of how we manage energy information.

**Accessibility and Democratization:** DeTrack makes energy data easy for everyone to access and understand - from regular consumers to producers and those trading in energy. This openness helps people get more involved and make smarter choices about how they use energy.

**Efficient Energy Management:** Tokenizing energy with DeTrack leads to better energy management. It helps identify how energy is used, optimizes how it's distributed, and balances the supply and demand effectively.



## DeGEP

DeGEP (Decentralized Green Energy Proofs) utilizes blockchain technology to provide reliable proof of the origin and authenticity of green energy. This method increases trust and clarity in the renewable energy market. By giving strong evidence about where the green energy comes from and ensuring it's genuine, DeGEP makes it easier for people to be sure about the quality and source of their renewable energy.



## Key Aspects of DeGEP

**Verifiable Green Energy Origins:** The main job of DeGEP is to confirm where green energy comes from. Using blockchain's unchangeable record-keeping, DeGEP makes sure that each unit of energy can be reliably traced back to its source, whether that's solar, wind, hydro, or other sustainable methods.

**Boosting Consumer Confidence:** In today's market, where misleading claims about being 'green' (greenwashing) are a concern, DeGEP adds a crucial layer of realness. This lets consumers and businesses buy energy with the confidence that they're truly supporting renewable sources.

**Tokenization of Energy Certificates:** DeGEP goes even further with energy certification by turning these proofs into digital tokens. This smart move makes buying and selling green energy credits simpler and more efficient for everyone involved in the market.

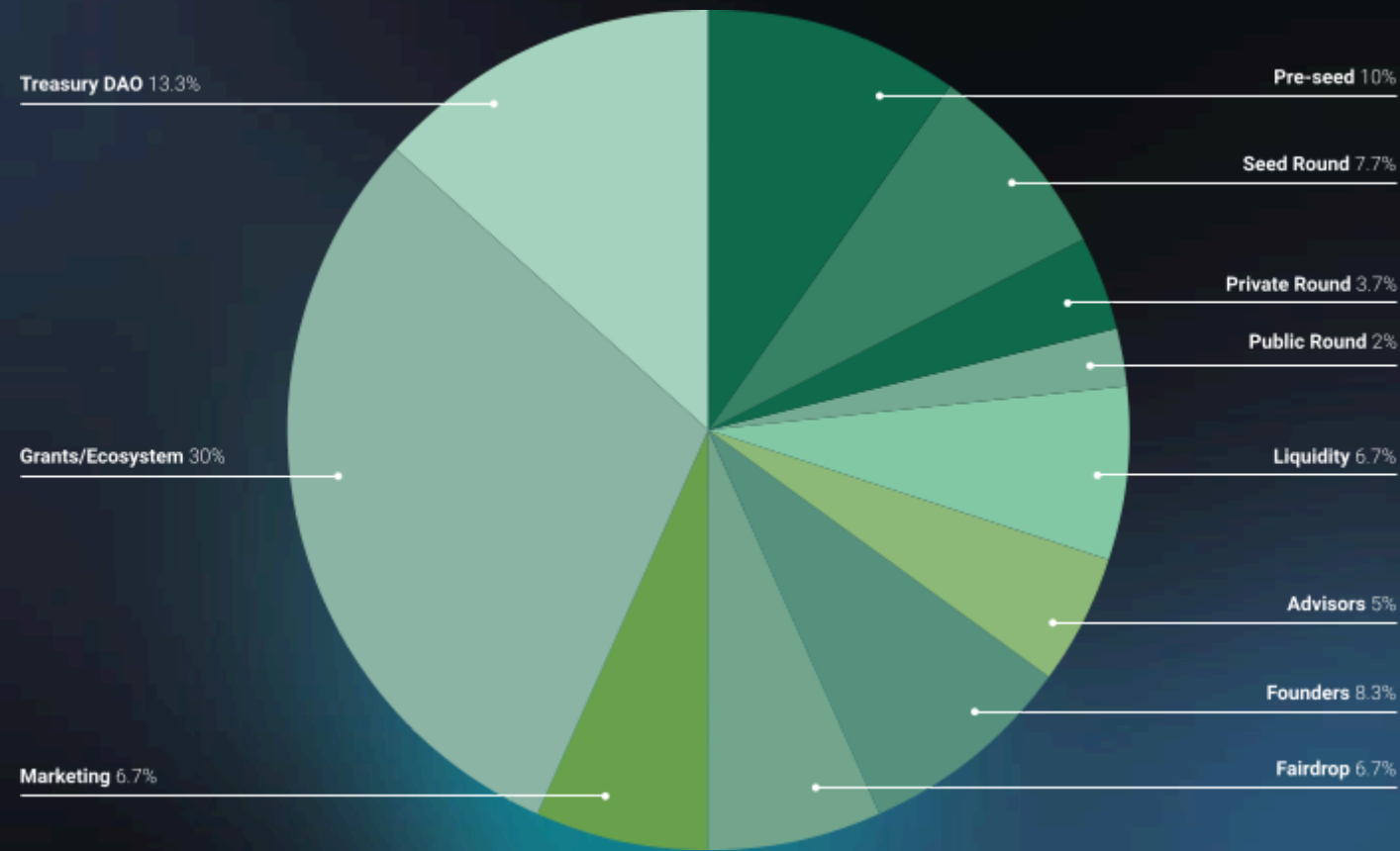
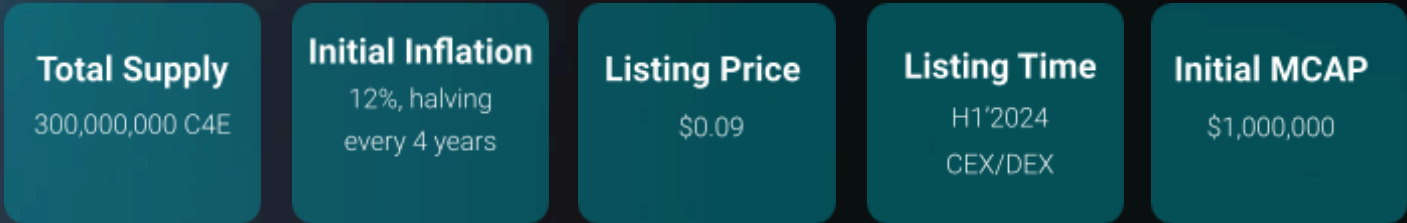
## ChargEra.xyz and Marketplace

