MiCA White Paper

Bitcoin (BTC)

Version 1.1 April 2025

White Paper in accordance with Markets in Crypto Assets Regulation (MiCAR) for the European Union (EU) & European Economic Area (EEA).

Purpose: seeking admission to trading in EU/EEA.

Prepared and Filed by LCX.com

NOTE: THIS CRYPTO-ASSET WHITE PAPER HAS NOT BEEN APPROVED BY ANY COMPETENT AUTHORITY IN ANY MEMBER STATE OF THE EUROPEAN UNION. THE PERSON SEEKING ADMISSION TO TRADING IS SOLELY RESPONSIBLE FOR THE CONTENT OF THIS CRYPTO-ASSET WHITE PAPER ACCORDING TO THE EUROPEAN UNION'S MARKETS IN CRYPTO-ASSET REGULATION (MICA).

LCX is voluntarily submitting this MiCA-compliant whitepaper for Bitcoin (BTC), which is classified as an "Other Crypto-Asset" under Regulation (EU) 2023/1114 on Markets in Crypto-Assets (MiCA). Unlike Asset-Referenced Tokens (ARTs), Electronic Money Tokens (EMTs), or Utility Tokens, BTC is not subject to a mandatory whitepaper requirement. However, pursuant to Article 6(1), second subparagraph of MiCA, service providers may voluntarily publish a whitepaper to promote transparency, regulatory clarity, and investor confidence. This document provides key disclosures regarding Bitcoin's characteristics, associated risks, and the regulatory framework under which LCX facilitates BTC-related services within the EU/EEA.

This document provides essential information about Bitcoin's characteristics, risks, and the framework under which LCX facilitates BTC-related services in compliance with MiCA's standards.

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01 DATE OF NOTIFICATION

2025-03-06

COMPLIANCE STATEMENTS

- This crypto-asset white paper has not been approved by any competent authority in any Member State of the European Union. The offeror of the crypto-asset is solely responsible for the content of this crypto-asset white paper.
 - Where relevant in accordance with Article 6(3), second subparagraph of Regulation (EU) 2023/1114, reference shall be made to 'person seeking admission to trading' or to 'operator of the trading platform' instead of 'offeror'.
- This crypto-asset white paper complies with Title II of Regulation (EU) 2023/1114 and, to the best of the knowledge of the management body, the information presented in the crypto-asset white paper is fair, clear and not misleading and the crypto-asset white paper makes no omission likely to affect its import.
- The crypto-asset referred to in this white paper may lose its value in part or in full, may not always be transferable and may not be liquid.
- 05 false
- The crypto-asset referred to in this white paper is not covered by the investor compensation schemes under Directive 97/9/EC of the European Parliament and of the Council. The crypto-asset referred to in this white paper is not covered by the deposit guarantee schemes under Directive 2014/49/EU of the European Parliament and of the Council.

SUMMARY

07 Warning

This summary should be read as an introduction to the crypto-asset white paper. The prospective holder should base any decision to purchase this crypto-asset on the content of the crypto-asset white paper as a whole and not on the summary alone. The offer to the public of this crypto-asset does not constitute an offer or solicitation to purchase financial instruments and any such offer or solicitation can be made only by means of a prospectus or other offer documents pursuant to the applicable national law.

This crypto-asset white paper does not constitute a prospectus as referred to in Regulation (EU) 2017/1129 of the European Parliament and of the Council (36) or any other offer document pursuant to Union or national law.

08 Characteristics of the crypto-asset

Bitcoin (BTC) is a decentralized digital currency that operates on a peer-to-peer blockchain network without a central authority or issuer. It enables secure, transparent, and immutable transactions through cryptographic verification using a proof-of-work (PoW) consensus mechanism. Holders of BTC have full control over their coins, which can be transferred, stored, or used for transactions globally without intermediaries. However, owning BTC does not grant any legal or contractual rights, such as ownership in an entity, governance participation, dividends, or claims against any organization. Additionally, all BTC transactions, once confirmed on the blockchain, are irreversible.

The conditions under which rights and obligations may be modified are determined through a decentralized governance process. Changes to the Bitcoin protocol require consensus among network participants and are typically proposed through Bitcoin Improvement Proposals (BIPs). While such updates may impact transaction fees, scalability, or mining rewards, they do not alter the fundamental ownership rights of BTC holders.

Since Bitcoin is neither an Asset-Referenced Token (ART), an Electronic Money Token (EMT), nor a Utility Token under MiCA, it falls into the category of "Other Crypto-Assets." As a decentralized digital currency with no identifiable issuer, Bitcoin is not subject to MiCA's issuance and authorization requirements. However, service providers facilitating BTC-related activities, such as exchanges and custodians, must comply with MiCA's operational and consumer protection rules.

09 Not applicable

10 Key information about the offer to the public or admission to trading

Bitcoin (BTC) is a decentralized, open-market digital currency, and as such, there is no centralized entity conducting an offer to the public. LCX does not issue or control the supply of Bitcoin but facilitates its trading and custody in compliance with MiCA regulations. This whitepaper is a voluntary disclosure to enhance transparency regarding Bitcoin's listing and trading on LCX's platform.

Since Bitcoin is already widely circulated and traded globally, this document does not represent a new issuance, public offering, or token sale but instead provides essential information about its admission to trading on the LCX platform.

