

September 15, 2022

The Honorable Janet Yellen  
Secretary  
U.S. Department of the Treasury  
1500 Pennsylvania Avenue NW  
Washington, D.C. 20220

Dear Secretary Yellen:

I am writing regarding the Treasury Department's (Treasury's) comprehensive review of the risks and opportunities presented by the proliferation of the digital asset market, which "will highlight the economic danger of cryptocurrencies in several key areas, including the fraud risks they pose for investors."<sup>1</sup> It is crucial that Treasury "create the analytical basis for very strong oversight of this sector of finance"<sup>2</sup> because cryptocurrency poses grave risks to investors and to the economy as a whole.

For well over a year, I have been ringing the alarm on the many threats posed by the crypto market, which demand a coordinated, cohesive response from the Treasury Department and other financial regulators.<sup>3</sup> I am deeply concerned by the volatility of the cryptocurrency market and

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<sup>1</sup> The Washington Post, "Treasury will warn White House that crypto needs major regulations," Jeff Stein and Tory Newmyer, September 8, 2022, <https://www.washingtonpost.com/us-policy/2022/09/08/treasury-crypto-warn-white-house/>.

<sup>2</sup> *Id.*

<sup>3</sup> Letter from Senators Warren, Durbin, Whitehouse, and Sanders to Acting Comptroller of the Currency Hsu, August 10, 2022, <https://www.warren.senate.gov/imo/media/doc/2022.08.10%20Letter%20to%20OCC%20re%20crypto%20guidance.pdf>; Letter from Senators Warren, Whitehouse, Markey, and Merkley, and Representatives Huffman and Tlaib to Environmental Protection Agency Administrator Regan and Energy Secretary Granholm, July 15, 2022, <https://www.warren.senate.gov/imo/media/doc/2022.07.15%20Letter%20to%20EPA%20and%20DOE%20Re%20Cryptomining%20Environmental%20Impacts.pdf>; Letter from Senator Warren to Fidelity Investments CEO Abigail Johnson, May 4, 2022, [https://www.warren.senate.gov/imo/media/doc/2022.05.04%20Send%20letter%20to%20Fidelity%20re%20401\(k\)%20Bitcoin%20investments.pdf](https://www.warren.senate.gov/imo/media/doc/2022.05.04%20Send%20letter%20to%20Fidelity%20re%20401(k)%20Bitcoin%20investments.pdf); Letter from Senators Warren, Warner, Brown, and Reed to Treasury Secretary Yellen, March 2, 2022, <https://www.warren.senate.gov/imo/media/doc/2022.03.01%20Letter%20to%20Treasury%20re%20OFAC%20crypto%20sanctions%20enforcement.pdf>; American Banker, "Warren: CFPB should take a closer look at overdraft fees, crypto," Hannah Lang, July 19, 2021, <https://www.americanbanker.com/news/warren-cfpb-should-take-a-closer-look-at-overdraft-fees-crypto>; Letter from Senator Warren to Securities and Exchange Commission Chair Gensler, July 7, 2021, <https://www.warren.senate.gov/imo/media/doc/Draft%20SEC%20Crypto%20Exchange%20Letter%2007.7.2021%20clean.pdf>; Remarks from Senator Warren to the U.S. Senate Banking, Housing, and Urban Affairs Committee's Subcommittee on Economic Policy, June 9, 2021, <https://www.banking.senate.gov/newsroom/majority/at-hearing-warren-delivers-remarks-on-digital-currency>; Letter from Senators Warren, Whitehouse, Merkley, Hassan, and Markey, and Representatives Porter, Tlaib, and Huffman to Riot Blockchain, Inc. CEO Jason Les, January 27, 2022,

the inadequate regulatory environment in which crypto scams, fraud, theft, and evasion continue to run rampant and mom-and-pop investors' savings have evaporated.<sup>4</sup> Cryptocurrency threatens our climate, our economy, and consumers while damaging national security by undermining sanctions regimes against foreign enemies. Attached to this letter, you will find copies of nine crypto-focused oversight letters I have sent over the past two years.<sup>5</sup> I hope you will take them into consideration as you continue to develop a strong regulatory strategy around the crypto

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<https://www.warren.senate.gov/imo/media/doc/2022.01.27%20Letters%20to%20Cryptominers.pdf>; Letter from Senators Warren, Whitehouse, Merkley, Hassan, and Markey, and Representatives Porter, Tlaib, and Huffman to Marathon Digital Holdings CEO Fred Thiel, January 27, 2022,

<https://www.warren.senate.gov/imo/media/doc/2022.01.27%20Letters%20to%20Cryptominers.pdf>; Letter from Senators Warren, Whitehouse, Merkley, Hassan, and Markey, and Representatives Porter, Tlaib, and Huffman to Stronghold Digital Mining Co-Chairman and CEO Gregory Beard, January 27, 2022,

<https://www.warren.senate.gov/imo/media/doc/2022.01.27%20Letters%20to%20Cryptominers.pdf>; Letter from Senators Warren, Whitehouse, Merkley, Hassan, and Markey, and Representatives Porter, Tlaib, and Huffman to Bitdeer General Manager – North America Stephanie Xia, January 27, 2022,

<https://www.warren.senate.gov/imo/media/doc/2022.01.27%20Letters%20to%20Cryptominers.pdf>; Letter from Senators Warren, Whitehouse, Merkley, Hassan, and Markey, and Representatives Porter, Tlaib, and Huffman to Bitfury Group CEO Brian Brooks, January 27, 2022,

<https://www.warren.senate.gov/imo/media/doc/2022.01.27%20Letters%20to%20Cryptominers.pdf>; Letter from Senators Warren, Whitehouse, Merkley, Hassan, and Markey, and Representatives Porter, Tlaib, and Huffman to Bit Digital CEO Bryan Bullett, January 27, 2022,

<https://www.warren.senate.gov/imo/media/doc/2022.01.27%20Letters%20to%20Cryptominers.pdf>; Letter from Senator Warren to Greenridge Generation Holdings, Inc. CEO Jeffrey Kirt, December 2, 2021,

<https://www.warren.senate.gov/imo/media/doc/2021.12.2.%20Letter%20to%20Greenidge%20Generation%20on%20Crypto.pdf>; Letter from Senator Warren to Treasury Secretary Yellen, July 26, 2021,

<https://www.warren.senate.gov/imo/media/doc/FSOC%20Crypto%20Letter%2007.26.2021.pdf>.

<sup>4</sup> The New York Times, "Crypto Crash Widens a Divide: 'Those With Money Will End Up Being Fine,'" David Yaffe-Bellany, June 29, 2022, <https://www.nytimes.com/2022/06/29/technology/crypto-crash-divide.html>.

<sup>5</sup> Letter from Senators Warren, Durbin, Whitehouse, and Sanders to Acting Comptroller of the Currency Hsu, August 10, 2022,

<https://www.warren.senate.gov/imo/media/doc/2022.08.10%20Letter%20to%20OCC%20re%20crypto%20guidance.pdf>; Letter from Senators Warren, Whitehouse, Markey, and Merkley, and Representatives Huffman and Tlaib to Environmental Protection Agency Administrator Regan and Energy Secretary Granholm, July 15, 2022,

<https://www.warren.senate.gov/imo/media/doc/2022.07.15%20Letter%20to%20EPA%20and%20DOE%20Re%20Cryptomining%20Environmental%20Impacts.pdf>; Letter from Senator Warren to Fidelity Investments CEO Abigail Johnson, May 4, 2022,

[https://www.warren.senate.gov/imo/media/doc/2022.05.04%20Send%20letter%20to%20Fidelity%20re%20401\(k\)%20Bitcoin%20investments.pdf](https://www.warren.senate.gov/imo/media/doc/2022.05.04%20Send%20letter%20to%20Fidelity%20re%20401(k)%20Bitcoin%20investments.pdf); Letter from Senators Warren, Warner, Brown, and Reed to Treasury Secretary Yellen, March 2, 2022,

<https://www.warren.senate.gov/imo/media/doc/2022.03.01%20Letter%20to%20Treasury%20re%20OFAC%20crypto%20sanctions%20enforcement.pdf>; Letter from Senator Warren to Securities and Exchange Commission Chair Gensler, July 7, 2021,

<https://www.warren.senate.gov/imo/media/doc/Draft%20SEC%20Crypto%20Exchange%20Letter%2007.7.2021%20clean.pdf>; Letter from Senators Warren, Whitehouse, Merkley, Hassan, and Markey, and Representatives Porter, Tlaib, and Huffman to Crypto Mining Companies, January 27, 2022,

<https://www.warren.senate.gov/imo/media/doc/2022.01.27%20Letters%20to%20Cryptominers.pdf>; Letter from Senator Warren to Greenridge Generation Holdings, Inc. CEO Jeffrey Kirt, December 2, 2021,

<https://www.warren.senate.gov/imo/media/doc/2021.12.2.%20Letter%20to%20Greenidge%20Generation%20on%20Crypto.pdf>; Letter from Senator Warren to Treasury Secretary Yellen, July 26, 2021,

<https://www.warren.senate.gov/imo/media/doc/FSOC%20Crypto%20Letter%2007.26.2021.pdf>; Letter from Senators Warren and Reed to Office of Financial Research Director Dino Falaschetti, January 14, 2022,

<https://www.warren.senate.gov/oversight/letters/warren-reed-urge-ofr-director-falaschetti-to-step-up-and-use-tools-granted-by-congress-to-help-protect-consumers-and-the-economy>.

market.

I urge you to take steps, both in your capacity as Treasury Secretary and as Chair of the Financial Stability Oversight Council (FSOC or the Council), to protect the integrity of the American sanctions regime, reduce the effects of climate change and the burden on our energy infrastructure, ensure the safety and stability of our financial system, and protect consumers and investors.

## **Crypto Poses National Security Risks**

### *Sanctions Evasion and Illicit Finance*

In March 2022, colleagues and I wrote to you expressing our concern that “criminals, rogue states, and other actors may use digital assets and alternative payment platforms... to hide cross-border transactions for nefarious purposes.”<sup>6</sup> During the Senate Banking, Housing, and Urban Affairs (BHUA) Committee’s hearing on Federal Reserve Chair Powell’s Semiannual Monetary Policy Report to Congress in March 2022, I noted that “[c]rypto takes the sting out of sanctions.”<sup>7</sup> That same month, colleagues and I introduced the *Digital Assets Sanctions Compliance Enhancement Act of 2022*, which would close potential avenues for evasion of sanctions by Russian actors using digital assets.<sup>8</sup> When Chainalysis co-founder Jonathan Levin told me during another hearing that using a crypto mixing service “doesn’t make it harder to track the money,” I called him out on the falsehood.<sup>9</sup> Treasury’s Office of Foreign Assets Control (OFAC) must develop strong enforcement procedures with the capacity to effectively monitor and prevent sanctions evasion.

In the past six months alone, numerous reports of crypto-facilitated illicit finance and sanctions violations have surfaced, including:

- That hacking crypto platforms has become a major source of revenue for North Korea, earning the country nearly one billion dollars through June of this year.<sup>10</sup> The thefts “were aimed at funding North Korea’s nuclear weapons programme.”<sup>11</sup> Indeed, the

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<sup>6</sup> Letter from Senators Warren, Warner, Brown, and Reed to Treasury Secretary Yellen, March 2, 2022, <https://www.warren.senate.gov/imo/media/doc/2022.03.01%20Letter%20to%20Treasury%20re%20OFAC%20crypto%20sanctions%20enforcement.pdf>.

<sup>7</sup> Senator Elizabeth Warren, “At Hearing, Senator Warren Says ‘Crypto Takes the Sting Out of Sanctions’ and Calls for ‘Cracking Down on Crypto’ to Hold Russia Accountable for its Aggression,” press release, March 3, 2022, <https://www.warren.senate.gov/newsroom/press-releases/at-hearing-senator-warren-says-crypto-takes-the-sting-out-of-sanctions-and-calls-for-cracking-down-on-crypto-to-hold-russia-accountable-for-its-aggression>.

<sup>8</sup> Digital Asset Sanctions Compliance Enhancement Act of 2022, S.3867, <https://www.congress.gov/bill/117th-congress/senate-bill/386>.

<sup>9</sup> Senator Elizabeth Warren, “At Hearing, Warren Warns Putin and Russian Elites Could Use Crypto to Hide Their Wealth and Evade Economic Sanctions,” press release, March 17, 2022, <https://www.warren.senate.gov/newsroom/press-releases/at-hearing-warren-warns-putin-and-russian-elites-could-use-crypto-to-hide-their-wealth-and-evade-economic-sanctions>.

<sup>10</sup> The New York Times, “How North Korea Used Crypto to Hack Its Way Through the Pandemic,” Choe Sang-Hun and David Yaffe-Bellany, June 30, 2022, <https://www.nytimes.com/2022/06/30/business/north-korea-crypto-hack.html>.

<sup>11</sup> Reuters, “How crypto giant Binance became a hub for hackers, fraudsters and drug traffickers,” Angus Berwick

United Nations reported in February that “[b]etween 2020 and mid-2021 cyber attackers stole more than \$50m of digital assets” and that the funds are an “important revenue source” for the nation’s nuclear and ballistic missile program;<sup>12</sup>

- Russian Prime Minister Mikhail Mishustin signaled in August 2020 that Russia would move to accept digital assets for imports and exports, remarking that the adoption of such assets “can guarantee uninterrupted payment for the supply of goods from abroad and for export;”<sup>13</sup>
- RenBridge, a cross-chain bridge that allows users to move from one blockchain to another, has been used to launder over \$540 million in cryptocurrencies, including those stolen by Russia-linked ransomware operations and hackers affiliated with North Korea;<sup>14</sup>
- The virtual currency mixer Tornado Cash—which has now been sanctioned by OFAC—has been used to launder over \$7 billion in virtual currency since 2019;<sup>15</sup>
- Kraken, a crypto exchange, is “suspected of violating U.S. sanctions by allowing users in Iran and elsewhere to buy and sell digital tokens;”<sup>16</sup>
- The Office of the Comptroller of the Currency (OCC) announced in April 2022 that Anchorage Digital Bank, one of the three crypto companies granted a national trust bank charter, “failed to adopt and implement a compliance program” with the *Bank Secrecy Act* and other anti-money laundering rules, “including, in particular, internal controls for customer due diligence and procedures for monitoring suspicious activity, BSA officer and staff, and training.”<sup>17</sup>

I commend Treasury for the enforcement actions it has brought thus far against cryptocurrency industry participants, as in the case of Tornado Cash.<sup>18</sup> I encourage you to continue to take strong enforcement action, including in your assessment of penalties in cases where a company has not self-disclosed apparent violations or delayed implementation of sanctions policies and procedures.<sup>19</sup> As OFAC noted in an October 2021 guidance, “members of the virtual currency

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and Tom Wilson, June 6, 2022, <https://www.reuters.com/investigates/special-report/fintech-crypto-binance-dirtymoney/>.

<sup>12</sup> BBC News, “North Korea: Missile programme funded through stolen crypto, UN report says,” February 6, 2022, <https://www.bbc.com/news/world-asia-60281129>.

<sup>13</sup> Cointelegraph, “Russian PM takes cue from Iran’s crypto payment permits for imports,” Helen Partz, August 30, 2022, <https://cointelegraph.com/news/russian-pm-takes-cue-from-iran-s-crypto-payment-permit-for-imports>.

<sup>14</sup> Elliptic Connect, “Cross-chain Crime: More Than Half a Billion Dollars has Been Laundered Through a Cross-chain Bridge,” August 10, 2022, <https://hub.elliptic.co/analysis/cross-chain-crime-more-than-half-a-billion-dollars-has-been-laundered-through-a-cross-chain-bridge>.

<sup>15</sup> U.S. Department of the Treasury, “U.S. Treasury Sanctions Notorious Virtual Currency Mixer Tornado Cash,” press release, August 8, 2022, <https://home.treasury.gov/news/press-releases/jy0916>.

<sup>16</sup> The New York Times, “Kraken, a U.S. Crypto Exchange, Is Suspected of Violating Sanctions,” Ryan Mac and David Yaffe-Bellany, July 26, 2022, <https://www.nytimes.com/2022/07/26/technology/kraken-crypto-iran.html#:~:text=Kraken%2C%20one%20of%20the%20world's,with%20knowledge%20of%20the%20inquiry>.

<sup>17</sup> Consent Order issued by the Office of the Comptroller of the Currency against Anchorage Digital Bank, April 21, 2022, <https://www.occ.gov/static/enforcement-actions/ea2022-010.pdf>.

<sup>18</sup> U.S. Department of the Treasury, “U.S. Treasury Sanctions Notorious Virtual Currency Mixer Tornado Cash,” press release, August 8, 2022, <https://home.treasury.gov/news/press-releases/jy0916>.

<sup>19</sup> U.S. Department of Treasury, “OFAC Enters Into \$507,375 Settlement with BitPay, Inc. for Apparent Violations of Multiple Sanctions Programs Related to Digital Currency Transactions,” Enforcement Release, February 18, 2021, [https://home.treasury.gov/system/files/126/20210218\\_bp.pdf](https://home.treasury.gov/system/files/126/20210218_bp.pdf).

industry implement OFAC sanctions policies and procedures months, or even years, after commencing operations... expos[ing] virtual currency companies to a wide variety of potential sanctions risks.”<sup>20</sup> When Marathon Digital, a crypto mining company, announced it would refuse to process transactions involving crypto wallets that appeared on OFAC’s Specially Designated Nationals and Blocked Persons List,<sup>21</sup> the company received backlash because, according to Marathon CEO Fred Thiel, some industry members are “against the whole concept of doing anything that has anything to do with financial regulatory compliance or government regulation.”<sup>22</sup> Ultimately, Marathon terminated the sanctions-compliant policy under industry pressure.<sup>23</sup>

In recent years, OFAC has become increasingly reliant upon voluntary self-disclosure from sanctions violators for enforcement, with one report concluding that 67% of enforcement cases during the Trump administration were prompted by self-disclosure.<sup>24</sup> However, this model appears to be ill-suited for enforcing sanctions compliance in the cryptocurrency industry, particularly given the current weakness of the industry’s compliance programs. As you develop the foundations of a strong regulatory framework for this market, I urge you to consider stronger alternatives to this self-disclosure model.

### **Cryptomining Exacerbates Environmental Risks**

Over a third of the global computing power dedicated to mining Bitcoin is now drawn from miners – or highly-specialized and power-intensive computers<sup>25</sup> – in the U.S.<sup>26</sup> As the nation’s share of miners has increased, so too has the amount of energy they consume.<sup>27</sup>

Bitcoin’s estimated annualized global power consumption had increased nearly four-fold between the beginning of 2019 and mid-June 2022 to as high as 130 TWh, rivaling the total annual electricity usage of countries such as the Netherlands, Finland, Chile, and Denmark, and reportedly exceeding the total reductions in greenhouse gas emissions attributed to electric vehicles.<sup>28</sup> The total annual global electricity consumption associated with just the two largest

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<sup>20</sup> Office of Foreign Assets Control, “Sanctions Compliance Guidance for the Virtual Currency Industry,” October 2021, [https://home.treasury.gov/system/files/126/virtual\\_currency\\_guidance\\_brochure.pdf](https://home.treasury.gov/system/files/126/virtual_currency_guidance_brochure.pdf).

<sup>21</sup> CoinDesk, “Marathon Miners Have Started Censoring Bitcoin Transactions; Here’s What That Means,” Colin Harper, May 7, 2021, <https://www.coindesk.com/tech/2021/05/07/marathon-miners-have-started-censoring-bitcoin-transactions-heres-what-that-means/>.

<sup>22</sup> The Block, “Marathon says its mining pool will stop censoring transactions following bitcoin community outcry,” Kollen Post, June 2, 2021, <https://www.theblockcrypto.com/linkedin/106865/marathon-ofac-bitcoin-mining-pooltaproot>.

<sup>23</sup> *Id.*

<sup>24</sup> War on the Rocks, “The Past, Present, and Future of U.S. Sanctions Enforcement,” Bryan Early and Keith Preble, February 23, 2021, <https://warontherocks.com/2021/02/the-past-present-and-future-of-u-s-sanctions-enforcement/>.

