
Blockedge
Tokenization of Renewable Energy Certificates (RECs)
Together, We Build a
Greener Future.

# RECs Utilization

Blockedge

We help clients strategically utilize Renewable Energy Certificates (RECs) to meet Scope 2 emissions targets, support clean energy development, and elevate sustainability credentials.

## Scope 2 Emission Reduction

Use RECs to account for indirect emissions from purchased electricity, aligning with GHG Protocol standards.

## Support for Renewable Energy Projects

Every REC purchased provides financial support to renewable energy producers, accelerating the global clean energy transition.

## Corporate Sustainability & ESG Goals

Companies leverage RECs to demonstrate commitment to 100% renewable electricity sourcing and strengthen ESG performance.

## Market Differentiation

RECs bolster green branding, stakeholder trust, and leadership positioning in climate responsibility.

## Compliance & Voluntary Markets

Whether for voluntary sustainability initiatives or to meet regulatory obligations, RECs offer a flexible mechanism for credible action.

# RECS UTILIZATION & REPORTING

Blockedge

## Definition & boundary of scope 1, 2, and 3 emissions

### SCOPE 1
**DIRECT**

Emissions from operations or processes your company directly controls

**REDUCTION**
- Energy Efficiency (Thermal)
- Biofuel
- Electric Vehicles
- Waste Management

**OFFSET**
- Carbon Credit
- Allowance under Emission Trading Scheme (ETS)

EMISSIONS

### SCOPE 2
**INDIRECT**

GHG emissions generated by your company's purchase of energy (e.g. electricity, steam, heating, or cooling)

**REDUCTION**
- Energy Efficiency (Power)
- Renewable Energy
- Visual PPA
- Utilized Green Tariff

**Claim**
- Renewable Energy Certificate (REC)
- Carbon Credit

EMISSIONS

### SCOPE 3
**INDIRECT**

All emissions, excluding those covered in scope 2, created by your company's supply chain, upstream or downstream

**REDUCTION**
- Mass Transportation
- Logistics & Distribution
- Provide aid to suppliers in their sustainability journey
- Recycle Packaging

**OFFSET**
- Renewable Energy Certificate (REC)
- Carbon Credit

EMISSIONS

Source: The U.S. Department of Energy (DOE), Greenhouse Gas Protocol Scope 2


THE INTERNATIONAL REC STANDARD

This Redemption Statement has been produced for

TRUE CORPORATION PUBLIC COMPANY LIMITED

by

INNOPOWER COMPANY LIMITED

confirming the Redemption of

265 000.000000

I-REC Certificates, representing 265 000.000000 MWh of electricity generated from renewable sources

This Statement relates to electricity consumption located at or in

18 True Tower, Ratchadapisek Road, HuaiKhwang, Bangkok 10310 Thailand

in respect of the reporting period

2022-01-01 to 2022-12-31

The stated Redemption Purpose is

Green House Gas Protocol Scope 2 Reporting

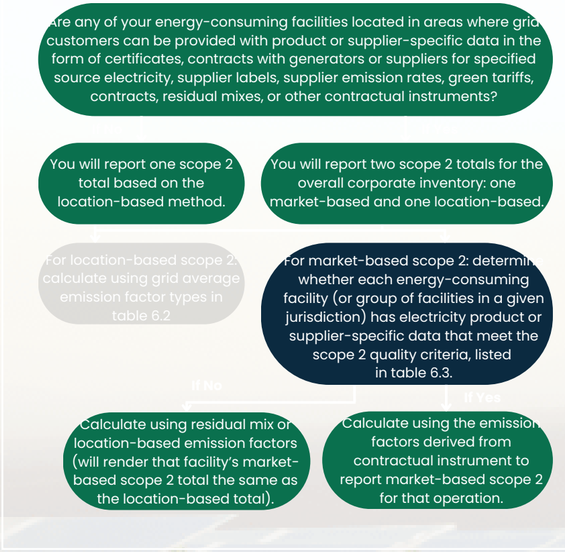
Evident

QR Code Verification

Verify the status of this Redemption Statement by scanning the QR code on the left and entering in the Verification Key below

Verification Key

4 9 7 3 3 7 7 2




"Corporates can reduce Scope 2 & 3 emissions by retiring or allocating RECs on behalf of their value chain partners"

# What is I-REC?

Blockedge

- The **International REC Standard (I-REC)** is a globally recognized framework for issuing Renewable Energy Certificates.
- **"Evident"** serves as the official platform for managing and tracking RECs, with authorized issuers in each country responsible for project registration and certificate issuance through the platform.

