Joint response to the ESMA consultation on MiCA RTS

[CONSULTATION](#)

1. Do you agree with ESMA's assessment of the mandate for sustainability disclosures under MiCA?

We agree with ESMA's assessment of the sustainability disclosure requirements under MiCA, but we have some important reservations. While we acknowledge the necessity and urgency of incorporating sustainability considerations into the crypto-asset sector, the unique attributes and operational modalities of blockchain require a carefully considered approach. Specifically, the application of sustainability disclosure standards derived from traditional financial sectors, like those outlined in CSRD and SFDR, may not be entirely fit for purpose when directly transposed onto the decentralised, global, and inherently varied nature of blockchain and crypto-asset mechanisms.

In our view, while ESMA's emphasis on transparency and sustainability is key, there is a critical need to further refine and adapt these standards to align with the distinct characteristics of crypto-assets. This includes acknowledging the diversity within consensus mechanisms and the varying energy consumption these may have, as well as considering the unique ways in which the crypto-assets industry is addressing its environmental footprint, such as through carbon compensation measures and the utilisation of renewable energy sources. The adoption of a one-size-fits-all approach could inadvertently overlook these critical nuances and potentially stifle the innovative potential of the sector. Therefore, while we align with the overarching goals of ESMA's mandate, we strongly advocate for a more tailored and informed approach to sustainability disclosures in the realm of crypto-assets. Below some relevant considerations:

- While we agree with the approach of developing transversal indicators across consensus mechanisms, It is essential to establish standardised indicators applicable across all consensus mechanisms. The focus should be on universal metrics like energy consumption and environmental impact, ensuring comparability and clarity in assessments across different blockchain technologies.
- We recommend always considering the difference between crypto-asset issuers and traditional financial entities when it comes to sustainability disclosure requirements. Traditional entities targeted by CSRD and SFDR typically operate within more centralised, geographically defined, and regulated frameworks, unlike the decentralised, borderless nature of blockchain validators and crypto-assets. This distinction requires an adaptable and comprehensive regulatory framework for crypto-assets, considering their unique operational characteristics and global reach.

- The three criteria outlined by ESMA for assessing the sustainability impact of consensus mechanisms in crypto-assets energy consumption of DLT network nodes, their location, and the devices used—are fundamental yet may not fully encapsulate the comprehensive environmental impact of these technologies, as they mostly cover the negative impact. It's important to recognize that 'impact' encompasses both positive and negative aspects, and a holistic assessment of the net impact must include measures of compensation and offsetting. Therefore, we advocate for expanding these criteria to better reflect the true environmental footprint of crypto-assets. Below the suggested expansion considerations:
    - When evaluating the environmental impact of crypto-assets, it is crucial to emphasize the significance of carbon compensation measures. These measures should be a cornerstone of environmental assessments, not just peripheral considerations. This approach recognises and values the proactive steps taken by numerous crypto-assets projects towards environmental sustainability, which extends well beyond their immediate operational impacts. Many of these projects are deeply involved in, or form the foundational technology for, initiatives aimed at financial inclusion and regenerative finance. Their contributions in these areas often have a substantial positive impact, counterbalancing and surpassing their carbon emissions. This holistic view of a project's environmental footprint is essential, as it acknowledges the broader ecological and social contributions of crypto projects, highlighting their role in fostering a more sustainable and inclusive global economy.
    - We recommend emphasising the importance of considering the type of energy source used as a key factor in evaluating the environmental impact of crypto-assets. While location can provide useful insights, especially when estimating greenhouse gas emissions, the specific nature of the energy source – whether it's renewable or not – is a fundamental determinant of the actual environmental footprint. For instance, crypto-assets mining operations that rely on renewable energy sources, such as solar power, significantly reduce their environmental impact. This shift towards renewable energy sources is more than a trend; it's an essential move towards sustainability within the industry. Using renewable energy, such as harnessing clipped solar power, represents a significant advancement in reducing the carbon footprint of crypto operations. The concept of clipped solar – using the excess energy from solar panels that is not consumed by the grid – is particularly innovative. By prioritising the consideration of renewable energy use over merely the location, the crypto-assets industry can make substantial strides in becoming more environmentally responsible and aligning itself with broader sustainability goals. This approach to assessing the sustainability of crypto-assets – considering both the type of energy used and its renewable nature – is crucial for a more accurate and comprehensive environmental impact assessment. Moreover, it encourages the adoption of green practices across the industry, contributing to a global shift towards a more sustainable and environmentally conscious future.

