



CRYPTO-ASSET WHITE PAPER | [OpenGradient](#)

# MiCAR White Paper

This white paper has been prepared in accordance with Regulation (EU) 2023/1114 of the European Parliament and of the Council on markets in crypto-assets (MiCAR).

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**PUBLICATION DATE**

2026-04-06

**PERSON SEEKING ADMISSION TO TRADING**

OpenGradient Foundation

**VERSION**

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## General information

No.	Field	Content
00	Table of contents	true
01	Date of notification	2026-03-05
02	Statement in accordance with Article 6(3) of Regulation (EU) 2023/1114	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 of the crypto-asset is solely responsible for the content of this crypto-asset white paper.
03	Compliance statement in accordance with Article 6(6) of Regulation (EU) 2023/1114	This crypto-asset white paper complies with Title II of Regulation (EU) 2023/1114 of the European Parliament and of the Council 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.
04	Statement in accordance with Article 6(5), points (a), (b), (c), of Regulation (EU) 2023/1114	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	Statement in accordance with Article 6(5), point (d)	The utility token referred to in this white paper may not be exchangeable against the good or service promised in the crypto-asset white paper, especially in the case of a failure or discontinuation of the crypto-asset project.
06	Statement in accordance with Article 6(5), points (e) and (f), of Regulation (EU) 2023/1114	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.
07	Warning in accordance with Article 6(7), second subparagraph, of Regulation (EU) 2023/1114	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

No.	Field	Content
		the European Parliament and of the Council (36) or any other offer document pursuant to Union or national law.

### Summary

08	Characteristics of the crypto-asset	<p>OpenGradient (OPG) tokens are crypto-assets classified as "crypto-assets other than asset-referenced tokens or e-money tokens" under MiCAR. Issued on the Base network, an Ethereum-compatible Layer 2 (L2) scaling solution, as ERC-20 compatible tokens, they are fungible, with a total supply of 1,000,000,000. OPG tokens are utility tokens that do not confer ownership, profit rights, or legal claims against the issuer. Instead, they grant access to the ecosystem's services, such as paying for decentralized AI inference, as well as rights to participate in protocol governance and network validation. These rights are exercised technically through on-chain interactions, such as staking tokens for consensus or voting on network upgrades via smart contracts. The OpenGradient Foundation reserves the right to amend these rights and functionalities; while holder opinions may be sought, changes are implemented at the issuer's discretion through updates to the token terms or documentation without requiring token-holder approval.</p>
09	Further information about utility tokens	<p>The OpenGradient (\$OPG) token serves as the primary utility token within the OpenGradient Network, granting access to a suite of decentralized AI infrastructure services. Key functionalities include: (i) Network Settlement and Access: \$OPG is used to pay for AI inference, model execution, and compute resources, while serving as the medium for rewarding nodes for processing tasks. (ii) Model Hosting: The token functions as a digital key allowing users to upload and host model architectures within the decentralized Model Hub. (iii) Governance and Security: Token holders can vote on protocol upgrades and the registry of approved enclave code, while validators must stake \$OPG to participate in the Proof of Stake consensus mechanism to secure the network. While there are no protocol-level restrictions on transferability, portions of the supply allocated to the foundation, contributors, and investors are subject to contractual lock-up and vesting schedules ranging from 36 to 96 months. Additionally, individual trading platforms may impose transfer restrictions based on jurisdiction and sanctions compliance.</p> <p>Prior to purchase, the purchaser shall be solely responsible for assessing whether token functionalities are available in the jurisdiction where the purchaser resides. No representation is made that the token's utilities will be accessible to all purchasers regardless of location.</p>

No.	Field	Content
10	Key information about the offer to the public or admission to trading	No offer of OpenGradient (OPG) tokens is being made to the public in connection with this disclosure. The token is already issued and circulating; therefore, there is no issuance of new tokens, no subscription period, and no associated fundraising activity. Accordingly, there are no target subscription goals, issue prices, or subscription fees applicable. OpenGradient (OPG) is being admitted to trading on the Bitvavo, Kraken, and Coinbase trading platforms. Admission is being sought to increase accessibility for users, improve liquidity, and ensure regulatory transparency under the MiCA framework. No crypto-asset service provider has been appointed to place the token on a firm commitment or best-effort basis.

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OpenGradient MiCAR Whitepaper

## Part A - Information about offeror or person seeking admission to trading

No.	Field	Content
A.1	Name	OpenGradient Foundation
A.2	Legal form	N/A
A.3	Registered address	N/A
A.4	Head office	N/A
A.5	Registration date	2026-02-27
A.6	Legal entity identifier	984500A5E14D36D7A578
A.7	Another identifier required pursuant to applicable	CR-432028

	national law							
A.8	Contact telephone number	+1 (217) 305-1574						
A.9	E-mail address	matthew@opengradient.ai						
A.10	Response time (Days)	10						
A.11	Parent company	N/A						
A.12	Members of the management body	<table border="1"> <thead> <tr> <th>Identity</th> <th>Business Address</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>Tiaan van Wyk</td> <td>P.O. Box 351 43 Sunrise Blvd Unit 23 Phase 2 Sunrise Townhomes Grand Cayman Cayman Islands</td> <td>Director</td> </tr> </tbody> </table>	Identity	Business Address	Function	Tiaan van Wyk	P.O. Box 351 43 Sunrise Blvd Unit 23 Phase 2 Sunrise Townhomes Grand Cayman Cayman Islands	Director
Identity	Business Address	Function						
Tiaan van Wyk	P.O. Box 351 43 Sunrise Blvd Unit 23 Phase 2 Sunrise Townhomes Grand Cayman Cayman Islands	Director						
A.13	Business activity	<p>OpenGradient Foundation is a foundation dedicated to transforming AI from a centralized gatekeeper model into an open, verifiable infrastructure. The company's core business activities include developing the OpenGradient Network, which utilizes a Hybrid AI Compute Architecture (HACA) to provide decentralized AI model hosting, secure execution, and verification to ensure AI remains verifiable and autonomous, preventing single points of failure or censorship in mission-critical applications. OpenGradient Foundation operates globally.</p>						
A.14	Parent company business activity	N/A						
A.15	Newly established	false						
A.16	Financial condition for the past three years	N/A						
A.17	Financial condition since registration	<p>As OpenGradient Foundation was established on 2026-02-27, three-year historical financial data is not available. OpenGradient Foundation is a newly established entity in the early stages of development. The company has not yet generated substantial revenue or incurred significant expenses.</p> <p>A brief summary of OpenGradient Foundation's financial performance at the time of writing is as follows:</p> <p><b>Funding and Capitalization:</b></p> <ul style="list-style-type: none"> <li>The company's initial share capital is USD \$1.00.</li> <li>The entity is funded via a promissory note for \$150,000.</li> <li>The \$OPG token has a fully diluted value as of 2 March 2026 of approximately USD 300,000,000.</li> </ul>						



