



Bhutan's Green Cryptocurrency Mining for Economic Growth

[Source: DD](#)

Bhutan is exploring the **mining of green [cryptocurrencies](#)** using its 100% **hydropower-generated electricity** to drive economic growth

- **Cryptocurrency Mining:** It is the process of using powerful computers to solve complex **mathematical problems** (cryptographic algorithms that secure the [blockchain](#)) to validate transactions and add them to a **distributed ledger**.
 - This process ensures the **security of digital currencies** like Bitcoin and Ethereum, and miners are rewarded with **newly created coins**, introducing fresh currency into circulation.
- **Green Cryptocurrencies:** Digital currencies mined using **clean energy sources** like hydropower, wind, or solar power, contrasting with **fossil fuel-based mining** and supporting the **global green economy**.
- **Strategic Sovereign Investment:** Since 2019, Bhutan's sovereign wealth fund has invested in **cryptocurrencies**, using profits to support public spending.
 - Bhutan plans to sell its "**green**" **coins to global companies** aiming to meet **Environmental, Social, and Governance (ESG) targets**, potentially opening a new stream of sustainable foreign investments.
 - With youth unemployment at **16.5% in 2024** and a rising brain drain, Bhutan aims to retain talent by training youth in **blockchain and AI**, linking tech education with job creation.
- **Hydropower Expansion:** Bhutan aims to expand hydropower capacity from **3.5 GW to 15 GW** in the next 10–15 years, with a long-term target of 33 GW to support mining and economic diversification.

CRYPTOCURRENCY

Cryptocurrency is a digital or virtual currency that employs cryptography for secure, decentralized transactions and operates on blockchain technology.

Features of Crypto

- Virtual money secured by cryptography
- Direct peer-to-peer transactions, eliminating the need for banks
- Entries recorded in a public ledger, not as physical cash
- Encrypted; advanced coding methods ensure high-level security
- Decentralised; not controlled by any government

Legal Status: Cryptocurrency

- **Declared Legal:** El Salvador (2021) and Central African Republic (2022); first and second countries to recognise Bitcoin as legal tender
 - Other Countries where Bitcoin is legal: US, UK, European Union, Canada, Australia, Japan, Switzerland
- **Declared Illegal:** China, Pakistan, Saudi Arabia, Tunisia, and Bolivia
- **Status in India:**
 - Not a legal tender but not banned either
 - **Taxation:** 30% tax on profits & 1% TDS on transfers (Budget 2022-23)
 - RBI launched its **CBDC - Digital Rupee** in 2022

Types of Cryptocurrency (Utility-based)

- **Utility Token:** Used to access services or features within a blockchain platform (Eg. Ethereum (ETH) & Ripple (XRP))
- **Transactional:** Tokens used for payments (Eg. Bitcoin (BTC))
- **Voting Token:** Tokens that provide voting rights on a blockchain (Eg. Uniswap)
- **Platform Based:** Tokens for utilizing a proof-of-stake mechanism to enable smart contracts (Eg. Solana)
- **Security:** Tokens representing asset ownership (Eg. Millennium Sapphire)
- **Stablecoins:** Created to reduce the volatility which is common in many cryptocurrencies

How Does It Work?

- **Mining:** Solves equations with computer power to validate transactions & earn rewards
- **Security:** Cryptography prevents manipulation
- **Blockchain:** Transactions are recorded on a distributed public ledger
- **Decentralization:** Verified & maintained by a global network of computers
- **Digital Wallet:** Stores keys for sending & receiving cryptocurrency

Benefits

- Decentralization
- Lower transaction fees
- Fast Transactions
- Security through cryptography
- Transparency
- Generates high returns

Challenges

- Pseudonymous transactions
- Price volatility
- Regulatory uncertainty
- Potential for criminal use
- Scalability Issues
- High energy use in mining



Drishti IAS

Read more: [Cryptocurrency and Blockchain](https://www.drishtiias.com/printpdf/bhutan-s-green-cryptocurrency-mining-for-economic-growth)

PDF Reference URL: <https://www.drishtiias.com/printpdf/bhutan-s-green-cryptocurrency-mining-for-economic-growth>