# I-REC Issuer

Blockedge

EGAT I-REC ISSUER

Thailand

Vietnam

ICX INTERNATIONAL CARBON EXCHANGE an IEX venture

India

دائـــرة الـطـاقـة DEPARTMENT OF ENERGY

Abu Dhabi and the UAE

INSTITUTO TOTUM

Brazil

ローカルグッド 創成支援機構

Japan

You can view more Issuers on the I-REC website.

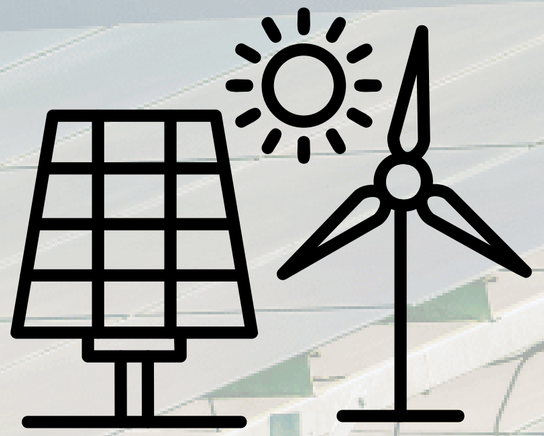
# Components of REC registration

Blockedge

Renewable Energy Power Producer (Registrant)

Individuals or Orgs seeking for Renewable Energy (Participants)

Certifying Entity (Issuer)