<sup>25</sup> CoinDesk, “What Is Proof-of-Work?,” Alyssa Hertig, March 9, 2022, <https://www.coindesk.com/tech/2020/12/16/what-is-proof-of-work/>.

<sup>26</sup> The Wall Street Journal, “U.S. Takes Bitcoin Mining Crown After China Crackdown,” Caitlin Ostroff, October 27, 2021, <https://www.wsj.com/articles/u-s-takes-bitcoin-mining-crown-after-china-crackdown-11635327002>.

<sup>27</sup> The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>28</sup> The New York Times, “Bitcoin Uses More Electricity Than Many Countries. How Is That Possible?” Jon Huang, Claire O’Neill, and Hiroko Tabuchi, September 3, 2021,

cryptocurrencies by market capitalization, Bitcoin and Ethereum, has been estimated to be as high as 300 TWh in May 2022, comparable to the annual electricity usage of the United Kingdom.<sup>29</sup>

### *Rising Energy Costs*

The sheer volume of energy used by cryptomining operations and carbon dioxide emitted by those operations is cause for alarm. Over the past few months, hardly any part of our country has been spared from scorching heat or flood warnings.<sup>30</sup> And yet, at a time when many Americans are facing already-high cooling and heating costs,<sup>31</sup> cryptomining facilities' energy consumption is causing significant increases in energy costs for many residents and small businesses.

Cryptomining in the city of Plattsburgh, New York heavily contributed to residential electricity bills that were “up to \$300 higher than usual” in the winter of 2018, leading the city to introduce the nation’s first 18-month moratorium on new cryptomining operations.<sup>32</sup> A 2021 study estimates that “the power demands of cryptocurrency mining operations in upstate New York push up annual electric bills by about \$165 million for small businesses and \$79 million for individuals.”<sup>33</sup> And states like Texas with relatively cheap electricity costs are experiencing an influx of cryptomining companies, raising concerns about the state’s unreliable electricity market and the potential for cryptomining to add to the stress on the state’s power grid.<sup>34</sup>

In fact, last month, as Texans were facing both extreme heat and more than 70 percent increases in their electric bills,<sup>35</sup> Riot, a cryptomining company, announced that the Electric Reliability

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<https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>; Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, “Bitcoin network power demand,” June 2022, <https://web.archive.org/web/20220612070718/https://ccaf.io/cbeci/index/>; U.S. Energy Information Administration, “Electricity,”

<https://www.eia.gov/international/data/world/electricity/electricityconsumption>; Digiconomist, “Bitcoin now negating a decade of progress in deploying electric vehicles,” June 27, 2021, <https://digiconomist.net/bitcoin-now-negating-a-decade-of-progress-in-deploying-electric-vehicles/>; The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>29</sup> NDTV Profit, “Ethereum Upgrade To Cut Energy Consumption By Over 99%: Know More About It,” March 27, 2022, <https://www.ndtv.com/business/ethereum-upgrade-and-energy-consumption-here-s-all-you-need-to-know-2846026>; Digiconomist, “Ethereum Energy Consumption Index; Digiconomist, “Bitcoin Energy Consumption Index,” U.S. Energy Information Administration, “Electricity,”

<https://www.eia.gov/international/data/world/electricity/electricity-consumption>.

<sup>30</sup> CNN, “More than 100 million in the US face excessive warning or heat advisories as a dangerous heat wave continues,” Payton Major, Judson Jones, and Amir Vera, “July 19, 2022, <https://www.cnn.com/2022/07/19/weather/us-heat-extreme-warning-forecast/index.html>.

<sup>31</sup> CNBC, “Everyone knows inflation is on fire. This is what’s really fueling it,” Jeff Cox, June 16, 2022, <https://www.cnbc.com/2022/06/16/everyone-knows-inflation-is-on-fire-heres-whats-really-fueling-it.html>.

<sup>32</sup> Congressional Research Service, “Bitcoin, Blockchain, and the Energy Sector,” Corrie E. Clark and Heather L. Greenley, August 9, 2019, <https://crsreports.congress.gov/product/pdf/R/R45863/3>.

<sup>33</sup> Berkeley Haas, “Power-hungry cryptominers push up electricity costs for locals,” Laura Counts, August 3, 2021, <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>.

<sup>34</sup> Cointelegraph, “Crypto miners eye cheap power in Texas, but fears aired over impact on the grid,” Samuel Haig, June 16, 2021, <https://cointelegraph.com/news/crypto-miners-eye-cheap-power-in-texas-but-fears-ai-red-over-impact-on-the-grid>.

<sup>35</sup> The Dallas Morning News, “Is your electricity bill soaring in the Texas heat? Here’s what you can do,” Aria Jones, August 2, 2022, <https://www.dallasnews.com/news/2022/08/02/is-your-electricity-bill-soaring-this-summer->

Council of Texas (ERCOT) had granted it \$9.5 million in energy credits in exchange for an 11,717 megawatt hour curtailment of its energy consumption.<sup>36</sup> The amount of energy that Riot curtailed alone is “enough to power 13,121 average homes for one month.”<sup>37</sup> Riot and other cryptomining companies are effectively holding Americans’ energy hostage, contributing to higher energy costs and using taxpayer-funded credits to offset their own mining costs.

Despite these adverse impacts from cryptomining, state and federal regulators currently know little about the scope of the problem. There is no national or state reporting requirement or compilation of the locations of cryptomining facilities in the United States, and no federal regulations specifically govern cryptomining. Consequently, policymakers and the public do not have a comprehensive source of information about where these operations are located, how much energy they consume, and what their sources of energy are – and without the energy use and source reporting, there is a subsequent lack of data regarding the associated air emissions of pollutants or carbon dioxide.

To address this concern, I wrote to a large cryptomining operator, and later led colleagues in writing to six more of the largest cryptomining operations in the U.S., seeking information about the locations of their facilities, their energy sources, energy consumption data, and the climate impacts associated with their mining operations.<sup>38</sup> Their responses revealed that they were equipped to “tap as much as 1,045 megawatts of power, or enough electricity to power all the residences in a city the size of Houston, the nation’s fourth-largest city with 2.3 million residents.”<sup>39</sup> “[T]his limited data alone reveal[s] that cryptominers are large energy users that account for a significant – and rapidly growing – amount of carbon emissions.”<sup>40</sup> We provided our findings to Energy Secretary Granholm and Environmental Protection Agency Administrator Regan, asking that their agencies work together to require cryptominers to report their emissions and energy use.<sup>41</sup>

### *Action is Necessary*

As Treasury Secretary, you have made “forcefully addressing the treat of climate change” one of

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[heres-what-you-can-do/](#).

<sup>36</sup> Riot Blockchain Inc., “Riot Blockchain Announces July 2022 Production and Operations Updates,” August 3, 2022, <https://www.riotblockchain.com/news-media/press-releases/detail/135/riot-blockchain-announces-july-2022-production-and-operations-updates>.

<sup>37</sup> *Id.*

<sup>38</sup> Letter from Senator Warren to Jeffrey Kirt, CEO, Greenridge Generation Holdings, Inc., December 2, 2021, <https://www.warren.senate.gov/imo/media/doc/2021.12.2.%20Letter%20to%20Greenridge%20Generation%20on%20Crypto.pdf>; Letter from Senators Warren, Whitehouse, Merkley, Hassan, and Markey, and Representatives Porter, Tlaib, and Huffman to Cryptomining Companies, January 27, 2022, <https://www.warren.senate.gov/imo/media/doc/2022.01.27%20Letters%20to%20Cryptominers.pdf>.

<sup>39</sup> The New York Times, “Cryptomining Capacity in U.S. Rivals Energy Use of Houston, Findings Show,” Hiroko Tabuchi, July 15, 2022, <https://www.nytimes.com/2022/07/15/climate/cryptocurrency-bitcoin-mining-electricity.html>.

<sup>40</sup> Letter from Senators Warren, Whitehouse, Markey, and Merkley, and Representatives Huffman and Tlaib to Environmental Protection Agency Administrator Regan and Energy Secretary Granholm, July 15, 2022, <https://www.warren.senate.gov/imo/media/doc/2022.07.15%20Letter%20to%20EPA%20and%20DOE%20Re%20Cryptomining%20Environmental%20Impacts.pdf>.

<sup>41</sup> *Id.*

the Department’s central priorities.<sup>42</sup> Last year, you took the historic step of naming Treasury’s first Climate Counselor and expressed your intention to “ensure that Treasury is doing everything it can to respond to climate change.”<sup>43</sup> Cryptomining *is* a climate-related risk to households, businesses, and the financial sector, and I urge you to continue your leadership in addressing the climate crisis by taking swift steps to investigate the extent of and limit the environmental harm caused by cryptomining.

## **Crypto Poses Potential Threats to Financial Stability**

### *Systemic Risks*

In its 2021 Annual Report to Congress, the Office of Financial Research noted that “increased trading of contracts tied to crypto assets on highly interconnected exchanges may raise contagion risk. Risks are heightened to the extent that these new instruments do not fit into existing regulatory frameworks. Increased provision of regulatory data is essential for effective risk monitoring.”<sup>44</sup> Several regulators have since found that the proliferation of crypto-assets could pose systemic risks to financial stability and the economy. Last month, the Federal Reserve issued guidance that stressed “certain types of crypto-assets, such as stablecoins, if adopted at large scale, could also pose risks to financial stability including potentially through destabilizing runs and disruptions in the payment systems.”<sup>45</sup> During a February 2022 BHUA Committee hearing, Under Secretary for Domestic Finance Liang agreed with me that ‘stablecoins’ pose the threat “of becoming a systemic risk.”<sup>46</sup> We must act to mitigate any and all threats to our financial stability, including threats posed by crypto.

### *Contagion*

Over the past few months, some of the largest institutional players in the crypto ecosystem have suffered catastrophic losses. Since a market high in November 2021, the market has seen about a \$2 trillion loss in value, which itself has triggered the collapse of several major crypto lenders and firms.<sup>47</sup> In May 2022, two of the three largest stablecoins – cryptocurrencies intended to

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<sup>42</sup> CBS News, “Treasury names ‘forcefully addressing the threat of climate change’ a top priority,” Sarah Ewall-Wice, February 3, 2021, <https://www.cbsnews.com/news/climate-change-top-priority-treasury/>.

<sup>43</sup> U.S. Department of the Treasury, “Treasury Announces Coordinated Climate Policy Strategy with New Treasury Climate Hub and Climate Counselor,” press release, April 19, 2021, <https://home.treasury.gov/news/press-releases/jy0134>.

<sup>44</sup> Office of Financial Research, “Annual Report to Congress 2021,” <https://www.financialresearch.gov/annual-reports/files/OFR-Annual-Report-2021.pdf>.

<sup>45</sup> Board of Governors of the Federal Reserve System, “SR 22-6 / CA 22-6: Engagement in Crypto-Asset Related Activities by Federal Reserve-Supervised Banking Organizations,” supervision and regulation letter, August 16, 2022, <https://www.federalreserve.gov/supervisionreg/srletters/SR2206.htm>.

<sup>46</sup> Senate Committee on Banking, Housing, and Urban Affairs, “Examining the President’s Working Group on Financial Markets Report on Stablecoins,” February 15, 2022, 1:17:50, <https://www.banking.senate.gov/hearings/examining-the-presidents-working-group-on-financial-markets-report-on-stablecoins>.

<sup>47</sup> Newsweek, “Cryptocurrencies Lose \$2 Trillion in Value Since 2021 Peak,” Rob Minto, June 13, 2022, <https://www.newsweek.com/cryptocurrencies-lose-trillion-value-since-peak-1715207>; The Wall Street Journal, “Market Rout Shows Dangers of Margin Lending, Crypto Style,” Justin Baer and Orla McCaffery, July 20, 2022, [https://www.wsj.com/articles/market-rout-shows-dangers-of-margin-lending-crypto-style-11658334507?mod=markets\\_lead\\_pos6](https://www.wsj.com/articles/market-rout-shows-dangers-of-margin-lending-crypto-style-11658334507?mod=markets_lead_pos6); The Wall Street Journal, “They Thought the ‘Crypto Banks’ Were Safe, and Then Came



maintain a set value through a peg to another cryptocurrency, fiat currency, or other exchange-traded commodities – failed to maintain their pegs.<sup>48</sup> The collapse of Terra, an algorithmic stablecoin that was supposed to be pegged to the U.S. dollar, ended “with a bank run that made \$40 billion of tokens virtually worthless.”<sup>49</sup> In July 2022, crypto “banks” Celsius and Voyager filed for bankruptcy after crypto hedge fund Three Arrows Capital defaulted on its loans to those banks and itself filed for bankruptcy.<sup>50</sup>

As *Fortune* put it, “[w]hen the stablecoin known as TerraUSD—once one of the 10 most valuable cryptocurrencies—lost its \$1 peg in May, the coin and its sister cryptocurrency Luna entered a death spiral that wiped out \$60 billion of combined market value. By June, the collapse spawned a contagion as companies that had borrowed to the hilt during the bull market rushed to shore up their balance sheet. Many could not.”<sup>51</sup> In December 2021, I raised my concerns about ‘stablecoins’ during a BHUA Committee hearing.<sup>52</sup> During that hearing, I noted, “[w]e know that stablecoins are not always stable. In fact, it’s worse than that. In troubled economic times people are most likely to cash out of risky financial products and move into real dollars. Stablecoins will take a nosedive precisely when people most need stability, and that run-on-the-bank mentality could ultimately crash our whole economy.”<sup>53</sup> Indeed, even the term ‘stablecoin’ is a misnomer – the very mechanisms for said stability remains under intense scrutiny. A number of companies offering ‘stablecoins’ have claimed their tokens are backed by U.S. dollars when they are not.<sup>54</sup> In other words, these crypto companies lied.<sup>55</sup> Without a robust disclosure regime,

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the Crash,” Rachel Louise Ensign and Angel Au-Yeung, July 23, 2022, <https://www.wsj.com/articles/they-thought-crypto-banks-were-safe-and-then-came-the-crash-11658568780>.

<sup>48</sup> Bloomberg, “Tether Loses Dollar Peg as Crypto Anxiety Hits No. 1 Stablecoin,” Emily Nicolle and Muyao Shen, May 12, 2022, <https://www.bloomberg.com/news/articles/2022-05-12/tether-moves-to-reassure-market-after-biggest-stablecoin-slips#xj4y7vzkg>.

<sup>49</sup> Bloomberg, “A \$2 Trillion Free-Fall Rattles Crypto to the Core,” Emily Nicolle and Olga Kharif, June 26, 2022, <https://www.bloomberg.com/news/articles/2022-06-26/crypto-winter-why-this-bitcoin-bear-market-is-different-from-the-past#xj4y7vzkg>.

<sup>50</sup> Bloomberg, “Three Arrows Creditors Include Crypto Giants, Co-Founder’s Wife,” Yueqi Yang and Muyao Shen, July 18, 2022, <https://www.bloomberg.com/news/articles/2022-07-18/three-arrows-said-to-owe-digital-currency-group-1-2-billion#xj4y7vzkg>; CNBC, “Crypto hedge fund Three Arrows files for Chapter 15 bankruptcy,” Reuters, July 2, 2022, <https://www.cnbc.com/2022/07/02/crypto-hedge-fund-three-arrows-files-for-chapter-15-bankruptcy.html>; The Wall Street Journal, “Market Rout Shows Dangers of Margin Lending, Crypto Style,” Justin Baer and Orla McCaffery, July 20, 2022, [https://www.wsj.com/articles/market-rout-shows-dangers-of-margin-lending-crypto-style-11658334507?%20mod=markets\\_lead\\_pos6](https://www.wsj.com/articles/market-rout-shows-dangers-of-margin-lending-crypto-style-11658334507?%20mod=markets_lead_pos6); The Wall Street Journal, “They Thought the ‘Crypto Banks’ Were Safe, and Then Came the Crash,” Rachel Louise Ensign and Angel Au-Yeung, July 23, 2022, <https://www.wsj.com/articles/they-thought-crypto-banks-were-safe-and-then-came-the-crash-11658568780>.

<sup>51</sup> *Fortune*, “How much legal trouble do Celsius and Three Arrows Capital execs face? Possibly a lot,” Taylor Locke, July 22, 2022, <https://fortune.com/2022/07/22/potential-legal-trouble-celsius-three-arrows-capital/>.

<sup>52</sup> Senator Elizabeth Warren, “At Hearing, Warren Calls on Regulators to ‘Clamp Down’ on Stablecoins and DeFi Platforms ‘Before It Is Too Late,’” press release, December 14, 2021, <https://www.warren.senate.gov/newsroom/press-releases/at-hearing-warren-calls-on-regulators-to-clamp-down-on-stablecoins-and-defi-platforms-before-it-is-too-late>.

<sup>53</sup> *Id.*

<sup>54</sup> Bloomberg, “Coinbase Vowed Token’s All-Cash Backing; That’s Not True,” Joe Light, August 11, 2011, <https://www.bloomberg.com/news/articles/2021-08-11/coinbase-drops-promise-of-token-s-cash-backing-that-wasnt-true#xj4y7vzkg>; New York State Attorney General Letitia James, “Attorney General James Ends Virtual Currency Trading Platform Bitfinex’s Illegal Activities in New York,” press release, February 2021, <https://ag.ny.gov/press-release/2021/attorney-general-james-ends-virtual-currency-trading-platform-bitfinexs-illegal>.

<sup>55</sup> *Id.*

these companies can continue to lie to mom-and-pop investors, people whose entire savings are on the line.

As my colleagues and I stressed in a letter we sent to Acting Comptroller Hsu last month, stronger protections are needed to mitigate the risks crypto poses to the financial system and to consumers.<sup>56</sup> We asked that Acting Comptroller Hsu withdraw OCC Interpretive Letters 1170, 1172, 1174, and 1179 – the last of which has “helped make it easier for traditional financial institutions to get into crypto” and which “the industry widely praised as one that could help mainstream adoption of crypto.”<sup>57</sup> We also asked that Acting Comptroller Hsu coordinate with the Federal Reserve and the Federal Deposit Insurance Corporation (FDIC) to develop a comprehensive approach that adequately protects consumers and the safety and soundness of the banking system. I urge you to use the tools at your disposal as FSOC Chair to lead the coordinated effort required to contain the systemic risks posed by crypto. As finance Professor Hilary J. Allen argues, “if DeFi is permitted to develop without any regulatory intervention, it will magnify the tendencies towards heightened leverage, rigidity, and runs that characterized” the financial activities that led to the Financial Crisis.<sup>58</sup>

### *Extreme Concentration and Centralization*

In the wake of the crypto crash, Sam Bankman-Fried, billionaire co-founder of the crypto exchange FTX and the trading firm Alameda Research, has “begun to step into the carnage to scoop up distressed assets or lend money to troubled businesses.”<sup>59</sup> FTX extended struggling crypto lender BlockFi a \$400 million credit line and secured the option to acquire the company for as little as \$15 million.<sup>60</sup> In June, FTX acquired Bitvo, a Canadian exchange,<sup>61</sup> while, Bloomberg reported that the FTX was “seeking a path to buy Robinhood,”<sup>62</sup> in which Bankman-Fried already has a 7.6% stake.<sup>63</sup> Last month, Voyager’s bankruptcy filings revealed that Alameda Research, the company’s largest shareholder, “provided a \$500 million bailout to

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<sup>56</sup> Letter from Senators Warren, Durbin, Whitehouse, and Sanders to Acting Comptroller of the Currency Hsu, August 10, 2022, <https://www.warren.senate.gov/imo/media/doc/2022.08.10%20Letter%20to%20OCC%20re%20crypto%20guidance.pdf>

<sup>57</sup> CoinDesk, “Banks Won’t Rush to Hold Crypto – But OCC’s Regulatory Approval Makes It Harder to Ignore,” Nikhilesh De and Ian Allison, July 24, 2020, <https://www.coindesk.com/policy/2020/07/24/banks-wont-rush-to-hold-crypto-but-occs-regulatory-approval-makes-it-harder-to-ignore/>.

<sup>58</sup> William and Mary Law Review, “DeFi: Shadow Banking 2.0?,” Hilary J. Allen, February 25, 2022, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4038788](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4038788).

