IMPLICATIONS FOR BLOCKCHAIN IN ENERGY MARKETS

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The energy industry, multinational corporations, traders and commodities trading platforms are experimenting with and implementing blockchain technology in order to streamline processes and allow for new forms of energy delivery. Energy market participants anticipate that blockchain technology will help standardize and streamline field processes and back-office operations in order to reduce the cost of energy extraction, processing and delivery, and to make physical and cash-settled trading more nimble.

The terms "blockchain" and "distributed ledger technology" generally refer to databases that maintain information, secured with cryptography, across a decentralized network of computers.[2] Blockchain enables users to record transactions on a shared ledger that is duplicated across the network, rather than each user having to maintain their own proprietary ledger. Public blockchains can be used by anyone with an internet connection and the requisite software and hardware. Private or permissioned blockchains can only be used by those who have a validated invitation to interact with the network.[3] For corporate enterprises in the energy markets, permissioned blockchain networks may be more appropriate because limits can be placed on who is allowed to participate in the network and the types of transactions the network will support.[4]

This article describes three use cases for blockchain in the energy industry and the securities and commodities regulatory considerations that may apply to those use cases. Finally, we address other considerations that will impact the future of blockchain in energy.

USE CASES

OIL EXTRACTION

Currently, smaller volumes of crude oil extracted from the field are measured by

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hand prior to shipment by dipping a weighted strap into the oil tank. This measurement is known as "the volume of a run" and is used to determine the gross volume upon which to calculate the royalty share of the oil well leaseholders. These measurements are recorded by hand on a field run ticket, which becomes part of the accounting records for the transaction.

Combined with the kind of automated metering systems currently used for larger volumes of oil, blockchain may be used to record the "volume of a run." The blockchain can use this information to then transfer payments to leaseholders automatically, triggered by a "smart contract" set to make payment ratably to the applicable leaseholders. A smart contract is software code that triggers certain actions upon the occurrence of a triggering event.[5] This payment could be made to leaseholders in the form of the proprietary digital assets of the system, by sending the applicable number of digital assets to the "wallet" of each leaseholder.[6] These digital assets could then be automatically exchanged for fiat currency (e.g., U.S. dollars) or another digital asset such as bitcoin.[7]

MICROGRIDS AND PEER-TO-PEER ENERGY TRADING

In the United States, energy is typically generated at a large plant, such as a hydroelectric dam, coal-fired power plant, or solar array, and transported long distances by wire to a grid that supplies electricity to hundreds of thousands of customers. This type of energy supply chain is subject to energy loss in the transportation of the energy to customers, and in the event of a severe storm or other natural disaster, there are several fault points at which customers can lose power.

Several communities around the world are experimenting with "microgrids" which allow members to generate their own power through, for instance, solar panels on their roofs, for their own use and to sell to their neighbors or to a central electric company.

There are currently several pilot programs that use blockchain and smart contracts to record the generation, transfer, and use of electricity among neighbors that are on the microgrid. Imagine a microgrid that transfers electricity generated on the roofs of five local buildings to the residents in the neighborhood. Smart meters measure the usage of each individual resident and the blockchain tracks when a user obtains electricity from the local solar panels and when electricity is obtained from an offsite power plant. Blockchains can facilitate payments among the users and generators connected to the microgrid. As with the prior example, the payments could be made in the form of the proprietary digital assets of the system. Participants that validate these transactions ("nodes") can be set up anywhere in the world and rewarded in digital assets for their work.

ENERGY TRADING PLATFORMS

There are currently several pilot programs for using blockchain for energy trading platforms. Physical energy trading is typically a manual and document-intensive process requiring several intermediaries and many contracts along the supply chain from source to storage, blending, and delivery. Those adopting blockchain technology for energy trading anticipate that blockchain can provide a single, consolidated source of transaction history in this supply chain in order to make physical energy trading more efficient.