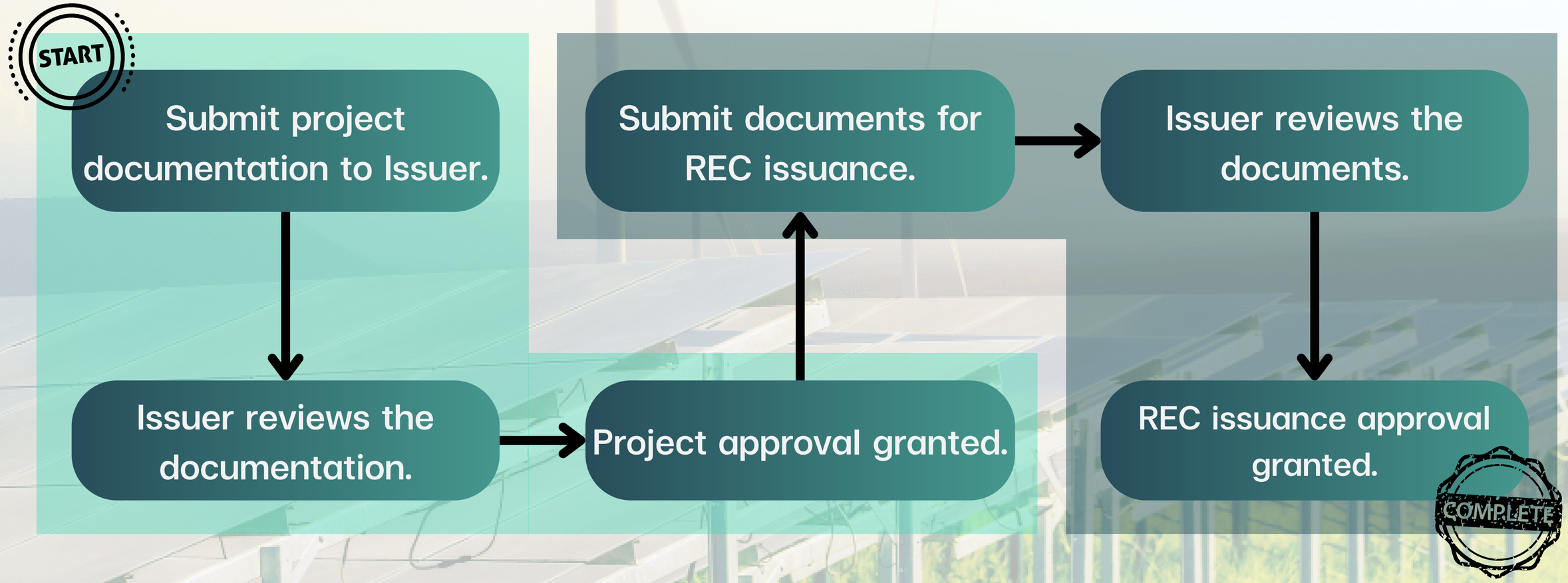


EGAT
I-REC ISSUER

# Process of I-REC Registration

Blockedge

## Onboarding projects and Issue RECs



# Challenges in the Carbon Credit Ecosystem

Blockedge

The global demand for carbon credits is growing rapidly as regulatory, investor, and consumer pressures increase on companies to act on climate change. However, traditional carbon markets are plagued by several systemic issues:

### Traceability Gap

Lack of transparency in the origin and retirement of credits, leading to risks of double-counting or fraud.

### Operational Friction

Slow and manual processes for procurement, verification, and reporting.

### Access Barrier

Limited access to premium carbon credits, particularly for SMEs and regional enterprises.

### Credibility Risk

Exposure to greenwashing accusations due to lack of third-party validation

Blockedge

# REC Token: A Transparent Standard for Renewable Energy Certification

REC token is a blockchain-based utility token representing one megawatt-hour (MWh) of certified renewable electricity, sourced from I-REC-accredited projects across Southeast Asia. Developed by Blockedge Technologies, each token is issued through smart contracts that embed verifiable project metadata such as location, generation time, certificate issuer, and retirement status.

The token ensures environmental claims are traceable and immutable, allowing businesses to meet renewable energy goals and report on ESG performance. REC Token is not designed for speculation—it is a utility instrument created to support verified clean energy procurement. Upon redemption, tokens are permanently burned on-chain, creating a secure audit trail for sustainability reporting

Blockedge

# Tokenization Mechanics

1

### Verification & Registration

Renewable energy projects are certified by I-REC via Evident. Issued RECs are transferred to REDEX for secure custody.

2

### Onboarding to UT Token Platform

Certified RECs are onboarded to Blockedge's tokenization platform for validation.

3

### Token Minting & Issuance

ERC-20 REC tokens are minted 1:1 (1 token = 1 MWh), embedding project origin, generation date, issuer, and retirement status.

4

### Transfer to Trading Platform

Tokens are moved to a trading or offset platform for market-based claims, subject to jurisdictional boundaries.

5

### Retirement Request

Users initiate redemption to claim renewable energy usage in ESG/Scope 2 reporting.

6

### Token Burn & Impact Certificate

Token is burned and a smart contract generates a verifiable proof of retirement and use.

Blockedge

# Tokenized Eco-system Map

## Onboarding

Renewable energy projects are registered under the I-REC Standard and field-level data and generation information are submitted.

## Verification

Generation data validated according to I-REC Standard methodology and RECs are issued by I-REC.

## Custody Wallet

Verified RECs are stored in REDEX's ReHash

## Tokenization

1 REC = 1 Token, with embedded project metadata.

Minted tokens via smart contracts with embedded project metadata and acts as custodial body for tokens

## Token Wallet

Tokens are held in wallet on the Blockedge platform

## Redemption Options

1. Trade/Buy/Sell tokens on exchanges

2. Retire token to offset carbon footprint

3. Exchange tokens into rewards at participating businesses

# REC Token Design

**Token Type:** Utility Token (non-investment)
**Standard:** ERC-20 or compatible on EVM chain
**Backing:** 1 token = 1 MWh of renewable energy generated and verified under I-REC Standard
**Burnable:** Tokens are retired on-chain with issuance of digital certificate


