Towards Responsible Innovation

An Interagency Web3, Crypto Asset, and Blockchain Progress Report to the Governor of California

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Table of Contents

Executive Summary

In May 2022, Governor Gavin Newsom issued Executive Order N-9-22 (EO) to ensure California engages early and proactively with nascent blockchain and Web3 industries, with the goal of ensuring continued consumer protections, innovation, job growth, advancing equity and regulatory clarity, among other strategic outcomes.

Since issuing the Executive Order, both traditional financial markets and crypto markets have experienced turmoil and remain volatile in response to ongoing macroeconomic changes. Additionally, the exchange FTX collapsed, and both it and its affiliated businesses are undergoing high-profile bankruptcy proceedings and ongoing investigations. The impact of this collapse has yet to be fully determined as potential contagion has spread across the industry.

This interagency blockchain progress report reflects the administration's work to implement the Executive Order over the last seven months, beginning with stakeholder meetings that took place over the summer. Topics were organized around the following issues:

- *Financial Inclusion and Consumer Protection*
- *Financial Technology*
- *Exchanges*
- *Metaworlds, NFTs, and Other Blockchain Applications*
- *Venture Capital*
- *Government Services and Verifiable Credentials*
- *Environmental Protection*

Additional administration activities included the advancement of public use cases, and progress towards regulatory clarity. This foundation of work has positioned California to accomplish the goals set forth in the Executive Order and to realize the opportunities blockchain technologies provide to our residents. In the months ahead, the state must continue to encourage innovation, while developing consumer protection guardrails that enable the private market to thrive. It is our responsibility to continue to protect California consumers and our environment, as well as encourage continued investment in California to remain the leader in the blockchain and Web3 sector.

The interagency report provides six recommendations as we continue the work of the EO.

1. **Continue engagement with stakeholders.** California must continue to be transparent and collaborative in order to remain the leader of responsible blockchain innovation.

2. **Promote consumer protections and consumer education regarding blockchain and crypto products.** As noted throughout this report, consumer protection is market protection—and it is critical for this emerging sector.

3. **Work with the Legislature to identify gaps and clarify statutory authority as needed with respect to regulating crypto assets.** This will encourage further investment in California and protect consumers by having laws for crypto-asset related financial services and products.

4. **Explore and develop more government use cases.** The public sector may be able to utilize blockchain technology to increase efficiencies, improve access to services, and reduce costs.

5. **Encourage more environmentally efficient blockchain technologies and environmental protections.** California should help encourage financial and technological innovations to align with environmental sustainability.

6. **Leverage California's unparalleled higher education systems to build a best-in-class workforce and drive additional research and innovation.** Current and future blockchain industries should be approached as areas of potential job growth and economic inclusion.

Introduction

Governor Newsom's Executive Order created collaborative and complementary workstreams for four state agencies to collect feedback from stakeholders to understand the risks and explore opportunities for the state: the Governor's Office of Business and Economic Development (GO-Biz), the Department of Financial Protection and Innovation (DFPI), the Business, Consumer Services, and Housing Agency (BCSH), and the Government Operations Agency (GovOps). This report summarizes our work so far—work which remains ongoing.

This introduction contextualizes our work and underscores our commitment to advancing equity and environmental and consumer protection. These principles are essential to cultivating responsible innovation and generating equitable and inclusive growth for all Californians. The chapters that follow provide insights into what we are learning as we execute our workstreams, which include gathering stakeholder input, working to harmonize federal and state approaches, encouraging clarity from the federal government, exploring public-serving use cases, and working toward blockchain-centric research and workforce pipelines.

The Administration would like to thank all those who generously offered their time, contacts, information, and expertise. To all of our thought partners in and around state and federal government, the blockchain industry, and consumer advocacy, your assistance is extremely valuable. We appreciate your insights and look forward to continued collaboration as we develop state policy to guide the continued growth of the blockchain ecosystem.

Expanding Universe

As multiple stakeholders have put it, "blockchain technology is bigger than just cryptocurrency." Even though news reports have understandably focused on the volatility and risks associated with specific crypto assets, blockchain has quickly become a complex space that is both broad and dynamic.

Just before the EO was issued in May, for example, PitchBook data suggested that between January and late April, 2022, the average valuation of late-stage blockchain and cryptocurrency companies backed by venture capital (VC) had climbed 91%, to nearly $4 billion. (Over the same period, average valuations among all late-stage VC-backed companies fell 14%, to roughly $700 million.) Since then, both traditional financial markets and crypto markets have experienced turmoil and remain volatile. Still, new investment funds continue to invest in blockchain and crypto startups.

Innovators are constantly working on new products and use cases, such as creating verifiable digital credentials or building entire economies and digital worlds in the metaverse. Each of these use cases, and the use cases yet to be discovered, have their own goals and applications that will require understanding and nuance as we develop the intersection of the public good with private enterprise.

One result is that creators, companies, and consumers are constantly producing unexpected relationships, communities, and outcomes. During the stakeholder engagement process, we heard from artists interested in tax law reforms, investors looking for regulatory clarity, and environmentalists parsing the subtleties of cryptography technology. These are the types of perspectives that are not always common in more established marketplaces, and they are some of what makes new technologies so compelling but also complicated and at times risky.