<sup>59</sup> Fortune, “The crypto crash resembles the Panic of 1907, with Sam Bankman-Fried in the role of J. P. Morgan,” Alex Tapscott, June 28, 2022, <https://fortune.com/2022/06/28/crypto-crash-sam-bankman-fried-ftx-panic-of-1907/>.

<sup>60</sup> Coindesk, “FTX Could Buy BlockFi for Only \$15M – or a Lot More If Crypto Lender Hits Big Goals,” Tracy Wang, August 22, 2022, <https://www.coindesk.com/business/2022/08/22/ftx-could-buy-blockfi-for-only-15m-or-a-lot-more-if-crypto-lender-hits-big-goals/>.

<sup>61</sup> CoinDesk, “FTX Agrees to Acquire Canadian Trading Platform Bitvo as It Eyes Regional Expansion,” Oliver Knight, June 17, 2022, <https://www.coindesk.com/business/2022/06/17/ftx-agrees-to-acquire-canadian-trading-platform-bitvo-as-it-eyes-regional-expansion/>.

<sup>62</sup> Bloomberg, “Bankman-Fried’s FTX Is Seeking a Path to Buy Robinhood,” Annie Massa, Matthew Monks, and Katie Roof, June 27, 2022, <https://www.bloomberg.com/news/articles/2022-06-27/bankman-fried-s-ftx-said-to-be-seeking-path-for-robinhood-deal#xj4y7vzkg>.

<sup>63</sup> CoinDesk, “FTX CEO Sam Bankman-Fried Buys 7.6% Stake in Robinhood,” Danny Nelson, May 12, 2022, <https://www.coindesk.com/business/2022/05/12/ftx-ceo-sam-bankman-fried-buys-56m-position-in-robinhood/>.

Voyager in late June,” even as it “owed the company over \$370 million.”<sup>64</sup> “[A] few weeks after Voyager’s bankruptcy filing, FTX and Alameda jointly moved in as a potential bidder for Voyager’s customer accounts, with Bankman-Fried saying his priority was to offer them liquidity.”<sup>65</sup> As *The Wall Street Journal* headlined, “In Voyager Bankruptcy, Crypto Trading Firm Alameda Is Creditor, Shareholder and Borrower.”<sup>66</sup>

FTX is just one example, but concentration plagues much of the crypto market. According to a study conducted by finance professors at MIT and the London School of Economics, “approximately 0.01% of bitcoin holders control 27% of the 19 million bitcoin in circulation.”<sup>67</sup> The professors argue that “[t]he ramifications of that centralization are mainly twofold... First, it makes the entire bitcoin network more susceptible to systemic risk. Second, it means the majority of the gains from the rising price and increased adoption go to a disproportionately small group of investors.”<sup>68</sup>

### *Action is Necessary*

FSOC is responsible for identifying and responding to emerging risks to financial stability. As I wrote to you in July 2021,<sup>69</sup> I am pleased to see that the Council has begun devoting more attention to this critical issue.<sup>70</sup> I urge FSOC to act with urgency and use its statutory authority to address cryptocurrencies’ risks and ensure the safety and stability of our financial system.

## **Crypto Market Fundamentally Lacks Protections for Consumers and Investors**

### *Predatory Tactics and Advertising*

The crypto industry has argued that crypto presents a path to greater financial inclusion, particularly for consumers whom have been locked out of or distrust the traditional financial system. But evidence continues to surface indicating that the same old players – billionaires and Wall Street – are emerging on top from a crumbling market.<sup>71</sup> Even as the crypto crash has

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<sup>64</sup> CNBC, “Sam Bankman-Fried’s crypto firms had deep ties to Voyager Digital and its bankruptcy wipeout,” MacKenzie Sigalos, August 9, 2022, <https://www.cnbc.com/2022/08/09/sam-bankman-frieds-alameda-voyager-digital-spar-in-bankruptcy-court.html>.

<sup>65</sup> *Id.*

<sup>66</sup> The Wall Street Journal, “In Voyager Bankruptcy, Crypto Trading Firm Alameda Is Creditor, Shareholder and Borrower,” Vicky Ge Huang and Alexander Osipovich, July 7, 2022, <https://www.wsj.com/articles/in-voyager-bankruptcy-crypto-trading-firm-alameda-is-creditor-shareholder-and-borrower-11657186200>.

<sup>67</sup> The Wall Street Journal, “Bitcoin’s ‘One Percent’ Controls Lion’s Share of the Cryptocurrency’s Wealth,” Paul Vigna, December 20, 2021, <https://www.wsj.com/articles/bitcoins-one-percent-controls-lions-share-of-the-cryptocurrencys-wealth-11639996204>.

<sup>68</sup> The Wall Street Journal, “Bitcoin’s ‘One Percent’ Controls Lion’s Share of the Cryptocurrency’s Wealth,” Paul Vigna, December 20, 2021, <https://www.wsj.com/articles/bitcoins-one-percent-controls-lions-share-of-the-cryptocurrencys-wealth-11639996204>.

<sup>69</sup> Letter from Senator Warren to Treasury Secretary Yellen, July 26, 2021, <https://www.warren.senate.gov/imo/media/doc/FSOC%20Crypto%20Letter%2007.26.2021.pdf>.

<sup>70</sup> Financial Stability Oversight Council, “Minutes of the Financial Stability Oversight Council,” June 11, 2021, [https://home.treasury.gov/system/files/261/FSOC\\_Minutes\\_6-11-21\\_1.pdf](https://home.treasury.gov/system/files/261/FSOC_Minutes_6-11-21_1.pdf); Financial Stability Oversight Council, “Minutes of the Financial Stability Oversight Council,” March 31, 2021, [https://home.treasury.gov/system/files/261/FSOC\\_Minutes\\_6-11-21.pdf](https://home.treasury.gov/system/files/261/FSOC_Minutes_6-11-21.pdf).

<sup>71</sup> The New York Times, “Crypto Crash Widens a Divide: ‘Those With Money Will End Up Being Fine,’” David

vaporized the savings of countless retail investors, wealthy investors and executives have remained “relatively unscathed.”<sup>72</sup> This pattern, in which “a small group of industry titans accumulated immense wealth as prices spiked” while retail investors were left “vulnerable to a crash,” is reflective of the unequal playing field that defines much of the larger financial system.<sup>73</sup> As one retail investor told *The New York Times*, “The smaller people get taken advantage of.”<sup>74</sup>

But the crypto market doesn’t just reflect the larger economy’s inequalities – it exacerbates them. Scholars have drawn persuasive parallels between the emergent so-called decentralized finance, or ‘DeFi’, ecosystem and the financial activities that led to the 2008 Financial Crisis.<sup>75</sup> In the years leading up to the Crisis, predatory lenders targeted Black and Brown communities, aggressively pushing subprime loans. “Banks that once ignored minority communities were targeting them now to make money.”<sup>76</sup> Banks turned around and sold, or securitized, those loans and, “[w]hen bad times came, in the form of a nationwide foreclosure crisis, ‘the mortgage securitization pipeline lit and spread the flame of contagion and crisis’”<sup>77</sup> – a crisis that has had a disproportionate and long-lasting impact on communities of color.<sup>78</sup>

Today, we are seeing crypto companies target communities of color and people for whom the traditional financial system has been inaccessible. In an ad for Coin Cloud, “a company that offers ATMs for cryptocurrencies,” filmmaker Spike Lee celebrates digital currency, saying “new money is positive. Inclusive. Fluid. Strong. Culturally rich. Where status is anything but status quo.”<sup>79</sup> Lee is among countless celebrities – including Matt Damon, Tom Brady, Naomi Osaka, Mike Tyson, and Mark Cuban – who have publicly touted digital assets.<sup>80</sup> Retail investors who followed these celebrities’ lead and invested in the assets they promoted have likely experienced losses. As *Bloomberg* reports, Bitcoin “has dropped more than 60%” since Damon’s ad aired and a token that Cuban blogged about “subsequently tumbled 99%.”<sup>81</sup> Some – like Justin Bieber and Reese Witherspoon – have promoted NFTs on social media without disclosing to followers their relationship to the NFT companies in those promotional posts.<sup>82</sup>

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Yaffe-Bellany, June 29, 2022, <https://www.nytimes.com/2022/06/29/technology/crypto-crash-divide.html>.

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

<sup>75</sup> William and Mary Law Review, “DeFi: Shadow Banking 2.0?,” Hilary J. Allen, February 25, 2022, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4038788](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4038788).

<sup>76</sup> Bloomberg, “The Dramatic Racial Bias of Subprime Lending During the Housing Boom,” Emily Badger, August 16, 2013, <https://www.bloomberg.com/news/articles/2013-08-16/the-dramatic-racial-bias-of-subprime-lending-during-the-housing-boom>.

<sup>77</sup> William and Mary Law Review, “DeFi: Shadow Banking 2.0?,” Hilary J. Allen, February 25, 2022, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4038788](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4038788).

<sup>78</sup> The American Prospect, “Staggering Loss of Black Wealth Due to Subprime Scandal Continues Unabated,” October 13, 2014, <https://prospect.org/justice/staggering-loss-black-wealth-due-subprime-scandal-continues-unabated/>.

<sup>79</sup> Vice, “Spike Lee Made an Ad for Cryptocurrency ATMs and It’s Bizarre,” Edward Ongweso Jr., July 15, 2021, <https://www.vice.com/en/article/dyvwwk/spike-lee-made-an-ad-for-cryptocurrency-atms-and-its-bizarre>.

<sup>80</sup> Bloomberg, “The Disastrous Record of Celebrity Crypto Endorsements,” Immanuel John Milton, August 1, 2022, <https://www.bloomberg.com/features/2022-crypto-celebrity-endorsements/>.

<sup>81</sup> *Id.*

<sup>82</sup> Truth in Advertising, “TINA.org Sends Notification Letters to Celebrities Promoting NFTs,” August 8, 2022, <https://truthinadvertising.org/articles/tina-org-sends-letters-to-celebrities-promoting-nfts/>.

Witherspoon tweeted about the World of Women NFT Collective in March – since then, “the average price for World of Women NFTs has slumped more than 75%.”<sup>83</sup>

As Acting Comptroller Hsu has noted, the crypto economy is dependent on hype: “Hype is needed to generate the interest and investment that are the key to creating the ‘flywheel’ of growth that crypto projects seem to need to get off the ground.”<sup>84</sup> Celebrities and other influencers have played a key role in generating the kind of hype needed to push retail investors towards digital currencies and crypto-related financial products. Just as often, crypto companies have made fraudulent claims in order to promote their products.

Section 120 of the *Dodd-Frank Wall Street Reform and Consumer Protection Act* gives FSOC the ability to “provide for more stringent regulation of a financial activity by issuing recommendations to the primary financial regulatory agencies” when the “conduct, scope, nature, size, scale, concentration, or interconnectedness of such activity or practice could create or increase the risk of significant liquidity, credit, or other problems spreading among bank holding companies and nonbank financial companies, financial markets of the United States, or low-income, minority, or underserved communities.”<sup>85</sup> As FSOC Chair, you can act to protect vulnerable investors and the larger financial system from the kind of systemic threats that led to the 2008 Financial Crisis.

### *Fraudulent Claims*

In the months before it filed for bankruptcy, Voyager, the crypto “bank,” “made various statements indicating that Voyager itself was FDIC-insured, that customers who invested in its cryptocurrency platform would have their funds insured, and that the FDIC would insure customers against the failure of Voyager itself.”<sup>86</sup> As I noted during a BHUA Committee hearing in July 2022, that was a lie from the start.<sup>87</sup>

In July, the Federal Reserve and the FDIC wrote to Voyager, that, “based on information gathered to date, it appears that these representations likely misled and were relied upon by customers who placed their funds with Voyager and do not have immediate access to their funds.”<sup>88</sup> Last month, FDIC issued five cease-and-desist letters, including one to FTX US, for

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<sup>83</sup> Bloomberg, “The Disastrous Record of Celebrity Crypto Endorsements,” Immanuel John Milton, August 1, 2022, <https://www.bloomberg.com/features/2022-crypto-celebrity-endorsements/>.

<sup>84</sup> Office of the Comptroller of the Currency, “Acting Comptroller Michael J. Hsu Remarks at the DC Blockchain Summit 2022 “Crypto: A Call to Reset and Recalibrate,” May 2022, <https://www.occ.treas.gov/news-issuances/speeches/2022/pub-speech-2022-60.pdf>.

<sup>85</sup> Dodd-Frank Wall Street Reform and Consumer Protection Act, Public Law 111-203.

<sup>86</sup> Reuters, “U.S. regulators order Voyager Digital to stop ‘false and misleading’ deposit insurance claims,” Pete Schroeder, July 28, 2022, <https://www.reuters.com/business/finance/us-regulators-order-voyager-digital-stop-false-misleading-deposit-insurance-2022-07-28/>.

<sup>87</sup> Senator Elizabeth Warren “At Hearing, Warren Calls out Giant Wall Street Firms’ Profiteering from Crypto Scams,” press release, July 28, 2022, <https://www.warren.senate.gov/newsroom/press-releases/at-hearing-warren-calls-out-giant-wall-street-firms-profiteering-from-crypto-scams>.

<sup>88</sup> Board of Governors of the Federal Reserve System and Federal Deposit Insurance Corporation, “FDIC and Federal Reserve Board issue letter demanding Voyager Digital cease and desist from making false or misleading representations of deposit insurance status,” press release, July 28, 2022, <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20220728a.htm>.

making false and misleading statements suggesting that their products were FDIC-insured.<sup>89</sup>

Crypto companies are *falsely* telling mom-and-pop investors that their products, like direct deposits and investment tools, were protected by FDIC insurance – or, as in the case of Celsius, that their products were “safer than a bank.”<sup>90</sup> At the same time, companies like Voyager and Celsius have been commingling – a notoriously risky banking practice – customer funds with their own assets or with those of other customers, meaning that “customers cannot make a claim to *their* crypto.”<sup>91</sup> While companies use commingling to decrease “the probability of a shortfall,” it “increases the severity of the losses if” a company goes bust.<sup>92</sup> And when companies like Voyager and Celsius file for bankruptcy, the repayment of institutional investors is prioritized over the repayment of the retail investors those companies lied to.

The recent letters issued by the Federal Reserve and FDIC are an important step in preventing crypto companies from lying to their customers, but more must be done to protect consumers from unscrupulous crypto executives.<sup>93</sup>

### *Peddling Junk Assets and Products*

Even crypto advocates have admitted that crypto products function like Ponzi schemes,<sup>94</sup> leading to concerns about the prospect of hard-working Americans losing their money to crypto schemes and crashes. That’s why colleagues and I wrote a letter to the CEO of Fidelity in May inquiring about her company’s decision to add Bitcoin to its 401(k) investment plan menu and the steps Fidelity will take to address the significant risks of fraud, theft, and loss posed by digital assets.<sup>95</sup> In March, the Department of Labor issued a release expressing “serious concerns regarding the prudence of a fiduciary’s decision to expose 401(k) plan’s participants to direct investments in cryptocurrencies.”<sup>96</sup> Fidelity’s actions, which seem to conflict with the Department’s views on

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<sup>89</sup> CoinDesk, “FDIC Orders Crypto Exchange FTX US, 4 Others to Cease ‘Misleading’ Claims,” Nikhilesh De, August 19, 2022, <https://www.coindesk.com/policy/2022/08/19/fdic-orders-ftx-us-4-other-companies-to-cease-and-desist-misleading-consumers/>.

<sup>90</sup> The Dallas Morning News, “Firefighter has retirement funds locked up in bankrupt crypto lender,” Freddy Brewster, August 18, 2022, <https://www.dallasnews.com/business/personal-finance/2022/08/18/firefighter-has-retirement-funds-locked-up-in-bankrupt-crypto-lender/>.

<sup>91</sup> JD Supra, “Vulnerability of Customers’ Crypto in Bankruptcy; Is Help on the Way?,” Greenberg Glusker LLP and Jonathan Shenson, August 22, 2022, <https://www.jdsupra.com/legalnews/vulnerability-of-customers-crypto-in-9514811/>.

<sup>92</sup> Forbes, “Two Wall Street Terms Every Bitcoin Trader Needs to Learn Now,” Caitlin Long, August 13, 2018, <https://www.forbes.com/sites/caitlinlong/2018/08/13/the-r-and-c-words-enter-the-vocabulary-of-bitcoin-enthusiasts/?sh=43ad4b1068f3>.

<sup>93</sup> Board of Governors of the Federal Reserve System and Federal Deposit Insurance Corporation, “FDIC and Federal Reserve Board issue letter demanding Voyager Digital cease and desist from making false or misleading representations of deposit insurance status,” press release, July 28, 2022, <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20220728a.htm>.

<sup>94</sup> Bloomberg, “Sam Bankman-Fried Described Yield Farming and Left Matt Levin Stunned,” Tracy Alloway and Joe Weisenthal, April 25, 2022, <https://www.bloomberg.com/news/articles/2022-04-25/sam-bankman-fried-described-yield-farming-and-left-matt-levine-stunned>.

<sup>95</sup> Letter from Senator Warren to Fidelity Investments CEO Abigail Johnson, May 4, 2022, [https://www.warren.senate.gov/imo/media/doc/2022.05.04%20Send%20letter%20to%20Fidelity%20re%20401\(k\)%20Bitcoin%20investments.pdf](https://www.warren.senate.gov/imo/media/doc/2022.05.04%20Send%20letter%20to%20Fidelity%20re%20401(k)%20Bitcoin%20investments.pdf)

<sup>96</sup> Department of Labor, “Compliance Assistance Release No. 2022-01: 401(k) Plan Investments in

the appropriateness of offering access to crypto in retirement accounts, raise serious concerns about workers' retirement savings, and about conflicts of interest which stem from the fact that Fidelity itself has been mining cryptocurrency since 2015 and may stand to gain from directing workers' retirement funds towards bitcoin investments.<sup>97</sup>

Fidelity, whose retail customers can access Coinbase directly from their Fidelity accounts, is not the only institution creating more channels between its consumers and riskier digital asset investments.<sup>98</sup> Coinbase, where an employee was recently arrested for insider trading and charged with securities fraud, routinely “promotes exceedingly volatile currencies to customers, who buy in and see the prices of their new investments fall as the creators of these tokens sell them off.”<sup>99</sup> One *Bloomberg* reporter wrote, “it’s hard to see how pushing what amounts to the digital equivalent of penny stocks on unsophisticated investors has anything to do with economic freedom.”<sup>100</sup>

But companies like Coinbase are engaging in deceptive practices that rob retail investors of the ability to make informed decisions about their money. Earlier this year, as “Bitcoin, Ethereum, and other currencies lost dozens of percent worth of value in the thousands and tens of thousands of dollars,” Coinbase stopped sending email notifications of price changes to its users and did not notify users that it would halt those notifications.<sup>101</sup> In June, over 2,000 investors filed a class-action lawsuit against Binance.US, alleging that the company “marketed Terra’s dollar based UST as more stable than it actually was.”<sup>102</sup> In April, a group of Coinbase’s shareholders filed a class action lawsuit “alleging that the registration statement and prospectus used to effectuate the Company’s Offering were false and misleading,” and that “the positive statements about the Company’s business, operations and prospects were materially misleading and/or lacked a reasonable basis.”<sup>103</sup> When crypto promoters encourage their followers to ‘do their own research,’ the companies they promote are circulating misinformation to investors, stockholders, and the public.

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“Cryptocurrencies,” March 10, 2022, <https://www.dol.gov/agencies/ebsa/employers-and-advisers/plan-administration-and-compliance/compliance-assistance-releases/2022-01>.

<sup>97</sup> Futurism, “Fidelity Investments Is Mining for Cryptocurrency,” Chelsea Gohd, September 30, 2017, <https://futurism.com/fidelity-investments-mining-cryptocurrency>.

<sup>98</sup> CNBC, “Fidelity allows clients to see digital currencies on its website,” Reuters, August 9, 2017, <https://www.cnbc.com/2017/08/09/fidelity-allows-clients-to-see-digital-currencies-on-its-website.html>.

