

CRYPTO CLASSIFICATION CONFUSION:
A RECOMMENDATION TO NOT REGULATE ETHEREUM
UNDER SECURITIES LAWS

MAXWELL HOLLEMAN*

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INTRODUCTION

The Information Age has produced previously unimaginable advances in entertainment, commerce, research, communications, currency, and almost every other aspect of life. The technological advances of the Information Age have allowed humans to become more interconnected than ever before, yet there are members of society who have used this interconnectedness to take advantage of those who are inexperienced or uneducated in the newest technological developments. A recent example of this unlawful and unethical behavior is the cryptocurrency exchange FTX and its CEO Sam Bankman-Fried. Bankman-Fried is currently under house arrest following the largest bail payment in United States history after he was accused of stealing billions of dollars from FTX users to pay the debts of his other firm, Alameda Research.¹ The uncertainties surrounding cryptocurrency combined with its increasing popularity have caused securities regulators and experts to take a closer look at the cryptocurrency market. After making the switch to an environmentally conscious staking consensus mechanism, the world's second-largest cryptocurrency, Ethereum, is under the microscopic lens of securities regulators who are bringing their best arguments to the table in favor of regulating the cryptocurrency as a security.² This note cautions securities regulators and experts to take a step

* Taxation LL.M Candidate, Northwestern University Pritzker School of Law, Class of 2025; J.D., Florida State University College of Law, 2024; B.A., Evangel University 2020.

1. Peter Hoskins, *FTX: Collapsed Crypto Exchange Says \$415m Was Hacked*, BBC NEWS (Jan. 18, 2023), <https://www.bbc.com/news/business-64313624>.

2. Robert A. Schwinger, *What's at Stake in 'Proof of Stake'?*, NEW YORK LAW JOURNAL (Nov. 21, 2022, 11:00 AM), <https://www.law.com/newyorklawjournal/2022/11/21/whats-at-stake-in-proof-of-stake/>. SEC Chairman

back and ponder the potential legal and, more importantly, the devastating environmental implications of dissuading cryptocurrencies from shifting to energy-conscious consensus mechanisms.

The section that follows this introduction explains the history of securities laws and their development over the last 90 years. The next section provides an explanation of blockchain technology and a breakdown of the two most popular consensus mechanisms—proof-of-work mining and proof-of-stake validation. Then, this note examines the arguments in favor of classifying cryptocurrencies that utilize proof-of-stake validation as securities. This note concludes with a recommendation to the SEC and courts of law that cryptocurrencies engaging in proof-of-stake validation should not be classified as securities because the *Howey* test does not support such a classification, and the environmental damage caused by proof-of-work mining will be accelerated if cryptocurrencies using proof-of-stake validation are regulated as securities.

I. AN OVERVIEW OF SECURITIES LAWS

A. *Securities Acts and Howey*

Following the market crash of 1929, Congress recognized the need for federal oversight in the securities industry and passed the Securities Act of 1933 and the Securities Exchange Act of 1934 in hopes of stabilizing the industry and restoring the public's trust.³ As remedial legislation, the purposes of the securities acts were intended to be broad.⁴ The Supreme Court has commented that the fundamental purpose of the acts is to diminish the potential for investor abuse in the previously unregulated securities market.⁵ Lower courts have added that the purposes of the securities acts include “protect[ing] investors by promoting full disclosure of information necessary to informed investment decisions”⁶ and advancing honesty and fairness in the securities profession.⁷ Since the enactment of the securities acts, courts have been called upon to interpret whether certain types of schemes or investments are covered by the legislation and properly classified as securities. According to section 2 (1) of the Securities Act of 1933, a security is

“any note, stock, treasury stock, security future, security-based swap, bond, debenture, evidence of indebtedness, certificate of interest or participation in any profit-sharing agreement, collateral-trust certificate, preorganization certificate or subscription, transferable share, investment contract, voting-trust certificate, certificate of deposit for a security, fractional undivided interest in oil, gas, or other mineral rights, any put, call, straddle, option, or privilege on any security, certificate of deposit, or group or index of securities (including any interest therein or based on the value thereof), or any put, call, straddle, option, or privilege entered into on a national securities exchange relating to foreign currency, or, in general, any interest or instrument commonly known as a “security”, or any certificate of interest or participation in, temporary or interim certificate for, receipt for, guarantee of, or warrant or right to subscribe to or purchase, any of the foregoing.”⁸

Gary Gensler commented that the “proof of stake” model in a blockchain, “supported a finding under the *Howey* analysis that the blockchain’s tokens should be regarded as being securities.” Georgetown Law School Professor Adam Levitin supported this comment in a thread of tweets by claiming there is a strong argument for classifying Ethereum as a security because the distributed rewards inherent to the system are akin to securities. *Id.*

3. See Justin Blount, *Federal Preemption in Securities Laws, the Investment Contract, and Macroprudential Financial Regulation*, 14 DEPAUL BUS. & COMM. L.J. 273, 280 (Spring 2016).

4. *Dooner v. NMI Limited*, 725 F. Supp. 153, 157-58 (S.D.N.Y. 1989).

5. *Reves v. Ernst & Young*, 494 U.S. 56, 60 (1990).

6. *Maritan v. Birmingham Properties*, 875 F.2d 1451, 1457 (10th Cir. 1989) (quoting *Matek v. Murat*, 862 F.2d 720, 728 (9th Cir. 1988)).

7. *Dooner*, 725 F. Supp. at 157-58.

8. 15 U.S.C. § 77b(a)(1) (1933); *Revak v. SEC Realty Corp.*, 18 F.3d 81, 86-87 (2d Cir. 1994).

In order to enforce the securities acts, Congress established the Securities and Exchange Commission (SEC) in 1934.⁹ Six years later, the Supreme Court would be called upon by the SEC to interpret the securities acts and clarify exactly what Congress regulated under the term “security.”¹⁰

SEC v. W.J. Howey Co. involved the application of section 2 (1) of the Securities Act of 1933¹¹ to an investment offer of units of citrus grove trees coupled with a contract for the care, harvesting, and sale of the crop to create a profit for the investor.¹² The SEC commenced the action to restrain the W.J. Howey Company and Howey-in-the-Hills Service, Inc. from offering and selling unregistered investments without a securities exemption.¹³ The Court had to determine whether the contracts entered into by outside investors constituted “investment contracts.”¹⁴ The Court found guidance in the definition of “investment contract” used by state courts—“a contract or scheme for ‘the placing of capital or laying out of money in a way intended to secure income or profit from its employment.’”¹⁵ Finding that it was reasonable to accept that Congress would impute state courts’ interpretations of “investment contract” to section 2 (1) of the Securities Act, the Court held “an investment contract for purposes of the Securities Act means a contract, transaction or scheme whereby a person [1] invests his money [2] in a common enterprise and [3] is led to expect profits [4] solely from the efforts of the promoter or a third party.”¹⁶ The Court sought to create a flexible principle that was capable of adapting to a variety of schemes devised by those seeking to use others’ money through the promise of profits.¹⁷ Since this landmark securities case in 1946, lower courts and the Supreme Court have clarified and altered parts of this four-prong “investment contract” test to embody the fluid nature of the securities industry.

B. Common Law Development

One element of the *Howey* test that has received considerable attention is the “common enterprise” element.¹⁸ Courts have interpreted the “common enterprise” element to cover contracts or schemes that include “either an enterprise common to the investor and the seller, promoter or some third party (vertical commonality) or an enterprise common to a group of investors (horizontal commonality).”¹⁹ Vertical commonality requires the fortunes or profits of the

9. 15 U.S.C. § 78d(a) (1934).

10. *SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946).

11. 15 U.S.C. § 77b(a)(1).

12. *Howey*, 328 U.S. at 294.

13. *Id.* at 294-95. The W.J. Howey Company owned many acres of citrus groves in Lake County, Florida and offered half of its grove to the public as an investment. Howey-in-the-Hills Service, Inc. managed the development of the citrus groves which included harvesting and marketing the crops. Prospective customers were offered land sales contracts (from the W.J. Howey Company) and a service contract (from Howey-in-the-Hills Service) after being informed that investing in a grove was only possible if combined with constant care for the crop. A majority of purchasers were not Floridians and lacked the skill or equipment necessary to develop and harvest the citrus trees. Investors were told they should expect a 10% annual return over the next decade. *Id.* at 295-96.

14. *Id.* at 297.