## Part B - Information about issuer, if different from offeror or person seeking admission to trading

No.	Field	Content						
B.1	Issuer different from offeror or person seeking admission to trading	true						
B.2	Name	Vanna Labs						
B.3	Legal form	N/A						
B.4	Registered address	N/A						
B.5	Head office	N/A						
B.6	Registration date	2024-02-27						
B.7	Legal entity identifier	984500C68EEDAZ7DCE84						
B.8	Another identifier required pursuant to applicable national law	2142884						
B.9	Parent company	OpenGradient Foundation						
B.10	Members of the management body	<table border="1"> <thead> <tr> <th>Identity</th> <th>Business Address</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>OpenGradient Foundation</td> <td>Pavilion East PO Box 10008 Cricket Square George Town Grand Cayman KY1-1001 Cayman Islands</td> <td>Director</td> </tr> </tbody> </table>	Identity	Business Address	Function	OpenGradient Foundation	Pavilion East PO Box 10008 Cricket Square George Town Grand Cayman KY1-1001 Cayman Islands	Director
Identity	Business Address	Function						
OpenGradient Foundation	Pavilion East PO Box 10008 Cricket Square George Town Grand Cayman KY1-1001 Cayman Islands	Director						
B.11	Business activity	Vanna Labs is a British Virgin Islands entity established to support the OpenGradient protocol through the issuance of digital assets and ecosystem infrastructure, operating globally to the extent permissible by law.						

B.12	Parent company business activity	OpenGradient Foundation is a foundation dedicated to transforming AI from a centralized gatekeeper model into an open, verifiable infrastructure. The company's core business activities include developing the OpenGradient Network, which utilizes a Hybrid AI Compute Architecture (HACA) to provide decentralized AI model hosting, secure execution, and verification to ensure AI remains verifiable and autonomous, preventing single points of failure or censorship in mission-critical applications. OpenGradient Foundation operates globally.
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## 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

No.	Field	Content
C.1	Name	N/A
C.2	Legal form	N/A
C.3	Registered address	N/A
C.4	Head office	N/A
C.5	Registration date	N/A
C.6	Legal entity identifier	N/A
C.7	Another identifier required pursuant to applicable national law	N/A

C.8	Parent company	N/A
C.9	Reason for crypto-asset white paper preparation	N/A
C.10	Members of the management body	N/A
C.11	Operator business activity	N/A
C.12	Parent company business activity	N/A
C.13	Other persons drawing up the crypto-asset white paper according to Article 6(1), second subparagraph, of Regulation (EU) 2023/1114	N/A
C.14	Reason for drawing the white paper by persons referred to in Article 6(1), second subparagraph, of Regulation (EU) 2023/1114	N/A

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## Part D - Information about the crypto-asset project

No.	Field	Content
D.1	Crypto-asset project name	OpenGradient
D.2	Crypto-assets name	OpenGradient
D.3	Abbreviation	OPG

#### D.4 Crypto-asset project description

OpenGradient is a decentralized AI platform focusing on transforming AI from a centralized gatekeeper model into an open, verifiable infrastructure.

The platform's architecture features a novel Hybrid AI Compute Architecture (HACA) that separates high-speed inference execution from asynchronous on-chain verification. The project's mission is to provide an end-to-end decentralized architecture for AI model hosting, secure execution, and agentic reasoning by leveraging Trusted Execution Environments (TEEs), Zero-Knowledge Machine Learning (ZKML), the x402 payment protocol and the CometBFT consensus mechanism.

The OpenGradient token (OPG) is the native utility token of the OpenGradient ecosystem. It is designed to ensure economic security through staking, facilitate protocol governance, and enable internal network settlement within this interconnected ecosystem.

Given the technical nature of the OpenGradient project, a glossary has been included in this section of the MiCAR whitepaper to clarify the key terms and concepts used throughout the MiCAR whitepaper.

##### **Hybrid AI Compute Architecture**

**(HACA):** OpenGradient's primary architectural framework that separates the "fast path" (direct, off-chain inference execution) from the "verification path" (asynchronous on-chain settlement). This allows the network to achieve the low latency of traditional web services while maintaining decentralized, blockchain-backed verification.

**Inference Execution:** The process of running a machine learning model to produce a result (e.g., generating text or classifying data). In this network, inference is performed by specialized "Inference Nodes" using GPUs or TEEs.

**Asynchronous On-Chain Verification:** A process where the results of AI executions are verified by "Full Nodes" (validators) and recorded on the blockchain after the execution has already occurred, ensuring the ledger remains lean and efficient.

**Trusted Execution Environments (TEEs):** Secure hardware-based enclaves (such as those provided by Intel or AWS) that allow for private and attested execution of code. In OpenGradient, TEEs are used for secure LLM execution with negligible computational overhead.

**Zero-Knowledge Machine Learning (ZKML):** A method of providing pure cryptographic proofs that a specific AI inference was performed correctly without revealing the underlying data or model parameters. While highly secure, it carries a high computational overhead (1000x–10000x slower than standard execution) and is recommended for high-impact financial or DeFi risks.

**x402 Payment Protocol:** A technical standard that extends HTTP with a "402 Payment Required" status code. It allows applications to access AI models through a verifiable gateway, integrating payment and settlement directly into the data flow.

**CometBFT Consensus Mechanism:** The Proof of Stake (PoS) based consensus engine used by the network's Full Nodes to maintain the ledger, manage node registration, and validate cryptographic proofs.

**Internal Network Settlement:** The use of the native utility token as the primary medium for distributing rewards to nodes and settling transactions within the internal protocol.

**Parallelized Inference Pre-Execution Engine (PIPE):** A technical architecture designed to enable native on-chain machine learning. It allows the network to process AI inference tasks in parallel with the blockchain's execution logic, facilitating "AI-enabled smart contracts" that can react to model outputs in real-time

**MemSync:** A specialized platform tool and infrastructure component designed to provide "long-term memory" for AI agents. It allows AI models to maintain context and historical data across different interactions, which is essential for consistent agent behavior.

**Paging-based KV-cache Management:** An optimization technique for Large Language Model (LLM) serving. It manages the "Key-Value" cache (memory used to store previous parts of a conversation) by breaking it into pages, similar to operating system virtual memory, to improve efficiency and reduce memory waste

**IO-aware Attention Kernels:** Highly optimized algorithms (such as FlashAttention) that reduce the number of memory read/write operations (Input/Output) required during the "attention" phase of a transformer model, significantly speeding up inference.

