# A Distinct Absence: Why Crypto and Web3 Technologies Need Environmental, Social, and Governance Frameworks

**Summary and framework**

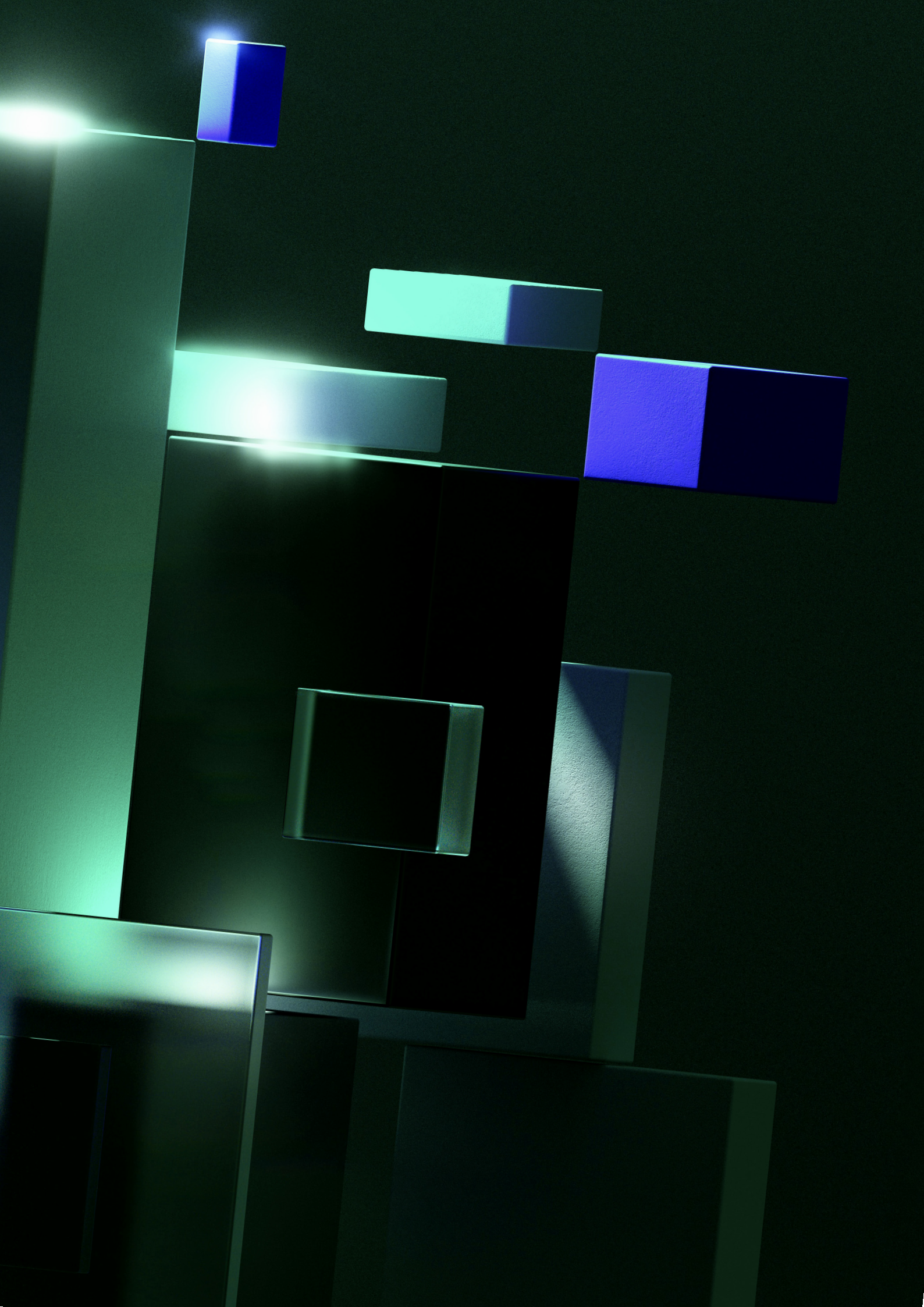**Cessiah Lopez and Dr Johannes Lenhard**

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December 2023

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# EXECUTIVE SUMMARY

## Goal of the report and framework:

This report demonstrates the importance of environmental, social, and governance principles ('ESG') specific to the crypto and Web3 space. Developed by VentureESG and the Minderoo Centre for Technology and Democracy, University of Cambridge, the report provides fundamental recommendations and a practical ESG framework to help VC ('venture capital') investors integrate ESG factors into their investment processes.