15. *Id.* at 298 (quoting *State v. Gopher Tire & Rubber Co.*, 146 Minn. 52, 56 (1920)). Many states applied this definition in situations where the public invested assets into a scheme or group of investors promising a profitable return derived solely from the actions of others. *Id.*

16. *Id.* at 298-99.

17. *Id.* at 299.

18. *See Hart v. Pulte Homes of Michigan Corp.*, 735 F.2d 1001 (6th Cir. 1984); *see also Salcer v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 682 F.2d 459 (3d Cir. 1982).

19. *Hocking v. Dubois*, 885 F.2d 1449, 1455 (9th Cir. 1989) (en banc).

investor and the promoter to be linked together;²⁰ thus, an enterprise falling under the scope of vertical commonality does not require each investor's fortunes to collectively rise and fall.²¹ In contrast, horizontal commonality requires a pool of investors that tie their fortunes to the success of the overall venture by requiring a sharing or commingling of funds.²² The Ninth Circuit has held evidence of horizontal commonality could be shown if the investors pool their assets; relinquish any right to the profits or losses resulting from their investments in exchange for a proportionate share of the returns of the enterprise; and make their financial success or failure tied to the performance of the enterprise.²³ By creating the vertical and horizontal commonality doctrines to better apply the common enterprise element of the *Howey* test, courts have fulfilled their duty to flexibly interpret securities laws to cover any type of investment scheme that uses others' money to create profit.²⁴

The fourth element of the *Howey* test has been at the center of many securities law decisions.²⁵ Almost 30 years after *Howey*, the Ninth Circuit heard an appeal from an order granting the SEC a preliminary injunction which enjoined the petitioners from selling "Adventures" and "Plans" deemed to be securities by the district court.²⁶ Petitioners argued that their "Adventures" and "Plans" failed the fourth element of the *Howey* test because the purchaser was required to exert some effort and spend some time to create a profit from his original investment rather than solely relying on the efforts of others.²⁷ Considering this issue, the Ninth Circuit stated that the remedial nature of the 1933 and 1934 acts required courts to construe the term "security" broadly in adherence to *Howey*.²⁸ In light of this statutory interpretation requirement, the Ninth Circuit held the word "solely" was not to be read strictly as to materially limit the definition of an investment contract, but rather a court must construe the term realistically, so as to include the contractual schemes or investment contracts that are substantively securities.²⁹ In altering the fourth element of the *Howey* test, the court reasoned that adhering to a strict interpretation of "solely" could result in an unduly restrictive view of what is considered an investment contract.³⁰ Instead of strictly applying the word "solely," the Ninth Circuit adopted what it claimed to be a more realistic test—"whether the efforts made by those other than the investor are the undeniably significant ones, those essential managerial efforts which affect the failure or success of the enterprise."³¹

20. *Dooner v. NMI Limited*, 725 F. Supp. 153, 158 (S.D.N.Y. 1989) (citing *Perez-Rubio v. Wyckoff*, 718 F. Supp. 217, 234 (S.D.N.Y. 1989)).

21. *Revak v. SEC Realty Corp.*, 18 F.3d 81, 87 (2d Cir. 1994) ("a pro-rata sharing of profits and losses is not required").

22. *Hart*, 735 F.2d at 1004 (citing *Union Planters National Bank v. Commercial Credit Business Loans, Inc.*, 651 F.2d 1174, 1183 (6th Cir. 1981), *cert. denied*, 454 U.S. 1124 (1981)).

23. *Hocking*, 885 F.2d at 1459.

24. *Dooner*, 725 F. Supp. at 158 (citing *Affiliated Ute Citizens of Utah v. United States*, 406 U.S. 128, 151 (1972)).

25. *See International Brotherhood of Teamsters v. Daniel*, 439 U.S. 551 (1979).

26. *SEC v. Glenn W. Turner Enters.*, 474 F.2d 476, 477 (9th Cir. 1973). The appellants collected profits from selling "Adventures and the Plan." The investor was convinced that they would be entitled to a portion of the sales revenue. To receive that share of the sales, the purchaser invested his money, his endeavors to seek out new prospects to join, and the expenses incurred to create the impression of wealth. Essentially, the buyer was acquiring the privilege to partake in the benefits of those endeavors. *Id.* at 482.

27. *Id.*

28. *Id.* at 480-81 (citing *Tcherepnin v. Knight*, 389 U.S. 332, 337 (1967); *SEC v. W.J. Howey Co.*, 328 U.S. 293, 299 (1946)).

29. *Id.* at 482.

30. *Id.* (citing *Georgia Market Centers, Inc. v. Fortson*, 171 S.E.2d 620 (Ga. 1969)).

31. *Id.*

Two years after the Ninth Circuit altered the fourth element of the *Howey* test, the Supreme Court heard an appeal from the Second Circuit concerning whether shares in a large cooperative housing project were securities.³² In holding that the shares were not securities, the Supreme Court reaffirmed its four-prong test from *Howey* for distinguishing securities from other commercial dealings.³³ In the footnotes, the Supreme Court noted the Ninth Circuit's alteration to the *Howey* test.³⁴ However, when given the opportunity to affirm the Ninth Circuit's holding, the Supreme Court declined to endorse the Ninth Circuit's omission of the word "solely" from the fourth prong of the *Howey* test.³⁵ Although the "solely from the efforts of others" requirement has been relaxed, there are still circumstances where the investor retains enough control in the enterprise to negate the final element of the *Howey* test.³⁶

In assessing whether certain investment contracts meet the "solely from the efforts of others" requirement, the Tenth Circuit has created its own six-factor control test.³⁷ In *Avenue Capital Management II, L.P. v. Schaden*, the Tenth Circuit had to determine, as a matter of law, whether certain interests constituted investment contracts.³⁸ The court held that the fourth prong of the *Howey* test should be considered using a sliding scale—the more control an investor has over the enterprise, the weaker the justification for classifying the investment as a security.³⁹ Thus, an investor who has the chance and capability to control the performance of their investment is not dependent upon the expertise of a manager; consequently, the investor does not rely solely on the efforts of others.⁴⁰ When assessing the degree of control held by an investor, the Tenth Circuit considers these six factors: "(1) the investors' 'access to information'; (2) the investors' 'contractual powers'; (3) the investors' 'contribution of time and effort to the success of the enterprise'; (4) 'the adequacy of financing'; (5) 'the nature of the business risks'; and (6) 'the level of speculation.'" ⁴¹ These factors are listed in order of significance.⁴²

An investor's access to information is the most important factor because it aligns with the principal purpose of the securities acts—to protect investors by promoting full access to the information required to make informed investment decisions.⁴³ "Contractual powers" is a close second because "an investor who has the contractual *power* to control the enterprise—even if he chooses not to use that power—has 'the sort of influence' that protects him 'against a dependence

32. *United Housing Found. v. Forman*, 421 U.S. 837 (1975).

33. *Id.* at 852 (citing *Howey*, 328 U.S. at 301).

34. *Id.* at n.16.

35. *Id.*

36. *See e.g.*, *Robinson v. Glynn*, 349 F.3d 166, 171 (4th Cir. 2003) (holding that "Robinson may have lacked 'decisive control over major decisions,' but he preserved 'the sort of influence which generally provide[d] [him] with access to important information and protection against a dependence on others'"); *Maritan v. Birmingham Props.*, 875 F.2d 1451, 1459 (10th Cir. 1989) (holding that "Maritan's access to critical information about the venture, his power under the agreement, and his demonstrated active involvement gave him sufficient control over the ultimate expectation of profits" making the *Howey* test inapplicable).

37. *Avenue Capital Management II, L.P. v. Schaden*, 843 F.3d 876, 882 (10th Cir. 2016).

38. *Id.* The Tenth Circuit held that the investors (avenue and Fortress) did not rely solely on the efforts of others as required under *Howey*. For its reasoning, the court cited to facts such as (1) the investors collectively owned approximately 80% of the LLC, (2) the investors had the ability to select eight of nine managers and remove them without cause, and (3) the investors were knowledgeable and experienced in their investment decisions. *Id.* at 883.

39. *Id.* at 882 (citing *SEC v. ETS Payphones, Inc.*, 408 F.3d 727, 732 (11th Cir. 2005) (per curiam)).

40. *Id.*

41. *Foxfield Villa Assocs., LLC v. Robben*, 967 F.3d 1082, 1091 (10th Cir. 2020) (quoting *Schaden*, 843 F.3d at 882).