FEDERAL SECURITIES LAW CONSIDERATIONS

The SEC has asked market participants to analyze whether a digital asset is an investment contract or another kind of security.[8] In any use case involving a digital asset, including energy use cases, the digital asset and any actual or imputed contract for the sale of the digital asset needs to be analyzed to determine if they constitute a security under the securities laws. If the digital asset or related contracts for sale meet the definition under the Securities Act or the Exchange Act,[9] then the digital asset or contract for sale must be registered with the SEC or offered subject to an exemption from the registration requirements. Furthermore, trading platforms that meet the definition of an "exchange" under the Exchange Act must register as a national securities exchange or meet the requirements for exemption, such as a registered alternative trading system.[10]

As defined in the Securities Act, the term "security" includes stocks, bonds and other common types of securities, as well as "investment contract[s]."[11] Energy digital assets should be analyzed to determine whether they represent debt, equity or another instrument or arrangement listed in the definition of security, including whether they are "investment contracts." *SEC v. Howey* and its progeny provide the test for determining whether an instrument is an "investment contract."[12] The SEC applied the *Howey* test in the context of digital assets in several enforcement actions and in its Report of Investigation Pursuant to section 21(a) of the Securities Exchange Act of 1934: The DAO.[13] The SEC has applied the *Howey* test both in cases involving an issuer's initial sale of a digital asset (a so-called

"initial coin offering" or "ICO") and in the context of trading platforms.[14]

The SEC's Strategic Hub for Innovation and Financial Technology has released its interpretation (Framework) of the *Howey* test as applied to digital assets.[15] The Framework provides an interpretation of how the *Howey* test could apply to certain facts that are common to digital assets. It provides factors that may indicate that a digital asset is offered for "consumptive" as opposed to investment intent. The Framework also provides considerations for evaluating whether a digital asset no longer needs to be offered as a security because its blockchain network is sufficiently "decentralized."

The SEC has also released two no-action letters relating to the interpretation of the *Howey* test for purposes of Section 5 of the Securities Act and Section 12(g) of the Exchange Act.[16] In the first, TurnKey Jet, Inc. (TurnKey) proposed to sell digital assets that would act as payment for air charter services.[17] TurnKey would operate a private blockchain network to facilitate a membership program for participants. The SEC's Division of Corporation Finance agreed not to recommend enforcement action to the Commission if TurnKey sold the digital assets without registering them under the Securities Act and the Exchange Act. The staff provided a similar no-action letter to Pocketful of Quarters, Inc. (PoQ), which proposed to distribute digital assets in a closed-system with the digital assets to be used primarily by gamers to "pay" for in-game digital items and to participate in e-sports tournaments.[18]

These SEC no-action letters provide further assurances to market participants considering issuing and trading digital assets. However, several

considerations and questions remain about accounting, custody and other issues important for building a vibrant market for digital assets. Accounting considerations include how companies can maintain complete and accurate books and records and maintain related internal accounting controls for digital assets, as required under the securities laws.[19] Custody questions include how broker-dealers can satisfy the SEC's Customer Protection Rule and how registered investment advisers can satisfy the Commission's Custody Rule.[20]

Energy digital assets should be developed with the securities case law, SEC guidance and unresolved questions in mind. In each of the use cases described above, any digital assets or actual or imputed contracts will need to be analyzed to determine whether they are securities under the *Howey* test and related case law and SEC guidance.

COMMODITY FUTURES LAW CONSIDERATIONS

During his tenure as Chairman of the CFTC, which ended in July 2019, Christopher Giancarlo expressed support for the possibility for blockchain to "streamline back-office infrastructure, interoperable databases, and shared ledgers" and the possibility for this technology to allow regulators to have real-time access to the trading ledgers of large financial institutions.[21] The CFTC is actively engaged in the blockchain and digital asset space through asserting its authority over digital assets as commodities, surveilling trading in derivative and spot markets, prosecuting fraud and manipulation, actively coordinating with other regulators, and providing consumer outreach and education materials,

particularly through LabCFTC.[22] The CFTC published a Request for Information in the *Federal Register* seeking information from the public on the underlying technology, opportunities, risks, mechanics, use cases, and markets, related to Ether and the Ethereum Network.[23]

In November 2019, Heath Tarbert, who became Chairman of the CFTC in July 2019, was interviewed about digital assets on CNBC. He explained that he wants the United States to lead in blockchain technology. "[U]ltimately I could see it overtaking the internet or being effectively parallel to the internet in using a variety of different kinds of transactions, not just the financial system, but in other types of transactions as well . . . I think whoever ends up leading in this technology will end up writing the rules of the road for the rest of the world. My emphasis is on making sure that the United States is a leader."[24] These comments echo statements that he made during his confirmation hearing, where he acknowledged that digital technologies have recently transformed derivatives markets.[25] Tarbert observed that these technologies present both opportunities and risks, and, therefore, the CFTC should promulgate regulations that "allow technological innovation to flourish" while protecting "markets and consumers from harm." He also cautioned that government needed to "remain vigilant in thwarting new threats—such as cyberattacks."