Opportunities and Challenges

California is positioned to be a global leader in technological and governmental innovation—as well as regulation—for blockchain technology. Our state is the world's 4th largest economy and the leading hub of entrepreneurialism. We are home to a diverse population that creates some of the world's most ambitious ideas, successful companies, and engaged consumers. Our network of universities and venture capital is unmatched,

creating competitive advantages and a momentum that is already carrying over into blockchain technology.

In industry terms, almost 23% of the nearly 800 blockchain companies based in North America are headquartered in California—by far the most of any jurisdiction. In consumer terms, research has shown that Californians demonstrate the most interest in crypto assets within the United States; they have the highest rates of searching online for words such as "cryptocurrency," "crypto," "dogecoin," "Coinbase," "tether," "cardano," and "binance."

This presents the State of California with an opportunity for leveraging new types of blockchain entrepreneurship and consumer interest, while also responding to the challenge of the blockchain universe's complex, ever-shifting nature.

Blockchain technology is not without its dangers. Communities that may be underserviced by traditional banking institutions like older adults, veterans, people of color, and other historically disadvantaged individuals who have invested in crypto assets have fallen victim to hacks, scams, fraud, and product collapses. Recently, the exchange FTX and its affiliated businesses are undergoing a high-profile bankruptcy and ongoing investigations. Additionally, the potential negative environmental impact from required computing power and increased energy use for proof of work crypto technologies is substantial. Our state's regulatory approach must strike a balance that advances equity, and protects consumers and the environment, while allowing innovation, economic growth, and good actors to thrive.

Executive Order

Recognizing this, the Governor issued the EO to foster responsible innovation and identified several priorities that work in concert with President Biden's March 9 Executive Order, setting California on a path to align with forthcoming federal rules and guidelines while providing much-needed clarity to businesses and protections to consumers.

The Governor's EO tasked the administration with collecting feedback from a broad range of stakeholders to help shape a regulatory approach to crypto assets—particularly to ensure harmonization between federal and state authorities. The EO also tasked the administration with exploring and establishing public-serving use cases (such as incorporating blockchain technologies into state operations) and building research and workforce pipelines.

Stakeholder Input

Stakeholder engagement is a critical component of the EO as it helps us ensure the state's approach is informed by people most impacted by this process in real-time. The EO directed GO-Biz to lead a stakeholder input process in collaboration with BCSH, DFPI, and GovOps. During June and July 2022, all four of our agencies hosted 10 virtual roundtables with several dozen stakeholders.

Each roundtable was organized around a specific group of stakeholders, ranging from blockchain developers to crypto asset exchanges, consumer and environmental advocates, artists, and many more. Each shared their broad experience within the blockchain universe while also providing a range of distinct perspectives, particularly regarding their area of expertise. The goal was to gather a comprehensive view about what the state's role should be in this new and fast-evolving universe, what immediate steps they would like the state to take, and what types of consumer protection principles and state regulatory approaches they thought make the most sense.

This process resulted in robust discussions that will be helpful as we continue to deepen our understanding and create a regulatory structure. All stakeholder groups shared a recognition that regulatory clarity is not only necessary but beneficial to the development of blockchain industries. There was broad agreement that well thought out, careful rules of the road will be critical for differentiating between good and bad actors, and thus for protecting consumers, building healthy markets, and fostering continued innovation.

Financial Inclusion and Consumer Protection

Participants in our financial inclusion roundtable included economic development specialists, government leaders, and advocacy groups, and they helped identify a range of opportunities and challenges. They shared a broad interest in using blockchain to try and make financial products and services more accessible, cheaper, and safer.

Participants noted that blockchain has captured the attention of communities that are underserved by traditional systems. Many persons with disabilities, people of color, and other historically disadvantaged individuals and communities have often been left out of mainstream financial institutions or chosen not to participate.

They described several barriers that prevent access to financial markets, including hard barriers, bank account fees, income levels, and credit scores. Soft barriers range from concerns about privacy to a sense of traditional banks being intimidating. Predatory financial products have also helped create the conditions for inequitable access. In this context, blockchain promises to offer new possibilities for developing safer and/or more accessible alternatives to traditional finance, but not without some of the same risks.

Participants argued for the necessity of clear and consistent consumer protections. As one put it: "Markets work best when they are adequately regulated and include vigorous enforcement mechanisms to ensure consumer protection and that market participants are working for the best interests of consumers, and not just themselves."

Several expressed a notable urgency, pointing out that the blockchain universe has succeeded in marketing new opportunities to disadvantaged communities, without the risks for consumers being fully understood. Three primary risks were identified as currently facing consumers interested in entering the blockchain marketplace:

1. **Fraud:** Marginalized and elderly individuals can be targeted for scams.
2. **Misinformation:** Consumers can be bombarded with ads with claims about getting rich quick, without detail of the risks involved.
3. **Privacy and safety:** Confidential information can be compromised and stolen.

Inadequate disclosure of these and other risks is a serious concern. When compared to credit cards, brokerage accounts, and other traditional products, risks associated with crypto assets may not be fully or prominently disclosed. Predatory products are an additional concern. Bad actors not only ruin the lives of individuals and families but create distrust and potentially undermine legitimate products and markets.