    - We consider that to have further clarity in who is the obligated party and who holds the responsibility for environmental assessments. It is essential to distinctly outline the responsibilities of both crypto-asset issuers and CASPs. This clarity becomes even more crucial for Layer 2 tokens, which operate on top of Layer 1 infrastructures. In the case of Layer 2 tokens, their environmental impact is inherently tied to the Layer 1 protocol they are built upon, however, it shall not be the responsibility of Layer 2 to conduct the environmental assessment of Layer 1.
- It is crucial to standardise how sustainability indicators are presented across CASPs and issuers. A unified approach will facilitate user understanding and streamline compliance for industry players.

Moreover, we recommend waiting for the results of the tender on 'Developing a Methodology and Sustainability Standards for Mitigating the Environmental Impact of Crypto-assets' to ensure the adoption of a realistic and executable methodology.

2. In your view, what features of the consensus mechanisms are relevant to assess their sustainability impacts, and what type of information can be obtained in relation to each DLT network node?

Understanding the diversity of consensus mechanisms and their unique characteristics is crucial for an accurate evaluation of their environmental impacts. This variety in operational models and mechanisms calls for a detailed analysis of their respective ecological footprints. The distinction and consideration of their particularities are essential not for implementing separate methodologies and indicators for each, but to identify which indicators can be universally applied across them. This will enable us to compare their impacts effectively.

To facilitate this, the following table classifies various consensus mechanisms, highlighting their distinct features and incentive structures. This classification aims to pinpoint the subtle differences among these mechanisms, particularly focusing on how some subcategories may be more efficient than others. The table also identifies essential environmental factors for each mechanism, laying the groundwork for creating consistent and comprehensive indicators for environmental impact assessments. This methodical approach is key to gaining a clearer, more complete picture of the sustainability aspects of different blockchain technologies and ensuring a fair comparison of their impacts.

Consensus Mechanism	Description	Incentive Structure	Examples	Sustainability Impact Considerations
Delegated Proof of Stake (DPoS) **Variety of Proof of Stake.**	Token holders vote for delegates to manage the blockchain on their behalf.	Rewards for delegates based on votes and performance.	EOS, Tron, Lisk	Reduces energy usage and increases transaction efficiency. Energy-efficient due to fewer validators. Easier identification of validators, limited geographical decentralisation
Directed Acyclic Graph (DAG) **Variety of Proof of Work**	Multiple chains allow simultaneous transactions.	Rewards are often based on transaction validation participation.	IOTA, Hedera Hashgraph, Nano	High scalability with potentially lower energy consumption per transaction.
Proof of Authority (PoA)	Transactions validated by approved accounts or validators.	Trust-based, with validators typically pre-selected.	VeChain, POA Network, GoChain	Low energy consumption due to trusted, pre-selected validators. Simple identification of validators, who are generally the project's core team
Proof of Burn (PoB)	Miners destroy a portion of tokens to obtain mining rights.	Incentivized by burning token for long-term rewards.	Slimcoin, Counterparty, Factom	Less energy-intensive Reduces energy usage but raises concerns about resource wastage (burning coins).