Total offer amount	Not applicable
Total number of tokens to be offered to the public	Not applicable
Subscription period	Not applicable
Minimum and maximum subscription amount	Not applicable

Issue price	Not applicable
Subscription fees (if any)	Not applicable
Target holders of tokens	Not applicable
Description of offer phases	Not applicable
CASP responsible for placing the token (if any)	Not applicable
Form of placement	Not applicable
Admission to trading	LCX AG, Herrengasse 6, 9490 Vaduz, Liechtenstein

A. PART A - INFORMATION ABOUT THE OFFEROR OR THE PERSON SEEKING ADMISSION TO TRADING

A.1 Name

LCX

A.2 Legal Form

AG

A.3 Registered Address

Herrengasse 6, 9490 Vaduz, Liechtenstein

A.4 Head Office

Herrengasse 6, 9490 Vaduz, Liechtenstein

A.5 Registration Date

24.04.2018

A.6 Legal Entity Identifier

529900SN07Z6RTX8R418

A.7 Another Identifier Required Pursuant to Applicable National Law

FL-0002.580.678-2

A.8 Contact Telephone Number

+423 235 40 15

A.9 E-mail Address

legal@lcx.com

A.10 Response Time (Days)

020

A.11 Parent Company

Not applicable

A.12 Members of the Management Body

Full Name	Business Address	Function
Monty C. M. Metzger	Herrengasse 6, 9490 Vaduz, Liechtenstein	President of the Board
Katarina Metzger	Herrengasse 6, 9490 Vaduz, Liechtenstein	Board Member
Anurag Verma	Herrengasse 6, 9490 Vaduz, Liechtenstein	Director of Technology

A.13 Business Activity

LCX provides various crypto-asset services under Liechtenstein's Token and Trusted Technology Service Provider Act ("Token- und Vertrauenswürdige Technologie-Dienstleister-Gesetz" in short "TVTG") also known as the Blockchain Act. These include custody and administration of crypto-assets, offering secure storage for clients' assets and private keys. LCX operates a trading platform, facilitating the matching of buy and sell orders for crypto-assets. It enables both crypto-to-fiat and crypto-to-crypto exchanges, ensuring compliance with AML and KYC regulations. LCX also supports token placements, marketing crypto-assets on behalf of offerors.

Under MiCA, LCX is classified as a Crypto-Asset Service Provider (CASP). LCX AG has applied for MiCA licensing on February 1, 2025, the first day of MiCA's implementation in Liechtenstein.

Under the TVTG framework, LCX provides:

- TT Depositary Custody and safekeeping of crypto-assets.
- TT Trading Platform Operator Operation of a regulated crypto-asset exchange.
- TT Exchange Service Provider Crypto-to-fiat and crypto-to-crypto exchange.
- Token Issuer Marketing and distribution of tokens.
- TT Transfer Service Provider Crypto-asset transfers between ledger addresses.
- Token Generator & Tokenization Service Provider Creation and issuance of tokens.
- Physical Validator Enforcement of token-based rights on TT systems.
- TT Verification & Identity Service Provider Legal capacity verification and identity registration.
- TT Price Service Provider Providing aggregated crypto-asset price information.

A.14 Parent Company Business Activity

Not applicable

A.15 Newly Established

false

A.16 Financial Condition for the past three Years

LCX AG has a strong capital base, with CHF 1 million (approx. 1,126,000 USD) in share capital (Stammkapital) and a solid equity position (Eigenkapital) in 2023. The company has experienced fluctuations in financial performance over the past three years, reflecting the dynamic nature of the crypto market. While LCX AG recorded a loss in 2022, primarily due to a market downturn and a security breach, it successfully covered the impact through reserves. The company has remained financially stable, achieving revenues and profits in 2021, 2023 and 2024 while maintaining break-even operations.

In 2023 and 2024, LCX AG strengthened its operational efficiency, expanded its business activities, and upheld a stable financial position. Looking ahead to 2025, the company anticipates positive financial development, supported by market uptrends, an inflow of customer funds, and strong business performance. Increased adoption of digital assets and service expansion are expected to drive higher revenues and profitability, further reinforcing LCX AG's financial position.

A.17 Financial Condition Since Registration

LCX AG has been financially stable since its registration, supported by CHF 1 million in share capital (Stammkapital) and continuous business growth. Since its inception, the company has expanded its operations, secured multiple regulatory registrations, and established itself as a key player in the crypto and blockchain industry.

While market conditions have fluctuated, LCX AG has maintained strong revenues and break-even operations. The company has consistently reinvested in its platform, technology, and regulatory compliance, ensuring long-term sustainability. The LCX Token has been a fundamental part of the ecosystem, with a market capitalization of approximately \$200 million USD and an all-time high exceeding \$500 million USD in 2022. Looking ahead, LCX AG anticipates continued financial growth, driven by market uptrends, increased adoption of digital assets, and expanding business activities.

B. PART B - INFORMATION ABOUT THE ISSUER, IF DIFFERENT FROM THE OFFEROR OR PERSON SEEKING ADMISSION TO TRADING

B.1 Issuer different from offeror or person seeking admission to trading

false

B.2 Name

Not applicable

B.3 Legal Form

Not applicable

B.4 Registered Address

Not applicable

B.5 Head Office

Not applicable

B.6 Registration Date

Not applicable

B.7 Legal Entity Identifier

Not applicable

B.8 Another Identifier Required Pursuant to Applicable National Law

Not applicable

B.9 Parent Company

Not applicable

B.10 Members of the Management Body

Not applicable

B.11 Business Activity

Not applicable

B.12 Parent Company Business Activity

Not applicable

C. PART C - INFORMATION ABOUT THE OPERATOR OF THE TRADING PLATFORM IN CASES WHERE IT DRAWS UP THE CRYPTO-ASSET WHITE PAPER AND INFORMATION ABOUT OTHER PERSONS DRAWING THE CRYPTO-ASSET WHITE PAPER PURSUANT TO ARTICLE 6(1), SECOND SUBPARAGRAPH, OF REGULATION (EU) 2023/1114

C.1 Name

LCX AG

C.2 Legal Form

AG

C.3 Registered Address

Herrengasse 6, 9490 Vaduz, Liechtenstein

C.4 Head Office

Herrengasse 6, 9490 Vaduz, Liechtenstein

C.5 Registration Date

24.04.2018

C.6 Legal Entity Identifier

529900SN07Z6RTX8R418

C.7 Another Identifier Required Pursuant to Applicable National Law

FL-0002.580.678-2

C.8 Parent Company

Not Applicable

C.9 Reason for Crypto-Asset White Paper Preparation

LCX is voluntarily preparing this MiCA-aligned whitepaper for Bitcoin (BTC) to enhance transparency, regulatory clarity, and investor confidence. As Bitcoin is classified as an "Other Crypto-Asset" under MiCA Article 4(2), a white paper is not required for its offering or trading. However, LCX is providing this document as part of its commitment to regulatory best practices and transparency.