**Metadata Includes:**

- **I-REC Certificate ID:** Unique ID from the I-REC registry
- **Issuing Body / Platform**: I-REC Standard
- **Project Developer:** Name and contact of the renewable energy provider
- **Location:** Country and GPS/region of generation
- **Project Type:** Solar, wind, hydro, biomass, etc.
- **Generation Period:** Start and end dates of the MWh generation
- **Issuance Date:** Date I-REC certificate was officially issued
- **Vintage Year:** Year in which the renewable energy was produced
- **Technology Type & Capacity:** e.g., “PV Solar, 5 MW”
- **Verification Status:** Confirmed issuance under I-REC rules
- **Tracking Platform URL:** Link to verify the I-REC in public or private registries
- **Retirement Status:** Burned or unburned (active)

# Blockchain Infrastructure

Blockedge

- **Issuer Name:** Blockedge Co.Ltd
- **Role:** Project whitelist authority and technical token issuer
- **Function:** Develops and deploys smart contracts to tokenize verified carbon credits into ERC-20 standard tokens. Each token includes embedded metadata such as project origin, certification, and retirement status, ensuring full protocol compliance and traceability.
- **Asset Ownership:** Holds custody of the underlying carbon credit assets during the tokenization process.

# Blockchain Infrastructure

Blockedge

CO2E BLOCKCHAIN

- **Blockchain Network Details**
  - **Network name : CO2e Chain**
  - **Currency symbol : CO2E**
  - **Network URL : https://rpc.co2e.cc**
  - **Chain ID : 171**
  - **Block explorer URL : https://exp.co2e.cc**

**Blockchain Stack**

- CO2E Layer 3 (Optimistic Rollup)
- 90% cheaper than Ethereum L1
- Near-instant token issuance (sub-5 seconds)

**Compliance Layer:**

- TGO registration + Redex custody
- SEC-compliant exchange prep subject to regulatory approval

# Co2E’s L3 Blockchain

Blockedge

## Tokenization

- Converts certified carbon credits into ERC-20 tokens on L3.
- Uses smart contracts to automate issuance, burning, and compliance checks.

## Optimistic Rollups

- Processes transactions off-chain and posts only final states to Ethereum (L1), reducing fees significantly
- Uses fraud proofs to ensure security — assumes transactions are valid unless challenged.

## Security & Compliance

- Inherits security from Ethereum (L1) while leveraging Optimism’s scalability.
- Compliance checks built into smart contracts ensure certification.