On November 27, 2018, LabCFTC released *A Primer on Smart Contracts* (Primer), which provides an overview of smart contracts, the role of the CFTC, and information on the risks, challenges and governance of smart contracts.[26] In the Primer, the CFTC explains that, depending on the relevant structure, operation, and facts and

circumstances, a smart contract could be considered a commodity, forward contract, futures contract, option on futures contract, or swap, each of which the CFTC regulates.[27]

It is important to assess whether a particular smart contract may fall under the CFTC's jurisdiction and take necessary steps to remain compliant with the governing regulations. In that regard, the definition of "commodity" under the Commodity Exchange Act (CEA) is broad. It includes several specifically enumerated products and "all other goods and articles. . .and all services, rights and interests. . .in which contracts for future delivery are presently or in the future dealt in."[28] The CFTC first found that bitcoin was a commodity in 2015, an interpretation subsequently supported by federal courts.[29] Due to this broad definition, digital assets that document a right related to energy are likely to also be considered commodities.

The CFTC's oversight of spot trading venues is limited, although energy digital asset trading platforms would need to consider whether certain regulations apply.[30] The CFTC has jurisdiction to investigate and conduct civil enforcement actions against fraud and manipulation in markets trading spot commodities, which would include digital assets, as well as in the futures and swaps markets that it regulates.[31]

If the trading involves contracts that could constitute futures, options or swaps, as with such trading in any commodity, the CFTC has broad regulatory authority and oversight and imposes: (1) registration requirements for trading and market surveillance; (2) reporting and monitoring standards; (3) capital requirements; and (4) platform and system safeguards.[32] Moreover, this same regulatory scheme also applies to certain so-called "retail commodity transactions." Those are transactions in which either party is not what is called an "eligible contract participant" under the CEA. Of potential concern in the energy markets is that certain smaller businesses could potentially not meet the requirements to be an "eligible contract participant."[33] If the transaction then includes some form of financing, margining, or leverage provided by the offeror and does not result in what is called "actual delivery" of the commodity, generally within 28 days of the transaction, then it is subject to all the same regulatory requirements as a futures, option or swap.

The question of what constitutes "actual delivery" is unclear when there is margin or leverage involved, since the CFTC takes a very aggressive position on the limitations that can be placed on the buyer's use of the commodity while still constituting "actual delivery." In December 2017, the CFTC published a proposed interpretation on the meaning of the term "actual delivery" in the context of retail transactions in virtual currencies, advising that while the test for whether actual delivery has occurred would be determined by facts and circumstances, the CFTC will look to whether, no later than 28 days after the transaction, the retail customer is able to take possession and control of the entire quantity of the virtual currency purchased and use it without the seller or platform retaining any security interest in the virtual currency.[34] No further action has been taken to date on that proposal.[35]

Anyone considering establishing a trading platform for energy digital assets, such as the one described in the Use Cases, should determine whether it is subject to the CFTC jurisdiction

over trading platforms. Depending on the types of products and services offered by a trading platform, the platform itself may be subject to CFTC regulations and require registration with the CFTC as a Designated Contract Market (DCM) or Swap Execution Facility (SEF).[36] The CFTC has cautioned that DCMs, SEFs, and Derivative Clearing Organizations (DCOs) that list digital asset derivatives must implement enhanced procedures relating to market surveillance and risk management, among other things, in light of the significant risks attributable to these assets.[37] Moreover, the CFTC stated it will engage in "heightened review" of self-certifications for digital asset products.[38] Heightened review incorporates various special standards for digital asset activities, such as "setting substantially high" margin for cash settled bitcoin futures, and coordinating with CFTC's market surveillance branch to allow for "minute-by-minute" oversight.[39]