One consumer protection principle that emerged from the discussion was the idea of treating crypto asset providers more like traditional institutions, but with additional tailoring, such as using blockchain auditing. The state should also consider what types of information service providers might be required to display across websites, apps, and advertisements and how best to distribute educational materials to consumers.

Participants broadly agreed that the state's role should be to make sure that both the public and the blockchain industry know that consumers will be protected. They noted that regulation is sometimes viewed as a barrier to innovation, but pointed out that without regulation, there can be no market and no innovation. Well-crafted protections can help consumers by making blockchain markets safer and more accessible while also helping innovators by keeping bad actors from gaining an unfair competitive advantage.

Participants also broadly agreed that consumer protections should be designed to be substantive, effective, and impactful. "Consumer protection in this area must not be an afterthought," one person said, warning against treating regulations only as a means "to tick a box or for a handy sound bite." Instead, they said, "consumer protection must be front and center of the whole effort to regulate and set forth fair and understandable rules of the road."

Financial Technology

Another group that we met with represented the financial technology (fintech) sector, which ranges widely from traditional companies such as payment processors to new startups focused exclusively on blockchain. Despite their differing positions within the finance world,

participants all had a generally positive view of the prospect of governments regulating blockchain. They also all emphasized the need for clear definitions as a necessary and beneficial step in building out regulatory oversight.

Several participants framed crypto as a major opportunity for California, with one noting that blockchain can spur startups and startups can spur growth, and another suggesting California can destigmatize crypto by promoting a greater understanding in the public sphere. All appreciated that California is already taking the first step and convening discussions with a diverse group of stakeholders.

A dominant theme was that the blockchain universe moves at the speed of innovation, new products and terminologies emerging constantly. For example, the use of the term "stable coins" has expanded quickly to include "asset backed stable coins" and "algorithmic stable coins." Both are technically stable coin products, but each operates in an entirely different way and, as the participants pointed out, regulatory definitions should reflect the reality of these differences.

Participants offered several ideas for helping think through possibilities for state regulations and consumer protections. One was the idea of pursuing a risk disclosure-based approach, which would involve focusing on regulating specific financial activities rather than focusing on regulating specific financial entities. Another idea was to use a "measure twice—cut once" approach to locking in regulatory definitions, meaning California should plan carefully and execute once in order to achieve positive results.

Several participants noted that blockchain is often built out with the goal of providing a decentralized financial system, as opposed to a centralized financial system. Decentralized systems are designed to be detached from the control of large organizations. Attempting to regulate decentralized products using a traditional centralized approach may not work for the industry or for consumers. To paraphrase a question asked by one of the participants:

"Can a nonproprietary financial infrastructure exist under proprietary regulatory guidelines?"

Another risk was identified as the possibility of governments ending up trying to gather too many blockchain organizations or products under the same regulatory umbrella. Financial technology stakeholders encouraged California to look at regulating blockchain using a technology-based model vs an entity-based model as one way to avoid this type of issue.

Echoing comments made during our other roundtables, financial technology stakeholders also underscored the need for consumer education. Participants noted that consumers look at blockchain products and become overwhelmed and struggle to find trusted resources. A strong regulatory framework was seen as an extremely helpful way forward. Not only would regulations strengthen and expand consumer participation, but they would also help innovators to develop their products and technologies in a responsible way.

Exchanges

Exchanges, within the blockchain universe, are places where consumers can open accounts to buy and sell crypto assets. The stakeholders representing exchanges had several clear messages, with the most important being that they would like to see a clear, consistent, and relatively compact regulatory structure.

Definitions again emerged as critical to the regulatory process. Participants echoed other roundtables by pointing out that cryptocurrencies, non-fungible tokens (NFTs), and other products can be distinctive for specific sets of customers and industries. For example, a financial technology company selling an NFT might intend for it to create and store financial value, whereas a fashion brand selling an NFT might intend to treat it as proof of ownership, a way of demonstrating authenticity and tracking control of a physical good. The latter would not be intended to be a financial instrument or a store of value, and nor would they wanted to be treated similarly to a bank, for example.

In these types of complex situations, participants suggested that disclosures could

be especially important. Bad actors in NFTs and other products will sometimes release disingenuous roadmaps, meaning releasing a strategic plan in which the creator might identify future goals that are unlikely or not intended to be achieved.