42. *Id.*

43. *Id.* (citing *SEC v. Shields*, 744 F.3d 633, 645 (10th Cir. 2014)).

on others.’⁴⁴ This is an objective test focusing on what the purchasers were offered or promised and dependent upon the actual power maintained by the investor rather than the investor’s subjective intentions.⁴⁵ The third factor represents a subjective test and helps a court determine—despite the objective contractual powers maintained by the investor—whether the investor was so dependent upon the efforts of a particular manager that it would be impracticable to replace him and exercise the control contractually maintained by the investor.⁴⁶ The final three factors are the least relevant and are used to corroborate a final decision on the investment.⁴⁷ The *Schaden* six-factor control test is a useful tool in assessing whether or not an investor relied solely on the efforts of others.⁴⁸

II. BLOCKCHAIN TECHNOLOGY AND CRYPTOCURRENCIES

This section provides a comprehensive overview of blockchain technology and the ways in which the most popular cryptocurrency consensus mechanisms operate. First, it will briefly explain blockchain technology and its uses. Second, it will examine the proof-of-work model and its largest user, Bitcoin. This section concludes with an exploration into the proof-of-stake model and Ethereum, the cryptocurrency giving securities law experts the biggest headache.

A. Blockchain Technology

Currently, cryptocurrencies represent the most well-known use of blockchain technology because of their security and transparency.⁴⁹ The blockchain acts as a register, or a distributed ledger, of any transaction that has ever occurred on its system.⁵⁰ Before being appended to the sequence of all previous transactions, each transaction, also known as a block, undergoes authentication by a network of computers.⁵¹ To maintain a reliable and consistent record of every transaction, the information from the preceding block is used to create a new block, which is then added to the chain of blocks.⁵² This process ensures that each transaction is documented accurately.⁵³ In addition to promoting secure practices, blockchain technology promotes transparency by allowing immutable and permanent transactions to be accessible for everyone on the blockchain.⁵⁴ As these blocks function on a decentralized ledger, the details of the transactions are accessible to all parties, irrespective of their location or position in the network.⁵⁵ In order to maintain the security and transparency promised by blockchain technology, verifying transactions and creating blocks through a decentralized system requires the services of

44. *Id.* (emphasis in the original) (citing *Maritan*, 875 F.2d at 1457-58; *Matek v. Murat*, 862 F.2d 720, 730 (9th Cir. 1988); *Schaden*, 843 F.3d at 884).

45. *Schaden*, 843 F.3d at 884 (citing *Bailey v. J.W.K. Props., Inc.*, 904 F.2d 918, 921-22 (4th Cir. 1990)).

46. *Foxfield*, 967 F.3d at 1092 (citing *Schaden*, 843 F.3d at 884).

47. *Id.* at 1093.

48. See Rodrigo Seira et al., *Ethereum’s New ‘Staking’ Model Does Not Make ETH A Security*, PARADIGM (Oct. 5, 2022), <https://www.paradigm.xyz/2022/10/ethereums-new-staking-model-does-not-make-eth-a-security>.

49. Mark Popielarski, *Blockchain Research*, 47-JUN Colo. Law. 10, 11 (2018).

50. Reggie O’Shields, *Smart Contracts: Legal Agreements for the Blockchain*, 21 N.C. BANKING INST. 177, 180 (2017).

51. *Id.* at 180.

52. Tiffany L. Minks, *Ethereum and the SEC: Why Most Distributed Autonomous Organizations are Subject to the Registration Requirements of the Securities Act of 1933 and a Proposal for New Regulation*, 5 TEX. A&M L. REV. 405, 407 (2018).

53. *Id.*

54. O’Shields, *supra* note 50, at 180.

55. *How Does Blockchain Work?*, STANFORD ONLINE, <https://online.stanford.edu/how-does-blockchain-work> (last visited Feb. 16, 2023).

validating nodes—computers that connect to the network and enforce its rules.⁵⁶ Regarding the authentication of transactions and block creation, cryptocurrencies commonly employ two prevalent verification methods, namely proof-of-work (“PoW”) and proof-of-stake (“PoS”).⁵⁷

B. Proof-of-Work Protocol

A PoW system involves a network of computers or nodes that are decentralized and responsible for processing transactions.⁵⁸ The process involves generating random numbers with the goal of guessing the correct combination to unlock formulas, which are then used to add transactions to the blockchain.⁵⁹ For this mining process to work, miners must accumulate large amounts of hardware to create a crypto-mining rig.⁶⁰ A crypto mining rig is a computer with multiple, powerful graphics cards that work to complete computations.⁶¹ After gathering enough hardware to sustain the large amounts of energy needed for mining, the computers put in “work,” or a large amount of electricity, to solve cryptographic puzzles to have the chance of verifying and validating transactions.⁶² Miners aim to generate a hash that corresponds with the present “target” of the cryptocurrency.⁶³ The probability of guessing the correct target is very low, but miners across the world are computing trillions of guesses every second.⁶⁴ Thus, it only takes about ten minutes for a node to correctly guess the correct target and verify a transaction to add to the blockchain.⁶⁵ The network’s nodes engage in competition to gain the privilege of verifying transactions and receive a payment in the form of newly minted tokens.⁶⁶ As the cryptocurrency grows, the competitive nature of the mining increases resulting in the need for more computational power to compute more guesses.⁶⁷ The mining process is primarily based on guesswork and demands extensive computational resources and significant energy consumption, making it a matter of concern.⁶⁸

The best example of the hazardous energy consumption required by PoW protocols is the world’s largest cryptocurrency, Bitcoin.⁶⁹ Many Bitcoin mining centers are massive facilities that

56. See O’Shields, *supra* note 50, at 180.

57. *How Does Blockchain Work?*, *supra* note 55.

58. Schwinger, *supra* note 2.

59. *Id.*

60. Oscar Gonzalez, *Bitcoin Mining: How Much Electricity It Takes and Why People Are Worried*, CNET (July 18, 2022, 2:08 PM), <https://www.cnet.com/personal-finance/crypto/bitcoin-mining-how-much-electricity-it-takes-and-why-people-are-worried/>.

61. *Id.* Instead of using a standard single-card setup, miners employ high-performance graphics cards to manage calculations, which necessitates the use of power supplies with high wattage. *Id.*

62. Simon Chandler, *Proof of Stake vs. Proof of Work: Key Differences Between These Methods of Verifying Cryptocurrency Transactions*, BUSINESS INSIDER (Nov. 21, 2022, 4:12 PM), <https://www.businessinsider.com/personal-finance/proof-of-stake-vs-proof-of-work#:~:text=Proof%20of%20stake%20achieves%20consensus,generate%20a%20new%20valid%20block.>

63. Alyssa Hertig, *What is Proof-of-Work?*, COINDESK (Jan. 12, 2023, 5:15 PM), <https://www.coindesk.com/learn/what-is-proof-of-work/>.

64. *Id.*

65. Andy Rosen, *How Bitcoin Mining Works: Explanation and Examples*, NERDWALLET (Dec. 21, 2022), <https://www.nerdwallet.com/article/investing/bitcoin-mining>.

66. Vicky Ge Huang & Caitlin Ostroff, *What is the Ethereum ‘Merge’?*, THE WALL STREET JOURNAL (Sep. 15, 2022, 4:39 AM), <https://www.wsj.com/livecoverage/stock-market-news-today-09-15-2022/card/when-is-the-ethereum-merge--yfH2C1iAC5yflJdFZx8?page=1>.

67. Arya Taghdiri, *The Cost of Innovation: Why Bitcoin Mining Requires International Regulation*, 50 TEX. ENVTL. L.J. 181, 183 (2020).

68. *How Does Blockchain Work?*, *supra* note 55.