LCX has applied for authorization as a Crypto-Asset Service Provider (CASP) and is aligning its operations with MiCA requirements while facilitating Bitcoin trading on its platform. This white paper serves to provide clear, standardized information about BTC for users and investors, even though it is not a MiCA requirement.

C.10 Members of the Management Body

Full Name	Business Address	Function
Monty C. M. Metzger	Herrengasse 6, 9490 Vaduz, Liechtenstein	President of the Board
Katarina Metzger	Herrengasse 6, 9490 Vaduz, Liechtenstein	Board Member
Anurag Verma	Herrengasse 6, 9490 Vaduz, Liechtenstein	Director of Technology

C.11 Operator Business Activity

LCX provides various crypto-asset services under Liechtenstein's Token and Trusted Technology Service Provider Act ("Token- und Vertrauenswürdige Technologie-Dienstleister-Gesetz" in short

"TVTG") also known as the Blockchain Act. These include custody and administration of crypto-assets, offering secure storage for clients' assets and private keys. LCX operates a trading platform, facilitating the matching of buy and sell orders for crypto-assets. It enables both crypto-to-fiat and crypto-to-crypto exchanges, ensuring compliance with AML and KYC regulations. LCX also supports token placements, marketing crypto-assets on behalf of offerors.

Under MiCA, LCX is classified as a Crypto-Asset Service Provider (CASP). LCX AG has applied for MiCA licensing on February 1, 2025, the first day of MiCA's implementation in Liechtenstein.

Under the TVTG framework, LCX provides:

- TT Depositary Custody and safekeeping of crypto-assets.
- TT Trading Platform Operator Operation of a regulated crypto-asset exchange.
- TT Exchange Service Provider Crypto-to-fiat and crypto-to-crypto exchange.
- Token Issuer Marketing and distribution of tokens.
- TT Transfer Service Provider Crypto-asset transfers between ledger addresses.
- Token Generator & Tokenization Service Provider Creation and issuance of tokens.
- Physical Validator Enforcement of token-based rights on TT systems.
- TT Verification & Identity Service Provider Legal capacity verification and identity registration.
- TT Price Service Provider Providing aggregated crypto-asset price information.

C.12 Parent Company Business Activity

Not Applicable

- C.13 Other persons drawing up the white paper under Article 6 (1) second subparagraph MiCA

 Not Applicable
- C.14 Reason for drawing up the white paper under Article 6 (1) second subparagraph MiCA

 Not Applicable

D. PART D - INFORMATION ABOUT THE CRYPTO-ASSET PROJECT

D.1 Crypto-Asset Project Name

Bitcoin

D.2 Crypto-Assets Name

Bitcoin

D.3 Abbreviation

BTC

D.4 Crypto-Asset Project Description

Bitcoin is a decentralized, open-source digital currency that operates on a peer-to-peer blockchain network without a central authority. It enables borderless, censorship-resistant transactions using cryptographic verification and is maintained by a global network of participants through the Proof-of-Work (PoW) consensus mechanism. Bitcoin functions as a store of value, medium of exchange, and investment asset, offering an alternative to traditional financial systems. Its fixed maximum supply of 21 million BTC ensures scarcity, contributing to its role as "digital gold."

D.5 Details of all persons involved in the implementation of the crypto-asset project

Bitcoin is an open-source project with no central issuer or development team. It is maintained by a decentralized network of developers, miners, node operators, and users worldwide.

Full Name	Business Address	Function
Satoshi Nakamoto	Not applicable	Creator (Pseudonymous)
Core Developers	Global	Software Development & Maintenance
Miners	Global	Transaction Validation & Security
Node Operators	Global	Network Verification & Governance

D.6 Utility Token Classification

false

D.7 Key Features of Goods/Services for Utility Token Projects

Not applicable

D.8 Plans for the Token

Not applicable

D.9 Resource Allocation

Not applicable

D.10 Planned Use of Collected Funds or Crypto-Assets

Not applicable

E. PART E - INFORMATION ABOUT THE OFFER TO THE PUBLIC OF CRYPTO-ASSETS OR THEIR ADMISSION TO TRADING

E.1 Public Offering or Admission to Trading

ATTR

E.2 Reasons for Public Offer or Admission to Trading

LCX is voluntarily filing a MiCA-compliant whitepaper for Bitcoin (BTC) to enhance transparency, regulatory clarity, and investor confidence. While BTC is classified as "Other Crypto-Assets" under MiCA and does not require a whitepaper, this initiative supports compliance readiness and aligns with MiCA's high disclosure standards. By doing so, LCX strengthens its position as a regulated exchange, ensuring a trustworthy and transparent trading environment for Bitcoin within the EU's evolving regulatory framework. Additionally, this filing facilitates market access and institutional adoption by removing uncertainty for institutional investors and regulated entities seeking to engage with Bitcoin in a compliant manner. It further supports the broader market adoption and integration of Bitcoin into the regulated financial ecosystem, reinforcing LCX's role in shaping compliant and transparent crypto markets.

E.3 Fundraising Target

Not applicable

E.4 Minimum Subscription Goals

Not applicable

E.5 Maximum Subscription Goal

Not applicable

E.6 Oversubscription Acceptance

Not applicable

E.7 Oversubscription Allocation

Not applicable

E.8 Issue Price

Not applicable

E.9 Official Currency or Any Other Crypto-Assets Determining the Issue Price

Not applicable

E.10 Subscription Fee

Not applicable

E.11 Offer Price Determination Method

Not applicable

E.12 Total Number of Offered/Traded Crypto-Assets

21,000,000 BTC (Maximum Supply)