OTHER APPLICABLE LAWS AND CONSIDERATIONS

OTHER FINANCIAL SERVICES LAWS

The U.S. Treasury Department's Financial Crimes Enforcement Network (FinCEN) has provided guidance regarding whether certain digital assets and digital asset market participants are engaged in regulated "money services business" activity, which requires registration with FinCEN.[40] Furthermore, certain states may include energy digital asset activity within their definition of "money transmitter." The State of New York requires a license for any person engaging in "virtual currency business activity" in New York or with a New York resident. [41] The license is commonly known as the "BitLicense"

and depending on the circumstances, some business may need both a BitLicense and a New York money transmitter license. Consideration would need to be given as to whether any use of digital assets in connection with any of the energy use cases might trigger these other regulatory schemes.

STATE REGULATIONS GOVERNING ENERGY SUPPLIERS

Electricity microgrids utilizing blockchain to record and transact energy provide numerous possibilities for individual market participants to procure power directly from generation sources, likely at reduced costs by eliminating traditional utility companies or other suppliers. This presents several potential challenges within the existing energy regulatory framework itself. The generation and retail sales of electricity are currently overseen by state public utility commissions that each impose their own regulations over generators and third party suppliers. The Federal Energy Regulatory Commission also regulates electricity transmission and wholesale sales of electricity in interstate commerce. These regulators have not offered much guidance as to how they would treat blockchain technology within the industry, particularly for microgrid projects such as those described above. Individuals or non-registered entities considering entering into decentralized electricity transactions should assess whether such activity could be considered third party energy supplier activity that would expose them to state and/or federal registration and compliance requirements.

ISDA GUIDELINES

In January 2019, ISDA published Legal Guidelines for Smart Derivatives Contracts: Introduc-

tion (Introduction), in February 2019 ISDA published Legal Guidelines for Smart Derivatives Contracts: The ISDA Master Agreement (Master Agreement Guidance) and in September 2019, ISDA published Legal Guidelines for Smart Derivatives Contracts: Collateral (Collateral Guidance).[42] The Introduction contains a framework for understanding smart derivatives contracts. Although not specific to energy transactions, the Master Agreement Guidance contains a framework for automation of ISDA documentation. The Master Agreement Guidance provides guidance on the legal documentation and framework currently governing derivatives trading and identifies certain issues to be considered by market participants considering adopting smart contracts. The Collateral Guidance provides guidelines to help the development and application of blockchain technology in the automation of collateral management. Market participants automating energy derivatives should consider this information and any further guidance that ISDA may provide on smart contracts.

THE FUTURE OF BLOCKCHAIN IN ENERGY

As the energy sector begins to experiment with blockchain technology, including the use of smart contracts, it is important for market participants to heed the securities, commodities and other regulatory requirements, to consult knowledgeable legal counsel, and, where appropriate, to approach regulators to discuss new use cases with them and the applicability of existing regulatory requirements to this new technology.

ENDNOTES:

[2]Securities and Exchange Commission (SEC)

Strategic Hub for Innovation and Financial Technology (FinHub), https://www.sec.gov/finhub.

[3]Praveen Jayachandran, *The Difference Between Public and Private Blockchain*, IBM BLOCKCHAIN BLOG (May 31, 2017) https://www.ibm.com/blogs/blockchain/2017/05/the-difference-between-public-and-private-blockchain/.

[4]Nolan Bauerle, *What Is the Difference Between Public and Permissioned Blockchains?,* COINDESK, https://www.Coindesk.Com/Information/What-Is-The-Difference-Between-Open-And-Permissioned-Blockchains. Well known examples of permissioned blockchains include Hyperledger Fabric and Corda R3.