69. CFI Team, *10 Largest Cryptocurrencies by Market Capitalization*, CORPORATE FINANCE INSTITUTE (Feb. 1, 2023), <https://corporatefinanceinstitute.com/resources/cryptocurrency/top-10-cryptocurrencies/>.

consume alarming amounts of energy.⁷⁰ As of August 2022, the electricity consumption of Bitcoin mining is believed to make up around 60% to 77% of the overall energy usage of crypto-assets worldwide.⁷¹ Due to its massive growth, the entire Bitcoin network now consumes more energy than most of the world's countries ranking just behind the Philippines and ahead of Belgium, Finland, and Chile.⁷² However, Bitcoin's most concerning problem is the carbon footprint emitted from its use of fossil fuels.⁷³ In August of 2021, it was estimated that the Bitcoin network increased its average carbon intensity of electricity consumption to 557.76 gCO₂/kWh.⁷⁴ For comparison, a single Bitcoin transaction has a carbon footprint equivalent to 1,023,869 Visa transactions.⁷⁵ Researchers at the University of Hawaii recently conducted a study on the potential rise in energy consumption of Bitcoin mining and its environmental impact.⁷⁶ The study predicted that the combined emissions stemming exclusively from Bitcoin mining could result in an increase in global warming by over 2 degrees Celsius by the year 2040.⁷⁷ If the crypto mining industry refuses to support the development of renewable energy, it will be an industry that contributes to the climate crisis and may drastically alter life on Earth as we know it.⁷⁸

C. Proof-of-Stake Protocol

With the PoS consensus mechanism, participants stake or lock in a specified amount of the cryptocurrency's tokens, purchased and owned by the participant, into a smart contract on the blockchain.⁷⁹ In exchange for the staked cryptocurrency, validators receive the opportunity to validate new transactions and earn new crypto tokens as a reward for their efforts.⁸⁰ Every time a crypto transaction requires approval, the network selects one validator from the staking participants to validate a block of transactions.⁸¹ The blockchain algorithm chooses validators based on how much crypto they have staked; thus, increasing your stake improves your likelihood

70. Gonzalez, *supra* note 60. A mining center in Kazakhstan is equipped to run 50,000 mining rigs; Paddy Baker, *Bitcoin Mining Facility with Room for 50,000 Rigs Set to Launch in Kazakhstan*, COINDESK (Aug. 21, 2020, 12:24 PM), <https://www.coindesk.com/markets/2020/08/21/bitcoin-mining-facility-with-room-for-50000-rigs-set-to-launch-in-kazakhstan/>.

71. THE WHITE HOUSE, FACT SHEET: CLIMATE AND ENERGY IMPLICATIONS OF CRYPTO-ASSETS IN THE UNITED STATES (2022), <https://www.whitehouse.gov/ostp/news-updates/2022/09/08/fact-sheet-climate-and-energy-implications-of-crypto-assets-in-the-united-states/#:~:text=Crypto%2Dasset%20activity%20in%20the,railroads%20in%20the%20United%20States.>

72. *Bitcoin Energy Consumption Index*, DIGICONOMIST (last visited Feb. 23, 2023), <https://digiconomist.net/bitcoin-energy-consumption.>

73. *Id.*

74. Alex De Vries et al., *Commentary: Revisiting Bitcoin's Carbon Footprint*, JOULE, Vol. 6 No. 13 (Mar. 16, 2022), https://www.researchgate.net/publication/358861058_Revisiting_Bitcoin's_carbon_footprint. The unit "gCO₂/kWh" is a measurement of the grams of carbon dioxide (gCO₂) per kilowatt hour (kWh) of energy. *Where Do Our Emissions Numbers Come From?*, LOW CARBON POWER (Dec. 6, 2021), <https://lowcarbonpower.org/blog/emissions.>

75. *Bitcoin Energy Consumption Index*, *supra* note 72. For further comparison, the amount of energy consumed by a single Bitcoin transaction (828.25 kWh) is equivalent to the energy consumed by 557,253 Visa transactions. *Id.*

76. Taghdiri, *supra* note 67, at 185.

77. *Id.*

78. Jeremy Hinsdale, *Cryptocurrency's Dirty Secret: Energy Consumption*, COLUMBIA CLIMATE SCHOOL (May 4, 2022), <https://news.climate.columbia.edu/2022/05/04/cryptocurrency-energy/>.

79. E. Napoletano, *Proof of Stake Explained*, FORBES ADVISOR (Feb. 16, 2023, 4:29 PM), <https://www.forbes.com/advisor/investing/cryptocurrency/proof-of-stake/>.

80. *Id.*

81. Jessica S. Hart, *Policing Proof-of-Stake Networks: Regulatory Challenges Presented by Staking-As-A-Service Providers and the Need for a Tailored Regime*, 23 COLUM. SCI. & TECH. L. REV. 192, 195 (2021).

of being selected to perform the task.⁸² Validators are responsible for attesting or verifying that new blocks propagated over the network are honest and valid, and, occasionally, validators must create and propose new blocks of transactions themselves.⁸³ Once a validator re-executes the transactions in the block, the validator checks to make sure that the block is valid before sending an attestation in favor of that block to other validators across the network.⁸⁴ After a committee of validators votes to validate the block, it is added to the blockchain,⁸⁵ and the chosen validators are rewarded with newly minted tokens for their accurate and honest validations.⁸⁶ The validator's staked cryptocurrency is an incentive for the participant to validate blocks fairly and accurately.⁸⁷ If a block is not validated or is invalidated incorrectly, the network may initiate a procedure called slashing, which results in the removal of the validator's staked cryptocurrency.⁸⁸ One can think of PoS protocols as a form of interest income that mandates the validator to carry out an honest validation of blockchain transactions to earn the interest.⁸⁹

In September 2022, the world's second-largest cryptocurrency, Ethereum, shifted from the power-intensive PoW system to the PoS consensus mechanism in a transition known as "The Merge."⁹⁰ After contemplating the unsustainability of its PoW consensus mechanism, Ethereum decided to move its blockchain to PoS protocols which is expected to lower its energy consumption by 99.9%.⁹¹ In addition to promoting energy-efficient practices, the PoS consensus mechanism makes Ethereum's network safer by improving its resilience to fraud and theft, because in order to launch a successful hack on the Ethereum blockchain and alter the consensus, an attacker would have to possess a majority of the tokens within the network.⁹² This type of attack, referred to as the 51% attack,⁹³ is theoretically impossible for two reasons. First, the expense and process of collecting the number of tokens necessary for a hacker to hold a majority of the tokens in the network is essentially prohibitive.⁹⁴ Second, since launching a 51% attack would require the hacker to hold a majority of the tokens in the network, any harm to the network's economy would be personally detrimental to the hacker considering the massive monetary investment necessary

82. Napoletano, *supra* note 79.

83. Luca Pennella et al., *Proof-of-Stake (POS), ETHEREUM* (Mar. 1, 2023), <https://ethereum.org/en/developers/docs/consensus-mechanisms/pos/>.

84. *Id.*

85. *Id.*

86. Hart, *supra* note 81, at 195-96. The reward is determined by the number of active validators on the network and adjusted to incentivize a certain set of validators. "Validators can earn a multiple of the base reward for attesting (or accurately voting) on (i) the correct source; (ii) the correct target; (iii) the correct head (collectively the 'accuracy rewards') of a block, and (iv) for having their attestation (their vote) included in a block (the inclusion reward)." Seira et al., *supra* note 48.

87. Hart, *supra* note 81, at 196.

88. *Id.* The slashing process involves sending the rogue validator's stake to "an unusable wallet address where nobody has access, rendering them useless forever." Napoletano, *supra* note 79.

89. Napoletano, *supra* note 79.

90. Stephen Graves & Robert Stevens, *What is 'The Merge'? Ethereum's Move to Proof of Stake*, DECRYPT (Sep. 15, 2022), <https://decrypt.co/resources/what-merge-ethereum-move-proof-stake>.

91. Schwinger, *supra* note 2. This reduction of energy consumption would be equivalent to Finland suddenly shutting down its entire power grid. *Id.*

92. Hart, *supra* note 81, at 202.

93. Penella et al., *supra* note 83.

94. Hart, *supra* note 81, at 202; On February 27, 2023, a single Ethereum token was valued at \$1,640.91. At that time, there were 122,373,866 Ethereum tokens (ETH) in circulation. *Ethereum*, COINMARKETCAP, <https://coinmarketcap.com/currencies/ethereum/>, (last visited Feb. 27, 2023). Thus, the cost of obtaining a majority of ETH would be \$100,402,251,869.94. This calculation was made by halving the circulating supply of ETH tokens, adding one token to that amount, and multiplying the sum by the cost of a single ETH token.

to hold a majority of the Ethereum tokens.⁹⁵ Even if a hacker were able to pull off this nearly impossible task, the Ethereum community has the option of social recovery by creating a new blockchain that would invalidate the compromised network, rendering the hacker's efforts futile.⁹⁶ Not only does the PoS consensus mechanism improve energy efficiency and security, but it also encourages inclusivity by making the network open and attractive to new validators who may be unable to acquire the equipment needed for PoW mining.⁹⁷ Whereas three large mining entities control the Bitcoin network,⁹⁸ PoS networks such as Ethereum remain relatively decentralized and encourage safe and sustainable growth.