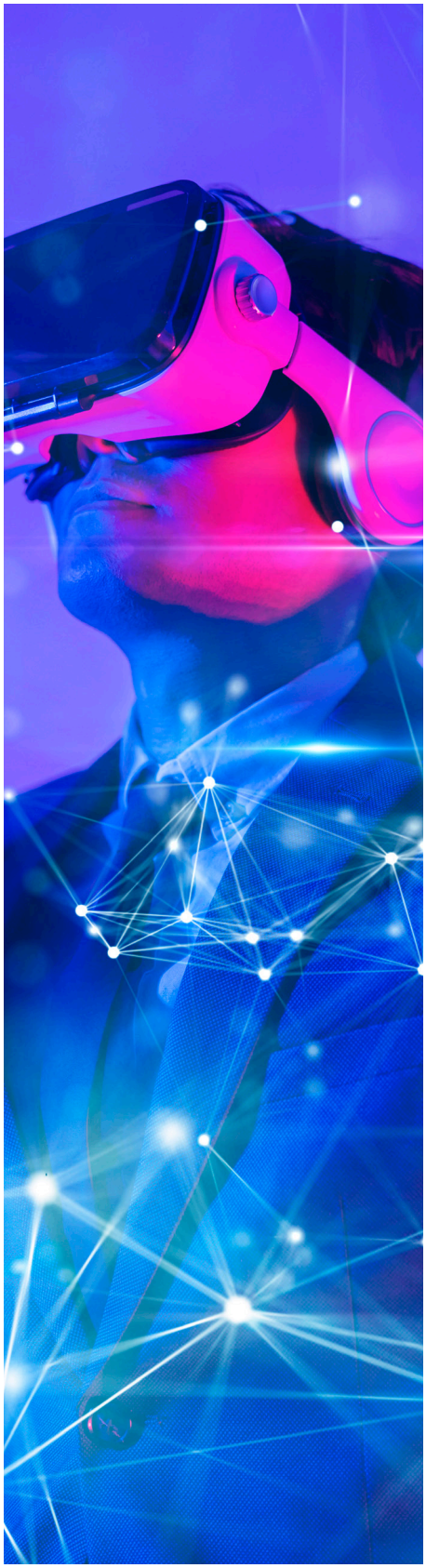
Unlike some corners of the blockchain universe, exchanges have already become subject to state, national, and foreign regulatory authorities. Participants shared the view that multistate coordination within the United States would create several benefits. Having to fulfill only one set of state-level compliance measures would save businesses time and money. Not having the additional barrier of having to track competing state-level regulations would also keep American blockchain industries competitive globally and maximize innovation.

There was broad agreement that because of its market size, California has an opportunity to create a regulatory model that other states and nations might follow. Effective regulatory standards will be necessary to build a solid regulatory floor. But, participants cautioned, unrealistic regulatory standards may have negative impacts: consumers presented with reduced market access might end up seeking access or products in other parts of the world.

Another idea that came from the roundtable was to create regulatory sandboxes while striving to avoid sand traps. Blockchain innovators want to have helpful two-way communication with regulators, the type of relationship that allows businesses to explore new products and regulators to gain access and build an understanding of those products. But what companies fear is opening themselves up, only to later face "gotcha" moments, where sharing information results in negative penalties rather than productive conversations.

Several other ideas revolved around transparency. Stakeholders mentioned the importance of having clear and standardized fees was critical, because complex and/or unreasonable fees foment confusion in the marketplace. Competition would be decreased, and barriers to entry would be increased; the result would be less innovation and worse outcomes for Californian and American companies. As part of this request for transparency, participants also specifically mentioned that businesses and investors need to have clarity in terms of decision-making timelines for regulatory approvals.

Metaworlds, NFTs, and Other Blockchain Applications



We also spoke with stakeholders interested in advancing metaworlds, virtual wallets, NFTs, and various other applications associated with blockchain technology. Although the members of this group had extremely different histories and roles within the blockchain universe, it was notable that they still joined the other stakeholder groups in flagging the need for clear regulations.

Broadly speaking, a metaworld is a social and economic space on the internet in which blockchain technology is often used to allow users to have ownership of digital assets within that particular space. An NFT is a record associated with a digital or physical asset that can be owned or transferred. These and other resources can be used to pursue many disparate activities, ranging from creating relatively small and specialized marketplaces to sustaining relatively large and complex economies. A metaworld user can, for example, potentially obtain a virtual wallet that allows them to use NFTs to buy and sell virtual real estate, among other things.

One stakeholder stressed that NFTs will be central to the evolution of metaworld economies, then noted that some companies are seeking to enhance and stabilize metaworld economies by implementing verifiable credentials (discussed more below). This is because, when creating certain online projects or metaworld experiences, identifying specific participants is seen as helpful and/or necessary.

Another stakeholder spoke about the ways artists

can use NFTs. Traditional art markets were said to be hierarchical and highly mediated, with the result being that non-established artists tend to face overhead costs when showing their work, transaction costs when selling via third parties, and other barriers to making a living. By contrast, blockchain can reduce costs and broaden access.

Being able to use NFTs to sell digital art can, they argued, bypass barriers and monetize creativity. For example, some platforms for buying and selling NFTs make it possible to earn royalties on the same piece every time it is resold, which tends to be difficult, if not impossible, for physical pieces sold in traditional venues. However, this royalty feature is not enforced by all markets, including some of the biggest NFT markets today. Having access to more and lower-cost marketplaces may also allow disabled artists, who might not otherwise have many opportunities, to build careers.

These same stakeholders also identified emerging challenges. Echoing many others, a metaworld representative suggested that regulatory definitions will be critical; metaworld companies will need to have a clear sense of when, how, and to whom regulations will apply in order to achieve compliance.