[5]So-called "smart contracts" may or may not have all of the elements necessary for a legally binding contract. Smart contracts can provide utility in legal contracting as a way to automate at least parts of the fulfilment of a contract. LABCFTC, *A Primer on Smart Contracts* at 4 (Nov. 27, 2018) (a smart contract "[a]llows self-executing computer code to take actions at specified times and/or based on reference to the occurrence or non-occurrence of an action or event (e.g., delivery of an asset, weather conditions, or change in a reference rate.")), https://cftc.gov/sites/default/files/2018-11/LabCFTC_PrimerSmartContracts112718.pdf. LABCFTC, *A CFTC Primer on Virtual Currencies* (Oct. 17, 2017) https://www.cftc.gov/sites/default/files/idc/groups/public/documents/file/labcftc_primercurrencies100417.pdf.

[6]Blockchain tokens (which we refer to in this article as "digital assets") are units of account on a blockchain and can be transferred between users of the blockchain. A "wallet" is the software interface that allows a person to query the blockchain for information and to send signed transactions to the blockchain. Wallets are also software programs that store private keys (similar to a password) and interact with a particular blockchain to transmit information needed to undertake transactions. The amount of digital assets associated with a particular wallet address is reflected on the blockchain.

[7]Digital assets are not necessarily required for a blockchain to function, although many

blockchains do feature digital assets.

[8]SEC STRATEGIC HUB FOR INNOVATION AND FIN. TECH., *Framework for "Investment Contract" Analysis of Digital Assets* (Apr. 3, 2019) https://www.sec.gov/files/dlt-framework.pdf.

[9]The U.S. Supreme Court has stated that the definitions of "security" under the Securities Act and the Exchange Act are treated as being the same, despite some technical differences. *S.E.C. v. Edwards*, 540 U.S. 389, 124 S. Ct. 892, 157 L. Ed. 2d 813, Fed. Sec. L. Rep. (CCH) P 92656 (2004) (citing *Reves v. Ernst & Young*, 494 U.S. 56, 61 n.1, 110 S. Ct. 945, 108 L. Ed. 2d 47, Blue Sky L. Rep. (CCH) P 73213, Fed. Sec. L. Rep. (CCH) P 94939 (1990)). *See also, Landreth Timber Co. v. Landreth*, 471 U.S. 681, 686 n.1, 105 S. Ct. 2297, 85 L. Ed. 2d 692, Fed. Sec. L. Rep. (CCH) P 92047 (1985); *Marine Bank v. Weaver*, 455 U.S. 551, 555 n.3, 102 S. Ct. 1220, 71 L. Ed. 2d 409, Fed. Sec. L. Rep. (CCH) P 98471 (1982); *United Housing Foundation, Inc. v. Forman*, 421 U.S. 837, 847 n.12, 95 S. Ct. 2051, 44 L. Ed. 2d 621, Fed. Sec. L. Rep. (CCH) P 95206 (1975); *Tcherepnin v. Knight*, 389 U.S. 332, 335-36, 88 S. Ct. 548, 19 L. Ed. 2d 564 (1967) (the Securities Act contains a definition of security virtually identical to that contained in the Exchange Act). *Cf.* Joseph A. Franco, *The Investment Company Act's Definition of Security and the* Myth of Equivalence, 7 STAN. J.L. BUS. & FIN. 1 (2001).

[10]SEC, Div. of Corp. Fin., Div. of Invest. Mgmt & Div. of Trading & Mkts, Statement on Digital Asset Securities Issuance and Trading (Nov. 16, 2018) https://www.sec.gov/news/public-statement/digital-asset-securites-issuuance-and-trading. *See* Press Release, SEC, Statement on Potentially Unlawful Online Platforms for Trading Digital Assets (Mar. 7, 2018) https://www.sec.gov/news/public-statement/enforcement-tm-statement-potentially-unlawful-online-platforms-trading.

[11]Securities Act section 77b(a)(1).

[12]*S.E.C. v. W.J. Howey Co.*, 328 U.S. 293, 66 S. Ct. 1100, 90 L. Ed. 1244, 163 A.L.R. 1043 (1946).

[13]*E.g.,* Press Release, SEC, *Two ICO Issuers Settle SEC Registration Charges, Agree to Register Tokens as Securities* (Nov. 16, 2018) https://www.sec.gov/news/press-release/2018-264. SEC, Release No. 81,207, *Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934* (July 25, 2017). Section 21(a) of the Exchange Act provides in relevant part that the Commission may investigate to determine whether any person has violated the federal securities laws. Section 21(a) allows the Commission to investigate matters to aid in the enforcement of the securities laws and to publish information concerning such violations. 15 U.S.C.A. section 78u(a)(1).