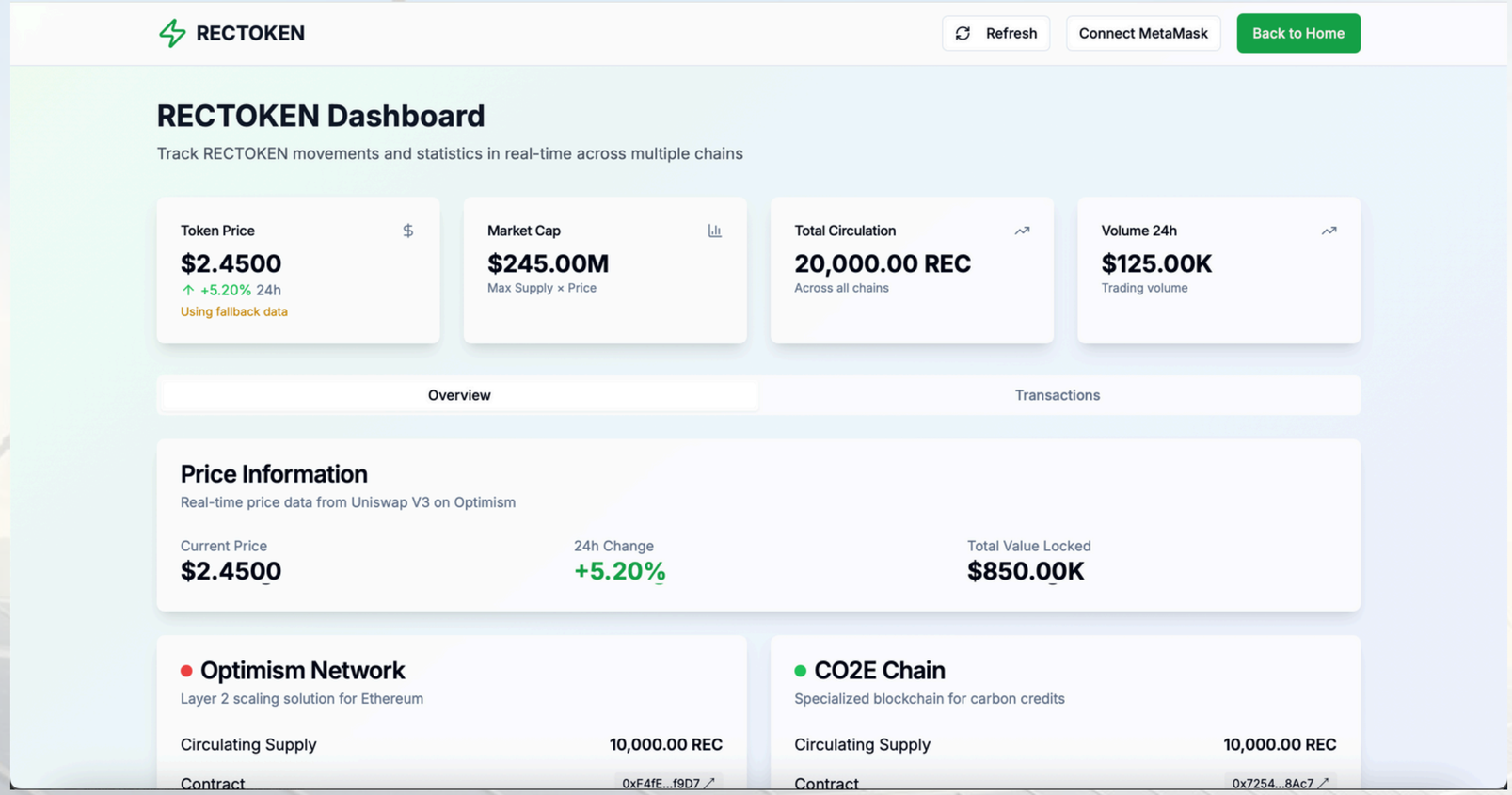
## Cost & Speed

- 90% lower fees vs. L1 (as low as 0.01 THB – 0.05 THB per transaction).
- Sub-5 second confirmation times for token issuance and trades.

CO2E’s L3 blockchain leverages Optimistic Rollup technology to deliver a fast, cost-effective, and compliant solution for carbon credit tokenization, securing a first-mover advantage in Thailand.”

# Blockchain Public Dashboard

Blockedge




**Click here to try**
https://rectoken.xyz/dashboard

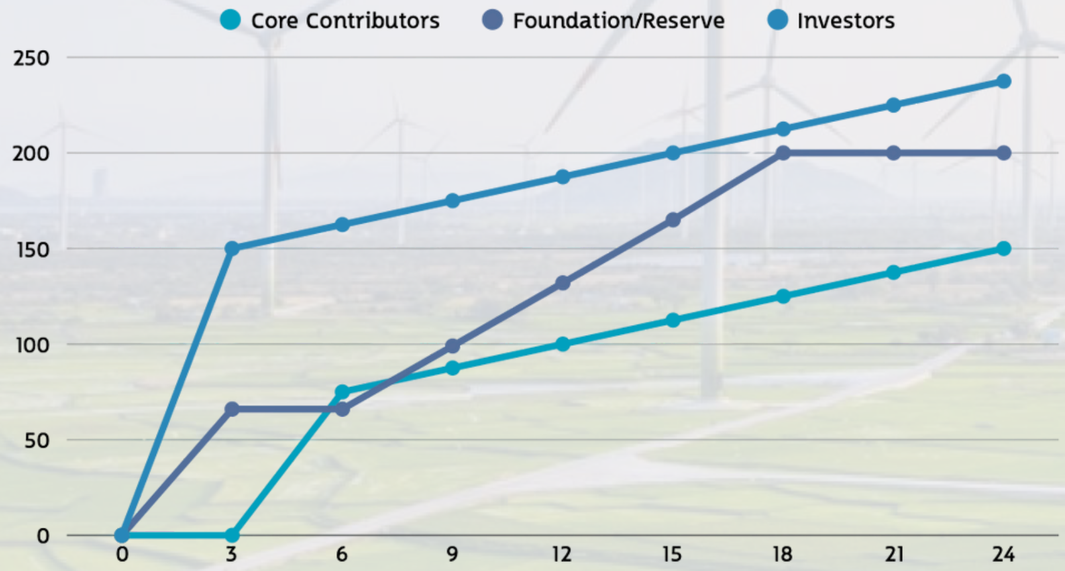
**Real-time cross-chain dashboard for REC token price, circulation, and carbon credit network metrics.**