E.13 Targeted Holders

ALL

E.14 Holder Restrictions

Not applicable

E.15 Reimbursement Notice

Not applicable

E.16 Refund Mechanism

Not applicable

E.17 Refund Timeline

Not applicable

E.18 Offer Phases

Not applicable

E.19 Early Purchase Discount

Not applicable

E.20 Time-Limited Offer

Not applicable

E.21 Subscription Period Beginning

Not applicable

E.22 Subscription Period End

Not applicable

E.23 Safeguarding Arrangements for Offered Funds/Crypto-Assets

Not applicable

E.24 Payment Methods for Crypto-Asset Purchase

Not applicable

E.25 Value Transfer Methods for Reimbursement

Not applicable

E.26 Right of Withdrawal

Not applicable

E.27 Transfer of Purchased Crypto-Assets

Not applicable

E.28 Transfer Time Schedule

Not applicable

E.29 Purchaser's Technical Requirements

Not applicable

E.30 Crypto-asset service provider (CASP) name

Not applicable

E.31 CASP identifier

Not applicable

E.32 Placement Form

NTAV

E.33 Trading Platforms name

LCX AG

E.34 Trading Platforms Market Identifier Code (MIC)

LCXE

E.35 Trading Platforms Access

Bitcoin (BTC) is widely traded on multiple regulated and unregulated trading platforms globally. As a decentralized crypto-asset with no central issuer, BTC is not restricted to a single exchange and can be accessed by retail and institutional investors worldwide.

LCX Exchange also provides access to Bitcoin trading with several pairs. Investors can access Bitcoin (\$BTC) through LCX.com, the official LCX exchange, as well as other supported cryptocurrency trading platforms. To trade \$BTC, users must register, complete KYC (Know Your Customer) verification, and comply with platform-specific requirements.

E.36 Involved Costs

Not applicable

E.37 Offer Expenses

Not applicable

E.38 Conflicts of Interest

Not applicable

E.39 Applicable Law

Not applicable - As Bitcoin (BTC) is a decentralized, open-source crypto-asset with no central issuer or governing entity, it does not fall under the jurisdiction of any specific legal framework.

E.40 Competent Court

In case of disputes related to services provided by LCX, the competent court is: The Courts of Liechtenstein, with jurisdiction in accordance with Liechtenstein law and applicable EU regulations.

F. PART F - INFORMATION ABOUT THE CRYPTO-ASSETS

F.1 Crypto-Asset Type

Other Crypto-Asset

F.2 Crypto-Asset Functionality

Bitcoin (BTC) is a decentralized, peer-to-peer digital asset designed as a store of value and medium of exchange. It enables secure, borderless transactions without reliance on intermediaries. As the first and most widely adopted cryptocurrency, Bitcoin serves as a key asset in the digital economy and is often used for investment, payments, and as a hedge against inflation.

F.3 Planned Application of Functionalities

Bitcoin (BTC) is a mature and globally recognized digital asset with its full functionality already in place. As a decentralized, permissionless cryptocurrency, BTC is fully operational as a store of value, medium of exchange, and peer-to-peer settlement layer from the moment of trading admission.

F.4 Type of white paper

OTHR

F.5 The type of submission

NEWT

F.6 Crypto-Asset Characteristics

Bitcoin (BTC) is a decentralized digital currency operating on a peer-to-peer network, allowing users to transact directly without intermediaries. It serves as a store of value and medium of exchange, with a capped supply of 21 million coins. All functionalities are fully operational and have been since its inception in 2009. Under the Markets in Crypto-Assets Regulation (MiCA), Bitcoin is classified as an "Other Crypto-Asset" (OTHR).

ISO 24165 DTI Code: 4H95J0R2X

F.7 Commercial name or trading name

Bitcoin

F.8 Website of the issuer

Not applicable

F.9 Starting date of offer to the public or admission to trading

2025-01-01

F.10 Publication date

2025-03-26

F.11 Any other services provided by the issuer

Not applicable

F.12 Language or languages of the white paper

English

F.13 Digital Token Identifier Code used to uniquely identify the crypto-asset or each of the several crypto assets to which the white paper relates, where available

4H95J0R2X

F.14 Functionally Fungible Group Digital Token Identifier, where available

Not applicable

F.15 Voluntary data flag

true

F.16 Personal data flag

false

F.17 LEI eligibility

false

F.18 Home Member State

Liechtenstein

F.19 Host Member States

Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

G. PART G - INFORMATION ON THE RIGHTS AND OBLIGATIONS ATTACHED TO THE CRYPTO-ASSETS

G.1 Purchaser Rights and Obligations

Purchasers of Bitcoin do not acquire contractual rights or obligations from an issuer, as Bitcoin is a decentralized, open-source protocol without a governing entity. Ownership of Bitcoin grants the right to store, transfer, and use BTC within the network, subject to its consensus rules and cryptographic security mechanisms. Users bear sole responsibility for managing their private keys and complying with applicable laws and regulations.

G.2 Exercise of Rights and Obligation

Since Bitcoin is a decentralized, permissionless asset with no central issuer, there are no contractual rights or obligations to exercise. The use and transfer of Bitcoin are governed by the consensus rules of the Bitcoin network. Users exercise control over their Bitcoin holdings by managing their private keys and can transact freely within the network, subject to network fees and block confirmation times. Legal and regulatory compliance remains the responsibility of the user.

G.3 Conditions for Modifications of Rights and Obligations

Bitcoin's rules and functionalities are determined by network consensus and cannot be unilaterally modified by any entity. Changes to the protocol require broad agreement among network participants through governance mechanisms such as Bitcoin Improvement Proposals (BIPs). However, legal and regulatory obligations may change based on jurisdiction, and users must ensure compliance with relevant laws.

G.4 Future Public Offers

Not applicable

G.5 Issuer Retained Crypto-Assets

Not applicable

G.6 Utility Token Classification

No

G.7 Key Features of Goods/Services of Utility Tokens

Not applicable

G.8 Utility Tokens Redemption

Not applicable

G.9 Non-Trading Request

True

G.10 Crypto-Assets Purchase or Sale Modalities

Not applicable

G.11 Crypto-Assets Transfer Restrictions

Not applicable

G.12 Supply Adjustment Protocols

Bitcoin follows a predefined supply issuance protocol that is hardcoded into its consensus rules. The total supply is capped at 21 million BTC, with new coins issued through mining rewards. The issuance rate decreases approximately every four years through the Bitcoin Halving process. This protocol is enforced by the network and cannot be changed without a broad consensus among network participants.

