



Green Proofs for BTC

The technical solution

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The technical solution

Green Proofs for BTC is an extension of Energy Web's open-source [Green Proofs solution](#), and enables cryptocurrency miners and hosting companies to:



Represent their operations with decentralized identifiers anchored to the Energy Web Chain (EW Chain);



Apply for a set of verifiable credentials attesting to their corporate identity, energy procurement score, and details about their mining operations (including their mining capacity), and



Compile their collection of verifiable credentials into a single, cryptographically verifiable, “verifiable presentation” to serve as their public disclosure.

Represent, apply, compile and verify

Since each participant's “verifiable presentation” is tamper-proof and can be verified by anyone, it can be published alongside traditional public sustainability disclosures for added trustworthiness.

How does it work?

Green Proofs for BTC uses the following decentralized tools and logic, all anchored to the trust layer built on the EW Chain:

Each party in the solution is represented by a **decentralized identifier** (DID) - most notably the Miners and the Auditors who review sensitive documents. Since each DID is controlled by an EW Chain wallet, DIDs are capable of signing messages that can be easily validated by anyone. Click [here](#) to read more about [Energy Web's implementation of the W3C DID standard](#).

Verifiable credentials (VCs) are signed messages that conform to defined structures with clear “subjects” and “issuers” (comparable to the “To:” and “From:” fields in an email). It is practically impossible to forge a VC from a DID you do not control. **VCs** serve as verifiable records of the evaluations that miners and hosting companies have undergone, and include descriptions of the certification process and key information about individual performance and mining capacity.

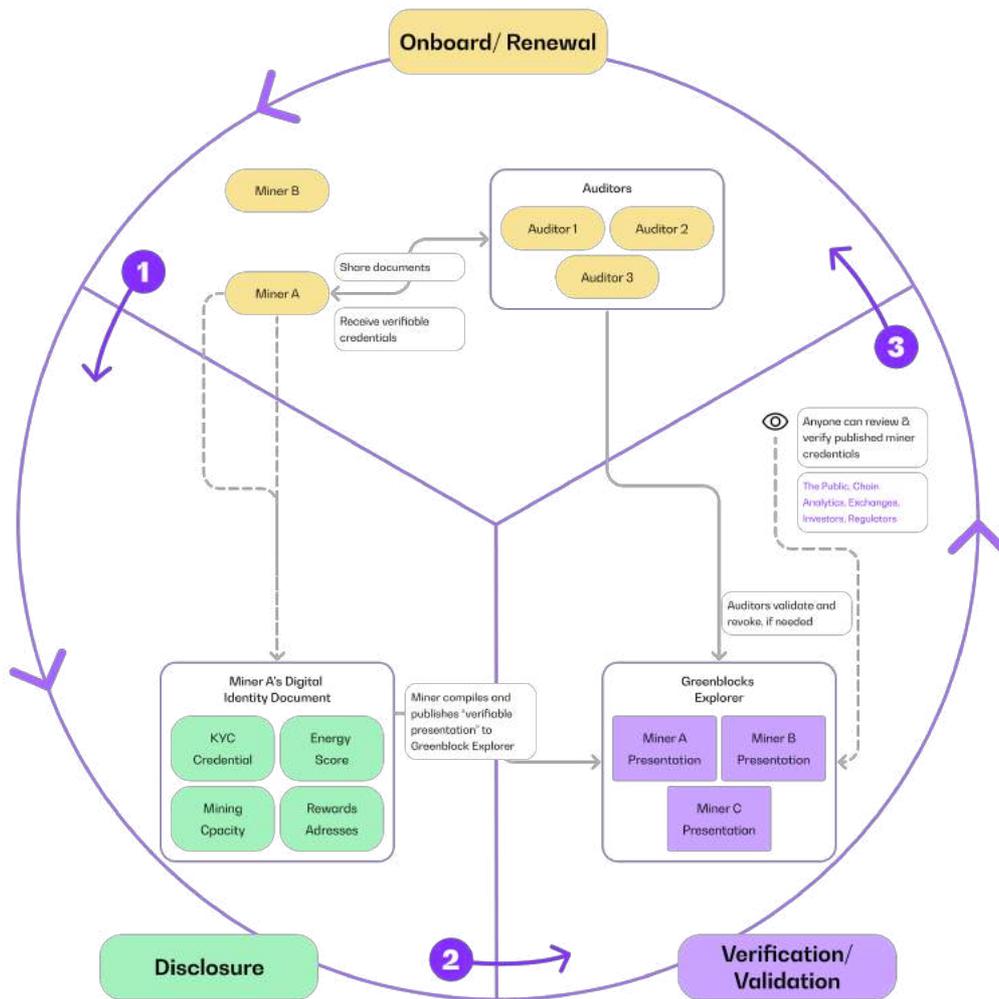
This process is couched within a formal governance structure on the EW Chain defined by an **Organization of DIDs**, the various **Roles** that DIDs can hold within the **Application**, and public **Definitions for the VCs** that can be issued by each Role. The application logic is defined and managed using Energy Web's [Switchboard Identity Management platform](#)