## Context:

ESG is a set of principles guiding a firm's or a fund's management, processes, and practices. The term 'ESG' was introduced in a UN Report in 2004 and can be generally defined as 'how corporations and investors integrate environmental, social, and governance concerns'[1] into their business models.[2]

Despite the recent 'crypto winter' (this period of decline in the crypto market generally characterised by low or falling prices and reduced investor interest), crypto and Web3 technologies may have profound and enduring impacts on our digital ecosystems. Integrating ESG principles into the VC process for investing in the crypto/Web3 space can play a pivotal role in building more resilient and socially responsible companies within the sector. By fostering responsible product design and practices, these principles can ultimately contribute to guiding the industry towards governance structures that work better for society.

## Process and methods:

We interviewed more than two dozen VCs, Web3 founders and operators, lawyers, and other policy makers and regulators (collectively referred to as 'participants') to understand the current landscape of crypto and Web3 and ESG's place in it. We covered questions and topics regarding (ESG) challenges in the industry, such as those around NFTs, token governance, DeFi, and the pseudo-anonymous culture of the space.

We also explored VCs' current investment processes and theses, looking at how ESG can be integrated with pragmatic, implementable guidance. We then worked on creating an explicitly crypto and Web3 focused ESG framework.

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1. Stuart L. Gillan, Andrew Koch and Laura T. Starks, 'Firms and Social Responsibility: a Review of ESG and CSR Research in Corporate Finance', *Journal of Corporate Finance* 66.101889: 101889 (2021), DOI: 10.1016/j.jcorpfin.2021.101889

2. When considering the impact and ESG practices of an organisation, it is important to distinguish between the end goal of the product or service (impact) and the specific operations and practices taken to reach them (ESG) (see Johannes Lenhard and Elena Lutz, 'What ESG Means for Venture Capital', VentureESG White Paper 1 (2021), at https://static1.squarespace.com/static/612443c0742cee5ec50528df/t/6227d2e1f9467356249c9d9b/1646777058568/VentureESG+Whitepaper+%231+-+ESG+in+VC+.pdf [accessed 16 November 2023]). Impact refers to the desired outcome, such as positive change to the environment for a climate tech company. On the other hand, ESG practices encompass the management, process and operational practices adopted to address environmental, social, and governance issues, risks (and opportunities) in the production of the service or product. It is crucial to understand that while a company may focus on achieving a certain positive impact, this does not automatically guarantee effective organisational management. Our focus in this white paper is on ESG; see Appendix 4 for some considerations around crypto/Web3 impact.

## Recommendations:

Using our findings, we present five key recommendations for VCs to ensure responsible investing in the crypto and Web3 industries. We also present a fit-for-purpose ESG framework that VCs can use to enable the integration.
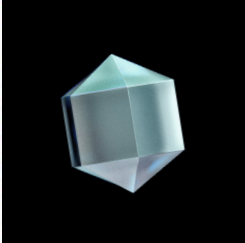


**1. Question the need for blockchain.**
VCs should prioritise evaluating the necessity of blockchain technology in startup projects, indirectly scrutinising environmental impact, societal, and governance implications.



**2. Conduct comprehensive due diligence.**
VCs should engage in active dialogue with Web3 founders, operators, and community members, moving beyond traditional due diligence methods in order to seek tangible evidence (e.g., that ESG principles are being followed by potential Web3 investments before making a decision to invest).
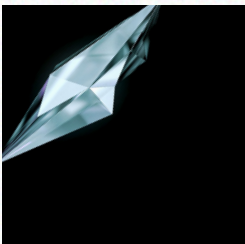


**3. Standardise crypto-ESG terminology.**
While we strongly suggest sticking to the widespread concept of ESG, the application of its principles are more important than the nomenclature. An alternative could be 'responsible investing' which has become more popular, e.g., among LPs in VCs more generally.
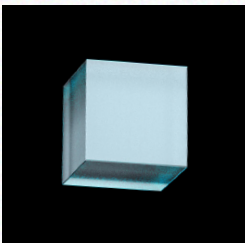


**4. Foster collaboration among key stakeholders.**
This includes policymakers and regulators, to create a comprehensive approach to ESG integration and involve the entire ecosystem for a holistic solution.



