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**Blockchain**  
**and ESG**



## Section 15: Blockchain and ESG

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### Introduction

As the popularity of cryptoassets has grown and mainstream financial institutions have begun to show an interest in them as an investable and tradable asset class, attention has started to focus on the cryptocurrency industry's environmental, social, and governance (**ESG**) performance.

Voluntary and mandatory ESG-related reporting requirements have emerged in recent years, as keen investor interest in ESG matters has grown. Consequently, financial institutions and other corporates find themselves under unprecedented scrutiny in terms of their ESG credentials. Therefore, they are under increasing pressure to ensure that their business, clients, associations, and investments do not have a negative impact from an ESG perspective.

The vast majority of the world's financial institutions manage climate risk and other ESG risks in their own portfolios. As a result, many financial institutions perform related diligence on corporates they look to service, whether by traditional lending, capital markets underwriting, or direct investment. Equally, listed companies are some of the first to face formal ESG disclosure regimes and so are mindful of their various ESG "exposures", while asset managers are also facing greater pressure to ensure that investments align with investor demands and expectations. Though the focus has been primarily on the ESG performance of cryptocurrency miners (given their role in the creation of cryptocurrencies and the energy requirements associated with that process), the ESG performance of the broader cryptocurrency industry increasingly needs to be considered, particularly as institutional investment in cryptoassets is accelerating. Accordingly, investors in cryptocurrency miners, in cryptoasset service providers, and even in companies that put cryptoassets on their balance sheets must now weigh the potential for increased returns against the possible negative impact on their ESG credentials.

For example, most listed corporates now have an ESG policy in place and, at one level or another, are looking to finance themselves by relying on ESG-linked products (sustainability-linked bonds or loans, ESG swaps, etc). Concurrently, many corporate treasuries (especially in the US, but also in Europe) are looking to invest a portion of their balance sheet assets in digital assets (Bitcoin in particular). For public companies looking to issue ESG products and also allocate a portion of their balance sheet to digital assets, the challenges in reconciling ESG-related promises to investors with the company's underlying ESG profile are acute.

It is necessary to distinguish cryptocurrencies as an asset class from the distributed ledger technology (**DLT**) they rely on. DLT is a set of technological solutions that enables a single, sequenced, standardised, and cryptographically-secured record of activity to be safely distributed to, and acted upon by, a network of participants. DLT has a wide number of potential use cases in financial services and many of those applications will be designed in a way that does not rely on the complex consensus models utilised by some cryptocurrencies and does not, therefore, necessarily present material ESG concerns. However, given the significant attention cryptocurrencies are receiving with respect to environmental considerations, this section focuses on the ESG considerations relating to cryptocurrencies rather than exploring the broader potential for DLT use cases in financial services, which would require a case-by-case assessment in relation to ESG issues.

### Environmental considerations

Environmental concerns have circulated in popular media relating to the amount of energy expended in mining cryptocurrencies and the consequent emissions, particularly those that rely on a proof of work consensus model (such as Bitcoin and Ether) rather than proof of stake, or proof of authority, consensus models. Such

emissions, it has been argued, have the potential to significantly contribute to the acceleration of global warming.

According to research by the University of Cambridge, the majority of Bitcoin miners have been based in China<sup>443</sup>, a country heavily reliant on coal for energy. However, recent policy decisions and initiatives to shift from fossil fuels to clean energy sources have started to reduce the cryptocurrency mining carbon footprint. Further, in September 2021, the Chinese government introduced a blanket prohibition on the trading and mining of cryptocurrencies, and it is yet to be seen what impact this will have on the carbon footprint of cryptocurrency mining in the longer term.

Nevertheless, a growing range of blockchain protocols supporting the issuance of cryptoassets that do not rely on energy-intensive consensus models are coming to the market, including permissioned networks, which the financial industry is increasingly adopting. Even so, the popularity of Bitcoin and other well-known cryptocurrencies as an asset, and their broader importance to the cryptocurrency market, means that environmental questions continue to be highly relevant in this sector.