G.13 Supply Adjustment Mechanisms

Not Applicable

G.14 Token Value Protection Schemes

False

G.15 Token Value Protection Schemes Description

Not Applicable

G.16 Compensation Schemes

False

G.17 Compensation Schemes Description

Not Applicable

G.18 Applicable Law

Not applicable - As Bitcoin (BTC) is a decentralized, open-source crypto-asset with no central issuer or governing entity, it does not fall under the jurisdiction of any specific legal framework.

G.19 Competent Court

Not applicable - As Bitcoin (BTC) is a decentralized, open-source crypto-asset with no central issuer or governing entity, it does not fall under the jurisdiction of any specific legal framework.

In case of disputes related to services provided by LCX, the competent court is: The Courts of Liechtenstein, with jurisdiction in accordance with Liechtenstein law and applicable EU regulations.

H. PART H – INFORMATION ON THE UNDERLYING TECHNOLOGY

H.1 Distributed ledger technology

Information on the Technology Used, Including Distributed Ledger Technology for Bitcoin

General Information on Distributed Ledger Technology and Blockchain

Bitcoin operates on a public, decentralized blockchain, which is a subset of Distributed Ledger Technology (DLT). It enables a peer-to-peer electronic cash system that allows users to send and receive transactions without intermediaries. The Bitcoin blockchain is maintained by a decentralized network of nodes that follow a consensus mechanism to validate and record transactions in a tamper-resistant ledger.

Bitcoin Blockchain Characteristics:

- A) Decentralization: Bitcoin is a permissionless, global blockchain with no central authority controlling the network. Any participant can run a full node, validate transactions, or mine new blocks.
- B) Security: Transactions are secured through cryptographic techniques, and blocks are linked together in an immutable chain. The Proof-of-Work (PoW) consensus mechanism ensures security against attacks by requiring computational work for block validation.
- C) Transparency & Immutability: All Bitcoin transactions are publicly visible on the blockchain and cannot be altered once confirmed. The longest valid chain represents the canonical transaction history.
- D) Fixed Supply: Bitcoin has a hard-capped supply of 21 million BTC, making it a deflationary digital asset. New Bitcoin issuance occurs through mining rewards, which are halved approximately every four years in an event known as the Bitcoin Halving.

Proof-of-Work (PoW) Consensus Mechanism:

Bitcoin employs Proof-of-Work (PoW) to secure the network and validate transactions.

- A) Miners compete to solve complex cryptographic puzzles (SHA-256 hashing algorithm) to propose the next valid block.
- B) The first miner to solve the puzzle adds a new block to the blockchain and receives a block reward plus transaction fees.

C) The difficulty adjustment algorithm ensures that blocks are mined approximately every 10 minutes, maintaining network stability.

Bitcoin's Monetary Policy and Fixed Supply:

- A) The issuance rate of new BTC follows a predefined schedule, with block rewards decreasing every 210,000 blocks (~every 4 years) in a process called Halving.
- B) This predictable supply schedule is embedded in Bitcoin's consensus rules and is resistant to arbitrary changes.
- C) The last Bitcoin is expected to be mined around 2140, after which miners will rely solely on transaction fees for network security.

Governance and Development:

Bitcoin has no central governing body. Instead, protocol upgrades are proposed, reviewed, and implemented through Bitcoin Improvement Proposals (BIPs), which require consensus from the global community of developers, miners, and users. Upgrades are voluntary and only adopted if the majority of the network participants agree.

Further Information Sources and Links

A) Bitcoin Whitepaper (Original Document by Satoshi Nakamoto, 2008):

https://bitcoin.org/bitcoin.pdf

B) Bitcoin Core Repository (Official Bitcoin Development Codebase):

https://github.com/bitcoin/bitcoin

C) Bitcoin Blockchain Explorer (Transaction & Block Data):

https://blockchair.com/bitcoin

D) Bitcoin Wiki (Technical and General Information):

https://en.bitcoin.it/wiki/Main Page

H.2 Protocols and Technical Standards

Bitcoin Protocol and Network Architecture

Bitcoin operates on a decentralized peer-to-peer (P2P) network with no central authority. Transactions and blocks are broadcasted across the network using the Bitcoin P2P protocol to ensure consensus and security. Nodes follow the Bitcoin Core reference implementation, which dictates consensus rules.

Consensus Mechanism – Proof-of-Work (PoW)

Bitcoin uses Proof-of-Work (PoW) based on the SHA-256 hashing algorithm to validate transactions and secure the network. Mining difficulty adjusts every 2,016 blocks, approximately every two weeks, to maintain an average 10-minute block time. New bitcoins are issued as mining rewards, and the issuance rate halves approximately every 210,000 blocks, or roughly every four years.

Bitcoin Improvement Proposals (BIPs) & Protocol Upgrades

Bitcoin's development follows an open standard process through Bitcoin Improvement Proposals (BIPs). Notable BIPs include BIP-32, which introduced hierarchical deterministic (HD) wallets, BIP-39, which standardized mnemonic seed phrases for wallet recovery, BIP-141, which implemented Segregated Witness (SegWit) for transaction optimization, BIP-340, which introduced Schnorr Signatures for enhanced privacy and efficiency, and BIP-341/342, which enabled smart contract functionality through Taproot and Tapscript.

Transaction and Address Standards

Bitcoin supports multiple address formats for transaction compatibility and efficiency. Pay-to-PubKey Hash (P2PKH) is the standard Bitcoin address format, which starts with "1." Pay-to-Script Hash (P2SH) allows for multi-signature and complex spending conditions, with addresses starting with "3." Bech32 (SegWit Native) introduces more efficient and lower-fee transactions, with addresses starting

with "bc1." The Taproot upgrade (P2TR) enhances privacy and enables efficient smart contract transactions.

Layer 2 Scaling - Lightning Network

The Lightning Network is a second-layer protocol that facilitates instant and low-cost Bitcoin transactions. It uses Hashed Time-Locked Contracts (HTLCs) to enable secure multi-hop payments. By processing transactions off-chain and settling them on-chain when necessary, the Lightning Network improves Bitcoin's scalability.