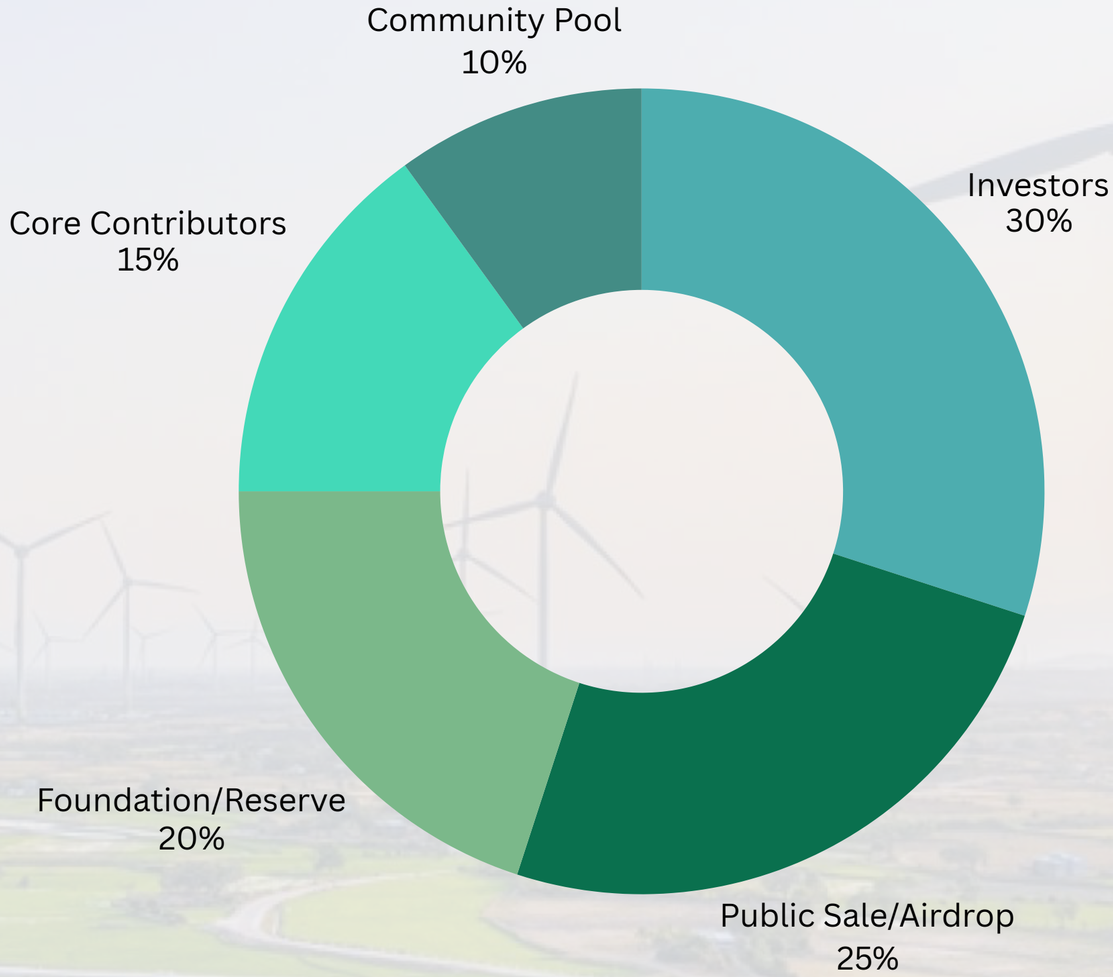
# Token Allocation

CO2E is a governance token that lets holders vote on upgrades and carbon-focused initiatives.