**Tensor and Pipeline Parallelism:** Distributed computing strategies used to run very large AI models that cannot fit on a single GPU. *Tensor parallelism* splits individual mathematical operations across multiple devices, while *pipeline parallelism* splits the different layers of the model across devices.

**Northbound APIs:** High-level application programming interfaces that allow external developers and "web2" applications to easily connect to the OpenGradient network's AI services (like LLMs or ONNX model execution) without needing to interact with low-level blockchain protocols.

**ONNX (Open Neural Network Exchange):** An open-standard format for representing machine learning models. OpenGradient uses this format to ensure that models built in different frameworks (like PyTorch or TensorFlow) can be executed consistently across the network's nodes.

**TEE Attestation Coverage:** The technical process of expanding the scope of cryptographic proofs (attestations) that verify a Trusted Execution Environment is running specific, unmodified code. This ensures the integrity of AI outputs in the "verification path".

**ZKML Compilation Efficiency:** Technical improvements aimed at reducing the time and computational power required to turn a machine learning model into a Zero-Knowledge circuit. This is intended to make the highly secure "ZKML" path more practical for developers.

**BitQuant AI Agent Framework:** A specific framework developed for the network to facilitate the creation of AI agents capable of performing financial analysis and automated trading (quant) tasks.

**Digital Twins & Agent Economies:** A multi-phase roadmap concept where digital representations of assets or users ("Digital Twins") evolve into "Autonomous Agents" that eventually interact in "Agent Economies," where AI entities trade and coordinate autonomously on-chain.

**ONNX-format Model Artifacts:** Files stored in the **Open Neural Network Exchange** format. This is an open-standard format that ensures AI models are interoperable, allowing them to be trained in one framework (like PyTorch) and executed across the various nodes of the OpenGradient network

**Cosmos SDK Layer:** A modular framework used for building custom, sovereign blockchains. By using the Cosmos SDK, OpenGradient can customize its chain for AI-specific needs (like high-throughput data handling) while remaining interoperable with other networks

**EVM-compatible (Ethereum Virtual Machine):** Refers to the network's ability to execute smart contracts written for Ethereum (such as those in the Solidity language). This allows developers to use familiar Ethereum tools and libraries when building AI-enabled decentralized applications on OpenGradient

D.5

Details of all natural or legal persons involved in the implementation of the crypto-asset project

Type of person	Name of person	Business address of person	Domicile of company
Development team	Matthew Wang	16220 Phoebe Rd apt 7325, Frisco, TX 75035, USA	United States
Development team	Adam Balogh	16220 Phoebe Rd apt 7325, Frisco, TX 75035, USA	United States
Development team	Advait Jayant	Pavillion East PO Box 10008 Cricket Square George Town	KY

Type of person	Name of person	Business address of person	Domicile of company
		Grand Cayman KY1-1001 Cayman Islands	
Development team	Khalifa Toumi	16220 Phoebe Rd apt 7325, Frisco, TX 75035, USA	United States
Development team	Aniket Dixit	16220 Phoebe Rd apt 7325, Frisco, TX 75035, USA	United States
Development team	Kyle Qian	16220 Phoebe Rd apt 7325, Frisco, TX 75035, USA	United States
Development team	Michael Hsu	16220 Phoebe Rd apt 7325, Frisco, TX 75035, USA	United States
Development team	Diane Guo	16220 Phoebe Rd apt 7325, Frisco, TX 75035, USA	United States
Development team	Joseph Christian Lacsamana	Pavilion East PO Box 10008 Cricket Square George Town Grand Cayman KY1-1001 Cayman Islands	KY
Development team	Sonali Rawat	16220 Phoebe Rd apt 7325, Frisco, TX 75035, USA	United States

D.6	Utility token classification	true
D.7	Key features of goods/services for utility token projects	<p>The OpenGradient token has several key functionalities within the OpenGradient Network ecosystem. The platform offers a suite of goods and services designed to transform AI from a centralized gatekeeper model into an open, verifiable infrastructure for hosting, executing, and verifying AI models.</p> <p>Key utilities of the OpenGradient token include:</p> <ul style="list-style-type: none"> <li>• Protocol Governance: OpenGradient holders can vote on network upgrades and the on-chain registry of approved enclave code.</li> <li>• Internal Settlement: The token is used as the medium for internal chain settlement and rewards, distinct from external gateway payments.</li> </ul>

- **Model Hosting:** Users can use tokens to upload models to the decentralized Model Hub.
- **Validation and Staking:** The token grants access to staking rights within the consensus mechanism and allows users to earn rewards for maintaining CometBFT consensus.

Prior to purchase, the purchaser shall be solely responsible for assessing whether token functionalities or services connected to the token are available in the jurisdiction where the purchaser resides. No representation is made that the token's utilities or connected services will be accessible to all purchasers regardless of location.

D.8

Plans for the token

**Past Milestones:**

- **2024:** Launch of the decentralized Open-Source Model Hub and deployment of initial ML models for AMM fee optimization and crypto asset forecasting.
- **2025:** Deployment of current network infrastructure including the x402 Protocol for payment-gated LLM inference and the decentralized Model Hub.
- **2025:** Release of the OpenGradient Nova Testnet, the Python SDK, the BitQuant AI agent framework, and the MemSync platform tools.
- **2025:** Implementation of TEE Verification for secure execution and MemSync for long-term AI memory.
- **2025:** Completion of capital raising efforts, securing over \$9.5 million from 37 investors.

**Future Milestones:**

- **Technical Development:** Deployment of the Parallelized Inference Pre-Execution Engine (PIPE) for native on-chain ML and AI-enabled smart contracts.
- **Product Roadmap:** Advancement of the Digital Twins platform to include Autonomous Agents (Phase 2), Evolving Intelligence (Phase 3), and Agent Economies (Phase 4).
- **Network Optimization:** Integration of paging-based KV-cache management and IO-aware attention kernels to improve inference serving.
- **Verification Evolution:** Expanding TEE attestation coverage and improving ZKML compilation efficiency to strengthen the verifiable intelligence layer.
- **Network Scalability:** Development of distributed inference capabilities utilizing tensor and pipeline parallelism.
- **Ecosystem Expansion:** Standardization of northbound APIs for LLMs and ONNX/tensor inference to facilitate developer adoption.