**5. Use our tailored framework.**
VCs are encouraged to use our fit-for-purpose due diligence ESG framework, specifically designed for assessing crypto and Web3 ESG issues. The framework enables VCs to make responsible investments in the ecosystem.
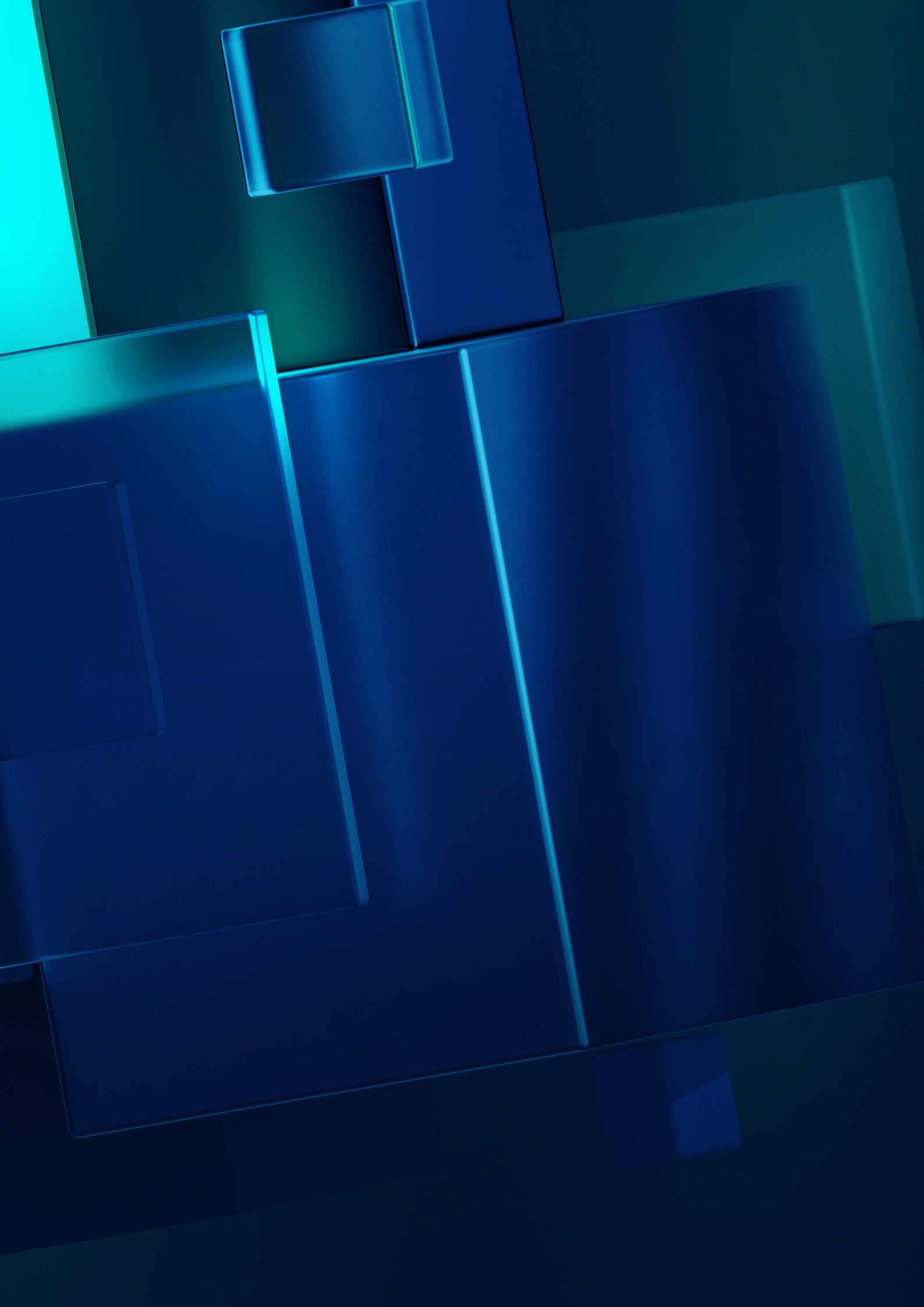
## Framework:

Building upon VentureESG's comprehensive 'Universe of ESG issues' document,[3] and informed by qualitative feedback from industry participants, our new fit-for-purpose ESG framework offers VCs a practical resource to enhance their due diligence processes for crypto and Web3 startups. It provides a concise and effective 'list of questions' that guides VCs to address unique industry-specific aspects, which are often overlooked.

The framework touches on crypto/Web3 specific ESG issues, such as the environmental impact of crypto mining and proof-of-work (PoW) chains, the social impact of certain tokenomics, and governance issues around centralised exchanges or pseudo-anonymous communities. The framework's aim is to make ESG fit-for-purpose for the ecosystem fostering responsible and sustainable investing practices.

3. The VentureESG 'Universe of Issues' is an ESG framework which can be used to inform investor due diligence questions; it is constantly updated and available to use for the VentureESG community.

# CRYPTO-ESG FRAMEWORK

| Material Issues | Questions | Definitions | Limitations |
|---|---|---|---|
| **Preliminary/'First' Questions** | | | |
| **Application of blockchain** | Why do you need to use blockchain technology? | | These are deliberately high-level questions to open a dialogue about the founders' general reasons for the choice of technology and its potential implications. |
| | How exactly is blockchain technology helping to solve the problem you are addressing? | | |
| **Unintended consequences** | What unintended consequences could your project/product produce? How could you mitigate those? | | Answers will probably point towards E, S, and G based issues that can be tackled further with the below questions. |
| **Environment** | | | |
| **Crypto mining (specifically, hardware)** | Are you directly or indirectly using hardware to operate, e.g., Validators, Nodes, Crypto mining hardware? If yes, are you thinking about chips and components used to determine the most cost-efficient results? | **Validator:** a computer program used to check the validity or syntactical correctness of a fragment of code or document. **Node:** refers to a device or computer that participates in a blockchain network. | |
| | How are you taking into consideration the implications of the geographical location of your mining operations as it relates to noise pollution? What measurements are in place to ensure you aren't complicit? | | |
| | If hardware is used, how are you monitoring the proper and careful (re)distribution and/or disposal of crypto mining equipment? | | Determining the exact hardware components can be challenging, especially if they rely on complex supply chains or multiple vendors. Startups may not have comprehensive visibility into the entire lifecycle of the hardware. |

| Material Issues | Questions | Definitions | Limitations |
|---|---|---|---|
| **Environment** | | | |
| **Crypto mining (specifically, hardware)** | Are you using carbon accounting frameworks? Is it planned? | | Defining the scope and boundaries for carbon accounting will be challenging, especially for projects with interconnected networks or decentralised operations. Determining which activities to include, such as energy consumption, transportation, or indirect emissions from third-party services, etc. is difficult. |
| | Are you aware of your mining and general algorithms' levels of profitability and efficiency? Are you making additional investments towards R&D to improve such algorithms? For example, Green Software Foundation develops baseline specifications for 'Green Software' to control the efficient use of technology, which helps manage cost and carbon. | **Mining algorithms:** The functions that make the task of mining cryptocurrency possible. There are various algorithms, each with its own characteristics adapted to the cryptocurrencies that make use of them. Sometimes the more profit-focused the algorithm is, the more energy it consumes. | |
| **Blockchain choice: PoW or PoS** | Are there any mechanisms in place to offset or reduce the carbon emissions associated with the token's mining or transactional activities (e.g., choosing a L2 or sidechain instead of the L1 mainnet)? | **L1 or Layer 1:** represents the base layer of a blockchain network. **L2 or Layer 2:** refers to secondary scaling solutions built on top of the Layer 1 blockchain. | |
| | Are you using renewable energy? | | This is only usually prevalent amongst startups/projects that are directly using mining. |