Artists can also find blockchain environments to be complex and governmental tax structures to be confusing. Anyone trying to monetize their artwork using NFTs faces a potentially steep learning curve. Without much institutional support, and despite the threat of fraud and scams, trial and error remain the main pathway to success. At the same time, anyone who succeeds in monetizing their artwork using NFTs faces ambiguous and/or difficult tax situations. One stakeholder found that different Certified Public Accountants (CPAs) offered conflicting advice on applying tax laws, some of which were designed for large corporations rather than individual artists.

Venture Capital

Our venture capital roundtable further underlined several dominant themes that emerged in other discussions. Participants emphasized that California is well-positioned to be a market and regulatory leader and that well-designed, well-communicated regulations will be helpful. However, they also cautioned that becoming a regulatory leader will require ensuring that innovators have sufficient flexibility and sufficient or improved incentives for continuing to innovate.

As several other groups had, venture capital representatives distinguished between good

actors and bad actors. There was general agreement that a primary goal of regulatory frameworks should be to separate good actors from bad actors by, for example, clarifying and incentivizing positive market behavior and preventing and disincentivizing negative market behavior. In particular, targeting unlicensed companies and other bad actors with enforcement actions was seen as something that would help create more investment, continued innovation, and healthier competition.

However, several participants emphasized that it is important to not only challenge bad actors but to support good actors. Regulatory sandboxes, no action letters, and conditional licensing were some of the examples cited as potentially positive incentives that could be used to make sure venture-backed companies will be attracted to California and retained. Being a regulatory leader, in this sense, would mean setting a high bar for what it means to be a licensed, while also potentially providing attractive services and incentives.

Participants were also in general agreement that regulatory clarity and certainty are extremely important. Disclosures were said to be a way of weeding out scams; consumer protections were said to be a necessary way of growing and sustaining profitable consumer markets; and transparency was said to be critical for the effectiveness of any and all regulatory steps.

More consistently than other groups, venture capital stakeholders framed the blockchain universe as existing in the context of intense global competition. As others had, several stressed that regulatory timelines must move at the speed of innovation in order for California to successfully leverage its current position as home to high numbers of both blockchain companies and interested consumers.

But with more details and more concern than others, those same participants also stressed that the stakes are extremely high. Failing to move quickly or failing to establish streamlined procedures for licensure and compliance might result in entrepreneurs, companies, and/or consumers looking overseas for alternative opportunities. Pursuing an enforcement-first approach would also risk making investors look elsewhere. Jobs, growth, and innovation are thus at stake, they noted.

Government Services and Verifiable Credentials

Another roundtable focused on public-oriented use cases, including the potential for implementing new, more, and/or better government services. The circulation of records, credentials, and resources is central to providing the public with a range of programs and

services. Participants suggested, in particular, that creating new and more secure verifiable credentials might be a powerful way of improving modern forms of government.

One major opportunity that was mentioned is the possibility for using blockchain-enabled credentials to disburse benefits and payments more easily and effectively. Another is the possibility of reducing the complexity of recordkeeping while also improving accuracy. Still another is the possibility of reducing a range of administrative costs.

The roundtable suggested the need not just for a clear and transparent regulatory framework in general but state-level leadership in particular. Participants noted that local governments are already interested in piloting these and other innovative approaches to public service, but added that state regulations will be critical for providing the flexibility and clarity for implementing new technologies.

Participants also mentioned the importance of regulatory definitions as a first and especially critical step in any regulatory process. Like their counterparts in the private sector, innovators working to use verifiable credentials in the public sector worry that overly broad definitions might inadvertently limit or complicate innovation. Trying to regulate distinctive products, services, or technologies under the same regulatory umbrella risks applying limitations that might not be reasonable in every case and/or that might discourage or prohibit new and publicly beneficial approaches to government.

Environmental Protection

The planet's ongoing climate and energy challenges make it important to consider any new technology in the context of environmental protection, energy systems, and overall statewide resilience. As with several of the others, our environmental roundtable highlighted the need for consumer protections, the difficulty of regulating a fast-evolving industry, and the benefit of potentially having clear regulations from the California state government. However, participants mainly focused on unpacking the nature and impact of a specific division within the blockchain universe.

There are two main technical methods currently in use for validating blockchain transactions: proof of work and proof of stake. Proof of work involves mining computers solving cryptographic equations in order to gain the authority for being able to confirm blockchain transactions and receive a reward for their service. By contrast, proof of stake involves miners using their existing assets and experience to try and get randomly assigned the

authority to confirm blockchain transactions, along with a reward. Proof of work requires heavy computing power and energy use, whereas proof of stake requires much lower levels of power and energy usage.

One of the largest blockchain networks, Ethereum, moved to proof of stake validation in September. Participants noted that the estimates for the switch by Ethereum to a proof of stake this year will reduce its energy consumption by 99%.

Participants noted that California is not seeing a rapid increase in proof of work mining activity because of the state's relatively high energy costs. Still, there was a general consensus that if proof of work is widely adopted, then global emissions and negative climate impacts will increase. According to stakeholders, other states are re-activating coal-fired plants and other non-clean energy sources in order to promote proof of work mining, which is ultimately a climate risk for California and the world. As noted in the White House September report on Energy Implications of Crypto-Assets in the United States, the electricity use of global crypto assets may be as high as the energy use of the entire country of Australia or Argentina. Therefore, even if California does not see a high proof of work mining activity, wide adoption of proof of work technologies will result in increased global emissions.