[14]*E.g.*, Press Release, SEC, *SEC Charges Issuer with Conducting $100 Million Unregistered ICO* (June 4, 2019) https://www.sec.gov/news/press-release/2019-87; Press Release, SEC, *SEC Charges ICO Superstore and Owners with Operating as Unregistered Broker-Dealers* (Sept. 11, 2018) https://www.sec.gov/news/press-release/2018-185.

[15]*Id.* at note 12.

[16]TurnKey Jet, Inc., SEC No-Action Letter (Apr. 3, 2019) https://www.sec.gov/divisions/corpfin/cf-noaction/2019/turnkey-jet-040219-2a1.htm; Pocketful of Quarters, Inc., SEC No-Action Letter (July 25, 2019) https://www.sec.gov/corpfin/pocketful-quarters-inc-072519-2a1.

[17]TurnKey Jet, Inc. Incoming Letter (Apr. 2, 2019) https://www.sec.gov/divisions/corpfin/cf-noaction/2019/turnkey-jet-040219-2a1-incoming.pdf.

[18]Pocketful of Quarters, Inc. Incoming Letter (July 25, 2019) https://www.sec.gov/divisions/corpfin/cf-noaction/2019/pocketful-of-quarters-inc-072519-2a1-incoming.pdf.

[19]Wesley Bricker, SEC Chief Accountant, *Remarks before the AICPA National Conference on Banks & Savings Institutions* (Sept. 17, 2018) https://www.sec.gov/news/speech/speech-bricker-2018-09-17.

[20]Div. of Trad. and Mkts., SEC, Office of Gen. Counsel, Financial Industry Regulatory Authority, *Joint Staff Statement on Broker-Dealer Custody of Digital Asset Securities* (July 8, 2019)

https://www.sec.gov/news/public-statement/join t-staff-statement-broker-dealer-custody-digital-a sset-securities. Paul G. Cellupica, Dep. Dir. and Chief Counsel, SEC Div. of Inv. Mgmt., *Engaging on Non-DVP Custodial Practices and Digital Assets* (Mar. 12, 2019) https://www.sec.gov/inve stment/non-dvp-and-custody-digital-assets-031219-206; Lilya Tessler, David M. Katz, Steffen Hemmerich, Daniel Engoren, *Custody Of Digital Asset Securities: A Proposal to Address Open Questions for Broker-Dealers Under the SEC's Customer Protection Rule* (March 18, 2019) https://www.sidley.com/-/media/publicatio ns/custody-of-digital-assets.pdf. *See also* Paxos Trust Company, LLC, SEC No-Action Letter (October 28, 2019) (Clearing Agency Registration Under Section 17A(b)(1) of the Securities Exchange Act), *available at* https://www.sec.go v/divisions/marketreg/mr-noaction/2019/paxos-t rust-company-102819-17a.pdf.

[21]Christopher J. Giancarlo, Chairman, CFTC, *Remarks Before the 4th Annual D.C. Blockchain Summit: The Digital Trinity: Technology, Markets, and Policy* (March 8, 2019) https://www.cft c.gov/PressRoom/SpeechesTestimony/opagianca rlo66.

[22]CFTC, *Backgrounder on Oversight of and Approach to Virtual Currency Future Markets* (Jan. 4, 2018) https://www.cftc.gov/sites/default/ files/idc/groups/public/@customerprotection/do cuments/file/backgrounder_virtualcurrency01.pd f.

[23]CFTC, *Request for Input on Crypto-Asset Mechanics and Markets*, 83 Fed. Reg. 64,563 (Dec. 17, 2018) https://www.cftc.gov/sites/defau lt/files/2018-12/2018-27167a.pdf; *see also* Press Release, CFTC, *CFTC Seeks Public Comments on Crypto-Asset Mechanics and Markets*, Release No. 7855-18 (Dec. 11, 2018) https://www.cftc.go v/PressRoom/PressReleases/7855-18.

[24]*Chairman Tarbert Discusses U.S. Leadership in Digital Assets on CNBC* (November 20, 2019) *available at* https://www.cftc.gov/PressRo om/PressReleases/8082-19.