Proof of Elapsed Time (PoET)	Participants randomly chosen based on the amount of time they have been waiting.	Fair opportunity for all nodes.	Hyperledger Sawtooth	Low energy due to efficient use of resources and fairness in validator selection.
Proof of History (PoH)	A high-frequency verifiable delay function to encode the passing of time into a ledger.	Efficient and fast processing with a focus on transaction speed.	Solana	Low energy consumption due to efficient time-stamping and transaction processing.
Proof of Space (PoSpace)	Validation based on disk space allocation.	Rewards based on the amount of disk space provided.	Chia, Filecoin, Spacemesh	Energy-efficient with significantly lower energy use compared to PoW.
Proof of Stake (PoS)	Validators are chosen based on the number of tokensheld and staked.	Rewards based on token stake.	Ethereum 2.0, Cardano, Polkadot	Much lower energy consumption, reducing carbon footprint.
Proof of Work (PoW)	Miners solve cryptographic puzzles to validate transactions and create new blocks.	Rewards based on solving puzzles first. High competition and computational power required.	Bitcoin, Litecoin, Dogecoin	High energy consumption due to intensive computational work. Significant carbon footprint which is likely to decrease in the energy market (green energy is often cheaper than carbon-based energy)
Tendermint	A Byzantine Fault Tolerant (BFT) variant combining PoS elements.	Incentives based on staking and validator performance.	Cosmos	Efficient in energy use due to BFT mechanism and validator accountability.

After delving into the characteristics of various consensus mechanisms and understanding their similarities and differences, it becomes evident that certain sustainability indicators can be effectively applied across all these mechanisms. This universal application of indicators allows for an equitable and comprehensive assessment of the environmental impact of different blockchain technologies.

The following table presents a comprehensive view of the indicators that can be designed for assessing the sustainability impact across consensus mechanisms. However, it also highlights the inherent challenges in data collection, particularly due to the decentralised and varied nature of blockchain networks.

Indicator	Data Required	Challenges in data collection
Total Energy Consumption (kWh)	Energy usage data from each node; may need self-reporting or monitoring systems.	Difficulty in obtaining accurate data from all nodes, especially in decentralised networks. Potentially significant variations according to market cycles can still affect the ease with which overall energy consumption can be calculated.
Proportion of Renewable Energy Usage (%)	Energy sourcing details; certifications or proof of renewable energy usage.	Varied reporting standards and verification of energy sources, especially in decentralised networks. The methodology used to calculate this proportion may vary.
Type of Energy Source	Energy supply stability data; backup solutions in place.	Assessing the exact type of energy source for each node is challenging, especially in a decentralised context.
Carbon Footprint (CO2e)	Emission data from energy providers; hardware lifecycle emissions.	Challenges in tracking and quantifying emissions across global, decentralised nodes.
Carbon Compensation Measures	Details of compensation initiatives (e.g., reforestation projects, carbon credits purchased); proof of implementation and effectiveness.	Requires transparent reporting and verification of compensatory measures, which may vary widely.
Community and Ecosystem Impact	Local impact assessments; stakeholder feedback.	Difficult to quantify indirect impacts.
Hardware Efficiency	Specifics of hardware models used; energy efficiency ratings.	Diverse hardware types and configurations across nodes complicate standardisation of

		efficiency metrics.
Lifecycle Impact of Hardware	Supply chain data; manufacturing and disposal practices.	Requires detailed data on hardware production, usage, and disposal processes, often not readily available.
Network Scalability	Transaction volume data; network capacity and growth metrics.	Requires comprehensive data on network performance under different loads, often not publicly disclosed.
Level of Decentralization	Number and distribution of nodes; network topology.	Decentralisation metrics are often subjective and challenging to quantify uniformly across different networks.
Total Waste Production	E-waste data; recycling and disposal information.	Tracking waste generation across diverse and globally distributed hardware systems is complex.
Water Usage	Water usage data; cooling system details.	Relevant mainly for large-scale data centres; difficult to assess for smaller or decentralised operations.
Geographic Distribution of Nodes	Location data of nodes; regional environmental impact assessments.	Gathering accurate location data of all nodes in a decentralised setup is challenging.