		<p>Prior to purchase, the purchaser shall be solely responsible for assessing whether token functionalities or services connected to the token are available in the jurisdiction where the purchaser resides. No representation is made that the token's utilities or connected services will be accessible to all purchasers regardless of location.</p>
D.9	Resource allocation	<p>OpenGradient has secured financial resources (approximately US\$ 9,519,040) through private investment rounds involving 37 investors.</p> <p>These resources are allocated to key areas, including:</p> <ul style="list-style-type: none"> <li>• Product Development &amp; Art: Approximately USD 5,700,000.</li> <li>• Marketing &amp; Community Growth: Approximately USD 2,400,000.</li> <li>• Consultancy and Legal/Compliance: Approximately USD 1,400,000.</li> </ul> <p>The project is supported by a multidisciplinary team of alumni from Palantir, Google, Meta, and Two Sigma with specialists in dual-tech AI and blockchain systems, cryptographic verification (ZKML and TEE), and digital asset law. Operational support is bolstered by dedicated personnel focused on marketing, community engagement, and operations.</p> <p>These projections are indicative only and may change during the rollout of OpenGradient.</p>
D.10	Planned use of collected funds or crypto-assets	<p>This is not applicable because there will be no raising of funds. This is not an offer of the OPG token but rather an admission of the OPG token to trading, as it is already in circulation.</p>



## Part E - Information about the offer to the public of crypto-

## assets or their admission to trading

No.	Field	Content
E.1	Public offering or admission to trading	ATTR
E.2	Reasons for public offer or admission to trading	<p>The admission to trading of OpenGradient (OPG) is intended to:</p> <ul style="list-style-type: none"> <li>• Increase Accessibility and Liquidity: To make the OPG token more accessible to European users and improve its liquidity on secondary markets. This can result in more efficient price discovery and reliable trade execution.</li> <li>• Enhance Transparency and Compliance: This MiCA-compliant disclosure is filed voluntarily to enhance transparency, regulatory clarity, and investor confidence. It signals the project's readiness to align with the high disclosure standards of Regulation (EU) 2023/1114.</li> <li>• Support Ecosystem Growth: By increasing access, OpenGradient Foundation aims to encourage wider participation and contribution to the OpenGradient Network ecosystem, allowing a broader user base to access and pay for verifiable AI inference services, stake tokens to earn validation rewards for maintaining CometBFT consensus, and participate in protocol governance by voting on network upgrades and the registry of approved enclave code.</li> </ul> <p>This initiative is an admission to trading and not a fundraising event or public offer.</p>
E.3	Fundraising target	N/A
E.4	Minimum subscription goals	N/A
E.5	Maximum subscription goals	N/A
E.6	Oversubscription acceptance	N/A
E.7	Oversubscription allocation	N/A
E.8	Issue price	N/A
E.9	Official currency or any other crypto-assets determining the issue price	N/A
E.10	Subscription fee	N/A
E.11	Offer price determination method	N/A

E.12	Total number of offered/traded crypto-assets	1000000000
E.13	Targeted holders	ALL
E.14	Holder restrictions	<p>The project is targeted at all types of investors. No restrictions are being applied other than those required by relevant laws, regulations, or the internal policies of the trading platforms.</p> <p>Access to the OPG token may be restricted by the individual trading platforms where it is made available. These restrictions may include, but are not limited to, geo-fencing for users in OFAC-sanctioned jurisdictions or other individuals prohibited under the platform's terms and conditions and applicable laws.</p>
E.15	Reimbursement notice	N/A
E.16	Refund mechanism	N/A
E.17	Refund timeline	N/A
E.18	Offer phases	N/A
E.19	Early purchase discount	N/A
E.20	Time-limited offer	N/A
E.21	Subscription period beginning	N/A
E.22	Subscription period end	N/A
E.23	Safeguarding arrangements for offered funds/crypto-assets	N/A
E.24	Payment methods for crypto-asset purchase	<p>Purchases of OPG on Bitvavo, Kraken and Coinbase may be made using supported crypto-assets (e.g., USDC) or fiat currencies (e.g., EUR, USD), as per the available trading pairs on the platform. The information on the specific payment methods and providers of payment services is available at <a href="http://www.kraken.com">www.kraken.com</a>, <a href="https://bitvavo.com">https://bitvavo.com</a> and <a href="https://www.coinbase.com">https://www.coinbase.com</a> and their use is subject to the applicable terms and conditions of the specific service provider.</p>
E.25	Value transfer methods for reimbursement	If applicable, any valid reimbursements shall be made to the account or wallet originally used to participate in the offer.
E.26	Right of withdrawal	N/A

E.27	Transfer of purchased crypto-assets	The OPG acquired as a result of trades shall be transferred through means designated by the trading platform to the compatible wallet or account as designated by the selected Trading Platforms.
E.28	Transfer time schedule	N/A
E.29	Purchaser's technical requirements	Purchasers must have an account on a trading platform where OPG is listed and abide by that platform's terms. Technically, holders must have a digital wallet compatible with the ERC-20 standard on the Base network (an Ethereum Layer 2). This can be a self-custodial wallet or an account managed by a third party (like an exchange) provided that such platform specifically supports the Base network. Basic requirements include internet access and a compatible device (computer or mobile).
E.30	Crypto-asset service provider (CASP) name	N/A
E.31	CASP identifier	N/A
E.32	Placement form	N/A
E.33	Trading platforms name	Bitvavo, Kraken, Coinbase
E.34	Trading platforms market identifier code (MIC)	Bitvavo: VAVO, Kraken: PGSL, Coinbase: FREX
E.35	Trading platforms access	OPG is available on several centralized and decentralized trading platforms. Investors can access these platforms by creating an account on their respective websites (e.g., <a href="http://www.kraken.com">www.kraken.com</a> , <a href="https://bitvavo.com">https://bitvavo.com</a> , and <a href="https://www.coinbase.com">https://www.coinbase.com</a> ) and complying with the platform's requirements, including KYC/AML verification.
E.36	Involved costs	Access to the trading platforms is typically free, but users will incur costs related to trading and transactions. These may include transaction fees (maker/taker fees), withdrawal fees, and network fees. These costs are set by the individual exchanges and are not controlled by OpenGradient Foundation. Users are advised to review the fee schedule on the respective platform's website at <a href="http://www.kraken.com">www.kraken.com</a> , <a href="https://bitvavo.com">https://bitvavo.com</a> , and <a href="https://www.coinbase.com">https://www.coinbase.com</a> .
E.37	Offer expenses	N/A
E.38	Conflicts of interest	To the best knowledge of OpenGradient Foundation, no conflicts of interest have been identified in relation to the admission to trading.

E.39	Applicable law	Subject to mandatory applicable law, any dispute arising out of or in connection with this white paper shall be governed by and construed in accordance with the laws of the Cayman Islands.
E.40	Competent court	Subject to mandatory applicable law, any dispute arising out of or in connection with this white paper shall be exclusively subject to the jurisdiction of the courts in the Cayman Islands.