[25]*Statement of Heath P. Tarbert, of Maryland, to be Chairman and Commissioner of the Commodity Futures Trading Commission before the*

U.S. Senate Committee on Agriculture, Nutrition, and Forestry (March 13, 2019) *available at* http s://www.agriculture.senate.gov/imo/media/doc/T estimony_Tarbert%2003.13.19.pdf.

[26]CFTC, LabCFTC, *A Primer on Smart Contracts* (Nov. 27, 2018) https://www.cftc.gov/site s/default/files/2018-11/LabCFTC_PrimerSmartC ontracts112718.pdf.

[27]Primer at page 22.

[28]CEA, 7 U.S.C.A. Section 1a(9). *See* Memorandum of Decision, *Commodity Futures Trading Commission v. My Big Coin Pay, Inc.*, 334 F. Supp. 3d 492, Comm. Fut. L. Rep. (CCH) P 34345 (D. Mass. 2018) (No. 106).

[29]*In re Coinflip, Inc.*, CFTC No. 15-29 (Sept. 17, 2015). The CFTC's interpretation was confirmed by the courts in *Commodity Futures Trading Commission v. McDonnell*, 287 F. Supp. 3d 213, Comm. Fut. L. Rep. (CCH) P 34222 (E.D. N.Y. 2018), adhered to on denial of reconsideration, 321 F. Supp. 3d 366, Comm. Fut. L. Rep. (CCH) P 34289 (E.D. N.Y. 2018).

[30]"Spot" refers to the market of immediate delivery and payment for a product. *See* CFTC, *CFTC Glossary*, https://www.cftc.gov/Consumer Protection/EducationCenter/CFTCGlossary/inde x.htm.

[31]J. Christopher Giancarlo, Chairman, CFTC, *Written Testimony of Chairman J. Christopher Giancarlo before the Senate Banking Committee, Washington, D.C.* (Feb. 6, 2018), *available at* htt ps://cftc.gov/PressRoom/SpeechesTestimony/op agiancarlo37. The U.S. Court of Appeals for the Ninth Circuit has affirmed the CFTC's jurisdiction to enforce claims of fraud in retail commodity transactions in the absence of allegations of manipulation. *U.S. Commodity Futures Trading Commission v. Monex Credit Company*, 931 F.3d 966, Comm. Fut. L. Rep. (CCH) P 34538 (9th Cir. 2019).

[32]"Security futures products" are subject to special requirements such as joint CFTC and SEC oversight, and can be offered only by markets that are either regulated by the CFTC and notice-registered with the SEC or regulated by the SEC and notice-registered with the CFTC.

Options on securities and securities indexes can only be traded on a securities exchange under the jurisdiction of the SEC. 17 C.F.R. Sections 202, 240 and 249.

[33]CEA, 7 U.S.C.A. Section 1a(18).

[34]*Retail Commodity Transactions Involving Virtual Currency*, 82 Fed. Reg. 60,335 (Dec. 20, 2017) (to be codified at 17 C.F.R. pt. 1.

[35]Further, in 2016, the CFTC entered into a settlement involving BFXNA Inc. (Bitfinex), which operated an online platform for trading various digital assets, mainly bitcoin. *In re BFXNA Inc.*, CFTC No. 16-19 (June 2, 2016). The CFTC determined that Bitfinex offered retail customers the ability to trade digital assets on a margined, leveraged, or financed basis and the transactions did not involve actual delivery, because Bitfinex maintained control of the private keys. The CFTC required Bitfinex to register with the CFTC because it engaged in soliciting or accepting orders for covered retail commodity transactions, and received funds from retail customers in connection with the transactions. *U.S. Commodity Futures Trading Commission v. Monex Credit Company*, 931 F.3d 966, Comm. Fut. L. Rep. (CCH) P 34538 (9th Cir. 2019) (addressing the meaning of "actual delivery" as used in this provision of the CEA; " 'Actual delivery' is the 'act of giving real and immediate possession to the buyer or the buyer's agent,' " slip op. at 12, *quoting* Black's Law Dictionary (9th ed. 2009); "Even if the commodity serves as collateral, there is no reason why the buyer cannot control it. In many financing contexts, some degree of buyer possession or control is commonplace. While permitting customers to obtain significant control over or possession of [the commodity] might be practically difficult. . ., that fact does not displace the statute's plain meaning," slip op. at 15).