<sup>99</sup> Bloomberg, “Coinbase Promised Empowerment While Pushing Questionable Assets,” Max Chafkin, July 26, 2022, <https://www.bloomberg.com/news/articles/2022-07-26/coinbase-promised-empowerment-while-pushing-questionable-assets#xj4y7vzkg>.

<sup>100</sup> *Id.*

<sup>101</sup> Mother Jones, “‘It’s Potentially Illegal’: As Crypto Crashed, Coinbase Stopped Some Notifications,” Ali Breland, August 10, 2022, <https://www.motherjones.com/politics/2022/08/its-potentially-illegal-as-crypto-crashed-coinbase-stopped-some-notifications/>.

<sup>102</sup> CoinDesk, “Binance.US Accused of Misleading Investors in Class-Action Lawsuit Over Terra,” Sam Kessler and Oliver Knight, June 13, 2022, <https://www.coindesk.com/business/2022/06/13/binanceus-accused-of-misleading-investors-in-class-action-lawsuit-over-terra/>.

<sup>103</sup> News Release on Global Newswire, “Lifshitz Law Firm, P.C. Announces Investigations of Cassava Sciences, Inc. (NASDAQCM: SAVA), Coinbase Global, Inc. (NASDAQGS: COIN), HyreCar, Inc. (NASDAQCM:HYRE), and Longeveron Inc. (NASDAQCM: LGVN),” Lifshitz Law Firm, P.C., April 13, 2022, <https://www.globenewswire.com/news-release/2022/04/13/2422266/0/en/Lifshitz-Law-Firm-P-C-Announces-Investigations-of-Cassava-Sciences-Inc-NASDAQCM-SAVA-Coinbase-Global-Inc-NASDAQGS-COIN-HyreCar-Inc-NASDAQCM-HYRE-and-Longeveron-Inc-NASDAQCM-LGVN.html>.

This misinformation is not spreading in a vacuum. When crypto executives lie to their investors and customers, they ruin lives. When the stablecoin TerraUSD lost its peg, many were driven to the brink. Some took their own lives. Reddit-users shared the National Suicide Prevention Line as stories of losses flooded social media platforms.<sup>104</sup> As part of Celsius' bankruptcy proceedings, the company's depositors have sent letters asking that the presiding judge investigate the company's balance sheet and make retail investors whole.<sup>105</sup> One such letter reads:

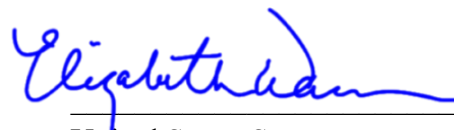
I am a New Hampshire State resident and Celsius customer with my life savings on their platform. I am writing to inform you that I believe fraud has been committed by the Celsius Management Team. Upon the halt of customer's withdrawals and subsequent bankruptcy proceedings, it is now clear that Celsius's customers were repeatedly lied to in order to persuade us to deposit our money onto their platform... Their front to the community of safety and security while simultaneously gambling away our life savings, retirements and pensions is a shocking and scandalous travesty.<sup>106</sup>

### **Conclusion**

The crypto ecosystem has the capacity to undermine our national security, worsen the climate crisis, harm consumers and retail investors, and threaten overall economic stability – all while lining billionaires' pockets. I urge you to utilize every tool at your disposal, including FSOC's statutory authorities, to protect consumers and investors, our economic and national security, and our environment.

Thank you for your attention to this important matter.

Sincerely,



United States Senator  
Elizabeth Warren

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<sup>104</sup> CNN Business, "Stablecoins were supposed to be 'stable.' Then the crash came," Jon Sarlin, May 17, 2022, <https://www.cnn.com/2022/05/17/investing/luna-terra-losses-crypto-traders/index.html>.

<sup>105</sup> Court Docket for Case Number 22-10964 (MG), Southern District of New York, In re: Celsius Network LLC, et. al., <https://cases.stretto.com/public/x191/11749/PLEADINGS/1174907142280000000053.pdf>.

<sup>106</sup> Letter from Aaron Smith to Judge Martin Glenn, Case Number 22-10964, Docket No. 574, Entered 8/22/22, <https://cases.stretto.com/public/x191/11749/PLEADINGS/1174908222280000000067.pdf>.



# **Addendum**

December 2, 2021

Jeffrey Kirt  
CEO  
Greenidge Generation Holdings, Inc.  
590 Plant Rd  
Dresden, NY 14441

Dear Mr. Kirt:

I write seeking information about Greenidge Generation Holdings, Inc. (Greenidge)'s power production and Bitcoin mining operations in New York State, and the impact these operations may be having on climate change, the local environment, and the cost of electricity for retail consumers. The Greenidge Generation power plant on the shores of Seneca Lake in Dresden, New York is one of the largest Bitcoin mining facilities in the U.S.<sup>1</sup> Formerly a coal plant that operated from 1937 through 2011, the plant was purchased in 2014 by Atlas Holdings, a private investment firm that "buys and transforms distressed industrial companies."<sup>2</sup> After bringing the plant back online in 2017 as a natural gas plant, with the intention of generating power for public consumption, Greenidge soon began producing electricity to mine Bitcoin.<sup>3</sup>

Cryptocurrency trading has grown exponentially since first introduced over a decade ago.<sup>4</sup> Mining operations for Bitcoin, the largest cryptocurrency by market cap, are increasingly moving onshore, with the United States' share of global mining increasing from 4% in August 2019 to 35% in July 2021<sup>5</sup> – meaning that over a third of the global computing power dedicated

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<sup>1</sup> Forbes, "Bitcoin Mining Can Be Profitable, If You Generate the Power," Robert Anzalone, August 16, 2020, <https://www.forbes.com/sites/robertanzalone/2020/08/13/bitcoin-mining-can-be-profitable-if-you-generate-the-power/>.

<sup>2</sup> Greenidge Generation, "Our Story," <https://greenidge.com/our-story/>; Forbes, "Bitcoin Mining Can Be Profitable, If You Generate the Power," Robert Anzalone, August 16, 2020, <https://www.forbes.com/sites/robertanzalone/2020/08/13/bitcoin-mining-can-be-profitable-if-you-generate-the-power/>.

<sup>3</sup> Grist, "This power plant stopped burning fossil fuels. Then Bitcoin came along," Jessica McKenzie, May 06, 2021, <https://grist.org/technology/bitcoin-greenidge-seneca-lake-cryptocurrency/>; The Chronicle-Express, "Power plant to add data center," John Christensen, July 31, 2019, <https://www.chronicle-express.com/story/news/2019/07/31/power-plant-to-add-data/4575073007/>.

<sup>4</sup> MIT Technology Review, "The Cryptocurrency Market Is Growing Exponentially," Emerging Technology from the arXiv, May 29, 2017, <https://www.technologyreview.com/2017/05/29/151496/the-cryptocurrency-market-is-growing-exponentially/>.

<sup>5</sup> Cambridge Bitcoin Electricity Consumption Index, "Bitcoin Mining Map," Cambridge Centre for Alternative Finance, April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map); CoinMarketCap, "Cryptocurrency Prices, Charts And Market Capitalizations," <https://coinmarketcap.com/>.

to mining Bitcoin is now drawn from miners in the U.S, in part due to a government crackdown in China.<sup>6</sup>

Bitcoin's network is secured through a "proof of work" algorithm, which involves miners using computers to verify transactions by guessing a string of numbers, with the winning miner being rewarded in new Bitcoin.<sup>7</sup> As more miners compete and the value of Bitcoin increases, solving this puzzle becomes increasingly difficult, requiring more computational power and greater energy consumption.<sup>8</sup> Bitcoin's estimated annual power consumption increased more than threefold between the beginning of 2019 and May 2021, rivaling the total energy usage of countries such as Denmark, Chile, and Argentina, and comparable to the entire energy consumption of Washington State.<sup>9</sup>

Given the extraordinarily high energy usage and carbon emissions associated with Bitcoin mining, mining operations at Greenidge and other plants raise concerns about their impacts on the global environment, on local ecosystems, and on consumer electricity costs. Therefore, as you move forward with plans to expand operations in New York and South Carolina,<sup>10</sup> I seek information on Greenidge's operations and the resulting impacts on the environment and local communities.

In May 2021, Greenidge announced that it was purchasing voluntary carbon offsets from a portfolio of U.S. greenhouse gas reduction projects to operate "an entirely carbon neutral bitcoin mining operation."<sup>11</sup> In July 2021, Greenidge announced that it would invest profits from its Bitcoin mining operation in upstate New York to expedite the closure of an existing, forty-year-old coal ash landfill in the Finger Lakes region and build a new solar farm at the site.<sup>12</sup> You have stated that "Bitcoin mining at Greenidge is already a model for the industry in that we are

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<sup>6</sup> The Wall Street Journal, "U.S. Takes Bitcoin Mining Crown After China Crackdown," Caitlin Ostroff, October 27, 2021, <https://www.wsj.com/articles/u-s-takes-bitcoin-mining-crown-after-china-crackdown-11635327002>.

<sup>7</sup> CoinDesk, "What Is Proof-of-Work?," Alyssa Hertig, December 16, 2020, <https://www.coindesk.com/tech/2020/12/16/what-is-proof-of-work/>.

<sup>8</sup> The Wall Street Journal, "Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants," Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>9</sup> *Id.*; The New York Times, "Bitcoin Uses More Electricity Than Many Countries. How Is That Possible?" Jon Huang, Claire O'Neill and Hiroko Tabuchi, September 3, 2021, <https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>.; The Wall Street Journal, "Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants," Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>10</sup> Greenidge Generation, "Greenidge Generation Announces Letter of Intent to Expand Bitcoin Mining Operation to Site in South Carolina," Greenidge Generation Holdings Inc., July 2, 2021, <https://greenidge.com/wp-content/uploads/2021/09/Greenidge-South-Carolina-Announcement-7.2.21-PRN-Final.pdf>.

<sup>11</sup> Greenidge Generation, "Greenidge Generation Bitcoin Mining Operation To Be Carbon Neutral in 2021 and Beyond," Greenidge Generation Holdings Inc., July 2, 2021, <https://greenidge.com/greenidge-generation-bitcoin-mining-operation-to-be-carbon-neutral-in-2021-and-beyond/>.

<sup>12</sup> Greenidge Generation, "Greenidge Generation Takes First Step in Renewable Energy Investment Program," Greenidge Generation Holdings Inc., July 29, 2021, <https://greenidge.com/wp-content/uploads/2021/09/Greenidge-Landfill-Closure-Solar-Project-Announcement-7.29.21.pdf>.

advancing this emerging financial platform for people across the world in a manner that fully protects our environment.”<sup>13</sup>

According to New York Department of Environmental Conservation records, however, your plant’s greenhouse gas emissions increased nearly tenfold from 2019 to 2020.<sup>14</sup> The computers at your facility “operate 24/7, burning through an astounding amount of real energy, and producing real pollution.”<sup>15</sup> In 2020, the plant emitted the equivalent of over 220,000 metric tons of carbon dioxide, comparable to the emissions of 50,000 cars.<sup>16</sup> In March 2021, Greenidge announced plans to more than double its mining capacity on Seneca Lake from 19 MW of mining capacity to 41 MW by July 2021, to double that again to 85 MW by the end of 2022,<sup>17</sup> and to reach a total company-wide capacity of 500MW by 2025 via expansion beyond the initial operation in Dresden, New York, including a Spartanburg, South Carolina facility where you plan to commence operations by the end of this year.<sup>18</sup> Your company claims carbon neutrality through the purchase of carbon offsets,<sup>19</sup> but its Dresden facility is still putting hundreds of thousands of metric tons of carbon dioxide into the atmosphere that would not be emitted otherwise.

In addition to your plant’s energy usage and emissions, local residents have also raised concerns about its impacts on wildlife and water quality, including the large volume of water intake, the withdrawal method of the intake, and the temperature of water outflow.<sup>20</sup> According to Mary Anne Kowalski, President of the Committee to Preserve the Finger Lakes, “Greenidge has permits that allows them to withdraw 139 million gallons of water a day from Seneca Lake, vacuuming up fish and fish eggs and larva, to cool the turbines and discharge the heated water into the Lake.”<sup>21</sup> One local petitioner told a court that the Keuka Lake Outlet, a trout stream and

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<sup>13</sup> *Id.*

<sup>14</sup> Grist, “This power plant stopped burning fossil fuels. Then Bitcoin came along.” Jessica McKenzie, May 06, 2021, <https://grist.org/technology/bitcoin-greenidge-seneca-lake-cryptocurrency/>.

<sup>15</sup> NBC News, “Some locals say a bitcoin mining operation is ruining one of the Finger Lakes. Here's how.” Gretchen Morgenson, July 5, 2021, <https://www.nbcnews.com/science/environment/some-locals-say-bitcoin-mining-operation-ruining-one-finger-lakes-n1272938>.

<sup>16</sup> Grist, “This power plant stopped burning fossil fuels. Then Bitcoin came along.” Jessica McKenzie, May 06, 2021, <https://grist.org/technology/bitcoin-greenidge-seneca-lake-cryptocurrency/>.

<sup>17</sup> Business Wire, “Bitcoin Miner Greenidge Generation Holdings Inc. and Support.com, Inc. (Nasdaq: SPRT) Announce Merger Agreement,” Business Wire, Inc., March 22, 2021, <https://www.businesswire.com/news/home/20210322005353/en/Bitcoin-Miner-Greenidge-Generation-Holdings-Inc.-and-Support.com-Inc.-Nasdaq-SPRT-Announce-Merger-Agreement>.

<sup>18</sup> Greenidge Generation, “Greenidge to Expand Bitcoin Mining Fleet with Order of Latest Generation Mining Machines from Bitmain,” Greenidge Generation Holdings Inc., September 15, 2021, <https://greenidge.com/wp-content/uploads/2021/09/Greenidge-Bitmain.pdf>.

<sup>19</sup> Greenidge Generation, “Greenidge Generation Bitcoin Mining Operation To Be Carbon Neutral in 2021 and Beyond,” Greenidge Generation Holdings Inc., July 2, 2021, <https://greenidge.com/greenidge-generation-bitcoin-mining-operation-to-be-carbon-neutral-in-2021-and-beyond/>.

<sup>20</sup> Grist, “This power plant stopped burning fossil fuels. Then Bitcoin came along.” Jessica McKenzie, May 06, 2021, <https://grist.org/technology/bitcoin-greenidge-seneca-lake-cryptocurrency/>.

<sup>21</sup> FingerLakes1.com, “Committee to Preserve the Finger Lakes elects new officers, focuses on Greenidge Power Plan operations,” FL1 News, August 17, 2020, <https://www.fingerlakes1.com/2020/08/17/committee-to-preserve-the-finger-lakes-elects-new-officers-focuses-on-greenidge-power-plan-operations/>.

fishery that the Greenidge water discharge flows into, and which subsequently empties into Seneca Lake, has been overtaken by “sludge, algae, insects, dead fish, and foul smells.”<sup>22</sup>

Cryptomining facilities’ energy consumption is also causing significant increases in energy costs for local small businesses and residents, and I am concerned about this potential impact of Greenidge’s actions. Cryptomining in the city of Plattsburgh, New York reportedly resulted in residential electricity bills that were “up to \$300 higher than usual” in the winter of 2018, leading the city to introduce the nation’s first 18 month moratorium on new cryptomining operations.<sup>23</sup> A recent study estimates that “the power demands of cryptocurrency mining operations in upstate New York push up annual electric bills by about \$165 million for small businesses and \$79 million for individuals.”<sup>24</sup>

Finally, Greenidge’s vertically integrated Bitcoin mining and power generation facility is also serving as a model for other companies seeking to acquire aging fossil fuel plants for the purposes of making the energy generation profitable,<sup>25</sup> a trend that is likely to accelerate after China’s crackdown on cryptomining. Around 500,000 formerly Chinese miner rigs are looking for new locations, potentially in the U.S., which would push North America closer to 40% of the global collective computing power of the Bitcoin network within the next year.<sup>26</sup> States like Texas with relatively cheap electricity costs are experiencing an influx of cryptomining companies,<sup>27</sup> raising concerns about the state’s unreliable electricity market and the potential for cryptomining to add to the stress on the state’s power grid.<sup>28</sup>

To address our concerns about the impact of Greenidge’s operations on the global climate and local communities, and in order for us to better understand how you intend to implement and maintain your public commitments to environmental quality, I ask that you respond in writing with answers to the following questions no later than December 17.

1. How much does Greenidge’s Dresden, New York plant currently emit annually in terms of metric tons of carbon dioxide equivalent? What is the current annual energy production of the plant?
2. What is the annual electricity consumption used for Bitcoin mining at the Dresden facility?

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<sup>22</sup> Grist, “This power plant stopped burning fossil fuels. Then Bitcoin came along,” Jessica McKenzie, May 06, 2021, <https://grist.org/technology/bitcoin-greenidge-seneca-lake-cryptocurrency/>.

<sup>23</sup> Congressional Research Service, “Bitcoin, Blockchain, and the Energy Sector,” Corrie E. Clark and Heather L. Greenley, August 9, 2019, <https://www.crs.gov/Reports/R41786>.

<sup>24</sup> Berkeley Haas, “Power-hungry cryptominers push up electricity costs for locals,” Laura Counts, August 3, 2021, <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>.

<sup>25</sup> Grist, “This power plant stopped burning fossil fuels. Then Bitcoin came along,” Jessica McKenzie, May 06, 2021, <https://grist.org/technology/bitcoin-greenidge-seneca-lake-cryptocurrency/>.

<sup>26</sup> CNBC, “How the U.S. became the world’s new bitcoin mining hub,” MacKenzie Sigalos, July 17, 2021, <https://www.cnbc.com/2021/07/17/bitcoin-miners-moving-to-us-carbon-footprint.html>.

<sup>27</sup> Cointelegraph, “Crypto miners eye cheap power in Texas, but fears aired over impact on the grid,” Samuel Haig, June 16, 2021, <https://cointelegraph.com/news/crypto-miners-eye-cheap-power-in-texas-but-fears-ai-red-over-impact-on-the-grid>.

<sup>28</sup> *Id.*

3. Your company is planning to significantly scale both energy production and Bitcoin mining operations in the coming months and years.<sup>29</sup> Please describe your scaling plans.
  - a. What is your projection for your annual emissions and energy production once the expansion is complete? What is your timeframe for completion?
  - b. What are your specific plans for increasing Bitcoin mining, and what will be the total electricity consumption for this mining once the expansion is complete?
    - i. What is your projected electricity consumption for Bitcoin production at the Dresden plant for each of the next five years?
    - ii. What is your projected electricity consumption for Bitcoin production at all over your plants combined over the next five years?
  - c. You recently announced the purchase of 10,000 S19j Pro bitcoin miners representing 1 EH of mining capacity for your anticipated Spartanburg, South Carolina facility.<sup>30</sup> How many bitcoin mining units do you currently have at your Dresden location, and how many will you have in total once your expansion is complete? How many EH/s of mining capacity will that represent? What is your average annual energy consumption per mining unit?
  - d. What specific plans do you have to address the environmental impact of this scaling, outside of the purchasing of carbon offsets?
4. Your company's claim that Greenidge is the first 100% carbon-neutral bitcoin transaction processor in the United States is based on the purchasing of carbon offsets.<sup>31</sup> Please provide information on the company through which you purchased these offsets, the location of the offsets, and any additional information that would support your claim that these offsets are a satisfactory counterbalance to your plant's emissions and are sufficient in making your overall operations environmentally friendly.
5. In order to prevent impingement and entrainment of fish, larvae, and other wildlife through water intake, the federal *Clean Water Act* requires facilities withdrawing upwards of 2 million gallons a day for cooling purposes to cover intake pipes with protective screens, for which New York's Department of Environmental Conservation has given Greenidge until late 2022 to comply.<sup>32</sup> I am aware you have recently installed variable speed drives on your facility's water pumps to slow the speed of water intake.<sup>33</sup>

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<sup>29</sup> Greenidge Generation, "Greenidge to Expand Bitcoin Mining Fleet with Order of Latest Generation Mining Machines from Bitmain," Greenidge Generation Holdings Inc., September 15, 2021, <https://greenidge.com/wp-content/uploads/2021/09/Greenidge-Bitmain.pdf>.