Participating miners or hosting companies receive multiple **VCs** that they can elect to consolidate into a single **Presentation** to be published to the Energy Web **Green Proofs for BTC Explorer**, a forthcoming website and API to enable the public and other stakeholders to review miner presentations. In the Web3 spirit of trust but verify, all of the data needed to verify the miner's VCs is included within each Presentation.

The following diagram depicts a company's journey in obtaining and sharing a certification with relevant parties. Steps include:

- 1 Initial onboarding and secure exchange of documents with Auditors for VCs (any sensitive documents shared with Auditors will be maintained using industry-standard best practices)
- 2 Conversion of VCs into a presentation for public disclosure via the Explorer
- 3 The final review, validation, and consumption of their credentials by other stakeholders.

When a company's credentials expire, it returns to the first phase ("Onboard / Renewal").



The Green Proofs for BTC Miner Journey

Green Proofs for BTC will also evolve in future to support decentralized, transparent governance mechanisms for administering and updating certification criteria.

Who is building the project and why

Energy Web has partnered with RMI to create the initial assessment approach underpinning Green Proofs for BTC. We invite interested stakeholders—be they crypto market participants, policy makers, renewable energy users or producers, or the general public—to help us improve and refine our approach by **providing comments** during our 30-day comment window (beginning May 9 and ending June 10, 2022).

Interested parties can also:



[Reading Renewable Energy Emissions Score Approach](#)



[Reading Guidance for the Cryptocurrency Sector](#)



[Joining](#) our public webinar on May 13th



[Download our calculator tool](#)



[Submitting your comments here](#)



[Joining our mailing list here](#)

Benefits

Green Proofs for BTC solves for several key challenges to reducing emissions from the cryptocurrency sector:



Transparency

- Certification is represented on-chain by a “verifiable presentation” containing cryptographic verification of the applicant’s identity, energy procurement score, and pertinent details about their mining operations.
- This credential can be viewed and checked by buyers, exchanges, regulators, auditors, and the general public via explorer or API.



Alignment with standard climate disclosure approaches

- Moves sustainability in the crypto industry from a “self-reporting” paradigm to one that is aligned with current best practices for ESG.
- Establishes renewable procurement goals for cryptocurrency that create true material impact.



Scalability

- This solution enables automated and impartial enforcement of miner sustainability commitments.
- Auditors can randomly audit mining rewards and initiate disputes with miners where mining capacity outstrips disclosed renewable energy procurement. Participants’ verifiable credentials automatically expire on a set schedule and must be renewed.

What's next?

In early Q3, 2022, Energy Web and RMI will publish an anonymized summary of feedback received during the comment window.

Following the comment window, Energy Web will detail next steps on certifying compliant bitcoin miners.