ChargEra.xyz and the Marketplace, already key parts of the C4E ecosystem, are set for a major upgrade with the introduction of web3 token integration. This new step will use cutting-edge blockchain technology to change how value is exchanged, creating a trading environment that's more dynamic, efficient, and focused on the user's needs.

These enhancements will open up new ways for people to interact, do business, and gain benefits from Web3 technologies. Thanks to the decentralized and advanced capabilities of the C4E Blockchain, ChargEra.xyz and the Marketplace will provide unique opportunities for everyone involved to engage and prosper in the world of Web3.

# C4E Tokenomics

The C4E token is the native digital currency of the C4E Blockchain. It plays a central role not only in our blockchain network but also in the functioning of our decentralized applications (dApps). This means that the C4E token is used for various transactions and interactions within our ecosystem, acting as a key facilitator for operations and services offered by our dApps. Its integration across our platform underscores its importance in enabling a smooth, efficient, and secure digital exchange, aligning with our vision of a decentralized and innovative digital economy.



# We work with

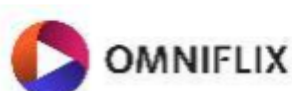
## ENERGY MARKET



## INTEGRATIONS



## WEB3 PARTNERS





# Roadmap



**2021**  
MVP

- Project Kicked-off
- \$600K Funding Secured
- Blockchain Testnet
- Energy Platform MVP



**2022**  
Blockchain  
& Energy platform

- Mainnet deployed
- Energy Tokenization PoC
- Energy Platform Launched for Commercial Customer



**2023**  
Cosmos IBC  
and first RWA cases

- COSMOS Inter-Blockchain Communication (IBC)
- Digital Authentication & KYC
- Strategic Reserve Delegation Program
- Incentivized testnet
- EV Charging PoC Launched with the BMW Foundation
- Green Energy certificates MVP



**2024 H1**  
ChargEra Launch

- C4E Airdrops distribution
- Public Sale
- CosmWasm
- CEX/DEX Token listing
- DePIN Energy Tracker
- DePIN EV Charging Network



**2024 H2**  
Marketplace

- Token incentives model
- Decentralized Storage
- Green Energy Proofs
- P2P Marketplace for Energy Trading
- Mobile App for Apple Store & Google Play

# Team

## Founders



**DOMINIK SKROBACZ**  
Co-founder & CEO

- 15 years of experience as a CEO
- 150+ projects delivered for telco and banks in Europe and Middle East (e.g. Orange, Magenta, Deutsche Telekom, Unifonic, PKO BP...)



**GREG SIKORA**  
Co-founder & CIO

- 20+ years of experience in IT & Business Development
- Previously Head of EMEA Pre-Sale in Teletax
- C4E Tokenomy designer



**PAWEŁ BORECKI**  
Co-founder & CTO

- Over 10 years of experience as a CTO
- Successfully completed 50+ large-scale data migrations
- Technological leadership in blockchain

## Core team & experts



**Adam Kruszewski**  
Chief Product Officer



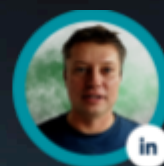
**Katarzyna Kochel**  
Product Lead



**Karolina Mejbaum**  
Business Development,  
Event Manager



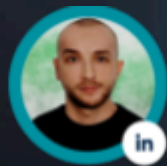
**Michał Dziopak**  
Marketing, Head of Communications



**Łukasz Dudziński**  
Architect



**Jan Łukasik**  
SW Engineer



**Adam Skimina**  
DevOp



**Dariusz Chudzik**  
Projekt Manager



**PhD Maciej Sołtysik**  
Energy Expert



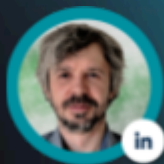
**Ireneusz Perkowski**  
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Crypto at Revolut



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Capital



**Piotr Hnacyk**  
Entrepreneur,  
Grenton



**Paweł Łaskarzewski**  
CEO Nomada Fulcrum



**Andrzej.btc**  
Blockchain Evangelist



**Juri Maibaum**  
Cosmos Community

## Contact Us