The table presented serves as a foundational guideline, outlining potential indicators that could be uniformly applied across various consensus mechanisms. However, it is crucial to acknowledge that the actual feasibility of implementing these indicators comprehensively and effectively by issuers requires a more detailed analysis. To ensure that the set of criteria and methodologies developed are both applicable and feasible, **a comprehensive feasibility study is needed**. This study should delve into the practical aspects of data collection, technological requirements, cost implications, and regulatory compliance challenges associated with these sustainability indicators.

The importance of such a feasibility study is further underscored by the dynamic and rapidly evolving nature of blockchain technologies and crypto-assets. It will provide critical insights into how these sustainability measures can be integrated seamlessly into the existing operational frameworks of crypto-asset issuers, without imposing undue burdens or hindering innovation within the sector.

Therefore, it is recommended to await the outcomes of the tender on 'Developing a Methodology and Sustainability Standards for Mitigating the Environmental Impact of Crypto-assets.' This initiative is expected to offer a realistic and executable methodology, grounded in thorough research and industry insights. The results from this tender will be instrumental in shaping a set of sustainability indicators and reporting standards that are not only comprehensive and robust but also practical and adaptable to the unique characteristics of the crypto-asset industry. This patient, informed approach will ensure the development of sustainability standards that are truly effective and conducive to the long-term growth and responsible evolution of the blockchain and crypto sector.

3. Do you agree with ESMA's approach to ensure coherence, complementarity, consistency and proportionality?

In terms of consistency, complementarity, and coherence, we consider that some aspects of the RTS could be strengthened to ensure that CASPs can, as far as possible, provide access to the same level of information to their respective customers. Some elements are already mentioned above.

Regarding proportionality, the best-effort system and the consideration of the unavailability of certain environmental data testify to a real effort from ESMA. This approach on a voluntary basis actually makes it possible to avoid a heavy and inadequate regulatory framework and to allow the development of adapted market practices (in light of the specificities of crypto-assets). As a result, the classification of ESG crypto-products seems to be proportionate overall at present, and may lead in the future to level 3 guidelines to support ESAs' expectations on CASPs and token issuers.

Specifically, we would like to warn about the ambiguity between MICA and the sustainability disclosures being proposed, regarding the responsibility of CASPs for the information they shall collect and provide in the white paper.

While MICA indicates that CASPs are liable entities for the white paper of crypto assets other than ARTs and EMTs they have prepared (Article 15), the Regulation only indicates issuers of ARTs and EMTs as the responsible entity for their white paper (Article 26 and 52). However, MICA and the sustainability disclosure standards also require CASPs to collect and provide information in the white papers for the crypto assets they list.

Although we understand that the liability question cannot be legally resolved through this RTS and that must be interpreted on a case-by-case basis, some elements must be considered. The responsibility, the level of information that must be gathered and the liability of CASPs must be understood in light of Article 66 of MICA on their obligation to act honestly, fairly, and professionally in the best interests of clients.

The standards and their implementation must acknowledge that some of the required information is not provided but only collected by the CASP and that ultimately limits their ability and means to verify the accuracy of this information. Therefore, when certain data may not be fully available and entities subject to disclosure requirements cannot rely on estimates where data is not readily available, the fulfilment of the obligations must be deemed sufficient when the CASP has acted ¨honestly, fairly, and professionally in the best interests of clients¨.

While the RTS takes into account the lack of structuring of the crypto-asset markets on its environmental impact, several points seem still unresolved.