Trying to regulate the blockchain universe, they suggested, should thus include considerations surrounding environmental protections. This could, for example, include making sure that consumer protections result in clear and accurate information about the environmental impacts and particular energy dynamics of blockchain platforms, products, and/or services, including any claims of clean energy use and carbon offsets.

The planet's ongoing climate and energy challenges make it important to consider any new technology in the context of environmental protection, energy systems, and overall statewide resilience.

Regulatory Progress

As stakeholders indicated, the future success of blockchain depends on sensible government regulations. The Governor's EO anticipated this by directing DFPI to pursue a range of efforts aimed at creating clear and responsible regulatory frameworks. In response to this directive, DFPI has initiated several related workstreams.

Strategic Engagement

In order to align with government agencies beyond California and provide clear guidance to financial institutions, DFPI has solicited input from both inside and outside the state.

Outside of California, staff met widely and regularly with external financial regulators. These included state regulators in Illinois, Vermont, Kentucky, New York, Washington, and many other states. These also included federal regulators such as the Federal Trade Commission, Consumer Financial Protection Bureau, Securities and Exchange Commission, Commodity Futures Trading Commission, and Federal Reserve.

Inside of California, DFPI issued an invitation for comment soliciting feedback on how California should approach crypto assets and crypto asset-related products. The solicitation—which was shared via press release, social media, public appearances, letters to licensees, direct outreach, and other mediums—was open during June, July, and early August. DFPI received dozens of responses representing nearly 50 organizations, including consumer groups, environmentalists, banking entities, and fintech representatives.

Public input echoed what we heard during the stakeholder engagement process. Commentors suggested that California should:

- **Provide regulatory clarity—**including by basing regulations on specific types of activities, products, and services (rather than specific entities).
- **Harmonize with federal guidelines—**including by modeling key terms and requirements on those used by federal regulators.
- **Avoid over-regulation—**including by minimizing compliance costs.
- **Prioritize consumer protection—**including by leveraging existing laws and creating disclosure requirements, consumer education, and enforcement.
- **Establish cybersecurity standards—**including by raising existing standards.
- **Address environmental risks—**including by acknowledging existing risks posed by blockchain industries and incentivizing clean energy usage.

Also within California, the Governor's EO calls on DFPI to issue crypto-related guidance to banks and credit unions. DFPI paved the way for future guidance by conducting a survey between late July and early September, 2022, and collecting responses from nearly 200 financial institutions. Preliminary findings indicate that roughly 20 percent of respondents offer or plan to offer crypto asset-related products or services, and that credit unions are the type of licensee most likely to offer such products or services. DFPI will issue guidance to state-licensed banks and credit unions in March 2023.

Consumer Protection and Equity

Other DFPI workstreams include drafting consumer protection principles, promoting consumer education, and fielding consumer complaints. For example, the Governor's EO directs DFPI to publish consumer protection principles and allows DPFI to issue model disclosures. DFPI thus plans to use input from the stakeholder engagement process and the solicitation for public comment to issue consumer protector principles.

The EO directs DFPI to educate crypto consumers across a variety of communication platforms. The result has been a steady increase in outreach and awareness materials. DFPI now hosts a dedicated crypto asset webpage, promotes crypto-related information on

social media, and conducts public consumer events on internet fraud. DFPI will also partner with community-based organizations to better understand what information consumers need and want based on their lived experiences. Between May and early September 2022, DFPI issued more than 30 consumer alerts related to crypto assets, drawing attention to a range of harmful activities, including unlicensed crypto-related business practices. DFPI will also translate materials into multiple languages to remove barriers and ensure meaningful access to consumer education materials and resources.

In partnership with the American Association of Retired People, DFPI established a weekly webinar called "Scam Chat Wednesdays," educating older adults on the hazards of internet applications and digital currencies. In partnership with federal regulators, DFPI has also begun working to create intergovernmental consumer education projects. Future projects may include, for example, issuing co-branded materials, developing co-hosted virtual events, and sharing information via Memoranda of Understanding (MOUs).

The EO further directs DFPI to improve its consumer complaint process, to work with companies to remedy complaints, and to consult law enforcement agencies regarding criminal activity. An existing system for collecting and coding crypto-related complaints has been improved, and a new system for consumer complaints that is being developed will feature a crypto-specific mechanism for inputting and tracking complaints.

Other recent efforts at fostering consumer protection have involved DFPI, as directed by the EO, beginning to plan a voluntary market-monitoring inquiry. Blockchain companies will be asked to offer information about their California activities to assist DFPI in undertaking any potential rulemaking activities in the future. Preliminary input was gathered via the public commentary process, and DFPI intends to start the full market-monitoring inquiry process in early 2023.

Financial Oversight

DFPI is currently monitoring crypto-related lenders, overseeing crypto-related securities, and providing crypto-related enforcement. DFPI has issued licenses to 10 crypto asset-related companies that engage in lending activities that fall under California financial licensing laws. Some make consumer loans that are secured by crypto assets, while others make commercial loans to crypto asset-related companies.