<sup>30</sup> *Id.*

<sup>31</sup> Greenidge Generation, "Greenidge Generation Takes First Step in Renewable Energy Investment Program," Greenidge Generation Holdings Inc., July 29, 2021, <https://greenidge.com/wp-content/uploads/2021/09/Greenidge-Landfill-Closure-Solar-Project-Announcement-7.29.21.pdf>.

<sup>32</sup> Grist, "This power plant stopped burning fossil fuels. Then Bitcoin came along.," Jessica McKenzie, May 06, 2021, <https://grist.org/technology/bitcoin-greenidge-seneca-lake-cryptocurrency/>.

<sup>33</sup> *Id.*

- a. What does your data say about fish impingement and entrainment mortality – on both a monthly and annual basis – caused by your plant? How does your impingement data compare to the Environmental Protection Agency’s (EPA) proposed numeric performance standard of limiting fish impingement mortality to no more than 12% on an annual average and 31% on a monthly average, and how does your entrainment data compare to the EPA standard for new units of reducing entrainment mortality to the equivalent of 90% of reductions achieved by closed-cycle cooling?<sup>34</sup>
  - b. Have you undertaken additional studies on this matter since your 2019 Cylindrical Wedge-Wire Screen Pilot Study in 2019?<sup>35</sup> What measures are you taking to reduce impingement and entrainment, and what other actions are you taking to protect wildlife in the lake?
6. Please provide detailed information regarding the temperature differentials of water intake and outflow from your facility. Specifically, please report the minimum and maximum temperature of intake and outflow for each month in the past year.
  7. Does Greenidge have any estimates or models regarding the impacts of your facility on energy costs to local families and businesses? If so, what do these estimates or models show? Have residential electricity costs increased since Greenidge began its cryptomining operations? What measures are you taking to ensure that local consumers and small businesses are not bearing the costs of Greenidge’s energy consumption?

Thank you for your attention to this important matter. I look forward to your response.

Sincerely,



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Elizabeth Warren  
United States Senator

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<sup>34</sup> Congressional Research Service, “Cooling Water Intake Structures: Summary of the EPA Rule,” Claudia Copeland, September 8, 2014, <https://www.crs.gov/Reports/R41786>.

<sup>35</sup> Treichler Law Office, “Greenidge Generation CWWS Pilot Study,” ASA Analysis & Communication, Inc., March 2018, [https://treichlerlawoffice.com/water/greenidge/Greenidge\\_Generating\\_Station\\_CWWS\\_Pilot\\_Study.pdf](https://treichlerlawoffice.com/water/greenidge/Greenidge_Generating_Station_CWWS_Pilot_Study.pdf).

United States Senate  
WASHINGTON, DC 20510

January 14, 2022

Dino Falaschetti  
Director  
Office of Financial Research  
U.S. Department of the Treasury  
717 14th Street, NW  
Washington, DC 20220

Dear Director Falaschetti:

We write to urge you to fully utilize the capabilities of the Office of Financial Research (OFR) to safeguard our financial system, consistent with the statutory function of the agency. Congress gave OFR critical tools to collect data on financial stability risks, yet even as OFR identifies ongoing and emerging sources of risk where regulators lack complete data, we believe the agency is not taking the steps needed to fill these gaps.

In 2007 and 2008, when contagion spread throughout the financial system, it became clear that regulators and financial institutions themselves did not have the visibility and data needed to understand the various risks to financial stability or the specific entities that were most exposed to those risks.<sup>1</sup> For that reason, with the passage of the Dodd Frank Wall Street Reform and Consumer Protection Act, Congress established OFR as a body housed within but independent from the Department of the Treasury.<sup>2</sup>

This office was created to “identify risks and fill blind spots so regulators would have a broader view of ‘who owes what to whom’ across the financial system.”<sup>3</sup> One of the statutory purposes of OFR is to support the Financial Stability Oversight Council (FSOC) by “collecting data on behalf of the Council, and providing such data to the Council and new member agencies.”<sup>4</sup> To carry out this duty, Congress granted the agency the power to subpoena data from financial companies.<sup>5</sup> This data collection function was intended to serve as an “early warning system to identify risks before they snowball into another financial crisis.”<sup>6</sup>

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<sup>1</sup> Hilary J. Allen, “Resurrecting the OFR,” July 9, 2021,

[https://papers.ssrn.com/sol3/Delivery.cfm/SSRN\\_ID3883753\\_code1702749.pdf?abstractid=3727585&mirid=1](https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID3883753_code1702749.pdf?abstractid=3727585&mirid=1).

<sup>2</sup> Title I, Subtitle B, Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. Law 111-203.

<sup>3</sup> The Brookings Institution, “Fixing financial data to assess systemic risk,” Greg Feldberg, December 2, 2020, <https://www.brookings.edu/research/fixing-financial-data-to-assess-systemic-risk/>.

<sup>4</sup> Pub. Law 111-203 Sec. 153(a)(1).

<sup>5</sup> Pub. Law 111-203 Sec. 153(f)(1)(A).

<sup>6</sup> Politico, “‘Early Warning System’ for Markets Muzzled under Trump,” Victoria Guida, October 24, 2018, <https://www.politico.com/story/2018/10/24/early-warning-system-for-markets-muzzled-under-trump-884053> (quoting Senator Jack Reed).



While OFR has taken important steps to gather more data on a portion of the repo market and continues to work to standardize and compile existing data sources,<sup>7</sup> it has declined to utilize its data collection powers to provide regulators with the information they need to assess the risks to our economy.<sup>8</sup> And under your leadership, staff levels remain around 50 percent of their peak in 2017.<sup>9</sup> Recruitment and retention of additional staff is necessary for OFR to fulfill its mission.

As part of its responsibilities, OFR reports to Congress each year on its findings with respect to threats to financial stability of the United States.<sup>10</sup> In the 2021 report, OFR identified several important areas that warrant much greater attention from regulators but did not clearly articulate how OFR itself would use its statutory powers to help address these risks.<sup>11</sup> OFR has the proper tools and has identified clear and compelling cases to make use of those tools consistent with the agency's mandate from Congress. It is past time for OFR to do so.

Given the importance of quality data to make sound public policy decisions, we ask that you respond to the questions below regarding specific areas identified in the 2021 Annual Report:

**Climate Change:** OFR's 2021 Annual Report stated, "Climate models provide an expectation of long-term climate changes, but data gaps between climate and economic models impede a full understanding of how climate change is expected to translate into deeper levels of financial risks."<sup>12</sup>

1. How does OFR plan to use its statutory authorities to fill these data gaps? Please include the types of data you plan on collecting, the entities from which you plan on collecting such data, and the timeline for implementing this data collection.

**Cryptocurrencies:** The report also noted, "Increased trading of contracts tied to crypto assets on highly interconnected exchanges may raise contagion risk. Risks are heightened to the extent that these new instruments do not fit into existing regulatory frameworks. Increased provision of regulatory data is essential for effective risk monitoring."<sup>13</sup>

2. Describe the specific data that is needed for "effective risk monitoring," and how OFR plans to use its statutory authorities to fill these data gaps. Please

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<sup>7</sup> Office of Financial Research, "OFR Begins Publishing Repo Data, Unveils Short-term Funding Monitor," press release, September 9, 2020, <https://www.financialresearch.gov/press-releases/2020/09/09/ofr-begins-publishing-repo-data-unveils-short-term-funding-monitor/>.

<sup>8</sup> The Brookings Institution, "Fixing financial data to assess systemic risk," Greg Feldberg, December 2, 2020, <https://www.brookings.edu/research/fixing-financial-data-to-assess-systemic-risk/>.

<sup>9</sup> Office of Financial Research, "Annual Report to Congress 2021," <https://www.financialresearch.gov/annual-reports/files/OFR-Annual-Report-2021.pdf>; Morning Consult, "Office of Financial Research Picks Up Hiring After Trump Cuts, Director Says," Claire Williams, September 25, 2019, <https://morningconsult.com/2019/09/25/office-of-financial-research-picks-up-hiring-after-trump-cuts-director-says/>. OFR's annual report identified 119 staff as of September 30, 2021. In 2017, before the Trump administration started making cuts, the staff totaled around 220.

<sup>10</sup> Pub. Law 111-203 Sec 154(d).

<sup>11</sup> Office of Financial Research, "Annual Report to Congress 2021," <https://www.financialresearch.gov/annual-reports/files/OFR-Annual-Report-2021.pdf>.

<sup>12</sup> Id.

<sup>13</sup> Id.

include the types of data you plan on collecting, the entities from which you plan on collecting such data, and the timeline for implementing this data collection.

Similarly, in comparing stablecoin arrangements to money market mutual funds, the report noted, “A lack of transparency about the assets backing existing stablecoin arrangements is worrisome in this regard. In February 2021, Tether reached an agreement with the New York State Attorney General’s office that included a fine of \$18.5 million to settle charges that it made false statements about the assets backing its coins.”<sup>14</sup>

3. Describe OFR’s plans to rectify this lack of transparency, including types of data you plan on collecting, the entities from which you plan on collecting such data and the timeline for implementing this data collection.
4. Will OFR collect data from stablecoin issuers on the assets backing their stablecoins and require comprehensive and consistent reporting on the composition of those assets?

**Repos:** Even as OFR collected data on the centrally cleared portion of the repo market, “regulators are still in the dark with respect to a significant segment of the repo market and the securities lending market.”<sup>15</sup> The report noted, “Expanding visibility into the uncleared bilateral segment of the market would allow policy makers to better capture exposures of hedge funds and other nonbank financial actors to sudden changes in liquidity.”<sup>16</sup>

5. What actions will OFR take to expand visibility into the bilateral repo market? Please include the types of data you plan on collecting, the entities from which you plan on collecting such data, and the timeline for implementing this data collection.

**Private Funds and Synthetic Leverage:** The report cited the example of the blowup of the family investment office Archegos as a potential indicator of broader financial stability concerns surrounding hedge funds and other leveraged asset managers. Specifically, the report noted, “The Archegos episode illuminated financial vulnerabilities related to synthetic leverage obtained from counterparties and fire-sale risks associated with asset managers’ concentrated holdings. While regulatory efforts are being made to address the lack of transparency around synthetic leverage through the creation of a swap data repository, the success of such efforts will still hinge on prudent risk management by multiple market participants.”<sup>17</sup>

6. Does OFR plan to collect additional data on exposures, sources of funding, and other potential areas of risk related to private funds and family offices?

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<sup>14</sup> Id.

<sup>15</sup> Center for American Progress, “5 Priorities for the Financial Stability Oversight Council,” Gregg Gelzinis, March 31, 2021, <https://www.americanprogress.org/article/5-priorities-financial-stability-oversight-council/>.

<sup>16</sup> Office of Financial Research, “Annual Report to Congress 2021,” <https://www.financialresearch.gov/annual-reports/files/OFR-Annual-Report-2021.pdf>.

<sup>17</sup> Id.

7. Beyond information currently required to be reported to swap data repositories, does OFR have any plans for additional data collection to inform FSOC member agencies' ongoing efforts to mitigate the risks of synthetic leverage?

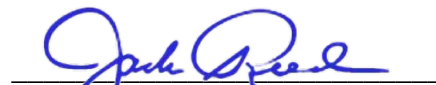
**Cybersecurity:** The report notes that cybersecurity concerns have “only increased since the onset of the COVID-19 crisis” and that “the cost of cyberattacks has surged in recent years both in terms of direct losses and the expense tied to prevention.” Our nation’s financial institutions and critical infrastructure are attacked daily. An attack on a key hub in the financial system could create a “perception of higher counterparty risk” that could then “spread credit problems among institutions, and consequently threaten financial stability.”<sup>18</sup>

8. Does OFR have data sufficient to understand the effects on the financial system posed by a cyber-attack that may cause an outage at a key financial hub, such as a central clearinghouse or a payment network?
9. Does OFR plan to collect data on third-party service providers to financial institutions, such as cloud-services providers, that provide services critical to performing core consumer functions like deposit-taking and securities brokerage?

The areas described above are a non-exhaustive set of examples of serious risks to financial stability where OFR can provide FSOC member agencies with the information and clarity necessary to make effective policy decisions to protect consumers and our economy as a whole. To learn how OFR plans to collect the data necessary to address these ongoing sources of risk, we ask that you respond to this letter by no later than January 28, 2022.

Sincerely,

  
Elizabeth Warren  
United States Senator

  
Jack Reed  
United States Senator

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<sup>18</sup> Id.

**Congress of the United States**  
Washington, DC 20510

January 27, 2022

Jason Les  
CEO  
Riot Blockchain, Inc.  
3855 Ambrosia Street  
Suite 301  
Castle Rock, CO 80109

Dear Mr. Les:

We write seeking information about Riot Blockchain, Inc.’s (Riot’s) Bitcoin mining operations and the impact these operations may have on climate change, the local environment, and the cost of electricity for retail consumers. Riot is one of the largest publicly traded Bitcoin miners in North America, with operations in Massena, New York and Rockdale, Texas.<sup>1</sup> Last month, Senator Warren sent a similar letter to Greenidge Generation Holdings, a Bitcoin mining plant in Dresden, New York, regarding the company’s cryptomining operations. As we continue our investigation into the climate impacts of cryptomining, we are now seeking insight into Riot’s operations and the company’s environmental footprint.

Cryptocurrency trading has grown exponentially since first introduced over a decade ago.<sup>2</sup> Mining operations for Bitcoin, the largest cryptocurrency by market cap, are increasingly moving onshore, with the United States’ share of global mining increasing from 4% in August 2019 to 35% in July 2021 – meaning that over a third of the global computing power dedicated to mining Bitcoin is now drawn from miners in the U.S., in part due to a government crackdown in China.<sup>3</sup>

Bitcoin’s network is secured through a “proof of work” algorithm, which involves miners using computers to verify transactions by solving a mathematical puzzle, with the winning miner being rewarded in new Bitcoin.<sup>4</sup> As more miners compete and the value of Bitcoin increases, solving this puzzle becomes increasingly difficult, requiring more computational power and

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<sup>1</sup> Riot Blockchain, Inc., “About,” <https://www.riotblockchain.com/about>.

<sup>2</sup> MIT Technology Review, “The Cryptocurrency Market Is Growing Exponentially,” Emerging Technology from the arXiv, May 29, 2017, <https://www.technologyreview.com/2017/05/29/151496/the-cryptocurrency-market-is-growing-exponentially/>.

<sup>3</sup> Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, “Bitcoin Mining Map,” April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map); CoinMarketCap, “Cryptocurrency Prices, Charts And Market Capitalizations,” <https://coinmarketcap.com/>; The Wall Street Journal, “U.S. Takes Bitcoin Mining Crown After China Crackdown,” Caitlin Ostroff, October 27, 2021, <https://www.wsj.com/articles/u-s-takes-bitcoin-mining-crown-after-china-crackdown-11635327002>.

<sup>4</sup> CoinDesk, “What Is Proof-of-Work?,” Alyssa Hertig, December 16, 2020, <https://www.coindesk.com/tech/2020/12/16/what-is-proof-of-work/>.

greater energy consumption.<sup>5</sup> Bitcoin’s estimated annual power consumption increased more than threefold between the beginning of 2019 and May 2021, rivaling the total energy usage of countries such as Denmark, Chile, and Argentina, and comparable to the entire energy consumption of Washington State.<sup>6</sup>

Cryptomining facilities’ energy consumption is also causing significant increases in energy costs for small businesses and residents in localities across the country. Cryptomining in the city of Plattsburgh, New York reportedly resulted in residential electricity bills that were “up to \$300 higher than usual” in the winter of 2018, leading the city to introduce the nation’s first 18-month moratorium on new cryptomining operations.<sup>7</sup> A recent study estimates that “the power demands of cryptocurrency mining operations in upstate New York push up annual electric bills by about \$165 million for small businesses and \$79 million for individuals.”<sup>8</sup>

Furthermore, after China’s crackdown on cryptomining, around 500,000 formerly Chinese miner rigs are looking for new locations, potentially in the U.S., which could push North America well over 40% of the global collective computing power of the Bitcoin network within the next year.<sup>9</sup> States like Texas with relatively cheap electricity costs are experiencing an influx of cryptomining companies,<sup>10</sup> raising concerns about the state’s unreliable electricity market and the potential for cryptomining to add to the stress on the state’s power grid.<sup>11</sup>

Riot’s self-mining operations are currently based out of private Bitcoin mining firm Coinmint LLC’s facility in Massena, New York,<sup>12</sup> where Riot has deployed a fleet of more than 16,000 Bitcoin mining hardware units at that facility.<sup>13</sup> In May 2021, Riot also acquired Whinstone U.S., the owner operator of what “is believed to be the largest single facility, as measured by developed capacity, in North America for Bitcoin mining.”<sup>14</sup> The Rockdale, Texas-

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<sup>5</sup> The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>6</sup> *Id.*; The New York Times, “Bitcoin Uses More Electricity Than Many Countries. How Is That Possible?” Jon Huang, Claire O’Neill, and Hiroko Tabuchi, September 3, 2021, <https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>; The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>7</sup> Congressional Research Service, “Bitcoin, Blockchain, and the Energy Sector,” Corrie E. Clark and Heather L. Greenley, August 9, 2019, <https://crsreports.congress.gov/product/pdf/R/R45863/3>.

<sup>8</sup> Berkeley Haas, “Power-hungry cryptominers push up electricity costs for locals,” Laura Counts, August 3, 2021, <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>.

<sup>9</sup> CNBC, “How the U.S. became the world’s new bitcoin mining hub,” MacKenzie Sigalos, July 17, 2021, <https://www.cnbc.com/2021/07/17/bitcoin-miners-moving-to-us-carbon-footprint.html>; Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, “Bitcoin Mining Map,” April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map).

<sup>10</sup> Cointelegraph, “Crypto miners eye cheap power in Texas, but fears aired over impact on the grid,” Samuel Haig, June 16, 2021, <https://cointelegraph.com/news/crypto-miners-eye-cheap-power-in-texas-but-fears-aired-over-impact-on-the-grid>.

<sup>11</sup> *Id.*

<sup>12</sup> Riot Blockchain, Inc., “Bitcoin Mining,” <https://www.riotblockchain.com/bitcoin-mining/>; Coinmint, “Operating the largest digital currency data center in the world,” <https://www.coinmint.one/>.

<sup>13</sup> *Id.*

<sup>14</sup> Riot Blockchain, Inc., “Whinstone U.S.,” <https://www.riotblockchain.com/bitcoin-mining/whinstone-u-s>.

based Whinstone “is located on an 100-acre site, hosting Bitcoin mining customers in three buildings totaling 190,000 square feet” with a “total power capacity of 750 MW, with 300 MW currently developed.”<sup>15</sup>

Given the extraordinarily high energy usage and carbon emissions associated with Bitcoin mining, mining operations raise concerns about their impacts on the global environment, local ecosystems, and consumer electricity costs. To help Congress better understand these impacts, we ask that you respond in writing with answers to the following questions no later than February 10, 2022.

1. What is the annual electricity consumption used for Bitcoin and other cryptocurrency mining at each of your facilities? Please include your own mining as well as mining done by customers hosted at your facilities. What are the estimated emissions, in terms of metric tons of carbon dioxide equivalent, produced by generating this energy?
  - a. Your website states that your self-operating mining operations are based out of Coinmint’s Massena, New York facility, which draws its energy from 88% zero-emission sources.<sup>16</sup> Please describe the sources of this electricity.
  - b. Your Whinstone site is subject to a long-term lease agreement, with electricity provided via a long-term power supply contract.<sup>17</sup> Please describe the sources of this electricity.
2. Please describe your plans, if any, to scale your cryptomining operations through your self-mining operations or your wholly owned subsidiary, Whinstone.
  - a. Whinstone has a total power capacity of 750 MW, but only 300 MW have been developed to date.<sup>18</sup> Do you plan to develop the remaining 450 MW of capacity? If so, what is your timeline to do so, and what are your own projections for the increase in carbon emissions from that expansion?
  - b. What is your projected electricity consumption for cryptomining across all of your facilities combined over the next five years? What are your projected associated carbon emissions for that mining?
  - c. What specific plans do you have to address the environmental impact of your increased operations?
3. Please describe in detail your purchasing agreements with electricity providers, including provisions regarding Riot’s responsibilities when demand for electricity outstrips supply on the grid.
4. Does Riot have any estimates or models regarding the impacts of your facilities on energy costs to local families and businesses? If so, what do these estimates or models show? Have local residential electricity costs increased since Riot began its cryptomining operations? What measures are you taking to ensure that local

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<sup>15</sup> *Id.*

<sup>16</sup> Riot Blockchain, Inc., “Bitcoin Mining,” <https://www.riotblockchain.com/bitcoin-mining>.