Where and how cryptocurrency is mined is a growing area of focus for investors who do not want to buy cryptocurrency that is created in a way that causes excessive energy waste or environmental damage. Today nearly 40% of cryptocurrency mining relies on renewable energy sources, as an increasing number of miners aim to reduce carbon emissions and meet investors' demands. Anecdotes have circulated about investors seeking sustainably mined 'virgin' bitcoins at a premium, as these bitcoins are less likely to be associated with problematic activities, and therefore less likely to raise ESG or reputational risks. Some institutions even want to mine their own supply to be able to prove their coins' provenance to clients.

### Climate focus: the impact of the Paris Agreement

The Paris Agreement is a legally binding international treaty on climate change, adopted by 196 countries at the United Nations Climate Change Conference in Paris on 12 December 2015. Its goal is to limit global warming to below 2°C, compared to pre-industrial levels. Those 196 countries are now looking to build their own legislative frameworks to ensure that they can achieve the carbon reduction goals set out in the Paris Agreement. They aim to achieve these goals by imposing carbon reduction requirements on companies operating in their jurisdictions. In practice, for the vast majority of companies, this requirement will likely involve aligning with the Task Force on Climate-related Financial Disclosures (**TCFD**), a private sector task force whose recommendations are widely recognised as authoritative guidance on the reporting of financially material, climate-related information.

The TCFD recommendations and supporting disclosures include the following:

- **Governance:** disclose the organisation's governance around climate-related risks and opportunities
- **Strategy:** disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material
- **Risk management:** disclose how the organisation identifies, assesses, and manages climate-related risks
- **Metrics and targets:** disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material

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443 [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map)

A number of governments and financial regulators around the world have expressed support for the TCFD recommendations and are integrating them into their guidance and policy frameworks, including the UK, Australia, New Zealand, Canada, Hong Kong, Japan, Singapore, and South Africa, as well as some EU Member States. In the UK, for example, the FCA has introduced climate-related disclosure requirements for listed companies. These require companies to disclose, on a “comply or explain” basis, whether they have made disclosures consistent with the TCFD recommendations. Further, a TCFD-aligned international reporting standard is currently under development, which could pave the way for mandatory TCFD compliance.

For the reasons highlighted above, many cryptocurrency miners and firms may find having to disclose their greenhouse gas emissions publicly as a highly sensitive exercise. They may also find it challenging to ensure the accuracy of those disclosures.

However, some cryptocurrency firms are starting to explore carbon offset and energy efficiency/sustainability programmes. For example, the Energy Web Chain is an Ethereum-like base layer network protocol for the purpose of building renewable energy applications on the blockchain. Unlike the Ethereum or Bitcoin protocols, Energy Web Chain uses a proof of authority consensus model, which, Energy Web Chain argues, is more energy efficient due to its permissioned, proof of authority consensus. These types of blockchain consensus models have been gaining prominence as a result of energy efficiency concerns and may become an increasingly important factor in the success of these platforms. Energy Web has also recently partnered in the launch of the Crypto Climate Accord (**CCA**), a private sector-led initiative inspired by the Paris Agreement. The CCA focuses its efforts on decarbonising the cryptocurrency industry, aiming for all blockchains to be powered by 100% renewable energy sources by 2025, as well as net-zero emissions for the entire crypto industry by 2040.<sup>444</sup>

## Social considerations

Social impacts have moved to the forefront during the COVID-19 pandemic. Bitcoin and other cryptocurrencies have notable arguments concerning their own social benefits. Cryptocurrencies aim to allow users to seamlessly transfer value in all parts of the world via a monetary network that is robust, free of censorship, and resistant to intervention by state actors and geopolitical conflicts. The only barrier to entry for aspiring market participants is an internet connection.

As mentioned previously, many cryptoasset service providers (**CSPs**) have taken significant steps to implement compliance safeguards such as anti-money laundering (**AML**) and countering terrorist financing (**CTF**) frameworks even in advance of formal regulatory requirements being imposed on them, though this is not universally the case. For example, the increasing use of decentralised finance (**DeFi**) platforms in order to trade cryptoassets or provide/take liquidity through lending or market-making platforms raises concerns as to whether these unregulated platforms may be used to sidestep the compliance safeguards of regulated platforms. DeFi platforms do not tend to impose AML “know your customer” (**KYC**) standards on their users, and governments and regulators have raised concerns as to whether the anonymity associated with these platforms could lead to undetected market manipulation or financial crime. However, a range of AML/KYC solutions tailored to the DeFi space are emerging even in this traditionally unregulated area.