- If a CASP cannot legitimately rely on the information given in the issuer's white paper to provide its clients information on negative environmental impacts, there is a risk of confusion/misunderstanding for the client. Clients will have at their disposal two conflicting sources of information on the environmental impact of their potential investment.
- If a token issuer does not provide data, or provides insufficient data, to CASPs and the CASP actively proposes another assessment with significantly different results, the question of data dominance arises. This could also be seen in two different CASPs conducting different analyses, based on different methodologies. At this level, it seems that the cooperation pursued by the European institutions is limited, as no mechanism has been put in place to facilitate the predominance of the most qualitative data.
- According to the RTS, the "CASP is also expected to cooperate to ensure such coherence overtime". Who will be liable in case of inconsistency? For instance, if a CASP does not agree on a previous opinion and establishes different conclusions?
- The draft RTS includes "the possibility for entities subject to disclosure requirements to benefit from the best effort clause in case of limited data availability". What should be understood as "limited data"?
  In this respect, if a CASP or token issuer does not comply with its environmental obligations, to what extent does it expose itself to the sanctions provided for in Chapter VI of MiCA?

4. **Do you agree with ESMA's approach to mitigating challenges related to data availability and reliability? Do you support the use of estimates in case of limited data availability, for example when data is not available for the entirety of a calendar year?**

It is important to note that, to date, energy consumption data for consensus protocols is based on estimations and publicly available data, which means that there may be a margin of error in the results that would vary with the reliability of the source of information.

Thus, the use of estimates seems necessary. Although data exists for Bitcoin and Ethereum and comes from sources external to the networks, the data currently available on the markets is often either based on estimates made by the network participants themselves or is non-existent.

Given the current challenges, the approach of allowing the use of estimates can indeed be pragmatic. It strikes a balance between the need for transparency and the practical challenges faced by blockchain service providers. However, in the future it is crucial to establish clear guidelines for the use of estimates to ensure a degree of standardisation and comparability across different providers. Regulators, industry stakeholders, and standard-setting bodies can collaborate to develop best practices for estimating environmental impact metrics. Encouraging transparency and providing guidelines for data reporting can contribute to a more accurate understanding of the environmental implications of blockchain technologies while considering the practical challenges faced by providers, especially smaller ones.

5. **What are your views on the feasibility and costs of accessing data required to compute the sustainability metrics included in the draft RTS?**

The question of the feasibility of accessing data depends on whether ESMA expects CASPs and token issuers to provide access to high-quality data (certified, easily verifiable and with a very low margin of error) or data based on estimates of what would be publicly available. If the expected data is of high quality, the feasibility of the rules would be very limited because it would require the players to identify all the validators for calculating the energy intensity used to operate the network, the energy mix and the use of renewable energies. However, not all of them are identifiable, some are located in areas that are difficult to access and would not always agree to share their data.
So, given the exhaustive nature of the information to be collected and the difficulty of producing reliable data, it is highly likely that the issuer and CASPs will entrust this data collection to a third party. Internalising this skill could represent relatively high costs.
Nor is compulsory outsourcing necessarily the best solution in terms of cost.

6. **Do you agree with ESMA's description on the practical approach to assessing the sustainability impacts of consensus mechanisms? If not, what alternative approach would you consider suitable to assess these impacts?**

   a) The existence of a centralised issuer

The annexed table proposed by ESMA contains several assessments that are inapplicable in terms of sustainability policy: these tables assume the existence of a centralised or semi-centralised issuer, whose governance could commit to sustainability policies for their project.

For example: "GHG emissions reduction targets or commitments, expressed in terms of absolute or relative reduction in GHG emissions over one calendar year".

By definition there can be no "target" and "commitment" other than in the context of a centralised player.However, the (stated) aim of the main crypto-asset projects is to achieve a high level of decentralisation. And this is already the case for Bitcoin. It is technically impossible to obtain a "commitment" or a "target" from the Bitcoin "issuer".

   b) Dependence on third parties

In a decentralised or semi-decentralised model, consensus mechanisms, whether Proof of Work or Proof of Stake, are not under the direct control of the initial issuers of the crypto-asset. This decentralisation implies that decision-making and the management of consensus processes are not overseen by a single entity, but rather by active participants in the network.