III. THE DEBATE OVER REGULATING ETHEREUM

A. *BlockFi's BIAs and the SEC's Response*

Although cryptocurrencies act as a decentralized form of exchange, the SEC requires cryptocurrency exchanges to comply with securities laws if they offer security-like investments.⁹⁹ In February 2022, the SEC showcased its determination to force cryptocurrency exchanges to adhere to securities laws when it agreed to a \$100 million settlement with BlockFi.¹⁰⁰ Prior to its filing for Chapter 11 bankruptcy, BlockFi operated as one of the preeminent crypto exchanges by allowing users to trade and store cryptocurrency in the BlockFi Wallet.¹⁰¹ BlockFi proffered BlockFi Interest Accounts ("BIAs") to investors that allowed them to lend their crypto assets to BlockFi.¹⁰² In return, the exchange pledged to provide a variable monthly interest payment.¹⁰³ BlockFi failed to register its offers and sales of BIAs as securities and failed to qualify for an exemption from SEC registration; consequently, the SEC agreed to the aforementioned settlement agreement with BlockFi and announced that BIAs are securities under applicable securities law.¹⁰⁴ On the same day it announced the settlement agreement with BlockFi, the SEC released an Investor Bulletin highlighting the risks of investing in crypto asset interest-bearing accounts.¹⁰⁵

Shortly after the SEC's major victory in its case with BlockFi, SEC Chairman Gary Gensler stated that crypto exchanges offering staking services to customers looked very similar to the

95. Hart, *supra* note 81, at 202. Essentially, it would cost a hacker in excess of \$100 billion to successfully attack the Ethereum network. See calculation *supra* note 94.

96. Penella et al., *supra* note 83.

97. Claire Belmont, *Which is More Inclusive: Proof-of-Work or Proof-of-Stake?*, MEDIUM (Jan. 29, 2019), <https://blog.celo.org/which-is-more-inclusive-proof-of-work-or-proof-of-stake-aa4fb22812ad>.

98. See Hart, *supra* note 81, at 202.

99. See U.S. SECURITIES AND EXCHANGE COMMISSION, BLOCKFI AGREES TO PAY \$100 MILLION IN PENALTIES AND PURSUE REGISTRATION OF ITS CRYPTO LENDING PRODUCT (2022).

100. See *id.*

101. Michael Adams, *BlockFi Review 2023*, FORBES ADVISOR (Nov. 28, 2022, 6:00 PM), <https://www.forbes.com/advisor/investing/cryptocurrency/blockfi-review/>. Since filing for Chapter 11 bankruptcy, BlockFi has stopped all customer withdrawals from its platform. "Forbes Advisor . . . strongly recommend[s] that users refrain from depositing any funds into existing BlockFi wallets or accounts." *Id.* BlockFi did not cite its settlement agreement with the SEC in its bankruptcy announcement to its customers. Instead, BlockFi told customers that the FTX meltdown played a major role in the decision. BlockFi had significant financial exposure to FTX and is working to recover the obligations that FTX owes to it. See *Chapter 11 FAQ*, BLOCKFI (Nov. 28, 2022), <https://blockfi.com/November28-ClientFAQ>.

102. U.S. SECURITIES AND EXCHANGE COMMISSION, *supra* note 99.

103. *Id.*

104. *Id.*

105. See *Investor Bulletin: Crypto Asset Interest-bearing Accounts*, U.S. SECURITIES AND EXCHANGE COMMISSION (Feb. 14, 2022), <https://www.investor.gov/introduction-investing/general-resources/news-alerts/alerts-bulletins/investor-bulletins-97>.

lending offered by BlockFi.¹⁰⁶ Following Ethereum's transition from PoW to PoS protocols, Gensler commented to reporters that "using a 'proof of stake' model in a blockchain supported a finding under the *Howey* analysis that the blockchain's tokens should be regarded as being securities."¹⁰⁷ Although Gensler cautioned that he was not referring to any specific cryptocurrency,¹⁰⁸ the timing of his comments coincided so well with Ethereum's change that one could infer that the SEC is looking to classify Ethereum as a security. There is nearly complete agreement amongst securities law experts that a cryptocurrency utilizing PoW protocols is not a security based on the *Howey* test, because PoW nodes or miners do not invest in a common enterprise.¹⁰⁹ Instead, miners compete directly against each other for the opportunity to validate new blocks and only receive mined coins for performing their own real work.¹¹⁰ In contrast, the debate over Ethereum's new PoS consensus mechanism and its classification as a security rages forward with millions of dollars¹¹¹ and severe environmental implications hanging in the balance.¹¹²

When an individual participates as a validator node in the Ethereum network, there is without a doubt an investment of money. In order to begin validating, a node must stake thirty-two ETH tokens.¹¹³ Thus, the first element of the *Howey* test is met.¹¹⁴ In addition, the whole incentive for staking is that one will receive a profit if validations are done correctly. So, the third element of the *Howey* test, an expectation of profit,¹¹⁵ is met. The debates over Ethereum's classification as a security center around the other two elements of the *Howey* test, the common enterprise and whether or not the profits are expected solely from the efforts of others. In addition, the arguments consider the purposes of securities laws, the interpretation of securities laws, and the environmental effects of increased regulation.

106. Paul Kiernan & Vicky Ge Huang, *Ether's New 'Staking' Model Could Draw SEC Attention*, WALL STREET JOURNAL (Sep. 15, 2022, 6:07 PM), <https://www.wsj.com/amp/articles/ethers-new-staking-model-could-draw-sec-attention-11663266224>.

107. Schwinger, *supra* note 2.

108. Kiernan & Huang, *supra* note 106.

109. Andrew Glidden, *Does Proof-of-Stake Violate Securities Law? Part II*, MEDIUM (Nov. 10, 2017), <https://medium.com/blockchain-at-berkeley/does-proof-of-stake-violate-securities-law-part-ii-5946315f182b>. (stating "no one argues that PoW protocols implicate securities law"). The second prong of the *Howey* test requiring a common enterprise demands "either an enterprise common to the investor and the seller, promoter or some third party (vertical commonality) or an enterprise common to a group of investors (horizontal commonality). *Hocking v. Dubois*, 885 F.2d 1449, 1455 (9th Cir. 1989) (en banc). "The term 'common enterprise' indicates a venture in which participants act in concert, with the fortunes of all participants tied together." In a PoW context, work is performed individually and in competition with others. Miners only receive rewards for their own work. Glidden, *supra* note 109.

110. Zeming M. Gao, *Most 'Cryptos' are Securities According to the Howey Test*, COINGEEK (July 27, 2022), <https://coingeek.com/most-cryptos-are-securities-according-to-the-howey-test/>.

111. Minks, *supra* note 52, at 426. "Prior to issuing securities, a company is required to conduct a financial audit and disclose information through registration." In addition to these costs, companies are required to file annual and quarterly reports. The cost of this entire process can cost more than \$6 million. *Id.*

112. See Taghdiri, *supra* note 67, at 187.

113. Penella et al., *supra* note 83. On April 3, 2023, thirty-two ETH tokens were valued at \$ 57,762.62 at a price of \$ 1,805.07 per token. *Ethereum*, COINBASE, <https://www.coinbase.com/price/ethereum>, (last visited Apr. 3, 2023).

114. Glidden, *supra* note 109 (stating "[t]he first requirement for a security is the investment of money, which courts read broadly as 'anything of value'"); see *SEC v. W.J. Howey Co.*, 328 U.S. 293, 298-99 (1946).

115. *Howey*, 328 U.S. at 299.