In terms of securities, DFPI has already "qualified" a small number of crypto assets. Under

the California Corporate Securities Law of 1968, certain securities offerings be reviewed and approved by DFPI and ultimately become qualified through one of several means (unless the offerings are exempt). So far DFPI has qualified one crypto asset-related securities offering via federal coordination (meaning the issuer's existing filing with federal regulators allowed for state-level approvals) and qualified another two offerings via state qualification.

An additional 200 notices have been received indicating that crypto asset-related securities have been offered in California in limited offerings or private placements that are not subject to DFPI's review and approval; these filings have typically been designed to raise capital for crypto-related service providers, rather than for investment vehicles involving crypto assets.

DFPI has already begun enforcement actions against crypto asset companies when warranted. Violations of existing law have led DFPI to:

- **Take action to stop four unregistered security issuers—**by issuing desist and refrain orders to companies offering "crypto interest account" products, which must either be exempt from state law or be qualified by DFPI. (These accounts allow companies and consumers to turn crypto deposits into interest earnings, making them securities based on the Howey test.)

- **Take action to stop 13 unlawful investment schemes—**by issuing desist and refrain orders to companies running unregistered and thus unlawful programs that promise consumers low-risk, high-reward via crypto investments.

- **Strengthen coordination with law enforcement—**by referring two crypto issues to law enforcement agencies.

While continuing to develop new regulatory frameworks, DFPI anticipates continue to take action to ensure existing law is enforced.

Responsible Innovation Summit

In early October, in partnership with the University of California Berkeley's Center for Responsible, Decentralized Intelligence, DFPI hosted a major event—the Summit on Responsible Innovation in Crypto and Web3.

Public leaders in attendance included BCSH Secretary Lourdes Castro Ramírez, GovOps

Secretary Amy Tong, DFPI Commissioner Cloey Hewlett, Senator Monique Limón, Assemblymember Tim Grayson, Treasurer Fiona Ma, and Chief Deputy Cabinet Secretary Ben Chida. Higher education leaders included UC Berkeley Chancellor Carol Christ and UC Berkeley Chief Innovation and Entrepreneurship Officer Rich Lyons. Private sector representatives also provided recommendations and helpful dialogue.

Further underscoring several issues and themes that DFPI continues to hear in other forums, participants noted that California should:

- **Build out responsible regulation—**to ensure blockchain's future success.
- **Continue to offer regulatory leadership—**including by embedding "California values" such as environmental protection in new frameworks.
- **Consider rethinking existing models—**to align regulatory frameworks with new types of technologies and policy problems.
- **Prioritize consumer education and protection—**including basic financial literacy.
- **Foster continued conversations—**including via more conferences.

Going forward, after having begun workstreams and conversations that range from consumer protections to enforcement actions, DFPI now anticipates being much better positioned to finalize a clear and responsible regulatory framework.

DFPI is currently monitoring crypto-related lenders, overseeing crypto-related securities, and providing crypto-related enforcement.

Public Use Cases

While other agencies have focused on the broader context of blockchain developments, GovOps has focused on harnessing blockchain technology for the benefit of public agencies, government services, and California residents.

Governor Newsom's EO built on the California Blockchain Working Group, which issued recommendations on potential public uses cases in July 2020. The EO tasks GovOps with issuing a Request for Innovative Ideas to explore a public use case of blockchain technologies and adding blockchain to the list of future Requests for Innovative Ideas.

Potential pilots being explored by GovOps include the use of smart contracts and new forms of state-recognized identification, and especially promising are potential uses identified by the Department of Motor Vehicles (DMV).

DMV Title Transfers

The DMV is currently planning to leverage blockchain-based ledgers to record and track the transfer of vehicle ownership. The organization's broader goals include aiming to streamline and simplify customer-facing processes, allowing California residents to engage with the DMV in more timely and convenient ways. Transferring vehicle titles is notably complex. Blockchain is thus a promising means of offering increased efficiencies while also preserving existing fraud protections.

Tracking and circulating title information for every new, used, and salvaged vehicle in California requires the use of manual computer entries and paper documents. The costs and burdens associated with administering title transfers and ensuring trust between unrelated parties remain high. By contrast, introducing blockchain technology may result in fewer costs and greater protections.

By modeling individual vehicles as digital tokens, and by creating a blockchain-based escrow contract system, existing analogue steps such as checking for smog checks are being transformed into easier, more streamlined processes. The pilot is still underway and the DMV is working towards populating a private blockchain that creates a DMV-controlled record of all title-related transactions.

DMV Verifiable Credentials

The DMV is also exploring improvements to state-issued credentials. Potential use cases include taking existing forms, placards, licenses, or other physical products issued by the DMV, and enhancing and/or reinventing them by adding blockchain-based forms of fraud prevention.

Digital signatures and other verification procedures could be used to ensure that issuing and tracking these types of products is safer and more efficient.

In late 2022 and early 2023, the DMV anticipates proving the utility of these use cases by piloting new disabled placards, new credentials for tracking driver safety courses, and driver's licenses.

Research and Workforce Pipelines

The state's world-class postsecondary ecosystem—the University of California, the California State University, the California Community Colleges, and myriad independent universities—is an unparalleled engine of innovation and talent.