With a 1 billion initial supply, it rewards participation and supports green projects.

It’s designed to blend community power with sustainability goals, making a positive impact easy and engaging for everyone.




**Total Allocation - 100,000,000 Tokens**

# Tokenomics



## Token Supply

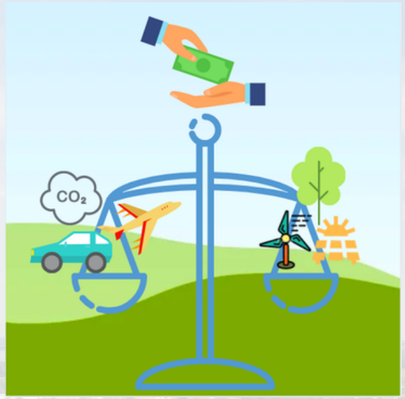
- Supply: Indefinite, based on certified renewable energy generation
- Backing: 1 REC = 1 MWh of verified renewable electricity
- Fee: 10:1 tokenization ratio (1 token retained as platform fee per 10 issued)

## Token Categories

- Covers solar, wind, hydro, and other certified renewable energy projects
- 1 REC = 1 MWh of clean energy
- Verified under the I-x Standard
- Supports Scope 2 reporting and ESG claims

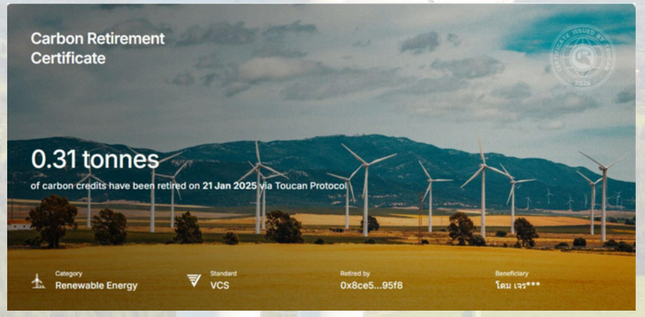
# Tokenomics : Primary Use Cases

Blockedge



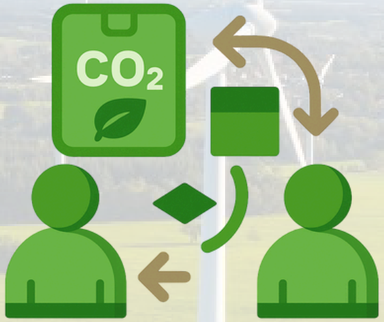

## Carbon Offsetting

Redeem tokens to offset verified emissions.




## Retirement & Certification

Tokens are burned and linked to immutable certificates.




## Transferability

Can be transferred through approved marketplaces.


## ESG Reporting

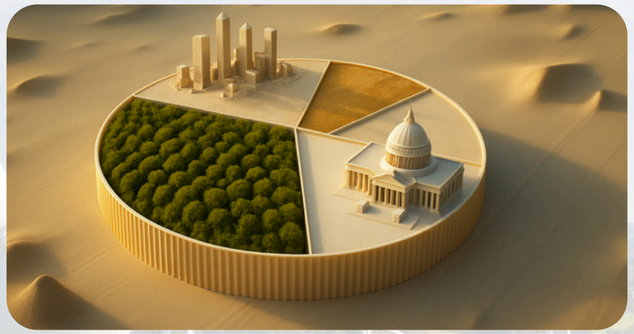
Digital proof for corporate carbon neutrality and sustainability claims.

Blockedge

# Tokenomics : Further Use Cases


## Carbon Credit Marketplaces

Integrate tokens into wider digital marketplaces



## Tokenized Carbon Credit Bundles

Bundle different token types into portfolios for corporate clients to easily offset against diverse SDGs.