[36]*See generally* CFTC, *Designated Contract Markets (DCMS)*, https://www.cftc.gov/Industry Oversight/TradingOrganizations/DCMs/index. htm; CFTC, *Swap Execution Facilities (SEFS),* https://www.cftc.gov/IndustryOversight/Trading Organizations/SEF2/index.htm. In 2015, the CFTC settled with Coinflip, the operator of an online swaps trading platform (Derivabit), and Francisco Riordan, Coinflip's founder and CEO, for violations of the DCM or SEF registration requirements of the CEA and related regulations. Coinflip connected buyers and sellers of Bitcoin option contracts through Derivabit, its online trading platform. Press Release, CFTC, *CFTC Orders Bitcoin Options Trading Platform Operator and its CEO to Cease Illegally Offering Bitcoin Options and to Cease Operating a Facility for Trading or Processing of Swaps without Registering* (Sept. 17, 2015) https://www.cftc.go v/PressRoom/PressReleases/pr7231-15; CEA, 7 U.S.C.A. Section 6c(b), Section 7b-3; 17 C.F.R. Sections 32.2, 37.3.

[37]CFTC, Staff Advisory No. 18-14, *Advisory with Respect to Virtual Currency Derivative Product Listings* (May 21, 2018), *available at* htt ps://www.cftc.gov/csl/18-14/download.

[38]CFTC, *CFTC Backgrounder on Self-Certified Contracts for Bitcoin Products* (Backgrounder) (Dec. 1, 2017) https://www.cftc.gov/si tes/default/files/idc/groups/public/@newsroom/d ocuments/file/bitcoin_factsheet120117.pdf. Prior to listing new contracts for trading, the CEA provides DCMs with the choice of either submitting a written self-certification that the contract complies with the CEA and CFTC regulations, including the statutory core principles and that the contract is not readily susceptible to manipulation, or submitting the contract to the CFTC for approval. *Id.* This process is applicable to exchanges that trade regulated contracts for bitcoin or other non-security digital assets. *Id.*

[39]*Id.*

[40]*E.g.*, FIN-2019-G001, *Application of Fin-CEN's Regulations to Certain Business Models Involving Convertible Virtual Currencies* (May 9, 2019) *available at* https://www.fincen.gov/site s/default/files/2019-05/FinCEN%20Guidance %20CVC%20FINAL%20508.pdf. *See also* Heath Tarbert, Chairman, CFTC, Kenneth A. Blanco, Director, FinCEN and Jay Clayton, Chairman, SEC *Leaders of the CFTC, FinCEN, and SEC Issue Joint Statement on Activities Involving Digital Assets* (October 11, 2019) http s://www.sec.gov/news/public-statement/cftc-finc

en-secjointstatementdigitalassets.

4123 NYCRR pt. 200 defines "virtual currency" as "any type of digital unit that is used as a medium of exchange or a form of digitally stored value . . . Virtual Currency shall be broadly construed to include digital units of exchange that (i) have a centralized repository or administrator; (ii) are decentralized and have no centralized repository or administrator; or (iii) may be created or obtained by computing or manufacturing effort," subject to certain exemptions.

42ISDA, *Legal Guidelines for Smart Deriva-* *tives Contracts: Introduction* (Jan. 30, 2019) https://www.isda.org/a/MhgME/Legal-Guidelines-for-Smart-Derivatives-Contracts-Introduction.pdf. ISDA, *Legal Guidelines for Smart Derivatives Contracts: The ISDA Master Agreement* (Feb. 19, 2019) https://www.isda.org/a/23iME/Legal-Guidelines-for-Smart-Derivatives-Contracts-ISDA-Master-Agreement.pdf. ISDA, *Legal Guidelines for Smart Derivatives Contracts: Collateral* (Sept. 12, 2019) https://www.isda.org/a/VTkTE/Legal-Guidelines-for-Smart-Derivatives-Contracts-Collateral.pdf.