Prior generations of innovation have lacked coordination, collaboration, and intentionality among educational institutions. For students, the lack of coordination resulted in inequitable opportunities for both entrepreneurship and employment—founders and technical talent were generated by only a subset of the state's diverse colleges and universities. For California, the lack of coordination resulted in innovation often untethered from the public good.

To help serve as a hub to align postsecondary institutions, the 2022-23 Budget invested $2.5 million in UC Berkeley's Center for Responsible, Decentralized Intelligence. This capacity—based at the university ranked by Coindesk as #1 in the nation for blockchain—supplements state-level discussions to promote coordination, including at the Governor's Council for Postsecondary Education.

At the regional level, thirteen collaboratives composed of K-12 schools, postsecondary institutions, workforce leaders, and private-sector partners are working to build regional workforce pipelines. Funded with $250 million in the 2021-22 Budget, most have prioritized workforce pipelines to technology sectors, including emerging industries related to Web3.

At both the state and regional levels, early coordination of California's postsecondary institutions will help ensure innovation is cultivated within responsible guardrails and resulting opportunities are equitably accessible.

Conclusion

Next Steps

The state must allow for and encourage innovation, while developing consumer protection guardrails that enable the private market to thrive. We must strike a balance, striving for transparency and clarity without being overly prescriptive and burdensome. We must encourage continued investment in California to remain the leader in the blockchain and Web3 sector, while also advancing equity, and protecting California consumers and our environment.

At the time of this report, the federal legislative and regulatory approaches to crypto assets remain a work in progress. Our agencies stand committed to continued work with industry, consumer, environmental and financial inclusion advocates, the state legislature, and the federal government to ensure alignment as blockchain technology usage evolves and becomes more widespread. Additionally, the state is taking exciting steps to implement blockchain technology solutions within state government.

To encourage the continued growth and adoption of blockchain technology here in California, our agencies recommend the following next steps, in addition to the remaining work outlined in the Governor's EO:

1. **Continue engagement with stakeholders.** California must continue to be transparent and collaborative in order to remain the leader of responsible blockchain innovation,

- All agencies will continue dialogue with industry, advocates, and regulators to stay apprised of new technologies, products, definitions and risks and look to organize or attend convenings around blockchain technology.

- DFPI will complete its evaluation of responses to its invitation for comment and will continue engagement with stakeholders, including other regulators, to identify and implement optimal regulatory approaches.

- GO-Biz will offer its full suite of business assistance, including site selection, permit assistance, and incentive navigation, to current blockchain-based companies, start-ups, and investors.

2. **Promote consumer protections and consumer education regarding blockchain and crypto products.** As noted throughout this report, consumer protection is market protection—and it is critical for this emerging sector.

    - DFPI will continue to educate and train its staff regarding blockchain and crypto in order to better supervise companies offering crypto asset-related financial products and services and mitigate scams and frauds that prey upon consumers who are curious about using such products and services.

        - To best assist consumers who have encountered and been victimized by crypto asset-related scams and frauds, the DFPI will train its Consumer Services Office staff who engage with consumers on how best to seek redress.

    - DFPI will accelerate efforts to educate Californians about how to use certain crypto asset-related financial products and services safely, how to better understand the risks, and how to avoid scams and frauds.

    - DFPI will develop and publish standards for use in reviewing crypto asset-related securities to help provide more meaningful investor disclosures and to allow companies who wish to offer such securities more quickly and efficiently.

    - DFPI will publish general consumer protection principles to guide companies in prioritizing consumer interests when offering crypto-asset related financial products and services.

3. **Work with the Legislature to identify gaps and clarify statutory authority as needed with respect to regulating crypto assets.** This will encourage further investment in

California and protect consumers by having laws for crypto-asset related financial services and products.

- DFPI will seek harmonization between California's regulatory approach with federal, other states, and local jurisdictions.
- DFPI will generate and publish data on Californian's use of crypto asset-related financial products and services, as well as data about the increasing number of complaints that the DFPI receives related to crypto assets.
- DFPI will engage with the Legislature on an on-going basis to share regulatory insights, complaint trends, information relating to federal and other state regulatory policies, and DFPI's crypto-asset related resource needs.

4. **Explore and develop more government use cases.** The public sector may be able to utilize blockchain technology to increase efficiencies, improve access to services, and reduce costs.
   - GovOps will continue working with state agencies and other levels of government to identify and promote blockchain pilot programs, similar to those now underway at the DMV.
5. **Encourage more environmentally efficient blockchain technologies and environmental protections.** Some blockchain technologies require large amounts of energy to support their operation.
   - To address this, relevant state agencies will explore various policy interventions to reduce energy use and climate impacts of blockchain technology. For example, they might encourage the use of proof of stake, rather than proof of work technology that in some cases has reduced energy use by an estimated 99 percent.
6. **Leverage California's unparalleled higher education systems and diverse talent to build a best-in-class workforce and drive additional research and innovation in the blockchain sector.**
   - Agencies, industry, and higher education systems should continue to explore new partnership opportunities and collaboration that supports a growing industry and technology.

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