## Loyalty Rewards

Companies or individuals could earn rewards, badges, or bonuses for volume of emissions offset.

Blockedge

# Service Structure & Strategic Partners

- **Platform Fees:** Charges a 10% fee per project for tokenization services.
- **Exchange Preparation:** Prepares tokens for listing on exchanges, pending SEC approval.
- **Ecosystem Partners:** I-REC (The International Renewable Energy Certificate Standard) – Regulatory authority and credit certifier, Redex (accredited REC custodian)

# Terms & Conditions

Blockedge

The token is a utility token issued for the purpose of facilitating verified carbon offset transactions and sustainability-related services. It is not an investment instrument and does not guarantee any form of return, dividend, or financial profit. The following terms and conditions apply to all token holders:

1

**Purpose & Usage**

- Tokens may only be used within the authorized Blockedge ecosystem for offsetting verified carbon emissions and accessing sustainability-related platform features.
- Each token represents one metric ton of $CO_2$ equivalent and will be permanently retired (burned) upon redemption to ensure transparency and prevent reuse.

2

**Transferability**

- Tokens may be transferred between users within the approved Blockedge ecosystem or through compliant third-party exchanges, subject to regulatory approval (e.g., SEC).
- Any secondary market trading, if permitted, must adhere to applicable local regulations and the rules of the respective trading platforms.

3

**Token Retirement & Expiry**

- Once a token is used to offset emissions, it is permanently retired and cannot be reused or transferred.
- Retired tokens will be logged transparently on the blockchain along with retirement metadata and timestamp.

# Terms & Conditions

Blockedge

**4** **Custody & Custodian**

- Carbon credits and Renewable Energy Certificates (RECs) linked to the tokens are held in custody by Redex, an accredited and trusted custodian.
- The issuer ensures that each token is fully backed by an equivalent, verified carbon credit or REC until it is permanently retired.

**5** **Issuer Rights & Responsibilities**

- Blockedge Technologies ensures the traceability and verification of underlying carbon credits, with the right to amend platform operations in accordance with regulatory compliance.
- In case of project termination or force majeure, the issuer will retire all unredeemed tokens and publish a public record detailing the closure process.

**6** **No Guarantee of Profit**

- Tokens do not confer any equity, dividend, or ownership rights in the issuer’s assets.
- Holding these tokens does not entitle the holder to any financial return, profit share, or investment gains.

# Terms & Conditions

Blockedge

**7** **Legal & Regulatory Compliance**

- All token issuance, usage, and associated smart contracts will comply with applicable digital asset regulations in Thailand and international jurisdictions where the token may be accessed.
- Any unresolved matters shall be governed by the applicable laws of the jurisdiction where the issuer is registered.

**8** **Risk Acknowledgement**

- Users understand and accept the risks related to token usability, regulatory changes, and carbon market volatility.
- By holding or using Tokens, users agree to all applicable terms, disclaimers, and privacy policies made available by the issuer.

# Together, We Build a Greener Future.

Blockedge


blockedge.co

dome@tel.co.th

# Appendix

**DOM CHAROENYOS**
Founder

**KETSARA TIANCHAI**
General Manager

**THANARAT KUAWATTANAPHAN**
IT Manager

Blockedge Co.,Ltd led by Founder and CEO Mr. Dom Charoenyos, a seasoned expert in decentralized systems, enterprise IT, and digital transformation. His leadership ensures strategic oversight, technical excellence, and market alignment across all platform operations. Positioned at the intersection of sustainability and technology, Blockedge delivers the trust infrastructure needed to support next-generation carbon markets. As the official issuer of carbon credit tokens, Blockedge supports multiple recognized standards.

Each token issued is uniquely named and tailored to its underlying certification, enabling precise traceability and compliance. The platform manages the full token lifecycle—from verification and smart contract deployment to on-chain retirement—ensuring a high-integrity, tamper-proof system. Every token includes embedded metadata such as project origin, credit type, certification body, and co-benefit attributes. Unlike conventional registries, Blockedge provides enterprise-grade token architecture designed for regulatory readiness, ESG reporting, and ecosystem interoperability.