<sup>17</sup> Riot Blockchain, Inc., “Whinstone U.S.,” <https://www.riotblockchain.com/bitcoin-mining/whinstone-u-s>.

<sup>18</sup> *Id.*

consumers and small businesses are not bearing the costs of Riot's energy consumption?

Thank you for your attention to this important matter. We look forward to your response.

Sincerely,



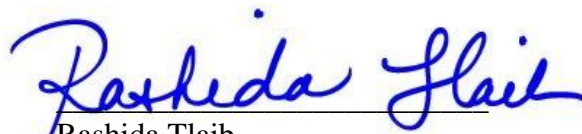
Elizabeth Warren  
United States Senator



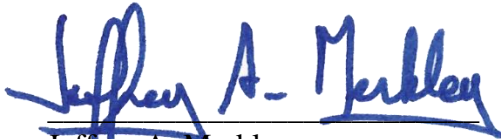
Katie Porter  
Member of Congress



Sheldon Whitehouse  
United States Senator



Rashida Tlaib  
Member of Congress



Jeffrey A. Merkley  
United States Senator



Jared Huffman  
Member of Congress



Margaret Wood Hassan  
United States Senator



Edward J. Markey  
United States Senator

**Congress of the United States**  
Washington, DC 20510

January 27, 2022

Fred Thiel  
CEO  
Marathon Digital Holdings  
1180 North Town Center Drive  
Suite 100  
Las Vegas, NV 89144

Dear Mr. Thiel:

We write seeking information about Marathon Digital Holdings (Marathon)'s Bitcoin mining operations and the impact these operations may be having on climate change, the local environment, and the cost of electricity for retail consumers. According to your website, Marathon is "one of the largest enterprise Bitcoin self-mining companies in North America."<sup>1</sup> Last month, Senator Warren sent a similar letter to Greenidge Generation Holdings, a Bitcoin mining plant in Dresden, New York, regarding the company's cryptomining operations. As we continue our investigation into the climate impacts of cryptomining, we are now seeking insight into Marathon's operations and the company's environmental footprint.

Cryptocurrency trading has grown exponentially since first introduced over a decade ago.<sup>2</sup> Mining operations for Bitcoin, the largest cryptocurrency by market cap, are increasingly moving onshore, with the United States' share of global mining increasing from 4% in August 2019 to 35% in July 2021 – meaning that over a third of the global computing power dedicated to mining Bitcoin is now drawn from miners in the U.S., in part due to a government crackdown in China.<sup>3</sup>

Bitcoin's network is secured through a "proof of work" algorithm, which involves miners using computers to verify transactions by solving a mathematical puzzle, with the winning miner

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<sup>1</sup> Marathon Digital Holdings, "Marathon Digital Holdings Announces Bitcoin Production And Mining Operation Updates For November 2021," press release, December 3, 2021, <https://ir.marathondh.com/news-events/press-releases/detail/1269/marathon-digital-holdings-announces-bitcoin-production-and>.

<sup>2</sup> MIT Technology Review, "The Cryptocurrency Market Is Growing Exponentially," Emerging Technology from the arXiv, May 29, 2017, <https://www.technologyreview.com/2017/05/29/151496/the-cryptocurrency-market-is-growing-exponentially/>.

<sup>3</sup> Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, "Bitcoin Mining Map," April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map); CoinMarketCap, "Cryptocurrency Prices, Charts And Market Capitalizations," <https://coinmarketcap.com/>; The Wall Street Journal, "U.S. Takes Bitcoin Mining Crown After China Crackdown," Caitlin Ostroff, October 27, 2021, <https://www.wsj.com/articles/u-s-takes-bitcoin-mining-crown-after-china-crackdown-11635327002>.



being rewarded in new Bitcoin.<sup>4</sup> As more miners compete and the value of Bitcoin increases, solving this puzzle becomes increasingly difficult, requiring more computational power and greater energy consumption.<sup>5</sup> Bitcoin's estimated annual power consumption increased more than threefold between the beginning of 2019 and May 2021, rivaling the total energy usage of countries such as Denmark, Chile, and Argentina, and comparable to the entire energy consumption of Washington State.<sup>6</sup>

Cryptomining facilities' energy consumption is also causing significant increases in energy costs for small businesses and residents in localities across the country. Cryptomining in the city of Plattsburgh, New York reportedly resulted in residential electricity bills that were "up to \$300 higher than usual" in the winter of 2018, leading the city to introduce the nation's first 18-month moratorium on new cryptomining operations.<sup>7</sup> A recent study estimates that "the power demands of cryptocurrency mining operations in upstate New York push up annual electric bills by about \$165 million for small businesses and \$79 million for individuals."<sup>8</sup>

Furthermore, after China's crackdown on cryptomining, around 500,000 formerly Chinese miner rigs are looking for new locations, potentially in the U.S., which could push North America well over 40% of the global collective computing power of the Bitcoin network within the next year.<sup>9</sup> States like Texas with relatively cheap electricity costs are experiencing an influx of cryptomining companies,<sup>10</sup> raising concerns about the state's unreliable electricity market and the potential for cryptomining to add to the stress on the state's power grid.<sup>11</sup>

Marathon has entered into an agreement with Beowulf Energy – "a private, independent infrastructure holding company that develops, builds, owns, and operates power generation and industrial infrastructure facilities worldwide" – to co-locate its Bitcoin Mining Data Center at the 20 acres-Big Horn Data Hub, which is powered by the adjacent Beowulf Hardin Generating

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<sup>4</sup> CoinDesk, "What Is Proof-of-Work?," Alyssa Hertig, December 16, 2020, <https://www.coindesk.com/tech/2020/12/16/what-is-proof-of-work/>.

<sup>5</sup> The Wall Street Journal, "Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants," Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>6</sup> *Id.*; The New York Times, "Bitcoin Uses More Electricity Than Many Countries. How Is That Possible?" Jon Huang, Claire O'Neill, and Hiroko Tabuchi, September 3, 2021, <https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>; The Wall Street Journal, "Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants," Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>7</sup> Congressional Research Service, "Bitcoin, Blockchain, and the Energy Sector," Corrie E. Clark and Heather L. Greenley, August 9, 2019, <https://crsreports.congress.gov/product/pdf/R/R45863/3>.

<sup>8</sup> Berkeley Haas, "Power-hungry cryptominers push up electricity costs for locals," Laura Counts, August 3, 2021, <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>.

<sup>9</sup> CNBC, "How the U.S. became the world's new bitcoin mining hub," MacKenzie Sigalos, July 17, 2021, <https://www.cnbc.com/2021/07/17/bitcoin-miners-moving-to-us-carbon-footprint.html>; Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, "Bitcoin Mining Map," April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map).

<sup>10</sup> Cointelegraph, "Crypto miners eye cheap power in Texas, but fears aired over impact on the grid," Samuel Haig, June 16, 2021, <https://cointelegraph.com/news/crypto-miners-eye-cheap-power-in-texas-but-fears-ai-red-over-impact-on-the-grid>.

<sup>11</sup> *Id.*

Station, a 105 MW coal-fired power facility located in Hardin, Montana.<sup>12</sup> The plant reportedly has been struggling, as with many coal generating power plants nationwide, and in 2017 it was announced that the plant would have to close by 2018 – however, “this move was staved off by plans to sell the power for Bitcoin mining and other data center use.”<sup>13</sup> Given that Bitcoin miners are incentivized to use the cheapest power available for their rapidly scaling energy consumption, such operations appear to be keeping open fossil fuel plants that otherwise were not profitable and could have been retired.<sup>14</sup> In addition to operations in Montana, in May 2021 Marathon announced an agreement with Compute North, a data center service provider, to “host approximately 73,000 of Marathon’s previously purchased Bitcoin miners as part of a new 300-megawatt data center located in Texas.”<sup>15</sup> At the time you stated that your company is “on a clear path to becoming one of the largest, most efficient, and most environmentally conscious Bitcoin miners in North America.”<sup>16</sup> In December 2021, the agreement with Compute North was expanded to include over 100,000 Bitcoin miners.<sup>17</sup>

Given the extraordinarily high energy usage and carbon emissions associated with Bitcoin mining, mining operations raise concerns about their impacts on the global environment, local ecosystems, and consumer electricity costs. To help Congress better understand these impacts, we ask that you respond in writing with answers to the following questions no later than February 10, 2022.

1. What is the annual electricity consumption used for Bitcoin and other cryptocurrency mining at each of your facilities? What are the estimated emissions, in terms of metric tons of carbon dioxide equivalent, produced by generating this energy?
  - a. A Beowulf Energy coal-fired generating station is now providing 100% of its energy to Marathon Digital Holdings for Bitcoin mining at your Montana facilities under a power purchase agreement.<sup>18</sup> Please describe this source of

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<sup>12</sup> Beowulf Energy, “About,” <http://beowulfenergy.com/about/>; Marathon Digital Holdings, “Our Facilities,” <https://marathondh.com/our-facilities/>; Data Center Dynamics, “Bitcoin miner Marathon signs for coal-fired electricity in Montana,” Alex Alley, October 16, 2020, <https://www.datacenterdynamics.com/en/news/bitcoin-miner-marathon-signs-coal-fired-electricity-montana/>.

<sup>13</sup> Data Center Dynamics, “Bitcoin miner Marathon signs for coal-fired electricity in Montana,” Alex Alley, October 16, 2020, <https://www.datacenterdynamics.com/en/news/bitcoin-miner-marathon-signs-coal-fired-electricity-montana/>.

<sup>14</sup> *Id.*

<sup>15</sup> Bitcoin.com, “Marathon Expands Miner Deployment Deal With Compute North, Aims to Power 100K+ Miners With Renewables,” Sergio Goschenko, December 3, 2021, <https://news.bitcoin.com/marathon-expands-miner-deployment-deal-with-compute-north-aims-to-power-100k-miners-with-renewables/>; Marathon Digital Holdings, “CORRECTION -- Marathon Digital Holdings Announces Binding Letter Of Intent With Compute North To Host 300-Megawatts Of Bitcoin Mining At New Data Center,” press release, May 24, 2021, <https://ir.marathondh.com/news-events/press-releases/detail/1243/correction---marathon-digital-holdings-announces-binding>.

<sup>16</sup> *Id.*

<sup>17</sup> Marathon Digital Holdings, “Marathon Digital Holdings Expands Deployments With Compute North, Powered By One Of The Largest Renewable Energy Providers In North America,” press release, December 1, 2021, <https://ir.marathondh.com/news-events/press-releases/detail/1267/marathon-digital-holdings-expands-deployments-with-compute>.

<sup>18</sup> ABC News, “Bitcoin-mining power plant raises ire of environmentalists,” Michael Hill, October 16, 2021, <https://abcnews.go.com/US/wireStory/bitcoin-mining-power-plant-raises-ire-environmentalists-80618790>; Data

electricity.

2. Please describe your plans, if any, to scale your cryptomining operations.
  - a. Your timeline shows you plan to have 133,120 miners deployed by mid-2022, generating 13.3 EH/s with mining operations 70% carbon neutral.<sup>19</sup> What are your own projections for the total increase in carbon emissions from that expansion?
  - b. What is your projected electricity consumption for cryptomining across all of your facilities combined over the next five years? What are your projected associated carbon emissions for that mining?
  - c. What specific plans do you have to address the environmental impact of your increased operations?
    - i. You note that you plan to have your mining operations be 70% carbon neutral by the end of the first quarter of 2022, with your long-term objective being to obtain a 100% carbon neutral footprint.<sup>20</sup> Please describe your plans to achieve 70% and 100% carbon neutrality.
    - ii. If the above plans include the purchasing of carbon offsets, please provide information on the company through which you purchased these offsets, the location of the offsets, and any additional information that would support your claim that these offsets are a satisfactory counterbalance to your plant's emissions.
3. Please describe in detail your purchasing agreements with electricity providers, including provisions regarding Marathon's responsibilities when demand for electricity outstrips supply on the grid.
4. Does Marathon have any estimates or models regarding the impacts of your facilities on energy costs to local families and businesses? If so, what do these estimates or models show? Have local residential electricity costs increased since Marathon began its cryptomining operations? What measures are you taking to ensure that local consumers and small businesses are not bearing the costs of Marathon's energy consumption?

Thank you for your attention to this important matter. We look forward to your response.


Sincerely,


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Center Dynamics, "Bitcoin miner Marathon signs for coal-fired electricity in Montana," Alex Alley, October 16, 2020, <https://www.datacenterdynamics.com/en/news/bitcoin-miner-marathon-signs-coal-fired-electricity-montana/>.


<sup>19</sup> Marathon Digital Holdings, "History of Expansion and Growth," <https://marathondh.com/timeline/>.

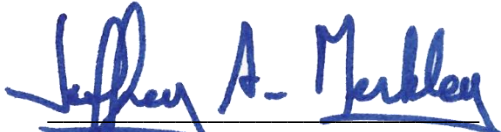
<sup>20</sup> Marathon Digital Holdings, "CORRECTION -- Marathon Digital Holdings Announces Binding Letter Of Intent With Compute North To Host 300-Megawatts Of Bitcoin Mining At New Data Center," press release, May 24, 2021, <https://ir.marathondh.com/news-events/press-releases/detail/1243/correction---marathon-digital-holdings-announces-binding>.

  
Elizabeth Warren  
United States Senator


  
Katie Porter  
Member of Congress


  
Sheldon Whitehouse  
United States Senator

  
Rashida Tlaib  
Member of Congress

  
Jeffrey A. Merkley  
United States Senator

  
Jared Huffman  
Member of Congress

  
Margaret Wood Hassan  
United States Senator

  
Edward J. Markey  
United States Senator

**Congress of the United States**  
Washington, DC 20510

January 27, 2022

Gregory Beard  
Co-Chairman and CEO  
Stronghold Digital Mining  
2151 Lisbon Road  
Kennerdell, PA 16374

Dear Mr. Beard:

We write seeking information about Stronghold Digital Mining (Stronghold)'s Bitcoin mining operations and the impact these operations may be having on climate change, the local environment, and the cost of electricity for retail consumers. Stronghold is a "vertically integrated crypto asset mining company currently focused on mining Bitcoin."<sup>1</sup> Last month, Senator Warren sent a similar letter to Greenidge Generation Holdings, a Bitcoin mining plant in Dresden, New York, regarding the company's cryptomining operations. As we continue our investigation into the climate impacts of cryptomining, we are now seeking insight into Stronghold's operations and the company's environmental footprint.

Cryptocurrency trading has grown exponentially since first introduced over a decade ago.<sup>2</sup> Mining operations for Bitcoin, the largest cryptocurrency by market cap, are increasingly moving onshore, with the United States' share of global mining increasing from 4% in August 2019 to 35% in July 2021 – meaning that over a third of the global computing power dedicated to mining Bitcoin is now drawn from miners in the U.S., in part due to a government crackdown in China.<sup>3</sup>

Bitcoin's network is secured through a "proof of work" algorithm, which involves miners using computers to verify transactions by solving a mathematical puzzle, with the winning miner being rewarded in new Bitcoin.<sup>4</sup> As more miners compete and the value of Bitcoin increases, solving this puzzle becomes increasingly difficult, requiring more computational power and

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<sup>1</sup> Stronghold Digital Mining, "Investor Relations," <https://ir.strongholddigitalmining.com/>.

<sup>2</sup> MIT Technology Review, "The Cryptocurrency Market Is Growing Exponentially," Emerging Technology from the arXiv, May 29, 2017, <https://www.technologyreview.com/2017/05/29/151496/the-cryptocurrency-market-is-growing-exponentially/>.

<sup>3</sup> Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, "Bitcoin Mining Map," April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map); CoinMarketCap, "Cryptocurrency Prices, Charts And Market Capitalizations," <https://coinmarketcap.com/>; The Wall Street Journal, "U.S. Takes Bitcoin Mining Crown After China Crackdown," Caitlin Ostroff, October 27, 2021, <https://www.wsj.com/articles/u-s-takes-bitcoin-mining-crown-after-china-crackdown-11635327002>.

<sup>4</sup> CoinDesk, "What Is Proof-of-Work?," Alyssa Hertig, December 16, 2020, <https://www.coindesk.com/tech/2020/12/16/what-is-proof-of-work/>.

greater energy consumption.<sup>5</sup> Bitcoin’s estimated annual power consumption increased more than threefold between the beginning of 2019 and May 2021, rivaling the total energy usage of countries such as Denmark, Chile, and Argentina, and comparable to the entire energy consumption of Washington State.<sup>6</sup>

Cryptomining facilities’ energy consumption is also causing significant increases in energy costs for small businesses and residents in localities across the country. Cryptomining in the city of Plattsburgh, New York reportedly resulted in residential electricity bills that were “up to \$300 higher than usual” in the winter of 2018, leading the city to introduce the nation’s first 18-month moratorium on new cryptomining operations.<sup>7</sup> A recent study estimates that “the power demands of cryptocurrency mining operations in upstate New York push up annual electric bills by about \$165 million for small businesses and \$79 million for individuals.”<sup>8</sup>

Furthermore, after China’s crackdown on cryptomining, around 500,000 formerly Chinese miner rigs are looking for new locations, potentially in the U.S., which could push North America well over 40% of the global collective computing power of the Bitcoin network within the next year.<sup>9</sup> States like Texas with relatively cheap electricity costs are experiencing an influx of cryptomining companies,<sup>10</sup> raising concerns about the state’s unreliable electricity market and the potential for cryptomining to add to the stress on the state’s power grid.<sup>11</sup>

Stronghold’s power-generation facilities in Pennsylvania convert coal refuse, the “environmentally harmful byproduct of Pennsylvania’s legacy coal-mining operations,” into power that is used to mine Bitcoin.<sup>12</sup> The Scrubgrass Plant, located on a 650-acre site in Venango County, has a generation capacity of 85 MW, while the planned Panther Creek Plant, located on

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<sup>5</sup> The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>6</sup> *Id.*; The New York Times, “Bitcoin Uses More Electricity Than Many Countries. How Is That Possible?” Jon Huang, Claire O’Neill, and Hiroko Tabuchi, September 3, 2021, <https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>; The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>7</sup> Congressional Research Service, “Bitcoin, Blockchain, and the Energy Sector,” Corrie E. Clark and Heather L. Greenley, August 9, 2019, <https://crsreports.congress.gov/product/pdf/R/R45863/3>.

<sup>8</sup> Berkeley Haas, “Power-hungry cryptominers push up electricity costs for locals,” Laura Counts, August 3, 2021, <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>.

<sup>9</sup> CNBC, “How the U.S. became the world’s new bitcoin mining hub,” MacKenzie Sigalos, July 17, 2021, <https://www.cnbc.com/2021/07/17/bitcoin-miners-moving-to-us-carbon-footprint.html>; Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, “Bitcoin Mining Map,” April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map).

<sup>10</sup> Cointelegraph, “Crypto miners eye cheap power in Texas, but fears aired over impact on the grid,” Samuel Haig, June 16, 2021, <https://cointelegraph.com/news/crypto-miners-eye-cheap-power-in-texas-but-fears-aiored-over-impact-on-the-grid>.

<sup>11</sup> *Id.*

<sup>12</sup> Stronghold Digital Mining, “Actively Improving the Environment,” <https://strongholddigitalmining.com/environmental-impact/>; Stronghold Digital Mining, “Power Facilities,” <https://strongholddigitalmining.com/the-facility/>.

a 33-acre site in Carbon County, has a generation capacity of 80 MW.<sup>13</sup> To date, Stronghold has either installed or committed to buy over 54,000 mining rigs.<sup>14</sup>

Given the extraordinarily high energy usage and carbon emissions associated with Bitcoin mining, mining operations raise concerns about their impacts on the global environment, local ecosystems, and consumer electricity costs. To help Congress better understand these impacts, we ask that you respond in writing with answers to the following questions no later than February 10, 2022.

