BBVA

ETH

Madrid, January 2025

Mandatory information on the main adverse effects on the climate and other environment-related adverse effects of the consensus mechanism.

N	Field	Contents
General information		
S.1	Name	Banco Bilbao Vizcaya Argentaria, S.A
S.2	Identifier of the relevant legal entity	K8MS7FD7N5Z2WQ51AZ71
S.3	Name of the cryptoasset	Ether
S.4	Consensus mechanism	Ethereum uses Proof of Stake (PoS), where validators propose and certify blocks by depositing Ether (ETH), the network's native token. Validators are randomly selected to propose blocks and collectively agree on their validity. PoS eliminates energy-intensive computations by replacing miners with validators, significantly reducing energy consumption while maintaining security and network decentralization. The deposited ETH acts as collateral that can be reduced ("slashed") in cases of misbehavior, incentivizing honest participation in the network.
S.5	Incentive mechanisms and applicable fees	Validators are incentivized by issuing staking rewards (new ETH issued) and transaction fees (priority fees). The base transaction fee, introduced with EIP-1559, is burned to regulate the supply of Ethereum. Validators earn part of the fees paid by users to prioritize transactions. Staking rewards are distributed according to the validator's performance, guaranteeing network security through financial incentives.
S.6	Start of the period to which the information disclosed refers	2024-01-01
S.7	End of the period to which the information disclosed refers	2024-12-31

Mandatory key indicator on energy consumption		
S.8	Power Consumption	Amount in kilowatt-hours (kWh) **5.717.300,00000**
Sources and methodologies		
S.9	Sources of energy consumption and methodologies	Source: Cambridge Centre for Alternative Finance. Cambridge Blockchain Network Sustainability Index. Notes: Ethereum's energy consumption is estimated based on the energy usage of Beacon nodes operating consensus and execution clients. The methodology considers different types of hardware, the resource intensity of different customer combinations and the market share of each customer. Complete description of the methodologies available at: https://ccaf.io/cbnsi/ethereum/methodology

Supplementary information on the main adverse effects on the climate and other environment-related adverse effects of the consensus mechanism.

Key supplementary indicators on energy and GHG emissions		
S.10	Consumption of renewable energies	Percentage **32.50%**
S.11	Energy intensity	Amount in kWh **0.01330**
S.12	GHG DLT emissions (scope 1): controlled	Amount in tons (t) of CO2 equivalent (CO2e) **0.00000**
S.13	GHG DLT emissions (scope 2): purchased	Amount in tCO2e **2,072.90000**
S.14	GHG intensity	Amount in kilograms (kg) CO2e (Tx) **0.00482**

Sources and methodologies			
S.15	Key energy sources and methodologies	Sources and methodologies used in connection with the information reported in fields S.10 and S.11.	Source: Cambridge Centre for Alternative Finance. Cambridge Blockchain Network Sustainability Index. Note: The energy mix and intensity figures reported in S.10 and S.11 are derived using the CBNSI methodology. The network analysis segment provides the geographical distribution of global Beacon node activity by extracting relevant information from the p2p communication between nodes using the Armiarma tracker. These data are linked to regional electricity generation profiles to consider the different carbon intensities of energy sources. Complete description of the methodologies available at: https://ccaf.io/cbnsi/ethereum/network_analytics https://ccaf.io/cbnsi/ethereum/ghg/methodology
S.16	Key GHG sources and methodologies	Sources and methodologies used in relation to the information reported in fields S.12, S.13 and S.14.	Source: Cambridge Centre for Alternative Finance. Cambridge Blockchain Network Sustainability Index. Note: GHG emissions and intensity figures (fields S.12, S.13 and S.14) are estimated using the CBNSI methodology, integrating data from the CBNSI network analysis segment. • **Scope 1 emissions:** these reflect direct on-site emissions generated by the company's own power generation infrastructure. It is assumed that Beacon node operators do not rely on self-power generation due to the minimal hardware requirements and low power demands of Ethereum's PoS consensus mechanism compared to energy-intensive mechanisms such as Proof of Work. • **Scope 2 emissions:** these include indirect emissions from electricity purchased by Beacon node operators. These emissions are calculated by applying regional emission intensity factors based on the geographic distribution of node activity and the regional electricity generation mix. • **GHG intensity:** this is the sum of Scope 1 and 2 issues divided by the total number of Ethereum transactions validated during the disclosure period. Complete description of the methodologies available at: https://ccaf.io/cbnsi/ethereum/network_analytics https://ccaf.io/cbnsi/ethereum/ghg