Example 1: In the context of Bitcoin, the Proof-of-Work ("PoW") mechanism plays a role in transaction validation and network security. Notably, this mechanism's environmental implications are not orchestrated by a central issuer, as Bitcoin operates on a decentralised protocol. Then, and unlike traditional centralised systems governed by a singular authority, Bitcoin's decentralised nature means that the mining process is distributed across a network of individual miners and entities dedicated to solving intricate mathematical problems. These entities, which are commonly referred to as "mining companies", invest in specialise hardware and then engage in mining activities to validate transactions and add block to the blockchain. Critically, when evaluating the environmental impact of Bitcoin, it becomes important to shift focus from the protocol alone to the broader industry that has evolved around it: this assessment involves a comprehensive analysis of the practices employed by Bitcoin mining companies (using factors such as energy sources utilised, efficiency of mining hardware etc).

Example 2: In the context of Ethereum, the network architecture takes a different form, particularly concerning the distribution of nodes. Unlike Bitcoin's PoW mechanism, Ethereum relies on various nodes for transaction validation, and a notable proportion of these nodes are hosted on Amazon Web Services ("AWS") servers. A parallel situation can be observed with Solana, where a significant number of nodes operate on Google Cloud. This divergence in node distribution introduces a distinction, which has to be taken into account in assessing the environmental impact of Ethereum (and similar blockchain projects). Unlike the decentralised mining model employed by Bitcoin, where impact assessment involves evaluating a dispersed industry of miners, Ethereum's "environmental footprint" is intricately tied to the infrastructure provided by third-party cloud services.

Thus, and in essence, evaluating the environmental impact of blockchain necessitates a nuanced understanding of the practices and environmental policies of the service providers hosting their nodes, for instance.

In conclusion, the evaluation of environmental impact in this field necessitates a paradigm shift towards third-party oversight. Rather than relying solely on the crypto-asset issuers for these assessments, the responsibility is rightfully placed on third-party auditors. This shift is important given the decentralised nature of many blockchain projects, as explained with Ethereum and Bitcoin. Furthermore, the meaningful establishment and pursuit of environmental objectives and commitments are most effective when undertaken by these third-party entities. This involves a targeted examination of the environmental policies implemented by cloud service providers (such as Amazon Web Services, Google Cloud) which host blockchain nodes. Additionally, this approach involved considering a unified policy enacted by trade association of miners for instance or aggregating the individual policies of each participant within the mining ecosystem.

c) International control

What happens when a blockchain node is located outside the EU and we have no information to ensure a uniform calculation, while obtaining the information becomes more complex (at present, the majority of Ethereum nodes are on AWS servers based in the US)?

Mining farms are generally located outside the EU, and are therefore not subject to regulation, so what about access to information and its reliability?

d) Completeness of information

Given the large number of third parties involved, and their geographical distribution, it is impossible to propose a complete assessment of the impact and environmental policy of each crypto-asset project. Recognizing this fact, it becomes necessary to establish a benchmark or minimum threshold of coverage to ensure the adequacy of an impact assessment. For instance, one approach could involve conducting a detailed analysis of Bitcoin mining companies that collectively represent at least 80% of the global hashrate, thus, this ensures that a substantial majority of the network's computational power is taken into account and ensures a more realistic reflection of the environmental impact. In a PoS mechanism (Ethereum), another criterion for comprehensive evaluation would be analysis of Cloud services responsible for at least 80% of the centralised validation nodes.

7. Do you agree with the definitions proposed in the draft RTS, in particular on incentive structure and on DLT GHG emissions? If not, what alternative wording would you consider appropriate?

While we fundamentally concur with the overarching sentiment expressed, we wish to proffer two supplementary observations of a refined nature. Within the context of point (e) in the document, there exists an allusion to 'points (3) and (4),' which appears discordant with the extant framework. To rectify this, we respectfully propose an adjustment wherein the reference is amended to 'points (c) and (d),' thereby engendering lucidity and adherence to established conventions. Likewise, in reference to point (g), we discern an allusion to 'point (6)' which warrants reconsideration. To foster consistency and circumvent potential ambiguity, we advocate for the revision of this reference to instead cite 'point (f).