Security & Cryptography Standards

Bitcoin employs the Elliptic Curve Digital Signature Algorithm (ECDSA) for transaction signing. The SHA-256 hashing function secures transactions and block headers, while RIPEMD-160 is used for Bitcoin address generation. The Taproot upgrade introduced Schnorr Signatures, which improve privacy and allow for signature aggregation.

Interoperability & Data Standards

Bitcoin supports various interoperability and data standards. Partially Signed Bitcoin Transactions (PSBT) enable multi-party transaction signing, while Bitcoin Script defines spending conditions through a stack-based scripting language. The OP_RETURN function allows embedding small pieces of data into Bitcoin transactions for specific use cases.

H.3 Technology Used

Bitcoin operates on a decentralized blockchain network utilizing the Proof-of-Work (PoW) consensus mechanism to validate transactions and secure the ledger. The network relies on cryptographic principles, including SHA-256 hashing and elliptic curve cryptography (ECDSA and Schnorr signatures), to ensure data integrity and transaction security.

Wallets and key management infrastructure play a crucial role in storing and transferring Bitcoin. Wallets can be classified into custodial and non-custodial types. Non-custodial wallets, including hardware wallets, software wallets, and air-gapped solutions, provide users with full control over their private keys. Hardware wallets, such as Ledger and Trezor, store private keys offline for enhanced security. Multi-signature (multi-sig) wallets require multiple private keys to authorize transactions, improving security and reducing single points of failure.

Bitcoin transactions are conducted using unspent transaction outputs (UTXOs), ensuring efficient and traceable fund management. Address formats include P2PKH, P2SH, Bech32 (SegWit), and Taproot (P2TR), each offering different levels of efficiency, compatibility, and privacy.

For advanced security and scalability, Bitcoin's Layer 2 solutions, such as the Lightning Network, enable off-chain transactions with instant settlement and low fees. Additionally, protocols like Partially Signed Bitcoin Transactions (PSBT) allow for flexible and secure transaction signing, facilitating complex multi-party and cold storage transactions.

H.4 Consensus Mechanism

Bitcoin operates using the Proof-of-Work (PoW) consensus mechanism, which ensures network security, decentralization, and immutability. PoW requires miners to compete in solving complex cryptographic puzzles using computational power. The first miner to find a valid hash for a new block is rewarded with newly minted Bitcoin and transaction fees, and the block is added to the blockchain.

The difficulty of mining adjusts approximately every 2,016 blocks (~every two weeks) to maintain an average block time of 10 minutes, ensuring a stable issuance rate. Bitcoin's issuance follows a pre-defined schedule, with block rewards halving approximately every 210,000 blocks (~every four years) to control supply inflation, making Bitcoin a deflationary asset.

Bitcoin's PoW mechanism relies on the SHA-256 hashing algorithm, ensuring strong cryptographic security. Miners operate in a globally distributed manner, reducing the risk of centralized control and

increasing network resilience. Unlike Proof-of-Stake (PoS) systems, PoW provides strong Sybil resistance, as participating in block validation requires significant energy and hardware investment.

The consensus rules are enforced by full nodes, which independently validate transactions and blocks. Bitcoin Improvement Proposals (BIPs) guide protocol upgrades, ensuring open and decentralized development. The longest valid chain rule determines consensus, where the chain with the most accumulated proof-of-work is considered the authoritative ledger.

H.5 Incentive Mechanisms and Applicable Fees

Bitcoin's incentive mechanism is based on the Proof-of-Work (PoW) model, where miners are rewarded for validating transactions and securing the network. The primary incentives in the Bitcoin networks are block rewards and transaction fees.

Each time a miner successfully mines a new block, they receive a block reward, which includes newly minted bitcoins and transaction fees from the transactions included in that block. The block reward halves approximately every 210,000 blocks (~every four years) through the programmed Bitcoin Halving event, reducing the rate at which new bitcoins are created. The current block reward, as of 2024, is 6.25 BTC per block, which will reduce to 3.125 BTC at the next halving event.

Transaction fees serve as an additional incentive for miners and act as a market-driven mechanism to prioritize transactions. Since Bitcoin's total supply is capped at 21 million BTC, the reliance on transaction fees will gradually increase as block rewards diminish. Users can set their transaction fees based on network demand, with higher fees leading to faster transaction confirmations.

Bitcoin's fee model is dynamic and determined by network congestion. Fees are calculated based on the size of the transaction in bytes, not the transaction value. Transactions with more inputs and outputs require higher fees due to increased data size. Wallet software typically suggests an appropriate fee based on current network conditions, ensuring that users can optimize cost and speed.

The incentive structure ensures network security by requiring miners to expend computational energy (electricity) in solving cryptographic puzzles. This Sybil-resistant model prevents spam attacks and maintains the decentralization and integrity of the Bitcoin ledger.

H.6 Use of Distributed Ledger Technology

True

H.7 DLT Functionality Description

Bitcoin operates on a decentralized, permissionless public blockchain using a Proof-of-Work (PoW) consensus mechanism. The Bitcoin network is maintained by thousands of nodes globally, where miners compete to solve complex cryptographic puzzles in order to validate transactions and add blocks to the chain. Each block contains a cryptographic hash of the previous block, forming an immutable chain of records. This design ensures transparency, immutability, and resistance to censorship. Transactions are grouped into blocks approximately every 10 minutes, and finality is probabilistic, improving with each additional confirmation. The Bitcoin blockchain does not natively support smart contracts beyond basic scripting, but it excels in secure peer-to-peer value transfer. Its UTXO (Unspent Transaction Output) model ensures efficient accounting, and innovations such as Segregated Witness (SegWit) and the Lightning Network have enhanced scalability and transaction efficiency.

H.8 Audit

False

H.9 Audit Outcome

As an open-source protocol, Bitcoin has not undergone formal audits by a centralized authority, but it has been continuously audited in practice through over a decade of public scrutiny, academic research, and global adoption.

PART I - INFORMATION ON RISKS

I.1 Offer-Related Risks

The admission to trading of Bitcoin (\$BTC) carries risks related to market volatility, regulatory uncertainties, and trading conditions. Bitcoin is the most widely traded cryptocurrency, with deep liquidity and active global secondary markets. However, price fluctuations can still be significant due to factors such as market sentiment, macroeconomic trends, institutional adoption, and speculative activity.