B. *The Argument for Regulating Ethereum as a Security*

As discussed previously, courts have found a common enterprise in schemes that implicate either horizontal or vertical commonality.¹¹⁶ Since Ethereum operates on a decentralized network,¹¹⁷ it cannot be argued that there is vertical commonality—requiring a relationship between a promoter and a body of investors.¹¹⁸ Rather, the argument for classifying Ethereum as a security focuses on horizontal commonality. To hold that there is a common enterprise entailing horizontal commonality, a court must find that the fortunes of each investor in a group of investors are tied to the success of the overall venture.¹¹⁹ Those in favor of classifying Ethereum as a security claim that staking implies horizontal commonality because each validator deposits their own ETH tokens (an investment of money) into the network entailing a pooling of assets.¹²⁰ This staking validation system requires multiple parties to pool their assets into the blockchain and act cooperatively to validate blocks of transactions and secure the network.¹²¹ Essentially, the validators in a PoS system are indistinguishable from shareholders of a corporation.¹²² Validators effectively buy shares of the Ethereum network, act as holders of the coin, and exercise their rights to validate transactions and secure the network when called upon.¹²³ Ethereum’s PoS consensus mechanism entails horizontal commonality, because its participants expect to increase the cryptocurrency’s value by acting in concert to validate transactions, secure the network, and enact protocol changes.¹²⁴

Advocates for categorizing Ethereum as a security contend that once the “investment of money” and “common enterprise” elements of the *Howey* test are established, it becomes relatively simple to establish the other two elements due to the inherent nexus.¹²⁵ Since *Howey*, courts have relaxed the requirement that an investor rely only on others’ efforts by omitting the “solely” requirement from restatements of the *Howey* test.¹²⁶ The question has become whether the investor, as a result of the investment agreement or the circumstances surrounding it, “is left unable to exercise meaningful control over his investment.”¹²⁷ There are two main arguments for the case that the Ethereum blockchain relies solely on the efforts of others. First, proponents of classifying Ethereum as a security assert that the verification responsibilities of an individual node are inconsequential when compared to the comprehensive efforts involved in the PoS consensus mechanism.¹²⁸ They contend that the validation duties of a validator are relatively

116. See *supra* notes 18-24 and accompanying text.

117. Seira et al., *supra* note 48.

118. Revak v. SEC Realty Corp., 18 F.3d 81, 87 (2d Cir. 1994). “Since vertical commonality requires that the fortunes of investors are tied to the fortunes of the promoter, the absence of a promoter ends the inquiry.” Seira et al., *supra* note 48.

119. Hart v. Pulte Homes of Michigan Corp., 735 F.2d 1001, 1004 (6th Cir. 1984).

120. Seira et al., *supra* note 48.

121. See Schwinger, *supra* note 2; see also Glidden, *supra* note 109.

122. Gao, *supra* note 110.

123. See *id.*

124. See Glidden, *supra* note 109.

125. Gao, *supra* note 110.

126. Foxfield v. Robben, 967 F.3d 1082, 1091 (10th Cir. 2020).

127. Robinson v. Glynn, 349, F.3d 166, 170 (4th Cir. 2003).

128. See Donald McIntyre, *Ethereum Classic Is a Commodity, Ethereum Is a Security*, ETHEREUM CLASSIC BLOG (Feb. 28, 2023), <https://ethereumclassic.org/blog/2023-02-28-ethereum-classic-is-a-commodity-ethereum-is-a-security>; see also Seira et al., *supra* note 48.

restricted compared to the collective endeavors of the entire enterprise; thus, the final element of the Howey test is met.¹²⁹

Second, those in favor of classifying Ethereum as a security argue that the most important changes to Ethereum's network—those that have driven the most value to the cryptocurrency—are the direct result of the efforts of Ethereum's core developers or promoters.¹³⁰ They maintain that a substantial part of Ethereum's success can be attributed to Ethereum's founder, Vitalik Buterin, and his efforts to develop the Ethereum ecosystem which have given Ethereum several competitive advantages compared to similar projects.¹³¹ The PoS system is a collaborative relationship where large staking pools and the Ethereum Foundation oversee the operations of validators who are not independent free actors because they act as unequal, subordinate contractors.¹³² To claim that the Ethereum Foundation has an insignificant role in the governance of Ethereum simply because they do not retain ultimate decision-making authority is akin to suggesting that a company's board of directors has no impact on the company's future because shareholders also participate in governance.¹³³ Considering the efforts of actors such as Vitalik Buterin, the Ethereum Foundation, and the Enterprise Ethereum Alliance and the roles played by other validators in the system, there is a strong argument that validators rely solely upon the efforts of others as held by the circuit courts.

The creation of federal securities laws was spurred by the financial despair of the Great Depression—the consequence of the public making uninformed investment decisions.¹³⁴ In response to the harm experienced by the uninformed American investor, Congress and President Franklin Roosevelt enacted the Securities Act of 1933 and the Securities Exchange Act of 1934 to prevent speculative frenzies.¹³⁵ Securities laws were implemented to safeguard investors because securities are inherently risky due to two factors: first, the issuers/sellers have a strong incentive to acquire the investors' capital, and second, the investors are enticed by the possibility of earning a substantial return without engaging in the enterprise that is anticipated to generate the

129. Schwinger, *supra* note 2 (citing Georgetown Law Professor Adam Levitin). Levitin concedes that “if the term ‘solely’ were taken very literally, then staking will not meet the test because the staker is also a participant.” *Id.*

130. Thijs Maas, *The SEC is Wrong! Ethereum Is a Security*, MEDIUM (Sep. 19, 2018), <https://medium.com/hackernoon/ethereum-security-sec-a145d638f5aa>. These important changes include the implementation of the PoS consensus model, the rejection of on-chain governance structures, and the decentralized autonomous organization (DAO) hard fork. The DAO hard fork decision even led to Ethereum splitting into Ethereum Classic (which still utilizes the PoW consensus model) and Ethereum. These changes have had a direct and measurable effect on Ethereum's value. *Id.*

131. *Id.*

132. McIntyre, *supra* note 128. As a non-profit entity, the Ethereum Foundation facilitates the advancement and backing of research, development, and education initiatives aimed at creating decentralized applications. *Ethereum Foundation*, BLOOMBERG <https://www.bloomberg.com/profile/company/1482193D:SW?leadSource=verify%20wall>. *But see About the Ethereum Foundation*, ETHEREUM (Mar. 10, 2023), <https://ethereum.org/en/foundation/> (The Ethereum Foundation is not a conventional non-profit or a corporation, and it does not have the responsibility of governing or directing Ethereum. Furthermore, they are not the solitary entity that provides financing for vital Ethereum-related technology advancements.).

133. Maas, *supra* note 130.

134. *Securities Law History*, LEGAL INFORMATION INSTITUTE, https://www.law.cornell.edu/wex/securities_law_history. “With thousands of investors buying up stock in hopes of huge profits, the market was in a state of speculative frenzy that ended in October 1929, when the market crashed as panicky investors sold off their investments en masse.” *Id.*

135. *Id.*

return.¹³⁶ Courts agree that the 1933 and 1934 acts are remedial legislation;¹³⁷ consequently, courts have expanded the acts to encompass any instrument that might be offered and sold as an investment.¹³⁸ The definition of an investment contract established a dynamic rather than a fixed principle that could adjust to different schemes developed by individuals attempting to leverage other people's funds while promising returns.¹³⁹ Thus, those in favor of classifying Ethereum as a security argue that the broad, remedial nature of securities legislation covers cryptocurrencies that utilize the PoS consensus mechanism.¹⁴⁰

C. *Why Ethereum Should Not Be Regulated as a Security*

1. *There is No Common Enterprise*

Ethereum should not be regulated as a security because staking ETH tokens does not meet the requirements of the *Howey* test. In order to establish a common enterprise that meets the second prong of the *Howey* test, a court must find horizontal or vertical commonality, and participating as a validator entails neither. Since the Ethereum network is sufficiently decentralized, no argument can be made for vertical commonality.¹⁴¹ Although in its early development, one could argue Ethereum's founders held considerable control over the enterprise, the cryptocurrency's development sufficiently decentralized the network by the time the switch to the PoS consensus mechanism was completed.¹⁴² Courts have held that horizontal commonality requires each investor to pool their assets.¹⁴³ Although becoming a validator requires one to deposit thirty-two ETH tokens into a smart contract address, that deposit is not a pooling since the staked Ethereum is distinguishable and is never controlled by a promoter or body of promoters who can use the tokens to create profits and redistribute them.¹⁴⁴ Since the staked ETH acts as an incentive mechanism for honest behavior rather than a pooling, validators can withdraw their staked ETH whenever they choose since the ETH is distinguishable from other stakes and secured in its own smart contract address.¹⁴⁵ Even if the validator behaves dishonestly, the other validators never have the opportunity to use the dishonest validator's staked tokens because they are essentially deleted from existence.¹⁴⁶ Since the deposited ETH is inaccessible to any node outside of the depositor and is not used to generate profits, it is impossible to say that there is a pooling of funds.

In addition to the lack of pooling assets, Ethereum's PoS consensus mechanism does not entail a common enterprise because validators compete with each other to be selected for block propagation and verification. Although the combined efforts of validators secure the Ethereum network, validators are competing to be called to validate blocks and receive profits in proportion

136. Gao, *supra* note 110; see *Maritan v. Birmingham Props.*, 875 F.2d 1451, 1457 (10th Cir. 1989) ("The principal purposes of the securities acts is to protect investors by promoting full disclosure of information necessary to informed investment decisions.").