1. How much do your power generation facilities currently emit annually in terms of metric tons of carbon dioxide equivalent? What is the current annual energy production of the plants?
2. What is the annual electricity consumption used for Bitcoin and other cryptocurrency mining at each of your facilities? What are the estimated emissions, in terms of metric tons of carbon dioxide equivalent, produced by generating this energy?
3. Please describe your plans, if any, to scale your cryptomining operations.
  - a. On November 2, 2021, you closed your acquisition of the Panther Creek Energy Facility, an 80 MW coal refuse reclamation-to-energy facility in Pennsylvania, which, together with your existing Scrubgrass plant, brought your overall power generation capacity to 165 MW.<sup>15</sup> What are the expected increases in carbon emissions from this expansion, and do you have plans to further increase your company's capacity?
  - b. What is your projected electricity consumption for cryptomining across all of your facilities combined over the next five years? What are your projected associated carbon emissions for that mining?
  - c. What specific plans do you have to address the environmental impact of your increased operations?
    - i. You note that your company "employs 21st-century crypto mining techniques to remediate the impacts of 19th- and 20th-century coal mining in some of the most environmentally neglected regions of the United States."<sup>16</sup> Lower-quality coal was discarded, often mixed with rock, clay, slurry, and other materials, and stockpiled - these still-existing piles cause water pollution, air pollution, pose fire hazards,

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<sup>13</sup> Stronghold Digital Mining, "Power Facilities," <https://strongholddigitalmining.com/the-facility/>.

<sup>14</sup> CoinDesk, "Stronghold Digital Mining to Acquire 9,080 Bitcoin Rigs," Eliza Gkritsi, December 20, 2021, <https://www.coindesk.com/business/2021/12/20/stronghold-digital-mining-to-acquire-9080-bitcoin-rigs/>.

<sup>15</sup> Stronghold Digital Mining, "Stronghold Digital Mining Closes Panther Creek Plant Acquisition, Increasing Owned Power Generation Capacity to 165 Megawatts," press release, November 8, 2021, <https://ir.strongholddigitalmining.com/news-releases/news-release-details/stronghold-digital-mining-closes-panther-creek-plant-acquisition>.

<sup>16</sup> Stronghold Digital Mining, "Actively Improving the Environment," <https://strongholddigitalmining.com/environmental-impact/>.

and are overall detrimental to the local ecosystems.<sup>17</sup> While coal refuse is an environmental problem, even controlled combustion does still have environmental impacts, as these plants are still coal-fired power plants that emit hazardous air pollutants.<sup>18</sup> In fact, there are reports that coal refuse plants are in fact far more inefficient and polluting than new regular coal plants.<sup>19</sup> Please describe your plans to account for that impact.

4. Does Stronghold have any estimates or models regarding the impacts of your facilities on energy costs to local families and businesses? If so, what do these estimates or models show? Have residential electricity costs increased since Stronghold began its cryptomining operations? What measures are you taking to ensure that local consumers and small businesses are not bearing the costs of Stronghold's energy consumption?

Thank you for your attention to this important matter. We look forward to your response.

Sincerely,



Elizabeth Warren  
United States Senator



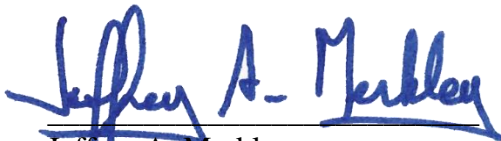
Katie Porter  
Member of Congress



Sheldon Whitehouse  
United States Senator



Rashida Tlaib  
Member of Congress



Jeffrey A. Merkley  
United States Senator



Jared Huffman  
Member of Congress

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<sup>17</sup> POWER Magazine, "The Coal Refuse Dilemma: Burning Coal for Environmental Benefits," Sonal Patel, July 1, 2016, <https://www.powermag.com/coal-refuse-dilemma-burning-coal-environmental-benefits/>; Stronghold Digital Mining, "Actively Improving the Environment," <https://strongholddigitalmining.com/environmental-impact/>.

<sup>18</sup> POWER Magazine, "The Coal Refuse Dilemma: Burning Coal for Environmental Benefits," July 1, 2016, <https://www.powermag.com/coal-refuse-dilemma-burning-coal-environmental-benefits/>.

<sup>19</sup> *Id.*; Sierra Club, "Report: Coal Refuse Energy Producers," April 25, 2017, <https://www.sierraclub.org/pennsylvania/blog/2017/04/report-coal-refuse-energy-producers>.





Margaret Wood Hassan  
United States Senator



Edward J. Markey  
United States Senator

**Congress of the United States**  
Washington, DC 20510

January 27, 2022

Stephanie Xia  
General Manager - North America  
Bitdeer  
300 Park Ave Ste 100  
San Jose, CA 95110

Dear Ms. Xia:

We write seeking information about Bitdeer’s Bitcoin mining operations and the impact these operations may be having on climate change. According to your website, Bitdeer is “the world’s leading provider of digital asset mining services.”<sup>1</sup> Last month, Senator Warren sent a similar letter to Greenidge Generation Holdings, a Bitcoin mining plant in Dresden, New York, regarding the company’s crypto mining operations. As we continue our investigation into the climate impacts of cryptomining, we are now seeking insight into Bitdeer’s operations and the company’s environmental footprint.

Cryptocurrency trading has grown exponentially since first introduced over a decade ago.<sup>2</sup> Mining operations for Bitcoin, the largest cryptocurrency by market cap, are increasingly moving onshore, with the United States’ share of global mining increasing from 4% in August 2019 to 35% in July 2021 – meaning that over a third of the global computing power dedicated to mining Bitcoin is now drawn from miners in the U.S., in part due to a government crackdown in China.<sup>3</sup>

Bitcoin’s network is secured through a “proof of work” algorithm, which involves miners using computers to verify transactions by solving a mathematical puzzle, with the winning miner being rewarded in new Bitcoin.<sup>4</sup> As more miners compete and the value of Bitcoin increases, solving this puzzle becomes increasingly difficult, requiring more computational power and

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<sup>1</sup> Bitdeer, “About Us,” <https://www.bitdeer.com/contactUs>.

<sup>2</sup> MIT Technology Review, “The Cryptocurrency Market Is Growing Exponentially,” Emerging Technology from the arXiv, May 29, 2017, <https://www.technologyreview.com/2017/05/29/151496/the-cryptocurrency-market-is-growing-exponentially/>.

<sup>3</sup> Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, “Bitcoin Mining Map,” April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map); CoinMarketCap, “Cryptocurrency Prices, Charts And Market Capitalizations,” <https://coinmarketcap.com/>; The Wall Street Journal, “U.S. Takes Bitcoin Mining Crown After China Crackdown,” Caitlin Ostroff, October 27, 2021, <https://www.wsj.com/articles/u-s-takes-bitcoin-mining-crown-after-china-crackdown-11635327002>.

<sup>4</sup> CoinDesk, “What Is Proof-of-Work?,” Alyssa Hertig, December 16, 2020, <https://www.coindesk.com/tech/2020/12/16/what-is-proof-of-work/>.

greater energy consumption.<sup>5</sup> Bitcoin’s estimated annual power consumption increased more than threefold between the beginning of 2019 and May 2021, rivaling the total energy usage of countries such as Denmark, Chile, and Argentina, and comparable to the entire energy consumption of Washington State.<sup>6</sup>

Cryptomining facilities’ energy consumption is also causing significant increases in energy costs for small businesses and residents in localities across the country. Cryptomining in the city of Plattsburgh, New York reportedly resulted in residential electricity bills that were “up to \$300 higher than usual” in the winter of 2018, leading the city to introduce the nation’s first 18-month moratorium on new cryptomining operations.<sup>7</sup> A recent study estimates that “the power demands of cryptocurrency mining operations in upstate New York push up annual electric bills by about \$165 million for small businesses and \$79 million for individuals.”<sup>8</sup>

Furthermore, after China’s crackdown on cryptomining, around 500,000 formerly Chinese miner rigs are looking for new locations, potentially in the U.S., which could push North America well over 40% of the global collective computing power of the Bitcoin network within the next year.<sup>9</sup> States like Texas with relatively cheap electricity costs are experiencing an influx of cryptomining companies,<sup>10</sup> raising concerns about the state’s unreliable electricity market and the potential for cryptomining to add to the stress on the state’s power grid.<sup>11</sup>

According to your website, Bitdeer, established in 2018, provides “comprehensive digital asset mining solutions for our customers” including handling “the complex processes involved in mining such as miner procurement, transport logistics, power management and daily operations.”<sup>12</sup> Bitdeer has mining farms deployed across Europe and North America, with over 100,000 mining units under Bitdeer management that create a miner sharing service that operates 24/7.<sup>13</sup> With headquarters in Singapore, Bitdeer “currently operates five proprietary mining

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<sup>5</sup> The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>6</sup> *Id.*; The New York Times, “Bitcoin Uses More Electricity Than Many Countries. How Is That Possible?” Jon Huang, Claire O’Neill, and Hiroko Tabuchi, September 3, 2021, <https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>; The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>7</sup> Congressional Research Service, “Bitcoin, Blockchain, and the Energy Sector,” Corrie E. Clark and Heather L. Greenley, August 9, 2019, <https://crsreports.congress.gov/product/pdf/R/R45863/3>.

<sup>8</sup> Berkeley Haas, “Power-hungry cryptominers push up electricity costs for locals,” Laura Counts, August 3, 2021, <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>.

<sup>9</sup> CNBC, “How the U.S. became the world’s new bitcoin mining hub,” MacKenzie Sigalos, July 17, 2021, <https://www.cnbc.com/2021/07/17/bitcoin-miners-moving-to-us-carbon-footprint.html>; Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, “Bitcoin Mining Map,” April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map).

<sup>10</sup> Cointelegraph, “Crypto miners eye cheap power in Texas, but fears aired over impact on the grid,” Samuel Haig, June 16, 2021, <https://cointelegraph.com/news/crypto-miners-eye-cheap-power-in-texas-but-fears-ai-red-over-impact-on-the-grid>.

<sup>11</sup> *Id.*

<sup>12</sup> Bitdeer, “About Us,” <https://www.bitdeer.com/contactUs>.

<sup>13</sup> *Id.*

datacenters in the United States and Norway,” including one in Rockdale, Texas.<sup>14</sup> In November 2021, Bitdeer and Blue Safari Group Acquisition Corp, a publicly traded special purpose acquisition company, announced that they have entered into a definitive merger agreement.<sup>15</sup> The combined company is expected to be renamed Bitdeer Technologies Group and will be a publicly listed company on the NASDAQ Stock Market.<sup>16</sup>

Given the extraordinarily high energy usage and carbon emissions associated with Bitcoin mining, mining operations raise concerns about their impacts on the global environment, local ecosystems, and consumer electricity costs. To help Congress better understand these impacts, we ask that you respond in writing with answers to the following questions no later than February 10, 2022.

1. Please describe your U.S.-based cryptomining facilities, including where they are located, the mining capacity of each facility, and the number of mining units at each facility.
2. What is the annual electricity consumption used for Bitcoin and other cryptocurrency mining at each of your facilities in the United States? What are the estimated emissions, in terms of metric tons of carbon dioxide equivalent, produced by generating this energy?
3. Please describe your plans, if any, to scale your cryptomining operations in the United States.
  - a. What is your projected electricity consumption for cryptomining across all of your U.S. facilities combined over the next five years? What are your projected associated carbon emissions for that mining?
  - b. What specific plans do you have to address the environmental impact of your increased operations?
4. Please describe in detail your purchasing agreements with electricity providers, including provisions regarding Bitdeer’s responsibilities when demand for electricity outstrips supply on the grid.

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<sup>14</sup> PR Newswire, “Bitdeer, a World-Leading Technology Company for the Cryptocurrency Mining Community, Announces Plans to List on the NASDAQ Through Merger with Blue Safari Group Acquisition Corp,” press release, November 18, 2021, <https://www.prnewswire.com/news-releases/bitdeer-a-world-leading-technology-company-for-the-cryptocurrency-mining-community-announces-plans-to-list-on-the-nasdaq-through-merger-with-blue-safari-group-acquisition-corp-301427759.html>; CNBC, “Two of the biggest bitcoin mining companies in the world are battling it out in a Texas town of 5,600 people,” MacKenzie Sigalos, October 31, 2021, <https://www.cnbc.com/2021/10/31/bitcoin-mining-giants-bitdeer-riot-blockchain-in-rockdale-texas.html>.

<sup>15</sup> PR Newswire, “Bitdeer, a World-Leading Technology Company for the Cryptocurrency Mining Community, Announces Plans to List on the NASDAQ Through Merger with Blue Safari Group Acquisition Corp,” press release, November 18, 2021, <https://www.prnewswire.com/news-releases/bitdeer-a-world-leading-technology-company-for-the-cryptocurrency-mining-community-announces-plans-to-list-on-the-nasdaq-through-merger-with-blue-safari-group-acquisition-corp-301427759.html>.

<sup>16</sup> *Id.*

5. Does Bitdeer have any estimates or models regarding the impacts of your facilities on energy costs to local families and businesses? If so, what do these estimates or models show? Have local residential electricity costs increased since Bitdeer began its cryptomining operations? What measures are you taking to ensure that local consumers and small businesses are not bearing the costs of Bitdeer's energy consumption?

Thank you for your attention to this important matter. We look forward to your response.

Sincerely,



Elizabeth Warren  
United States Senator



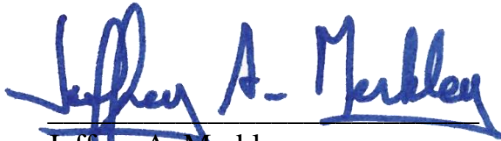
Katie Porter  
Member of Congress



Sheldon Whitehouse  
United States Senator



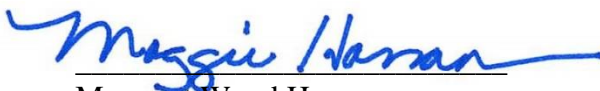
Rashida Tlaib  
Member of Congress



Jeffrey A. Merkley  
United States Senator



Jared Huffman  
Member of Congress



Maggie Hassan  
Margaret Wood Hassan  
United States Senator



Edward J. Markey  
United States Senator

**Congress of the United States**  
Washington, DC 20510

January 27, 2022

Brian Brooks  
CEO  
Bitfury Group  
456 Montgomery Street  
Suite 1350  
San Francisco, CA, 94104

Dear Mr. Brooks:

We write seeking information about Bitfury USA, Inc. (Bitfury)'s Bitcoin mining operations and the impact these operations may be having on climate change, the local environment, and the cost of electricity for retail consumers. According to your website, the global Bitfury Group was founded in 2011 and is the "world's leading emerging technologies company," focused on artificial intelligence, blockchain, bitcoin and high-performance computing.<sup>1</sup> Last month, Senator Warren sent a similar letter to Greenidge Generation Holdings, a Bitcoin mining plant in Dresden, New York, regarding the company's cryptomining operations. As we continue our investigation into the climate impacts of cryptomining, we are now seeking insight into Bitfury's operations and the company's environmental footprint.

Cryptocurrency trading has grown exponentially since first introduced over a decade ago.<sup>2</sup> Mining operations for Bitcoin, the largest cryptocurrency by market cap, are increasingly moving onshore, with the United States' share of global mining increasing from 4% in August 2019 to 35% in July 2021 – meaning that over a third of the global computing power dedicated to mining Bitcoin is now drawn from miners in the U.S., in part due to a government crackdown in China.<sup>3</sup>

Bitcoin's network is secured through a "proof of work" algorithm, which involves miners using computers to verify transactions by solving a mathematical puzzle, with the winning miner being rewarded in new Bitcoin.<sup>4</sup> As more miners compete and the value of Bitcoin increases,

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<sup>1</sup> Bitfury, "About," <https://bitfury.com/about>.

<sup>2</sup> MIT Technology Review, "The Cryptocurrency Market Is Growing Exponentially," Emerging Technology from the arXiv, May 29, 2017, <https://www.technologyreview.com/2017/05/29/151496/the-cryptocurrency-market-is-growing-exponentially/>.

<sup>3</sup> Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, "Bitcoin Mining Map," April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map); CoinMarketCap, "Cryptocurrency Prices, Charts And Market Capitalizations," <https://coinmarketcap.com/>; The Wall Street Journal, "U.S. Takes Bitcoin Mining Crown After China Crackdown," Caitlin Ostroff, October 27, 2021, <https://www.wsj.com/articles/u-s-takes-bitcoin-mining-crown-after-china-crackdown-11635327002>.

<sup>4</sup> CoinDesk, "What Is Proof-of-Work?," Alyssa Hertig, December 16, 2020, <https://www.coindesk.com/tech/2020/12/16/what-is-proof-of-work/>.

solving this puzzle becomes increasingly difficult, requiring more computational power and greater energy consumption.<sup>5</sup> Bitcoin's estimated annual power consumption increased more than threefold between the beginning of 2019 and May 2021, rivaling the total energy usage of countries such as Denmark, Chile, and Argentina, and comparable to the entire energy consumption of Washington State.<sup>6</sup>

Cryptomining facilities' energy consumption is also causing significant increases in energy costs for small businesses and residents in localities across the country. Cryptomining in the city of Plattsburgh, New York reportedly resulted in residential electricity bills that were "up to \$300 higher than usual" in the winter of 2018, leading the city to introduce the nation's first 18-month moratorium on new cryptomining operations.<sup>7</sup> A recent study estimates that "the power demands of cryptocurrency mining operations in upstate New York push up annual electric bills by about \$165 million for small businesses and \$79 million for individuals."<sup>8</sup>

Furthermore, after China's crackdown on cryptomining, around 500,000 formerly Chinese miner rigs are looking for new locations, potentially in the U.S., which could push North America well over 40% of the global collective computing power of the Bitcoin network within the next year.<sup>9</sup> States like Texas with relatively cheap electricity costs are experiencing an influx of cryptomining companies,<sup>10</sup> raising concerns about the state's unreliable electricity market and the potential for cryptomining to add to the stress on the state's power grid.<sup>11</sup>

Bitfury is reported to be a "leading full-service blockchain technology company and one of the largest private infrastructure providers in the blockchain ecosystem," as well as "the world's leading provider of large-scale digital asset infrastructure solutions."<sup>12</sup> Bitfury is headquartered in Amsterdam, with operations in the United Kingdom, Canada, Japan, Hong

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<sup>5</sup> The Wall Street Journal, "Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants," Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>6</sup> *Id.*; The New York Times, "Bitcoin Uses More Electricity Than Many Countries. How Is That Possible?" Jon Huang, Claire O'Neill, and Hiroko Tabuchi, September 3, 2021, <https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>; The Wall Street Journal, "Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants," Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>7</sup> Congressional Research Service, "Bitcoin, Blockchain, and the Energy Sector," Corrie E. Clark and Heather L. Greenley, August 9, 2019, <https://crsreports.congress.gov/product/pdf/R/R45863/3>.

<sup>8</sup> Berkeley Haas, "Power-hungry cryptominers push up electricity costs for locals," Laura Counts, August 3, 2021, <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>.

<sup>9</sup> CNBC, "How the U.S. became the world's new bitcoin mining hub," MacKenzie Sigalos, July 17, 2021, <https://www.cnbc.com/2021/07/17/bitcoin-miners-moving-to-us-carbon-footprint.html>; Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, "Bitcoin Mining Map," April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map).

<sup>10</sup> Cointelegraph, "Crypto miners eye cheap power in Texas, but fears aired over impact on the grid," Samuel Haig, June 16, 2021, <https://cointelegraph.com/news/crypto-miners-eye-cheap-power-in-texas-but-fears-ai-red-over-impact-on-the-grid>.

<sup>11</sup> *Id.*

<sup>12</sup> Bitfury, "Blockchain technology leader Bitfury completes planned transfer of Hut 8 shares," press release, February 16, 2021, <https://bitfury.com/content/downloads/bitfury-hut8-february.pdf>.