## Part F - Information about the crypto-assets

No.	Field	Content
F.1	Crypto-asset type	OpenGradient (OPG) is classified as an "Other Crypto-Asset" under Regulation (EU) 2023/1114 (MiCAR), as it is not an Asset-Referenced Token (ART) or E-Money Token (EMT). It is a fungible token based on the ERC-20 standard and is deployed on the Base network, an Ethereum Layer 2 (L2) scaling solution.
F.2	Crypto-asset functionality	<p>The OpenGradient token's primary functionalities within the OpenGradient ecosystem include:</p> <ul style="list-style-type: none"> <li>• <b>Network Settlement and Access:</b> The token serves as the native medium for internal chain settlement, enabling users to pay for AI inference services and rewarding nodes for processing compute tasks within the Hybrid AI Compute Architecture.</li> <li>• <b>Economic Security and Staking:</b> Validators and specialized nodes must stake the token to participate in the Proof of Stake consensus mechanism, providing economic security by ensuring that malicious behavior, such as submitting invalid proofs, results in the slashing of collateral.</li> <li>• <b>Protocol Governance:</b> Holders are granted the right to vote on protocol updates and network parameters,</li> </ul>

		<p>including the maintenance of the on-chain registry of approved PCR hashes for Trusted Execution Environment (TEE) enclaves.</p> <ul style="list-style-type: none"> <li>• <b>Model Hosting Rights:</b> The token functions as a digital key for uploading model architectures to the decentralized Model Hub and acts as the primary Sybil-resistance mechanism for the network's specialized node infrastructure.</li> </ul> <p>Prior to purchase, the purchaser shall be solely responsible for assessing whether token functionalities or services connected to the token are available in the jurisdiction where the purchaser resides. No representation is made that the token's utilities or connected services will be accessible to all purchasers regardless of location.</p>
F.3	Planned application of functionalities	<p>The functionalities described in F.2 are partially live, with core infrastructure available now and advanced features currently under development.</p> <p>Prior to purchase, the purchaser shall be solely responsible for assessing whether token functionalities or services connected to the token are available in the jurisdiction where the purchaser resides. No representation is made that the token's utilities or connected services will be accessible to all purchasers regardless of location.</p>
F.4	Type of crypto-asset white paper	OTHR
F.5	The type of submission	NEWT
F.6	Crypto-asset characteristics	<p>OPG is a fungible crypto-asset classified as an "Other Crypto-Asset" under MiCA. It is deployed as an ERC-20 token on the Base network, an Ethereum Layer 2 (L2) scaling solution. The underlying network, OpenGradient, uses a Proof-of-Stake (CometBFT) consensus mechanism designed for securely validating decentralized AI inference through a Hybrid AI Compute Architecture (HACA) that decouples high-speed execution from asynchronous on-chain settlement. OPG does not represent ownership, profit rights, or legal claims, and functions solely to support the protocol's technical and economic operations.</p>
F.7	Commercial name or trading name	N/A
F.8	Website of the issuer	<a href="https://www.opengradient.ai/">https://www.opengradient.ai/</a>
F.9	Starting date of offer to the public or admission to trading	2026-04-06

F.10	Publication date	2026-04-06
F.11	Any other services provided by the issuer	The issuer operates in the field of decentralized artificial intelligence infrastructure and provides the following services as part of its everyday business activity: the management of decentralized AI model hosting and execution, the maintenance of the x402 protocol for payment-gated inference, and the operation of the MemSync semantic memory layer. These activities utilize hardware-attested enclaves and cryptographic proofs to ensure the verifiability and transparency of AI systems, aligning with regulatory standards established under the EU AI Act.
F.12	Language or languages of the crypto-asset 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	NL1CPT6Q1
F.14	Functionally fungible group digital token identifier, where available	6WNLFSDSK
F.15	Voluntary data flag	true
F.16	Personal data flag	false
F.17	LEI eligibility	true
F.18	Home member state	NL
F.19	Host member states	AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GR, HR, HU, IE, IS, IT, LI, LT, LU, LV, MT, NO, PL, PT, RO, SE, SI, SK



## Part G - Information on the rights and obligations attached to the crypto-assets

No.	Field	Content
G.1	Purchaser rights and obligations	<p>Purchasers or holders of OPG do not acquire any contractual rights, equity interests, profit-sharing rights, dividends, or other legal claims against OpenGradient Foundation or any affiliated entity by virtue of holding the token.</p> <p>The OPG token is a decentralized digital asset designed for functional use within the OpenGradient Network ecosystem. Any "rights" are limited to the token's protocol-level utility, such as:</p> <ul style="list-style-type: none"> <li>• <b>Access to Services:</b> The ability to pay for decentralized AI inference, model execution, and compute resources within the network infrastructure.</li> <li>• <b>Protocol Governance:</b> The ability to vote on critical network upgrades, protocol parameters, and the on-chain registry of approved TEE enclave code.</li> <li>• <b>Validation Rewards:</b> The ability to stake tokens to validate transactions and secure the consensus mechanism via the CometBFT engine, earning rewards for maintaining ledger integrity.</li> </ul> <p>Holding OPG does not represent ownership in any legal entity and does not confer any right to financial returns.</p>
G.2	Exercise of rights and obligations	<p>There are no formal contractual rights to "exercise." Any functionality associated with OPG is exercised technically by interacting with the OpenGradient protocol's smart contracts.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• <b>Governance:</b> Rights are exercised by participating in on-chain voting to approve network upgrades and managing the decentralized registry of approved PCR hashes for Trusted Execution Environment (TEE) enclaves.</li> <li>• <b>Utility:</b> Rights are exercised by staking tokens to secure the network via CometBFT Proof of Stake consensus, settling internal chain transaction fees, and accessing decentralized services such as model uploading in the Model Hub.</li> </ul>

These actions are carried out on-chain and are validated by the decentralized network, not by OpenGradient Foundation. Procedures are defined in the project's public documentation (e.g., <https://docs.opengradient.ai>).

Prior to purchase, the purchaser shall be solely responsible for assessing whether token functionalities or services connected to the token are available in the jurisdiction where the purchaser resides. No representation is made that the token's utilities or connected services will be accessible to all purchasers regardless of location.