| Material Issues | Questions | Definitions | Limitations |
|---|---|---|---|
| **Environment** | | | |
| **Gas prices** | Are there any measures in place to mitigate the environmental impact of cross-chain transactions or data transfers (e.g., optimising gas fees in smart contracts)? | **Gas fees:** transaction fees are charges associated with executing transactions on a blockchain network.<br>**Smart contract:** a self-executing digital agreement or program that automatically enforces the terms and conditions of a contract without the need for intermediaries. | Startups/projects may rely on various blockchain platforms or protocols to facilitate cross-chain transactions or data transfers. While optimisations can be implemented within operations, they may have limited control over the environmental impact of transactions from the underlying platforms or protocols. |
| **Social** | | | |
| **Operational location(s)** | Where are your major operational activities located? Are there measurements in place to ensure local citizens aren't being disadvantaged and/or displaced as a byproduct of the operations? | | |
| **Tokenomics and inequality** | How are you thinking about token distribution (e.g., through airdrops)? Are there measurements in place to ensure that there is a fair allocation of tokens to the community (e.g., avoiding distributing tokens based on existing holding amounts)? | | |
| | Are there any risks that you are potentially contributing to the unequal distribution of money/power (e.g., increasing the prevalence of 'crypto whales')? | **Whales:** individuals or entities that hold significant amounts of cryptocurrency, often possessing the ability to influence market prices and trends due to their large holdings. | Limited control over the broader market dynamics that influence wealth concentration or the prevalence of whales. Factors such as token distribution, market speculation, and investor behaviour, e.g., FOMO (fear of missing out). |

| Material Issues | Questions | Definitions | Limitations |
|---|---|---|---|
| **Social** | | | |
| **Gas prices** | Are there measures in place to mitigate the pricing out of customers who come from emerging markets/marginalised backgrounds through extremely high gas fees? | | Overall limited control over gas fee structures imposed by the underlying blockchain network. Gas fees are typically determined by factors such as network congestion and market dynamics. |
| **Social platform choices and management** | What social platform are your community and customers using (e.g., Discord servers, Telegram)? How do you assert digital behaviour within these communities (e.g., banning slurs in chat)? | | Even if bots or features are used on Discord servers to allow users to assign roles to themselves that share their gender, location, age, ethnicity, etc., this does not stop someone falsely ticking those boxes to misrepresent themselves. This can lead to inaccurate data. |
| | How do you track the social and demographic make-up of pseudo-anonymous communities (e.g., zero-knowledge proofs (ZK proofs) or decentralised ID (DID))? | **Zero-knowledge proofs (ZK proofs):** used to verify an individual's identity, without revealing any sensitive personal information.<br><br>**Decentralised ID (DID):** globally unique identifier that enables an entity to be identified in a manner that is verifiable, persistent (as long as the DID controller desires), and does not require the use of a centralised registry. | The only usual available data projects that are 100% accurate are on-chain data which are often just wallet addresses. There are limited ways to identify a persona as no identifying information is stored directly on the blockchain, so often they'll have to (most likely) use off-chain data which is difficult to collate. |

| Material Issues | Questions | Definitions | Limitations |
|---|---|---|---|
| **Social** | | | |
| **Cybersecurity** | What measures are in place to ensure that customers/users are being educated on wallet hygiene/better OpSec practices? | **Wallet hygiene:** refers to the practices and measures taken to ensure the security and proper management of cryptocurrency wallets.<br><br>**OpSec:** short for Operational Security, refers to measures employed to safeguard sensitive information, maintain privacy and protect against potential threats and vulnerabilities. | |
| **Governance** | | | |
| **Tokenomics (Airdrops, Meme Coins, etc.)** | Are there mechanisms to mitigate potential negative impacts, such as market manipulation, fraud, or illicit activities (e.g., through MACI voting)? | **MACI:** Minimal Anti-Collusion Infrastructure, is an application that allows users to have an on-chain voting process with greatly increased collusion resistance.[67] | |
| | Are you transparent with your airdropping process, including clear disclosure of token distribution/ allocations, and intended use cases? | **Airdropping:** the distribution of free tokens or cryptocurrencies to a specific group of individuals or wallet addresses as a promotional or community-building activity. | Intended use cases that do not determine what users and owners will actually use them for. Once tokens are airdropped, their utility is in the hands of the owners. They can choose to also burn (essentially, get rid of) the tokens, making them useless. |
| | Are there governance measures in place to ensure fair distribution of tokens and prevent concentration of wealth or power (e.g. through Quadratic voting)? | **Quadratic voting:** a voting system where participants can assign more voting power to options they care about the most, facilitating a more nuanced and proportional expression of preferences.[68] | |