137. *Marine Bank v. Weaver*, 455 U.S. 551, 555-56 (1982).

138. *Reves v. Ernst & Young*, 494 U.S. 56, 60-61 (1990).

139. *Dooner v. NMI Limited*, 725 F. Supp. 153, 158 (S.D.N.Y. 1989).

140. See Gao, *supra* note 110.

141. See *supra* notes 117-118 and accompanying text.

142. See Marie Huillet, *Senior US Regulator Says Ethereum 'In Its Present State' is Not a Security*, Coin Telegraph (Jun. 14, 2018), <https://cointelegraph.com/news/senior-us-regulator-says-ethereum-in-its-present-state-is-not-a-security>.

143. *Revak v. SEC Realty Corp.*, 18 F.3d 81, 87 (2d Cir. 1994).

144. *Seira et al.*, *supra* note 48.

145. *Id.*

146. *Id.*

to their validated blocks.¹⁴⁷ The ETH earned by propagating and validating blocks varies for each validator and is determined primarily by the validator's individual efforts.¹⁴⁸ Each individual node's share of the network, or the amount of tokens staked, affects its potential rewards.¹⁴⁹ Since validators with larger shares of the network perform more block validations, they are likely to receive rewards more frequently.¹⁵⁰ The PoW mining protocols operate in essentially the same manner,¹⁵¹ yet no one argues that cryptocurrencies utilizing the PoW consensus mechanism should be classified as securities. Moreover, it is ill-fitting to argue that staking Ethereum creates a common enterprise given that the consensus mechanism does not generate economic activity by itself.¹⁵² The economic activity occurs when individuals operate autonomously on the platform, rather than at the platform level itself where the validators work to secure the network.¹⁵³ Without a pooling of assets or concerted action to entail horizontal commonality, there is no common enterprise in the Ethereum network to implicate the second prong of the *Howey* test.

2. Validators Do Not Rely Solely on the Efforts of Others

Although the word “solely” has been nearly eliminated from the fourth prong of the *Howey* test,¹⁵⁴ staking Ethereum is not an investment activity that relies solely upon the efforts of others. Rather than interpreting the word “solely” literally, courts look to whether the investor “maintains legal control over his investment (or the ability to regain control),”¹⁵⁵ whether the investor “has meaningfully participated in the management of the partnership,”¹⁵⁶ or whether the investor “is left unable to exercise meaningful control over his investment.”¹⁵⁷ The Tenth Circuit's *Schaden* factors are the most useful tool in assessing the degree of control maintained by the investor,¹⁵⁸ and the three most significant factors all favor a finding that staking Ethereum does not rely solely on the efforts of others.

The first and most important factor considered when assessing the degree of control maintained by an investor is the investor's access to information.¹⁵⁹ This aligns with the principal purpose of the securities acts—to protect investors by guaranteeing access to the information required to make versed investment choices.¹⁶⁰ The decentralized nature of a blockchain network

147. Glidden, *supra* note 109.

148. Seira et al., *supra* note 48.

149. Hord Team, *How to Maximize Your Liquid ETH Staking Rewards*, HORD (Mar. 5, 2023), <https://www.hord.fi/blog/how-to-maximize-your-liquid-eth-staking-rewards>.

150. *Id.*

151. By accumulating more computers to generate more numbers, a PoW miner has a better chance at guessing the correct number. Thus, accumulating more computational power increases the validator's odds of receiving newly minted coins. PoS validators who stake more ETH have a better chance of being selected for validation. Competition is inherent to both protocols.

152. Glidden, *supra* note 109.

153. *Id.*

154. *See* *Hocking v Dubois*, 885 F.2d 1449, 1455 (9th Cir. 1989) (en banc). Although almost every circuit court has adopted this interpretation, the Supreme Court has recognized it but not endorsed it. *See* *United Housing Found. v. Forman*, 421 U.S. 837, 852 n.16 (1975). In fact, there is concern that the Court implicitly overruled reading out the word “solely” from the *Howey* test. *See* *College Sav. Bank v. Florida Prepaid Postsecondary Educ. Expense Board*, 527 U.S. 666, 690 (1999) (holding “[c]ongressional flexibility is desirable . . . only within the bounds of federal power established by the Constitution”).

155. *Hocking*, 885 F.2d at 1460.

156. *Steinhardt Group, Inc. v. Citicorp*, 126 F.3d 144, 152 (3d Cir. 1997).

157. *Robinson v. Glynn*, 349 F.3d 166, 170 (4th Cir. 2003).

158. *See supra* notes 37-48 and accompanying text.

159. *Foxfield Villa Assocs., LLC v. Robben*, 967 F.3d 1082, 1091 (10th Cir. 2020).

160. *Id.* (citing *SEC v. Shields*, 744 F.3d 633, 645 (10th Cir. 2014)).

promotes transparency and prioritizes accessibility to information. An individual who stakes Ethereum has access to all of the information on the Ethereum blockchain.¹⁶¹ Staking rewards are distributed to validators on an open-source protocol, and every transaction is recorded and accessible on a public blockchain.¹⁶² A blockchain network such as Ethereum is the peak of transparency and accessibility because it creates a network of user-authenticated information that is always accessible to anyone participating in the network. In addition, validators have the chance to vote on any proposed changes to the Ethereum network's governance procedures.¹⁶³ Thus, validators are always aware of pending changes to Ethereum and can withdraw from the network prior to enactment and without consequence if they are unsatisfied. Unlimited access to all of the information on the blockchain pushes this factor in favor of not classifying Ethereum as a security.

The second *Schaden* factor concentrates on the investor's contractual powers and asks whether the investor has the contractual power to control the enterprise or investment.¹⁶⁴ A validator can withdraw its stake at any time;¹⁶⁵ therefore, as long as the validator behaves honestly in the network, a validator has contractual power over its original investment and any future stakes at all times. Moreover, the validator controls the profitability of that investment by receiving rewards when blocks are proposed and validated.¹⁶⁶ A validator can only profit from the investment by honestly participating in the network. Whether or not the validator receives a reward or profits from the investment is completely determined by the validator's accurate validations.¹⁶⁷ When an investor's own efforts are the only way to increase the profitability of the investment, "it is not a security for purposes of the Securities Act."¹⁶⁸ If the investment is the staked ETH tokens and the profitability of the enterprise is completely determined by the validator's own actions, then the validator has contractual power to control the enterprise. Since the validator controls every aspect of its investment, the second *Schaden* factor favors a finding that Ethereum is not a security.

The third *Schaden* factor examines the actual time and effort that the validator contributes to the enterprise.¹⁶⁹ Ethereum's website emphasizes the time and effort it takes to be a successful validator.¹⁷⁰ Ethereum's website states, "running a validator is a commitment," and "[t]he validator is expected to maintain sufficient hardware and connectivity to participate in block validation and proposal."¹⁷¹ Thus, staking Ethereum is quite different from the BIA accounts offered by BlockFi and punished by the SEC, because staking does not entail simply giving the network money and hoping the investment is multiplied. Validators are expected and required to participate in the network and will not receive rewards without sufficient participation. If the success of the enterprise is understood as the rewards earned by validators, then these rewards are primarily determined by the validator's own efforts and not dependent on a third party's managerial efforts.¹⁷² The rewards earned by a validator are determined by the random opportunities it receives to propose or validate a block, and those opportunities are enhanced only

161. See Seira et al., *supra* note 48.

162. *Id.*

163. Hart, *supra* note 81.

164. *Foxfield*, 967 F.3d at 1091.

165. Seira et al., *supra* note 48.

166. See Hart, *supra* note 81, at 195-96.

167. See Napoletano, *supra* note 79. In other words, the validator's profits are directly tied to its own actions.

168. Minks, *supra* note 52, at 424.

169. *Foxfield*, 967 F.3d at 1091.

170. See Penella et al., *supra* note 83.

171. *Id.*

172. Seira et al., *supra* note 48.

by increasing the amount of staked ETH.¹⁷³ Without any managerial effort driving the value of the investment, the validator's efforts are the main factor in garnering a profit from the original investment. Since validators contribute actual time and effort in order to maximize profits, the third *Schaden* factor ensures that Ethereum is not a security.

Although individual validators and the entire Ethereum network are incentivized to have new validators join the network¹⁷⁴ and dependent on other validators to maximize rewards, an individual validator retains control over the profitability of its staked ETH tokens. A validator's control over its investment is evidenced by the validator's access to information, contractual powers, and contribution of time and effort to the success of the investment. The *Schaden* control factors support a finding that a validator's investment is not dependent solely on the efforts of others.