While Bitcoin's liquidity is generally high, market conditions may vary, and extreme events such as regulatory restrictions, exchange delistings, or systemic financial shocks could impact trading conditions. Additionally, regulatory changes may affect exchange availability or impose new compliance requirements on market participants, potentially limiting access in certain jurisdictions.

I.2 Issuer-Related Risks

Bitcoin (\$BTC) does not have a central issuer, and its network operates in a decentralized and permissionless manner, maintained by independent node operators, miners, and developers. Therefore, many issuer-specific risks, such as financial stability, operational risks, or conflicts of interest, do not apply to Bitcoin.

However, Bitcoin's ecosystem still faces certain risks, including:

Regulatory and Legal Uncertainty: While Bitcoin itself is decentralized, regulatory frameworks in different jurisdictions may impact exchanges, custodians, and service providers offering access to Bitcoin.

Network Governance and Protocol Risks: Bitcoin's development follows a decentralized, consensus-driven process through Bitcoin Improvement Proposals (BIPs). While this ensures resistance to centralized control, protocol changes and upgrades require broad community consensus, which can sometimes lead to network splits (forks) or delays in necessary updates.

Mining Centralization Risks: Although Bitcoin mining is competitive and decentralized, the concentration of mining power in specific geographic regions or entities may pose risks to network security and transaction finality.

Security and Technological Risks: Bitcoin relies on cryptographic security, and while its core protocol has proven robust, advancements in quantum computing or unforeseen vulnerabilities could pose a future risk.

I.3 Crypto-Assets-Related Risks

Bitcoin (\$BTC) is a decentralized digital asset with no central issuer, making it resistant to many risks associated with centrally controlled crypto-assets. However, Bitcoin still carries certain risks, including:

Market Risk: Bitcoin's price is highly volatile, influenced by market sentiment, macroeconomic conditions, regulatory developments, and institutional adoption. Sudden price swings can result in significant gains or losses.

Liquidity Risk: Bitcoin is one of the most liquid crypto-assets, with deep markets across multiple exchanges. However, during periods of extreme market stress, liquidity may temporarily decrease, leading to price slippage when executing large trades.

Custodial and Self-Custody Risk: Bitcoin ownership is secured through private keys. Loss or theft of private keys results in the permanent loss of assets. Users storing Bitcoin on centralized exchanges or custodial platforms face counterparty risks, including potential insolvency, hacking incidents, or regulatory seizures.

Regulatory and Taxation Risks: Bitcoin operates across various regulatory jurisdictions, each with different approaches to taxation, compliance, and trading restrictions. Future regulatory changes could impact market access, taxation policies, or the classification of Bitcoin under financial laws.

Security and Network Risks: Bitcoin's Proof-of-Work (PoW) consensus ensures network security, but risks include: A9 51% Attack: If a single entity controls the majority of mining power, they could manipulate transactions. However, Bitcoin's high hash rate makes this attack economically unfeasible. B) Protocol Bugs or Upgrades: While Bitcoin's protocol is robust, unforeseen software bugs or contentious upgrades could introduce temporary instability. C) Quantum Computing Threats: Future advancements in quantum computing could challenge current cryptographic standards, potentially impacting Bitcoin's security.

Reputational Risk: Bitcoin has been associated with illicit financial activities due to its pseudonymous nature. While Bitcoin is widely recognized as a legitimate financial asset, potential regulatory scrutiny and media narratives may impact its perception and adoption.

Despite these risks, Bitcoin remains the most established and widely adopted crypto-asset, with deep liquidity, strong network security, and global acceptance as a store of value and medium of exchange.

I.4 Project Implementation-Related Risks

Bitcoin, as a decentralized and open-source project, has no central issuer or structured implementation plan, but certain risks affect its ongoing operation and adoption. Changes to the network require community consensus, and disagreements among developers, miners, and node operators can lead to contentious forks, causing uncertainty and potential fragmentation. Scalability limitations may result in network congestion, higher transaction fees, and longer confirmation times, affecting usability. Regulatory uncertainty remains significant, as jurisdictions impose varying restrictions that may impact adoption and market accessibility. The concentration of mining power among a few entities raises concerns about centralization, network security, and the risk of 51% attacks. While Bitcoin's blockchain is highly secure, vulnerabilities in software, wallets, or exchanges pose cybersecurity risks, and future quantum computing advancements may threaten cryptographic integrity. Bitcoin also experiences high price volatility driven by speculation, macroeconomic conditions, and institutional demand, which can affect liquidity and investor confidence.

I.5 Technology-Related Risks

Bitcoin (\$BTC) operates on a decentralized Proof-of-Work (PoW) blockchain, ensuring security and censorship resistance. However, technology-related risks persist. Private key management is critical, as loss or theft results in permanent loss of BTC. Transactions are irreversible, meaning errors in address input or low-confirmation settlements pose risks. Scaling limitations restrict transaction throughput, leading to high fees during network congestion, though solutions like the Lightning Network aim to improve efficiency. Bitcoin's PoW mechanism also presents cybersecurity risks, including 51% attacks, Sybil attacks, and denial-of-service attempts, though the network's scale makes such threats improbable.

Protocol governance relies on community consensus, leading to potential delays in critical upgrades and chain splits, as seen in past forks like Bitcoin Cash. The network remains vulnerable to software bugs, mining centralization, and future quantum computing risks that could compromise cryptographic security. Bitcoin's pseudonymous nature exposes transactions to blockchain analysis, limiting privacy. Additionally, reliance on third-party exchanges and custodians introduces counterparty risks such as hacks, insolvency, and regulatory restrictions. While Bitcoin remains a highly secure and decentralized system, users must adopt best practices in key management, transaction validation, and third-party interactions to mitigate these risks.

I.6 Mitigation Measures

Mitigation measures for Bitcoin's environmental impact focus on increasing the use of renewable energy in mining, improving hardware efficiency, and promoting Layer 2 scaling solutions such as the Lightning Network to reduce on-chain transaction demand. Regulatory initiatives and industry-led efforts aim to enhance sustainability by encouraging energy-efficient mining practices and integrating carbon offset strategies where applicable.