6. Kyle Charbonnet, 'A Technical Introduction to MACI 1.0', *Medium* (18 January 2022), at https://medium.com/privacy-scaling-explorations/a-technical-introduction-to-maci-1-0-db95c3a9439a [accessed 16 November 2023].

7. Galen Moore, 'What is Quadratic Voting and Why Don't More Projects Use It?', *Axelar* (23 January 2023), at https://axelar.network/blog/quadratic-voting-DAOs-dPoS-and-decentralization [accessed 16 November 2023].

| Material Issues | Questions | Definitions | Limitations |
|---|---|---|---|
| **Governance** | | | |
| **Tokenomics (Airdrops, Meme Coins, etc.)** | Do you plan on using 'Meme coins' as part of their project in any way (go-to-market strategy, promotion or marketing)? If so, are they showing user education as priority, providing clear risk disclosures and investor protection? | **Meme coins:** a type of cryptocurrency that gains popularity primarily through online communities and social media platforms, often driven by humorous or viral content, rather than through intrinsic value or underlying utility. | |
| **Third-Party Considerations** | Do you use third-party custodials (e.g., Centralised Exchanges)? If so, how are customers' assets being managed to ensure they're safe and still strictly owned by them? | | |
| | How are you managing operations security (OpSec) in regards to Multisig wallets? How are they distributing this private information amongst their team? | **Multisig wallets:** cryptocurrency wallets that require multiple authorised signatures or approvals from different parties to authorise transactions, adding an extra layer of security and control. | |
| | What legal resources do you have to ensure enforceable contracts when outsourcing/hiring third-parties who do not want to be doxxed? | **Doxxing:** involuntary doxxing is considered as the malicious act of publicly revealing or publishing private information about an individual without their consent, often with the intent to harass, threaten, or incite harm. Voluntary doxxing, however, is choosing to reveal one's identity willingly. | |
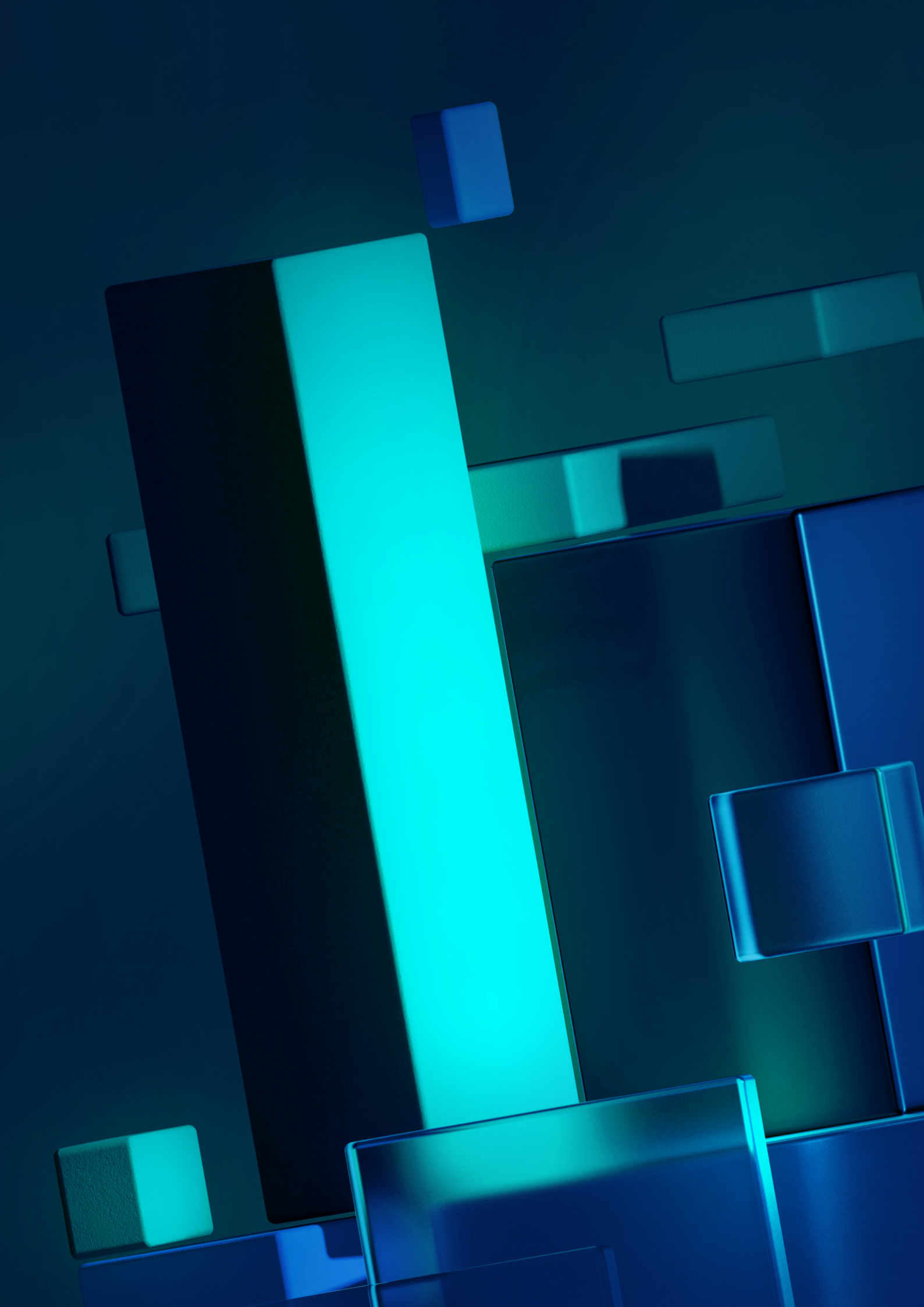
# CONCLUSION