Furthermore, we submit that it would be judicious to incorporate a well-defined explication of a 'DLT' (Distributed Ledger Technology). This elucidation should meticulously account for the exclusion of 'fully decentralised protocols' and should also take into contemplation any pertinent DLT definitions that may have been broached in alternative contexts. Such elucidation would undoubtedly augment the comprehension and application of the document in question.

8. In your view, are the proposed mandatory sustainability indicators conducive to investor awareness? If not, what additional or alternative indicators would you consider relevant?

We are not convinced that these indicators, in their current format - see Table 1 - provide investors with an easy understanding of the concrete impact of the consensus mechanisms used to validate crypto-asset transactions. Simply reading the data made available by CASPs will not give all investors a full understanding of the potential impact of their investment.

In our opinion, it may therefore be appropriate to provide customers with keys to understanding (e.g. an "energy label" type rating scale found in France on household appliances) to make it easier to compare data between several CASPs. It would also be good practice for the actors involved to produce summaries of this table (while still allowing the customer to consult the table containing all the exhaustive data).

9. **Do you consider the proposed optional sustainability indicators fit for purpose? If not, what additional indicators would you consider relevant? Would you agree to making these optional sustainability indicators mandatory in the medium run?**

We affirm that the supplementary climate and other environment-related indicators as described in Table 2 are aptly suited for their intended purpose. We would like to further direct the regulators' attention to the ongoing evolution of consensus mechanisms and the foundational technologies that underpin them. While these advancements may not be immediately incorporated into Table 2, we earnestly encourage regulatory authorities to acknowledge the diligent endeavours in this sphere and consider the possibility of officially recognizing the allocation of non-natural resources dedicated to these endeavours.

10. **Do you consider the principles for the presentation of the information, and the template for sustainability disclosures fit for purpose? If not, what improvements would you suggest?**

We recognize that the principles set forth in Articles 3 and 4, as well as the accompanying template, are deemed suitable for their intended purpose.

Additionally, we would appreciate further clarification from the regulators regarding: i) the relevant elements that contribute to the comparison of data between several CASPs, and ii) the allocation of responsibilities among various CASPs. It appears that the delineation of roles and responsibilities in cases where a CASP offers a crypto asset across multiple blockchain networks is not explicitly defined. In line with our answer provided under Question 3 regarding the fulfilment of CASPs obligation, we seek guidance on whether CASPs should solely disclose the absence of data regarding the asset from a particular chain in the absence of a comprehensive assessment or whether should they take further actions.

Furthermore, it would be beneficial to ascertain whether it is expected that CASPs themselves should undertake the responsibility of conducting such assessments for a crypto-asset utilizing a particular blockchain network or whether this should remain the responsibility of the crypto-asset issuer.

11. **In your view, are the calculation guidance for energy use and GHG emissions included in the draft European Sustainability Reporting Standards relevant for methodologies in relation to the sustainability indicators under MiCA? If not, what alternative methodologies would you consider relevant? For the other indicators for which the calculation guidance of the ESRS was not available, do you consider that there are alternative methodologies that could be used? If so, which ones?**

The calculation guidance provided by the draft European Sustainability Reporting Standards for energy use and greenhouse gas emissions can serve as a valuable initial framework for developing methodologies related to sustainability indicators under MiCA. However, it's important to recognize that the unique characteristics of crypto-assets and blockchain technologies necessitate some adaptation of ESRS principles.

In cases where ESRS calculation guidance is not available for specific sustainability indicators particularly designed for crypto, alternative methodologies must be explored. These alternative methods should be designed to yield accurate and dependable data, taking into account the decentralised and global nature of crypto-assets. For instance, when assessing indicators related to energy consumption, one potential approach could involve relying on self-reporting by network participants or conducting third-party audits to verify energy-related data. Additionally, innovative solutions like blockchain-based transparency mechanisms in M2M sensor monitoring can enhance the accuracy and trustworthiness of sustainability data.