On the other hand, cryptocurrency activity is not inherently opaque, and a benefit of cryptocurrency transactions is that they are largely transparent and traceable (with the exception of privacy coins<sup>445</sup>). Blockchain analysis has been recognised as an

<sup>444</sup> <https://cryptoclimate.org/>

<sup>445</sup> Privacy coins are coins that provides the user community with a higher level of anonymity than is typical for cryptocurrency. Privacy-related features may include encryption, the bundling of transactions (so that individual users cannot be linked to individual transactions), and stealth addresses.

important tool for cryptoasset service providers to consider when dealing with assets that have originated from anonymous or private sources.<sup>446</sup> Still, important questions remain as to how AML/KYC requirements should be adjusted to take into account the traceable nature of the blockchain (e.g. how many ‘hops’ a cryptoasset service provider should analyse to be comfortable with the source of the asset). However, as the industry matures, and as regulators and international bodies such as the FATF continue to work with the sector, market standards in this area should continue to emerge.

While market participants in the cryptocurrency industry may be able to use their social impacts as a method of competitive advantage, particularly by contrasting their activities with any perception that cryptocurrency is an avoidance mechanism for taxation and other regulatory regimes, or a driver for criminal activity, they must be able to demonstrate meaningful social contribution by understanding the metrics customarily used to measure social impacts.

### **Governance considerations**

Governance, and in particular the transparency of a cryptocurrency market participant’s governance framework, forms a key driver of opportunity or exposure. Considerations include:

- Does the management body take into account sustainability issues in the course of business?
- Is the operation structured to align with the long-term ideal of being sustainable by maintaining a diverse management team?
- Does the firm operate with tax transparency?
- Is financial crime, bribery, and corruption risk adequately managed?
- Does the operation have systems in place to protect against cyberattacks that could result in losses for investors and breaches of privacy?
- Is executive pay linked to sustainability targets?
- How does the firm address diversity and inclusion within the organisation?

Some of these questions may challenge high-growth companies that often operate under regimes that have not adapted to their business model, particularly in the case of financial crime legislation. Over time, governance will organically improve as digital asset businesses become more mainstream and list on public exchanges (whether through IPOs, direct listings, SPACs, or otherwise), as they will be forced to adhere to formalised governance and disclosure models as would any other publicly-traded company. In line with the current focus on ESG matters, governance-related disclosures are also expanding for listed companies, with various jurisdictions beginning to introduce additional governance-related disclosure standards regarding diversity and inclusion. For example, in the UK the FCA is introducing new requirements for listed companies to disclose in their annual financial report whether they meet specific board diversity targets on a “comply or explain” basis.

### **Conclusion**

With ESG reaching increased prominence, businesses cannot escape its impact. Whether caught directly because they fall within the formal disclosure regimes, or indirectly because the corporates and financial institutions they deal with fall within those regimes and/or must justify their ESG credentials to investors and other interested parties, ESG is a key consideration across all markets and sectors. Therefore, ESG considerations cannot be ignored by digital asset businesses, particularly given the environmental concerns that have been highlighted in the press.

<sup>446</sup> See the Joint Money Laundering Steering Group’s Sectoral Guidance on Cryptoasset Exchange Providers and custodian wallet providers.

For these reasons, it is advisable for any cryptocurrency firm looking to access finance from financial institutions to holistically review its ESG credentials and narrative and consider how it would like to publicly present its performance against traditional ESG metrics. For ESG-conscious financial institutions looking to trade, invest, or custody digital assets, it will be critical to review the cryptocurrency firm's ESG credentials and narratives to ensure that they are in line with their own ESG objectives, as well as client expectations. And for corporate treasuries exploring the possibility of adding cryptocurrency hedges to their balance sheet, a well-devised strategy and execution is imperative to ensure consistency with internal ESG policies.

Cryptocurrency firms must also bear in mind the strong regulatory framework that continues to build around ESG, and the level of scrutiny in this area. Any ESG-related claims must be fully substantiated and the data upon which they are based must be accurate and reliable.