G.3	Conditions for modifications of rights and obligations	<p>OpenGradient Foundation may decide on amendments or updates to the rights and functionalities associated with the \$OPG.</p> <p>Changes are suggested by the issuer and implemented through updates to the token terms or related documentation. Where feasible, the issuer may inform and request the token holders to provide an opinion on material changes in advance, but such changes do not require token-holder approval.</p>
G.4	Future public offers	Not applicable.
G.5	Issuer retained crypto-assets	150000000
G.6	Utility token classification	true
G.7	Key features of goods/services of utility tokens	<p>OPG functions as a utility token within the OpenGradient ecosystem, providing access to its core goods and services. These include:</p> <ul style="list-style-type: none"> <li>• <b>AI Inference and Execution:</b> Users utilize the token to pay for decentralized AI model inference and execution tasks performed by the network's specialized nodes. This enables access to high-performance compute resources and third-party LLM providers via the verifiable x402 payment-gated protocol.</li> <li>• <b>Decentralized Model Hosting:</b> The token grants access to the Model Hub for hosting and retrieving AI model architectures, ranging from linear regression to stable diffusion. This service leverages decentralized Walrus storage to provide a permissionless and verifiable repository for ONNX-format model artifacts.</li> <li>• <b>Protocol Governance:</b> Token holders possess the right to vote on network parameters and protocol upgrades, including the maintenance of the on-chain registry for approved TEE enclave code. This ensures the community can oversee the cryptographic security standards and operational logic of the HACA architecture.</li> </ul>

		<p>Prior to purchase, the purchaser shall be solely responsible for assessing whether token functionalities or services connected to the token are available in the jurisdiction where the purchaser resides. No representation is made that the token's utilities or connected services will be accessible to all purchasers regardless of location.</p>
G.8	Utility tokens redemption	<p>The OPG token is "redeemed" or used within the ecosystem to access the goods and services listed in G7. This occurs when a user or developer pays the network's protocol fees to access verifiable AI inference services, upload machine learning models to the decentralized Model Hub, or record hardware-attested cryptographic proofs for mission-critical AI workflows. The type of goods or services that can be redeemed may evolve over time based on ecosystem development and governance.</p> <p>Prior to purchase, the purchaser shall be solely responsible for assessing whether token functionalities or services connected to the token are available in the jurisdiction where the purchaser resides. No representation is made that the token's utilities or connected services will be accessible to all purchasers regardless of location.</p>
G.9	Non-trading request	true
G.10	Crypto-assets purchase or sale modalities	N/A
G.11	Crypto-assets transfer restrictions	<p>There are no restrictions on the transferability of OPG at the protocol level; it may be freely transferred between users.</p> <p>However, a portion of the token supply allocated to ecosystem, foundation, core contributors, investors, and staking rewards is subject to contractual lock-up and/or vesting schedules (e.g., 12-month cliffs and linear vesting durations ranging from 36 to 96 months). Furthermore, individual trading platforms may impose their own transfer restrictions in accordance with applicable laws and internal policies.</p>
G.12	Supply adjustment protocols	false
G.13	Supply adjustment mechanisms	<p>The supply of the crypto-asset is adjusted automatically based on predefined protocol rules. These rules include the programmatic issuance of staking rewards to incentivize node operators and the potential reduction of the effective supply through the slashing of staked collateral in the event of protocol violations. The mechanism operates without discretionary intervention by the issuer.</p>

		The network implements a linear distribution of 100,000,000 tokens, representing 10% of the total supply, allocated as staking rewards over a 96-month period to secure the CometBFT-based Proof of Stake consensus. This inflationary reward schedule is counterbalanced by automated slashing rules that programmatically penalize malicious behavior—such as the submission of invalid ZKML or TEE-based verification proofs—by removing a portion of the validator's staked tokens from circulation.
G.14	Token value protection schemes	false
G.15	Token value protection schemes description	N/A
G.16	Compensation schemes	false
G.17	Compensation schemes description	N/A
G.18	Applicable law	There is no written legal agreement between the person seeking admission to trading and the crypto asset-holder that sets out the laws that govern the legal relationship between those two parties. In the absence of such an agreement, the law and competent court applicable to the OPG shall be the law of the Cayman Islands, unless prescribed otherwise by applicable legislation (incl. consumer law).
G.19	Competent court	There is no written legal agreement between the person seeking admission to trading and the crypto asset-holder that sets out the laws that govern the legal relationship between those two parties. In the absence of such an agreement, the law and competent court applicable to the OPG shall be the law of the Cayman Islands, unless prescribed otherwise by applicable legislation (incl. consumer law).

## Part H – Information on the underlying technology

No.	Field	Content
H.1	Distributed ledger technology (DTL)	The OpenGradient (OPG) token is a crypto-asset issued on the Base network, which serves as the underlying distributed ledger technology (DLT). Base is a decentralized Ethereum Layer 2 (L2) scaling solution that settles transactions on the Ethereum blockchain. The OpenGradient protocol also utilizes a specialized EVM-compatible execution layer based on the Cosmos SDK and CometBFT consensus system to manage decentralized AI inference.
H.2	Protocols and technical standards	OPG is an ERC-20 token deployed on the Base network, an Ethereum Layer 2 (L2) scaling solution. This standard ensures industry compatibility with wallets, exchanges, and smart contracts. The OpenGradient network itself is a decentralized AI infrastructure designed to separate execution from settlement via a novel Hybrid AI Compute Architecture (HACA) that utilizes CometBFT consensus on an EVM-compatible Cosmos SDK layer, integrated with Trusted Execution Environments (TEEs) and ZKML proofs for its operations.
H.3	Technology used	As an ERC-20 token, OPG is deployed as a smart contract on the Base network, an Ethereum Layer 2 (L2) scaling solution. Users can hold, store, and transfer the token using any wallet software (non-custodial or self-custody) that is compatible with the OpenGradient network. Users may also manage the token through accounts provided by third-party custodians or centralized exchanges.
H.4	Consensus mechanism	The OpenGradient network, which the OpenGradient utility token relies on, operates using a CometBFT-based Proof-of-Stake consensus mechanism.  In this system, validators (Full Nodes) are chosen to maintain the ledger, manage node registration, settle payments, and validate cryptographic proofs (ZKML/TEE) without re-executing compute based on stake weight, where participants must lock tokens as economic collateral to secure the network against malicious behavior via slashing mechanisms.
H.5	Incentive mechanisms and applicable fees	The validators and specialized nodes who secure the network are rewarded with economic incentives for their work. These incentives consist of staking rewards derived from token issuance and settlement fees for maintaining consensus and verifying AI inference tasks.

H.6	Use of distributed ledger technology	false
H.7	DLT functionality description	N/A
H.8	Audit	true
H.9	Audit outcome	<p>The audit was successfully completed. The audit reviewed the smart contract for the OpenGradientToken.sol contract, specifically evaluating its security, efficiency, and adherence to industry best practices. The outcome was that the smart contracts were found to be "Secure". Although one Quality Assurance (QA) finding regarding a floating pragma was initially identified, it has been fully resolved. The audit concluded that the project has a sound and well-tested code base with no further identified vulnerabilities.</p> <p>Link: <a href="https://docs.opengradient.ai/token_audit.pdf">https://docs.opengradient.ai/token_audit.pdf</a></p>



## Part I - Information on risks

No.	Field	Content
I.1	Offer-related risks	<p>The admission of OPG to trading on third-party platforms involves specific risks for holders:</p> <ul style="list-style-type: none"> <li>• <b>Third-Party Platform Risk:</b> Holders are subject to the terms and conditions of the trading platforms. The platform's operational disruptions (e.g., outages, cyberattacks) or a decision to delist OPG (due to low liquidity, regulatory pressure, or internal policy) could severely impact the token's accessibility and liquidity.</li> <li>• <b>Platform Insolvency Risk:</b> If a trading platform holding a user's OPG tokens becomes insolvent or bankrupt, users risk the partial or total loss of those assets.</li> </ul>

- **Regulatory Risk (Platforms):** Crypto-asset service providers are subject to evolving regulations. New rules could force platforms to halt trading, restrict access for users from certain jurisdictions, or delist OPG.