It's worth noting that blockchain technology offers inherent characteristics that can significantly assist companies and issuers regulated under MiCA in meeting sustainability requirements. These characteristics include transparency, traceability, smart contracts, data availability, and decentralisation. Recognizing and effectively utilising these blockchain-native elements is essential to streamline compliance for CASPs and token issuers while avoiding unnecessary regulatory burdens.

To ensure the development of sustainability indicators that are both comprehensive and practical for the crypto-asset industry, a multi-stage approach is recommended, taking into account the feasibility aspect outlined in our response to question 2.

Initially, it is advisable to await the outcomes of the tender on 'Developing a Methodology and Sustainability Standards for Mitigating the Environmental Impact of Crypto-assets.' This initiative is expected to provide a realistic and executable methodology grounded in thorough research and industry insights. The results from this tender will be instrumental in shaping a set of sustainability indicators and reporting standards that are not only comprehensive and robust but also practical and adaptable to the unique characteristics of the crypto-asset industry.

In a second stage, it is advisable to consider the implementation of a test phase or regulatory sandbox to determine the most relevant criteria for the industry. This approach, taken in a long-term perspective, can help generalise the use of sustainability criteria effectively, fostering the responsible evolution of the blockchain and crypto sector while ensuring that the criteria are both meaningful and feasible.

12. Would you consider it useful that ESMA provides further clarity and guidance on methodologies and on recommended data sources? If yes, what are your suggestions in this regard?

Yes, providing further clarity and guidance on methodologies and recommended data sources would be beneficial for the crypto-assets industry and stakeholders. To ensure consistent and reliable sustainability disclosures, ESMA should consider the following suggestions:

- ESMA should actively engage with industry experts, stakeholders, and researchers to develop methodologies tailored to the crypto sector's unique characteristics. This collaborative approach can lead to more accurate and relevant methodologies but also to one that is feasible for the issuers and the CASPs.
- ESMA should recommend reliable data sources for sustainability indicators. These sources should be credible, verifiable, and accessible to issuers and CASPs. Encouraging the use of blockchain-based data solutions or oracles for real-time data verification could enhance transparency.
- ESMA should outline best practices for data collection, validation, and reporting. This could include standards for self-reporting, third-party audits, and verification processes to improve the reliability of disclosed information.
- ESMA should design guidelines that allow for flexibility and adaptation over time. This ensures that sustainability disclosures remain relevant and up-to-date more considering the rapidly evolving nature of blockchain and crypto-assets.
- ESMA should encourage collaboration among crypto-asset issuers, CASPs, and other relevant stakeholders to share insights and best practices. This collaborative approach can contribute to the development of more robust methodologies.
- ESMA may consider launching pilot programs to test the effectiveness of proposed methodologies and gather feedback from industry participants. These programs can help identify challenges and refine the guidance accordingly.

Additional clarity and guidance from ESMA on methodologies and data sources will play a pivotal role in enhancing the credibility and reliability of sustainability disclosures in the crypto-assets sector. It will also contribute to the overall goals of transparency and accountability outlined in MiCA and related regulations.

In conclusion, it is consistently recommended, as outlined in previous responses, to await the outcomes of the ongoing tender focused on 'Developing a Methodology and Sustainability Standards for Mitigating the Environmental Impact of Crypto-assets.' This initiative is aiming to deliver a pragmatic and implementable methodology founded on extensive research and industry expertise. The insights and results generated through this tender will play an integral role in shaping a comprehensive and robust set of sustainability indicators and reporting standards. Importantly, these standards will be designed to be both practical and adaptable, effectively addressing the unique characteristics of the crypto-asset industry.

Acknowledgments:

The response provided in this consultation paper was a collective effort of ADAN, EUCI, INATBA, and EBA, under the leadership of Adriana Torres, Mariana de la Roche, and Anja Blaj. We would like to extend our gratitude to the members of the different leading associations, the members of the EUBOF expert panel, and the members of the Electronic Money Association for their valuable contributions and insights.