This report and tailored framework derived from sector interviews, addresses some of the pressing issues within the crypto and Web3 industry.

Throughout our interviews, we were met with unanimous agreement that more care is needed, especially in light of the FTX scandal. We are also happy to see similar pieces of work such as the recently published ESG Benchmark for digital assets by CCData and the Crypto Carbon Ratings Institute (CCRI)[69], which bestows further validation to our recommendations.

We believe that – like in other sectors – ESG can help make the crypto and Web3 landscape more robust, aligning successful company and project building with risk management and value creation for investors.

However, the challenges to adoption, rooted in the sector's cultural resistance to being affiliated with Web2 (traditionally corporate or institutionalised) ideologies, necessitate strategic and concerted efforts to establish ESG, especially in light of the lack of regulation.

These efforts, if driven further by industry collaboration and standardisation of terminology (we strongly suggest using the widespread concept of ESG, but an alternative standardised terminology could be 'responsible investing') can direct the sector towards embracing the underlying ESG principles.

As for the next steps, a concerted focus on education and awareness raising is essential. VCs and their LPs need to understand the productive role ESG can play for their companies. Integrating ESG (e.g., by using the following framework during investment decision making) can be seen as part of the investors' fiduciary duty.

Misunderstandings regarding capital, entrepreneurs' and builders' approaches need to be replaced by the right knowledge, and we believe that VCs can play an active role in this. The disconnect between policymakers/regulators and the founders, users, and investors in crypto and Web3 is palpable, with interests and goals misaligned, causing disparate results from both ends.

We strongly encourage cross-function conversations, workshops, and engagement, leading ultimately to collective action. We do believe that the crypto and Web3 sector, as with many VC-backed sectors, can still adapt towards responsible and sustainable innovation.