I.2

Issuer-related risks

Vanna Labs is an entity established for the sole purpose of the issuance and administrative management of \$OPG and does not conduct additional business operations, such as the active development or operational guidance of OpenGradient. Because the administrative functions and legal standing of \$OPG may depend on this specific entity, any rights related to the token are subject to significant risk if Vanna Labs were to face legal, operational, or financial issues. Specifically, if Vanna Labs were to cease operations or be subject to regulatory sanctions, it could prevent the continued support or recognition of rights associated with \$OPG, potentially without a mechanism for recovery.

**Regulatory/Legal Risks for related entities:** Specific entities that support OpenGradient may be subject to regulatory inquiries, investigations, limitations or sanction in the jurisdictions in which they operate. Such actions could prevent or prohibit operational, financial or other types of support of the OpenGradient.

I.3

Crypto-assets-related risks

Holding OPG involves risks inherent to most crypto-assets:

- **Market Volatility:** Crypto-asset prices are extremely volatile and subject to significant, rapid fluctuations. The value of OPG can be influenced by market speculation, shifts in sentiment, and macroeconomic factors, and may not reflect the project's fundamentals. There is no guaranteed price floor, buyback or redeemability mechanism, which means that acquiring the OPG may result in total loss of the invested amounts.
- **Liquidity Risk:** The market for OPG may lack depth and liquidity. It may be difficult to buy or sell large quantities at a desired price, or at all, leading to significant financial losses.
- **Custody & Private Key Risk:** Holders are responsible for securing the private keys to their wallets. The loss, theft, or compromise of these keys will result in the irreversible loss of all associated OPG tokens, with no recourse.
- **Regulatory Risk:** The legal and regulatory treatment of crypto-assets is uncertain and evolving. Future regulations could impose restrictions on the holding, use, or trading of OPG, or it could be classified in a way that adversely affects its value or legality.
- **Utility Risk:** The expected utility of the OPG token within the OpenGradient ecosystem may fail to

materialize due to low user adoption, technical failures, or superior competing projects, undermining its fundamental value proposition.

I.4

Project implementation-related risks

The future success of the OpenGradient ecosystem is subject to significant implementation risks:

- **Adoption & Competition Risk:** The project may fail to attract a sufficient number of users, developers, and participants to create a viable ecosystem. It faces competition from other projects that may have substantially greater financial, technical, and marketing resources.
- **Roadmap & Development Risk:** The project may experience delays, fail to deliver on its published roadmap, or encounter unforeseen technical complexities. Strategic shifts or "pivots" may result in features that do not align with community expectations.
- **Funding & Treasury Risk:** Continued development depends on the effective management of the project's treasury. A shortfall in funding or misallocation of resources could slow or halt ecosystem development.
- **Governance Risk:** For decentralized projects, governance "deadlock" or misalignment of incentives among participants can impede critical network upgrades and strategic decisions.
- **Infrastructure and Hardware Risk:** The ecosystem is dependent on the availability and integrity of third-party Trusted Execution Environments (TEEs), such as Intel SGX and AMD SEV. This introduces exposure to semiconductor supply chain disruptions, geopolitical volatility, and the security protocols of cloud providers like AWS. Furthermore, the project remains subject to inherent hardware-level vulnerabilities, including side-channel attacks (e.g., Spectre) and hardware failures that could adversely affect network inference capacity.

I.5

Technology-related risks

The OPG token and OpenGradient platform rely on complex, emerging technology, which introduces specific risks:

- **Smart Contract Risk:** The smart contracts for OPG and the ecosystem's applications, despite audits, may contain hidden bugs, flaws, or vulnerabilities. Such flaws could be exploited by malicious actors, potentially resulting in the theft or irreversible loss of funds.
- **Underlying DLT Risk:** The project operates on the Base network, an Ethereum Layer 2 (L2) scaling solution, and relies on the security and performance of both the Base and underlying Ethereum networks. These networks are subject to their own risks, such as network congestion, high transaction fees, consensus

failures (e.g., 51% attacks), forks, or operational halts. Execution of transactions requires gas fees, which are subject to market conditions and may fluctuate during periods of high activity. Users who interact with OPG via decentralized exchanges (DEXs) may face exposure to front-running or Maximal Extractable Value (MEV), where third parties reorder or insert transactions for their advantage.

- **Cybersecurity Risk:** The ecosystem, including its protocols, bridges, and front-end applications, is a target for cyber-attacks (e.g., DDoS attacks, hacks). A successful attack could disrupt services or lead to a loss of user assets.
- **Bridge Risk (if applicable):** If OPG exists on multiple blockchains, the bridges connecting them are a critical vulnerability. An exploit of a bridge protocol could lead to de-pegging or unrecoverable losses.
- **Scalability Risk:** The underlying technology may not scale effectively to handle a high volume of users or transactions, leading to slow performance and high fees, which would deter adoption.

I.6

Mitigation measures

OpenGradient Foundation has implemented several measures to mitigate the identified risks:

- **Security Audits:** Commissioning comprehensive security audits of all smart contract code from reputable, independent third-party security firms before deployment.
- **Bug Bounty Program:** Operating an active bug bounty program to incentivize ethical hackers and security researchers to discover and responsibly report vulnerabilities.
- **Regulatory Monitoring:** Actively monitoring the global regulatory landscape with the assistance of external legal counsel to ensure compliance with applicable laws.
- **Use of Reputable Technology:** Building on the Base network, a secure and battle-tested Ethereum Layer 2 (L2), to leverage Ethereum's established consensus mechanism and institutional-grade security.
- **Strategic Partnerships:** Strategic partnerships and exchange listings are pursued to improve liquidity and operational resilience.