J. PART J – INFORMATION ON THE SUSTAINABILITY INDICATORS IN RELATION TO ADVERSE IMPACT ON THE CLIMATE AND OTHER ENVIRONMENT-RELATED ADVERSE IMPACTS

Adverse impacts on climate and other environment-related adverse impacts.

J.1 Mandatory information on principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism

Bitcoin's Proof-of-Work (PoW) consensus mechanism ensures network security and integrity but requires significant computational power, leading to high energy consumption and associated environmental impacts. The network's total estimated annual energy consumption is 185,010,360,649.43 kWh, largely driven by mining operations using specialized hardware. While some mining activity is powered by renewable energy sources (15.12%), the majority relies on conventional energy, contributing to greenhouse gas (GHG) emissions.

Bitcoin's estimated Scope 2 purchased emissions amount to 76,223,539.89 tCO2e per year, reflecting the carbon footprint of electricity used in mining. The average energy intensity per transaction is 15.67 kWh, and the GHG intensity is 6.46 kgCO2e per transaction. These figures take into account both on-chain Bitcoin transactions and Lightning Network transactions to ensure accurate reporting.

Efforts to reduce Bitcoin's environmental impact include increasing the share of mining operations powered by renewable energy, optimizing mining hardware efficiency, and scaling the Lightning Network to reduce on-chain transaction demand.

General information		
S.1 Name Name reported in field A.1	LCX	
S.2 Relevant legal entity identifier Identifier referred to in field A.2	529900SN07Z6RTX8R418	
S.3 Name of the crypto-asset Name of the crypto-asset, as reported in field D.2	Bitcoin	
S.4 Consensus Mechanism The consensus mechanism, as reported in field H.4	Bitcoin operates using the Proof-of-Work (PoW) consensus mechanism, which ensures network security, decentralization, and immutability. PoW requires miners to compete in solving complex cryptographic puzzles using computational power. The first miner to find a valid hash for a new block is rewarded with newly minted Bitcoin and transaction fees, and the block is added to the blockchain. The difficulty of mining adjusts approximately every 2,016 blocks (~every two weeks) to maintain an average block time of 10 minutes, ensuring a stable issuance rate. Bitcoin's issuance follows a pre-defined schedule, with block rewards halving approximately every 210,000 blocks (~every four years) to control supply inflation, making Bitcoin a deflationary asset. Bitcoin's PoW mechanism relies on the SHA-256 hashing algorithm, ensuring strong cryptographic security. Miners operate in a	

globally distributed manner, reducing the risk of centralized control and increasing network resilience. Unlike Proof-of-Stake (PoS) systems, PoW provides strong Sybil resistance, as participating in block validation requires significant energy and hardware investment.

The consensus rules are enforced by full nodes, which independently validate transactions and blocks. Bitcoin Improvement Proposals (BIPs) guide protocol upgrades, ensuring open and decentralized development. The longest valid chain rule determines consensus, where the chain with the most accumulated proof-of-work is considered the authoritative ledger.

S.5 Incentive Mechanisms and Applicable Fees

Incentive mechanisms to secure transactions and any fees applicable, as reported in field H.5

Bitcoin's incentive mechanism is based on the Proof-of-Work (PoW) model, where miners are rewarded for validating transactions and securing the network. The primary incentives in the Bitcoin network are block rewards and transaction fees.

Each time a miner successfully mines a new block, they receive a block reward, which includes newly minted bitcoins and transaction fees from the transactions included in that block. The block reward halves approximately every 210,000 blocks (~every four years) through the programmed Bitcoin Halving event, reducing the rate at which new bitcoins are created. The current block reward, as of 2024, is 6.25 BTC per block, which will reduce to 3.125 BTC at the next halving event.

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The incentive structure ensures network security by requiring miners to expend computational energy (electricity) in solving cryptographic puzzles. This Sybil-resistant model prevents spam attacks and maintains the decentralization and integrity of the Bitcoin ledger.

S.6 Beginning of the period to which the disclosure relates	2024-03-04	
S.7 End of the period to which the disclosure relates	2025-03-04	
Mandatory key indicator on energy consumption		
S.8 Energy consumption	185,010,360,649.43 kWh per year	
Total amount of energy used for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions, expressed per calendar year		
Sources and methodologies		
S.9 Energy consumption sources and Methodologies Sources and methodologies used in relation to the	Energy consumption estimates use a top-down economic model, factoring in mining revenue, hardware efficiency, and electricity use. SHA-256 mining rigs above the profitability	
information reported in field S.8	threshold are considered, ensuring realistic consumption estimates.	

J.2 Supplementary information on principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism

Supplementary key indicators on energy and GHG emissions	
S.10 Renewable energy consumption Share of energy used generated from renewable sources, expressed as a percentage of the total amount of energy used per calendar year, for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions.	15.12% of the network's energy use comes from renewable sources.
S.11 Energy intensity Average amount of energy used per validated transaction	15.67 kWh per transaction
S.12 Scope 1 DLT GHG emissions – Controlled Scope 1 GHG emissions per calendar year for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions	0.00 tCO2e per year
S.13 Scope 2 DLT GHG emissions – Purchased Scope 2 GHG emissions, expressed in tCO2e per calendar year for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions	76,223,539.89 tCO2e per year
S.14 GHG intensity	6.46 kgCO2e per transaction

Average GHG emissions (scope 1 and scope 2) per validated transaction	
Sources and methodologies	
S.15 Key energy sources and methodologies Sources and methodologies used in relation to the information reported in fields S.10 and S.11	Node locations are analyzed using public data, crawlers, and geographic mapping. Energy sources are determined using data from the European Environment Agency (EEA) and comparable reference networks.
S.16 Key GHG sources and methodologies Sources and methodologies used in relation to the information reported in fields S.12, S.13 and S.14	GHG emissions calculations are based on node energy use, regional energy grids, and public emissions data from the EEA and comparable mining networks.