8. CCData, 'CCData & CCRI Launch Industry First, Institutional Grade Digital Asset ESG Benchmark', press release, *CCData* (13 July 2023), at https://ccdata.io/press-releases/ccdata-ccri-launch-industry-first-institutional-grade-digital-asset-esg-benchmark [accessed 16 November 2023].
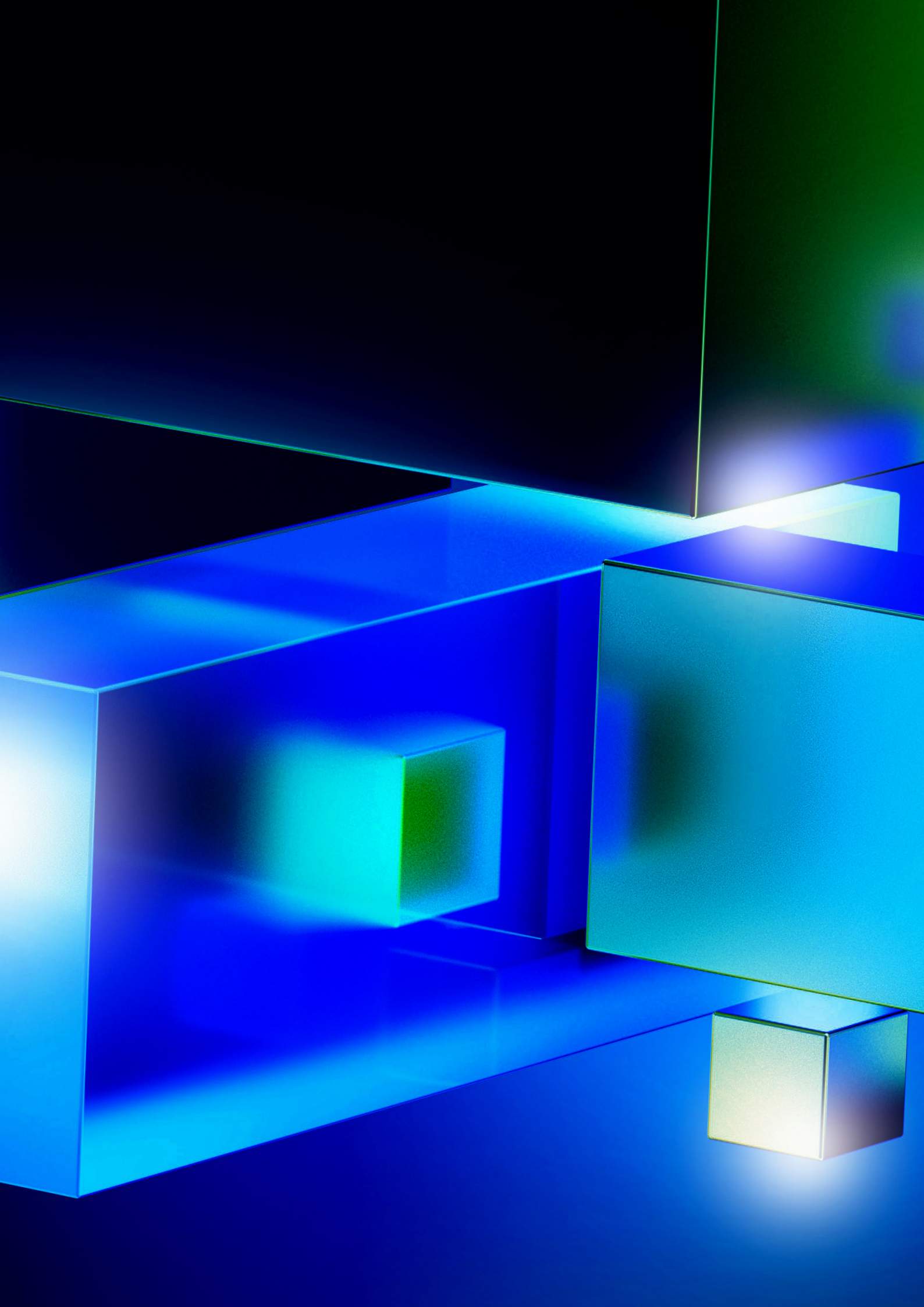
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