## Part J - Information on the sustainability indicators in relation to adverse impact on the climate and other environment-related adverse impacts

No.	Field	Content
S.1	Name	OpenGradient Foundation
S.2	Relevant legal entity identifier	984500A5E14D36D7A578
S.3	Name of the crypto-asset	Opengradient
S.4	Consensus mechanism	<p>The OpenGradient network, which the OpenGradient utility token relies on, operates using a CometBFT-based Proof-of-Stake consensus mechanism.</p> <p>In this system, validators (Full Nodes) are chosen to maintain the ledger, manage node registration, settle payments, and validate cryptographic proofs (ZKML/TEE) without re-executing compute based on stake weight, where participants must lock tokens as economic collateral to secure the network against malicious behavior via slashing mechanisms.</p>
S.5	Incentive mechanisms and applicable fees	The validators and specialized nodes who secure the network are rewarded with economic incentives for their work. These incentives consist of staking rewards derived from token issuance and settlement fees for maintaining consensus and verifying AI inference tasks.
S.6	Beginning of the period to which disclosed information relates	2025-01-01
S.7	End of the period to which disclosed information relates	2025-12-31
S.8	Energy consumption	0,50318 kWh
S.9	Energy consumption sources and methodologies	Data provided by the MiCA Crypto Alliance as a third party, with no deviations from the calculation guidance of Commission Delegated Regulation (EU) 2025/422, Article 6(5). As the base layer is a decentralised network, estimates on individual node power draw are used. Full

methodology available at:  
[www.micacryptoalliance.com/methodologies](http://www.micacryptoalliance.com/methodologies)

S.10 Renewable energy consumption 37,1207750563 %

S.11 Energy intensity 0 kWh

S.12 Scope 1 DLT GHG emissions - controlled 0 tCO<sub>2</sub>e

S.13 Scope 2 DLT GHG emissions - purchased 0,00015 tCO<sub>2</sub>e

S.14 GHG intensity 0 tCO<sub>2</sub>e

S.15 Key energy sources and methodologies  
 Data provided by the MiCA Crypto Alliance as a third party, with no deviations from the calculation guidance of Commission Delegated Regulation (EU) 2025/422, Article 6(5). As the token studied does not have activity at the time of the study, its energy intensity is approximated through the calculation of a market cap-weighted average of the peer crypto asset activities, compared to the Opengradient's market capitalisation estimated through the product of its issue price and total supply. The peer group is defined as other ERC-20 tokens on Base whose market capitalisation falls within  $\pm 25\%$  of Opengradient's market cap at issue are included, to ensure only similar peers are used for estimations. Full methodology available at: [www.micacryptoalliance.com/methodologies](http://www.micacryptoalliance.com/methodologies)

S.16 Key GHG sources and methodologies  
 Data provided by the MiCA Crypto Alliance as a third party, with no deviations from the calculation guidance of Commission Delegated Regulation (EU) 2025/422, Article 6(5). Full methodology available at: [www.micacryptoalliance.com/methodologies](http://www.micacryptoalliance.com/methodologies)

S.17 Energy mix

Energy Source	Percentage
Bioenergy	3,2930025700%
Coal	15,8013187598%
Flared Methane	0,0000000000%
Gas	30,9446462621%
Hydro	9,5360174288%
Nuclear	13,6903683910%
Other Fossil	2,4428915308%
Other Renewables	0,4409769636%
Solar	4,8184425467%

			Energy Source	Percentage
			Vented Methane	0,0000000000%
			Wind	19,0323355473%
			<b>Total</b>	<b>100 %</b>
S.18	Energy use reduction	N/A		
S.19	Carbon intensity	0,30632		
S.20	Scope 3 DLT GHG emissions - Value chain	N/A		
S.21	GHG emissions reduction targets or commitments	N/A		
S.22	Generation of waste electrical and electronic equipment (WEEE)	0 t		
S.23	Non-recycled WEEE ratio	60,9981916058 %		
S.24	Generation of hazardous waste	0 t		
S.25	Generation of waste (all types)	0 t		
S.26	Non-recycled waste ratio (all types)	60,9981916058 %		
S.27	Waste intensity (all types)	0 t		
S.28	Waste reduction targets or commitments (all types)	N/A		
S.29	Impact of the use of equipment on natural resources	Land use: 0.01219 m <sup>2</sup>		
S.30	Natural resources use reduction targets or commitments	N/A		
S.31	Water use	0,00217 m <sup>3</sup>		
S.32	Non recycled water ratio	73,3391300342 %		
S.33	Other energy sources and methodologies	Data provided by the MiCA Crypto Alliance as a third party, with no deviations from the calculation guidance of Commission Delegated Regulation (EU) 2025/422, Article		

6(5). Full methodology available at:  
[www.micacryptoalliance.com/methodologies](http://www.micacryptoalliance.com/methodologies)

S.34

Other GHG sources and methodologies

Data provided by the MiCA Crypto Alliance as a third party, with no deviations from the calculation guidance of Commission Delegated Regulation (EU) 2025/422, Article 6(5). As the token studied does not have activity at the time of the study, its carbon intensity per transaction is approximated through the calculation of a market cap-weighted average of the peer crypto asset activities, compared to the Opengradient's market capitalisation estimated through the product of its issue price and total supply. The peer group is defined as other ERC-20 tokens on Base whose market capitalisation falls within  $\pm 25\%$  of Opengradient's market cap at issue are included, to ensure only similar peers are used for estimations. Full methodology available at:  
[www.micacryptoalliance.com/methodologies](http://www.micacryptoalliance.com/methodologies)

S.35

Waste sources and methodologies

Data provided by the MiCA Crypto Alliance as a third party, with no deviations from the calculation guidance of Commission Delegated Regulation (EU) 2025/422, Article 6(5). As the base layer is a decentralised network, estimates on individual node weight, hazardous components and depreciation rate are used. As the token studied does not have activity at the time of the study, its waste intensity is approximated through the calculation of a market cap-weighted average of the peer crypto asset activities, compared to the Opengradient's market capitalisation estimated through the product of its issue price and total supply. The peer group is defined as other ERC-20 tokens on Base whose market capitalisation falls within  $\pm 25\%$  of Opengradient's market cap at issue are included, to ensure only similar peers are used for estimations. Full methodology available at:  
[www.micacryptoalliance.com/methodologies](http://www.micacryptoalliance.com/methodologies)

S.36

Natural resources sources and methodologies

Data provided by the MiCA Crypto Alliance as a third party, with no deviations from the calculation guidance of Commission Delegated Regulation (EU) 2025/422, Article 6(5). Usage of natural resources is approximated through land use metrics. Land use, water use and water recycling are calculated based on energy mix-specific estimates of purchased electricity land intensity, purchased electricity water intensity, and water recycling rates. As the token studied does not have activity at the time of the study, its land intensity and waste intensity are approximated through the calculation of a market cap-weighted average of the peer crypto asset activities, compared to the Opengradient's market capitalisation estimated through the product of its issue price and total supply. The peer group is defined as other ERC-20 tokens on Base whose market capitalisation falls within  $\pm 25\%$  of Opengradient's

market cap at issue are included, to ensure only similar peers are used for estimations. Full methodology available at: [www.micacryptoalliance.com/methodologies](http://www.micacryptoalliance.com/methodologies)