3. *Encourage Environmentally Sound Cryptocurrency Activity*

It is abnormal for legislators or regulators to consider the environment when creating policies for the securities industry. Typically, there is no environmental effect for punishing a crypto exchange platform like BlockFi for selling BIAs without access to the information required to make informed investment decisions or for requiring new digital assets to register as securities. However, if the SEC was to regulate Ethereum or any other cryptocurrency that utilizes the PoS consensus mechanism, in a way that severely inhibited its ability to operate and grow, there is the potential for cataclysmic damage to the environment.¹⁷⁵

PoW mining protocols, such as those used by the world's largest cryptocurrency Bitcoin, present an inevitable threat to our environment.¹⁷⁶ Since cryptocurrency's popularity has increased with the market's increase in value, PoW miners have been forced to accumulate more computational power and have used more energy to compete with other miners.¹⁷⁷ Bitcoin's annual energy consumption is estimated to create between 22 and 23 million metric tons of CO2 emissions annually, which is equivalent to the CO2 emissions of over 2.5 billion households for one year.¹⁷⁸ However, CO2 emissions are not the only environmental threat posed by PoW mining protocols. The Greenidge Generation, one of the largest cryptocurrency mines in the U.S., consumes "139 million gallons of fresh water out of the Seneca Lake *each day* to cool the plant and discharges it some 30 to 50° F hotter than the lake's average temperature, endangering the lake's wildlife and ecology."¹⁷⁹ It is projected that Bitcoin mining's cumulative emissions will increase global warming by at least two degrees Celsius by 2040.¹⁸⁰ One way to combat the environmental problems posed by the PoW consensus mechanism is encouraging cryptocurrencies to use consensus mechanisms that are more energy efficient such as the PoS model.

A ruling or declaration that cryptocurrencies utilizing the PoS consensus mechanism are securities would cause many cryptocurrencies that have switched to PoS protocols to revert back

173. *Id.*

174. Hart, *supra* note 81, at 202-03 ("As these networks increase in inclusivity, they also increase in their resilience to attack due to the reduced likelihood of coordination among nodes—and thus monopoly force—that accompanies an increase in the members in a network.")

175. This argument assumes that the SEC will not regulate Bitcoin as a security in the future or level the playing field for cryptocurrencies utilizing the PoS consensus mechanism and effectively force cryptocurrencies to choose between the two popular consensus mechanisms.

176. Taghdiri, *supra* note 67, at 182.

177. Renee Cho, *Bitcoin's Impacts on Climate and the Environment*, COLUMBIA CLIMATE SCHOOL (Sep. 20, 2021), <https://news.climate.columbia.edu/2021/09/20/bitcoins-impacts-on-climate-and-the-environment/>.

178. *Id.*

179. *Id.* (emphasis added).

180. *Id.*; Taghdiri, *supra* note 67, at 185.

to PoW protocols. Moreover, other cryptocurrencies might be deterred from switching to energy-efficient PoS protocols. In addition to the fact that Ethereum would experience an immediate loss of value due to delisting on crypto exchanges, many less-popular cryptocurrencies considering which consensus mechanism to use would be on notice with the same concern of being regulated as a security.¹⁸¹ New cryptocurrencies or cryptocurrencies considering a switch to sustainable growth protocols such as PoS are unlikely to choose to incur the costs and tribulations of being regulated as a security. These cryptocurrencies will choose the less regulated and environmentally damaging PoW protocols or another consensus mechanism that is not as tested or as reliable as PoW and PoS.¹⁸² If more cryptocurrencies use the PoW consensus mechanism, the environmental dangers presented by Bitcoin mining will only increase. This is why the SEC needs to consider the environmental implications of its decision to potentially regulate Ethereum as a security. There is a balance that must be struck in order to promote innovation, protect investors, and manage the emissions produced by innovation. The SEC needs to consider the environmental implications of regulating Ethereum as a security because regulating Ethereum as a security will effectively encourage cryptocurrencies to use PoW protocols. Encouraging PoW protocols will increase the energy-guzzling mining farms that create an imminent threat to the well-being of Earth.

4. Recommendation to Courts and the SEC

Rather than attaching the regulations of a security to Ethereum, the SEC should continue to let Ethereum's regulation as a commodity suffice. A commodity designation is the best way to balance innovation, investor protection, and sustainability. Former Chairman of the Commodities and Futures Trading Commission ("CFTC") Heath Tarbet first announced in 2019 that Ethereum was a commodity and fell under the jurisdiction of the CFTC.¹⁸³ While disclosing his announcement, Tarbet, in collaboration with the SEC, explained that the regulatory classification of a digital asset or coin may change over time as the system becomes increasingly decentralized and the currency operates autonomously.¹⁸⁴ This statement aligns perfectly with Ethereum's development. Ethereum's developers and founders, such as Vitalik Buterin and members of the Ethereum Foundation, had great influence and control over Ethereum during its beginnings, but the cryptocurrency has become so decentralized due to the work of validators that it is impossible to classify it as a security.¹⁸⁵ The current CFTC Chairman Rostin Benham has consistently affirmed that Ethereum is a commodity and not a security even after Ethereum's adoption of the PoS consensus mechanism.¹⁸⁶ Ambiguities in the applicability of securities laws should be

181. Brady Dale, *The Regulatory Risk in Ethereum's New Security Model*, AXIOS (July 27, 2022), <https://www.axios.com/2022/07/27/regulatory-risk-ethereum-security-model-proof-of-stake-sec>.

182. Less popular consensus mechanisms include Proof of Capacity, Proof of Elapsed Time, Proof of Identity, Proof of Authority, and Proof of Activity. See Naveen Joshi, *8 Blockchain Consensus Mechanisms You Should Know About*, ALLERIN (Apr. 23, 2019), <https://www.allerin.com/blog/8-blockchain-consensus-mechanisms-you-should-know-about>.

183. *Ether Is...a Commodity*, SULLIVAN & WORCESTER LLP (Oct. 10, 2019), <https://www.sullivanlaw.com/news-ether-is-a-commodity.html>.

184. *Id.*

185. See Seira et al., *supra* note 48; Glidden, *supra* note 109.

186. Dylan Butts, *CFTC Chair Calls Ethereum a Commodity, In Contrast to SEC Chair Gensler's Position*, YAHOO! LIFE (Mar. 9, 2023), https://www.yahoo.com/lifestyle/cftc-chair-calls-ethereum-commodity-111551034.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAGSkDYb4XFS15vVLmx2rFQjRoQ0SLkzRBliZMqBLHjhF8MCnMGvDQNjPntlSfxmJvENIBHM36trfb0lltQ7DCKeUFfcqE3WwJdcXGtUKtXIVD6DoyULORMezKMYqjoA4lka_SDFupcTPon0Hu-k1KzYILTk_j1jskRrD9ikl4UG.

resolved in favor of innovation¹⁸⁷ and environmental sustainability. Allowing Ethereum to remain regulated as a commodity will allow for safe and sustainable growth in blockchain and cryptocurrency technology while encouraging innovation to move towards protocols that do not endanger the planet.

CONCLUSION

Financial and securities regulation does not adequately comprehend decentralized systems and using a test such as *Howey*, which applied to the sale of citrus groves,¹⁸⁸ cannot grasp the complexity of cryptocurrencies. The Supreme Court has long recognized that although securities laws are broad and interpreted flexibly, Congress, in enacting securities legislation, did not intend to create a catch-all remedy for fraud.¹⁸⁹ Ethereum and cryptocurrencies that utilize the PoS consensus mechanism are examples of an investment strategy that is outside the scope and cabin of federal securities laws. Since participants in the Ethereum network do not pool their assets and perform a considerable amount of work while maintaining access to all of the blockchain's information, it is ill-fitting to classify Ethereum as a security under the *Howey* test. Albeit not a factor that courts or the SEC have considered in their application of securities laws, courts and the SEC should consider the potentially cataclysmic environmental effects of hindering cryptocurrencies' use of the PoS consensus mechanism. When considering these effects with a true application of the *Howey* test, the SEC and courts of justice should find that Ethereum should be solely regulated by the CFTC as a commodity and not as a security.

187. See Glidden, *supra* note 109.

188. SEC v. W.J. Howey Co., 328 U.S. 293, 295 (1946).

189. Reves v. Ernst & Young, 494 U.S. 56, 60-61 (1990).