Kong, Korea, Norway, Georgia, United Arab Emirates, Russia, Ukraine, and Kazakhstan.<sup>13</sup> Bitfury has “deployed several data centers that utilize air and immersion cooling technology for customers and its own operations in six countries and has active cryptomining operations in four countries.”<sup>14</sup> Since 2011, Bitfury Group has deployed more than 500+ MW of computing power.<sup>15</sup> In March 2021, Bitfury formed a US-based subsidiary, Cipher Mining, which “is expected to be positioned as a U.S.-centric Bitcoin mining champion with potential to reach a cumulative deployed capacity of 745 MW by the end of 2025.”<sup>16</sup>

Given the extraordinarily high energy usage and carbon emissions associated with Bitcoin mining, mining operations raise concerns about their impacts on the global environment, local ecosystems, and consumer electricity costs. To help Congress better understand these impacts, we ask that you respond in writing with answers to the following questions no later than February 10, 2022.

1. Please describe your U.S.-based cryptomining facilities, including where they are located, the mining capacity of each facility, and the number of mining units at each facility.
2. What is the annual electricity consumption used for Bitcoin and other cryptocurrency mining at each of your facilities in the United States? What are the estimated emissions, in terms of metric tons of carbon dioxide equivalent, produced by generating this energy?
3. Please describe your plans, if any, to scale your cryptomining operations in the United States.
  - a. What is your projected electricity consumption for cryptomining across all of your U.S. facilities combined over the next five years? What are your projected associated carbon emissions for that mining?
  - b. What specific plans do you have to address the environmental impact of your increased operations?
4. Please describe in detail your purchasing agreements with electricity providers, including provisions regarding Bitfury’s responsibilities when demand for electricity outstrips supply on the grid.

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<sup>13</sup> Bitfury, “About,” <https://bitfury.com/about>; Bitfury, “Blockchain technology leader Bitfury completes planned transfer of Hut 8 shares,” press release, February 16, 2021, <https://bitfury.com/content/downloads/bitfury-hut8-february.pdf>.

<sup>14</sup> Bitfury, “Data centers,” <https://bitfury.com/crypto-infrastructure/datacenters>.

<sup>15</sup> Business Wire, “Cipher Mining Inc., a Newly Formed US-based Bitcoin Mining Company, to Become a Publicly Traded Company via a Merger with Good Works Acquisition Corp.,” March 5, 2021, <https://www.businesswire.com/news/home/20210305005234/en/Cipher-Mining-Inc.-a-Newly-Formed-US-based-Bitcoin-Mining-Company-to-Become-a-Publicly-Traded-Company-via-a-Merger-with-Good-Works-Acquisition-Corp>.

<sup>16</sup> *Id.*



5. Does Bitfury have any estimates or models regarding the impacts of your facilities on energy costs to local families and businesses? If so, what do these estimates or models show? Have local residential electricity costs increased since Bitfury began its cryptomining operations? What measures are you taking to ensure that local consumers and small businesses are not bearing the costs of Bitfury's energy consumption?

Thank you for your attention to this important matter. We look forward to your response.

Sincerely,



Elizabeth Warren  
United States Senator



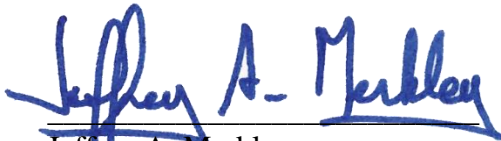
Katie Porter  
Member of Congress



Sheldon Whitehouse  
United States Senator



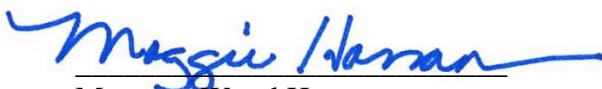
Rashida Tlaib  
Member of Congress



Jeffrey A. Merkley  
United States Senator



Jared Huffman  
Member of Congress



Maggie Hassan  
United States Senator



Edward J. Markey  
United States Senator

**Congress of the United States**  
Washington, DC 20510

January 27, 2022

Bryan Bullett  
CEO  
Bit Digital  
33 Irving Place  
New York, NY 10003

Dear Mr. Bullett:

We write seeking information about Bit Digital’s Bitcoin mining operations and the impact these operations may be having on climate change, the local environment, and the cost of electricity for retail consumers. According to your website, Bit Digital is “one of the largest publicly-listed bitcoin miners on the NASDAQ.”<sup>1</sup> Last month, Senator Warren sent a similar letter to Greenidge Generation Holdings, a Bitcoin mining plant in Dresden, New York, regarding the company’s crypto mining operations. As we continue our investigation into the climate impacts of cryptomining, we are now seeking insight into Bit Digital’s operations and the company’s environmental footprint.

Cryptocurrency trading has grown exponentially since first introduced over a decade ago.<sup>2</sup> Mining operations for Bitcoin, the largest cryptocurrency by market cap, are increasingly moving onshore, with the United States’ share of global mining increasing from 4% in August 2019 to 35% in July 2021 – meaning that over a third of the global computing power dedicated to mining Bitcoin is now drawn from miners in the U.S., in part due to a government crackdown in China.<sup>3</sup>

Bitcoin’s network is secured through a “proof of work” algorithm, which involves miners using computers to verify transactions by solving a mathematical puzzle, with the winning miner being rewarded in new Bitcoin.<sup>4</sup> As more miners compete and the value of Bitcoin increases, solving this puzzle becomes increasingly difficult, requiring more computational power and

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<sup>1</sup> Bit Digital, “About,” <https://bit-digital.com/about/>.

<sup>2</sup> MIT Technology Review, “The Cryptocurrency Market Is Growing Exponentially,” Emerging Technology from the arXiv, May 29, 2017, <https://www.technologyreview.com/2017/05/29/151496/the-cryptocurrency-market-is-growing-exponentially/>.

<sup>3</sup> Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, “Bitcoin Mining Map,” April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map); CoinMarketCap, “Cryptocurrency Prices, Charts And Market Capitalizations,” <https://coinmarketcap.com/>; The Wall Street Journal, “U.S. Takes Bitcoin Mining Crown After China Crackdown,” Caitlin Ostroff, October 27, 2021, <https://www.wsj.com/articles/u-s-takes-bitcoin-mining-crown-after-china-crackdown-11635327002>.

<sup>4</sup> CoinDesk, “What Is Proof-of-Work?,” Alyssa Hertig, December 16, 2020, <https://www.coindesk.com/tech/2020/12/16/what-is-proof-of-work/>.

greater energy consumption.<sup>5</sup> Bitcoin’s estimated annual power consumption increased more than threefold between the beginning of 2019 and May 2021, rivaling the total energy usage of countries such as Denmark, Chile, and Argentina, and comparable to the entire energy consumption of Washington State.<sup>6</sup>

Cryptomining facilities’ energy consumption is also causing significant increases in energy costs for small businesses and residents in localities across the country. Cryptomining in the city of Plattsburgh, New York reportedly resulted in residential electricity bills that were “up to \$300 higher than usual” in the winter of 2018, leading the city to introduce the nation’s first 18-month moratorium on new cryptomining operations.<sup>7</sup> A recent study estimates that “the power demands of cryptocurrency mining operations in upstate New York push up annual electric bills by about \$165 million for small businesses and \$79 million for individuals.”<sup>8</sup>

Furthermore, after China’s crackdown on cryptomining, around 500,000 formerly Chinese miner rigs are looking for new locations, potentially in the U.S., which could push North America well over 40% of the global collective computing power of the Bitcoin network within the next year.<sup>9</sup> States like Texas with relatively cheap electricity costs are experiencing an influx of cryptomining companies,<sup>10</sup> raising concerns about the state’s unreliable electricity market and the potential for cryptomining to add to the stress on the state’s power grid.<sup>11</sup>

Your website states that Bit Digital is “the largest bitcoin miner listed on the NASDAQ based on the size of our currently-owned miner fleet,” which includes 27,744 miners and is spread across the U.S. and Canada, with operations in Texas, Nebraska, Georgia, and New York.<sup>12</sup>

Given the extraordinarily high energy usage and carbon emissions associated with Bitcoin mining, mining operations raise concerns about their impacts on the global environment,

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<sup>5</sup> The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>6</sup> *Id.*; The New York Times, “Bitcoin Uses More Electricity Than Many Countries. How Is That Possible?” Jon Huang, Claire O’Neill, and Hiroko Tabuchi, September 3, 2021, <https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>; The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>7</sup> Congressional Research Service, “Bitcoin, Blockchain, and the Energy Sector,” Corrie E. Clark and Heather L. Greenley, August 9, 2019, <https://crsreports.congress.gov/product/pdf/R/R45863/3>.

<sup>8</sup> Berkeley Haas, “Power-hungry cryptominers push up electricity costs for locals,” Laura Counts, August 3, 2021, <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>.

<sup>9</sup> CNBC, “How the U.S. became the world’s new bitcoin mining hub,” MacKenzie Sigalos, July 17, 2021, <https://www.cnbc.com/2021/07/17/bitcoin-miners-moving-to-us-carbon-footprint.html>; Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, “Bitcoin Mining Map,” April 2021, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map).

<sup>10</sup> Cointelegraph, “Crypto miners eye cheap power in Texas, but fears aired over impact on the grid,” Samuel Haig, June 16, 2021, <https://cointelegraph.com/news/crypto-miners-eye-cheap-power-in-texas-but-fears-ai-red-over-impact-on-the-grid>.

<sup>11</sup> *Id.*

<sup>12</sup> Bit Digital, “About,” <https://bit-digital.com/about/>; Bit Digital, “Mining,” <https://bit-digital.com/mining/>.

local ecosystems, and consumer electricity costs. To help Congress better understand these impacts, we ask that you respond in writing with answers to the following questions no later than February 10, 2022.

1. Please describe your U.S.-based cryptomining facilities, including where they are located, the mining capacity of each facility, and the number of mining units at each facility.
2. What is the annual electricity consumption used for Bitcoin and other cryptocurrency mining at each of your facilities in the United States? What are the estimated emissions, in terms of metric tons of carbon dioxide equivalent, produced by generating this energy?
  - a. Your website states that “The majority of our fleet runs on carbon-free energy, making us leaders in sustainability within the bitcoin mining industry,” and that in the U.S. your operations are 47% carbon-free.<sup>13</sup> Please describe the sources of this electricity.
  - b. You have a goal of 100% clean energy usage.<sup>14</sup> What is your timeline for achieving that goal, and what measurable intermediate steps have you set in working towards that?
  - c. You also claim that “We aim to contribute to the acceleration of bitcoin’s decarbonization and act as role models in our industry, responsibly stewarding digital assets.”<sup>15</sup> Please describe what other actions you are taking to work towards this stated goal.
3. Your website states that Bit Digital has an “aggressive growth plan focused on increasing capacity month-on-month.”<sup>16</sup> Please describe your plans, if any, to scale your cryptomining operations.
  - a. What is your projected electricity consumption for cryptomining across all of your U.S. facilities combined over the next five years? What are your projected associated carbon emissions for that mining?
  - b. What specific plans do you have to address the environmental impact of your increased operations?
4. Bit Digital is a “participant in a voluntary energy-curtailement program.”<sup>17</sup> Please describe in detail your purchasing agreements with electricity providers, including provisions regarding Bit Digital’s responsibilities when demand for electricity outstrips supply on the grid.
5. Does Bit Digital have any estimates or models regarding the impacts of your facilities on energy costs to local families and businesses? If so, what do these estimates or models show? Have local residential electricity costs increased since Bit Digital

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<sup>13</sup> Bit Digital, “Sustainability,” <https://bit-digital.com/sustainability/>.

<sup>14</sup> *Id.*

<sup>15</sup> *Id.*

<sup>16</sup> Bit Digital, “Mining,” <https://bit-digital.com/mining/>.

<sup>17</sup> *Id.*

began its cryptomining operations? What measures are you taking to ensure that local consumers and small businesses are not bearing the costs of Bit Digital's energy consumption?

Thank you for your attention to this important matter. We look forward to your response.

Sincerely,



Elizabeth Warren  
United States Senator



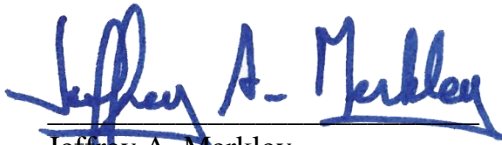
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United States Senator



Jared Huffman  
Member of Congress



Maggie Hassan  
Margaret Wood Hassan  
United States Senator



Edward J. Markey  
United States Senator

United States Senate  
WASHINGTON, DC 20510

March 2, 2022

The Honorable Janet Yellen  
Secretary  
Department of the Treasury  
1500 Pennsylvania Avenue NW  
Washington, DC 20220

Dear Secretary Yellen:

We write to inquire about the Treasury Department’s progress in monitoring and enforcing sanctions compliance by the cryptocurrency industry and to express our concern that criminals, rogue states, and other actors may use digital assets and alternative payment platforms as a new means to hide cross-border transactions for nefarious purposes. Recent reports, including the Department’s *2021 Sanctions Review*, have warned that such digital assets and alternative payment platforms may facilitate evasion of U.S. and global sanctions, potentially undermining the efficacy of our sanctions regime.<sup>1</sup> These concerns have become even more urgent given the sanctions imposed on Russia after its invasion of Ukraine and reports that “Russian entities are preparing to blunt some of the worst effects” of the sanctions that have been levied on the country by using the array of “cryptocurrency-related tools as its disposal.”<sup>2</sup> Given the need to ensure the efficacy and integrity of our sanctions program against Russia and other adversaries, we are seeking information on the steps Treasury is taking to enforce sanctions compliance by the cryptocurrency industry.

The cryptocurrency industry has seen tremendous growth in recent years, with its market capitalization roughly tripling in 2021 to reach nearly \$3 trillion.<sup>3</sup> Recognizing the rapid growth of the market, Treasury’s Office of Foreign Assets Control (OFAC) released its “Sanctions Compliance Guidance for the Virtual Currency Industry” in October 2021.<sup>4</sup> As the guidance notes, “The growing prevalence of virtual currency as a payment method likewise brings greater exposure to sanctions risks—like the risk that a sanctioned person or a person in a jurisdiction subject to sanctions might be involved in a virtual currency transaction.”<sup>5</sup> The guidance outlines

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<sup>1</sup> Department of Treasury, “The Treasury 2021 Sanctions Review,” October, 2021, <https://home.treasury.gov/system/files/136/Treasury-2021-sanctions-review.pdf>; <https://s.wsj.net/public/resources/documents/unpanelofexperts.pdf>.

<sup>2</sup> The New York Times, “Russia Could Use Cryptocurrency to Blunt the Force of U.S. Sanctions,” Emily Flitter and David Yaffe-Bellany, February 23, 2022, <https://www.nytimes.com/2022/02/23/business/russia-sanctions-cryptocurrency.html>.

<sup>3</sup> Bloomberg, “Crypto Barrels Toward 2022 After Adding \$1.5 Trillion In Value,” Akshay Chinchalkar, December 20, 2021, <https://www.bloomberg.com/news/articles/2021-12-20/cryptocurrencies-and-bitcoin-btc-2021-year-in-charts>.

<sup>4</sup> Office of Foreign Assets Control, “Sanctions Compliance Guidance for the Virtual Currency Industry,” October 2021, [https://home.treasury.gov/system/files/126/virtual\\_currency\\_guidance\\_brochure.pdf](https://home.treasury.gov/system/files/126/virtual_currency_guidance_brochure.pdf).

<sup>5</sup> *Id.*

best practices for compliance and makes clear that all actors in the cryptocurrency space, including “technology companies, exchangers, administrators, miners, wallet providers, and users,” are “responsible for ensuring that they do not engage, directly or indirectly, in transactions prohibited by OFAC sanctions.”<sup>6</sup>

Strong enforcement of sanctions compliance in the cryptocurrency industry is critical given that digital assets, which allow entities to bypass the traditional financial system, may increasingly be used as a tool for sanctions evasion. In a February 2022 report, the United Nations found that North Korea used stolen cryptocurrency – worth perhaps as much as \$400 million – to fund its nuclear and ballistic missile program in contravention of international sanctions.<sup>7</sup> A May 2021 report by the blockchain analytics firm Elliptic found that Iran has turned to bitcoin mining as “an attractive opportunity for a sanctions-hit economy suffering from a shortage of hard cash,” allowing it to “earn hundreds of millions of dollars in cryptocurrencies that can be used to buy imports and lessen the impact of sanctions.”<sup>8</sup>

In addition, there are growing concerns that Russia may use cryptocurrencies to circumvent the broad new sanctions it faces from the Biden administration and foreign governments in response to its invasion of Ukraine.<sup>9</sup> This could include the use of dark web marketplaces that are powered by cryptocurrencies to move funds and conduct transactions; the use of crypto wallets and mixing services that allow sanctioned entities to transfer and hide their wealth; deployment of a digital ruble that would allow Russia to conduct foreign trade without converting their currency into dollars; and ransomware attacks that would allow Russian actors to recoup revenues lost to sanctions.<sup>10</sup> Indeed, nearly three-quarters of all global ransomware revenue last year, or more than \$400 million in cryptocurrency payments, is estimated to have gone to Russia-affiliated entities.<sup>11</sup> Trading volumes between the Russian ruble and Bitcoin have spiked to their highest level since May 2021 in recent days following the wave of sanctions announcements.<sup>12</sup>

These reports are even more troubling because of analyses that suggest that the cryptocurrency industry may not be fulfilling its responsibility to comply with U.S. sanctions. OFAC’s October guidance notes that many “members of the virtual currency industry implement OFAC sanctions policies and procedures months, or even years, after commencing operations... expos[ing] virtual currency companies to a wide variety of potential sanctions risks.”<sup>13</sup> When Marathon Digital, a crypto mining company, announced it would refuse to process transactions involving crypto

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<sup>6</sup> *Id.*

<sup>7</sup> BBC, “North Korea: Missile programme funded through stolen crypto, UN report says,” February 6, 2022, <https://www.bbc.com/news/world-asia-60281129>.

<sup>8</sup> Reuters, “Iran uses crypto mining to lessen impact of sanctions, study finds,” Anna Irrera, May 21, 2021, <https://www.reuters.com/technology/iran-uses-crypto-mining-lesser-impact-sanctions-study-finds-2021-05-21/>.

<sup>9</sup> The New York Times, “Russia Could Use Cryptocurrency to Blunt the Force of U.S. Sanctions,” Emily Flitter and David Yaffe-Bellany, February 23, 2022, <https://www.nytimes.com/2022/02/23/business/russia-sanctions-cryptocurrency.html>.

<sup>10</sup> *Id.*

<sup>11</sup> *Id.*

<sup>12</sup> Bloomberg, “Bitcoin Volume Spikes in Russia and Ukraine as Sanctions Hit,” Muyao Shen, February 28, 2022, <https://www.bloomberg.com/news/articles/2022-02-28/bitcoin-volume-spikes-in-russia-and-ukraine-as-sanctions-hit>.

<sup>13</sup> Office of Foreign Assets Control, “Sanctions Compliance Guidance for the Virtual Currency Industry,” October 2021, [https://home.treasury.gov/system/files/126/virtual\\_currency\\_guidance\\_brochure.pdf](https://home.treasury.gov/system/files/126/virtual_currency_guidance_brochure.pdf).

wallets that appeared on OFAC’s Specially Designated Nationals and Blocked Persons List,<sup>14</sup> the company received backlash from the cryptocurrency community because, according to Marathon CEO Fred Thiel, some industry members are “against the whole concept of doing anything that has to do with financial regulatory compliance or government regulation.”<sup>15</sup> Ultimately, Marathon terminated the sanctions-compliant arrangement under industry pressure.<sup>16</sup>

The growth of activity in the Decentralized Finance (DeFi) space of the cryptocurrency market raises additional concerns about sanctions compliance.<sup>17</sup> DeFi aims to “eliminat[e] human intermediaries like brokers, bank clerks and traders, and instead uses algorithms to execute financial transactions.”<sup>18</sup> Unlike traditional financial institutions, or even the larger, centralized cryptocurrency exchanges, DeFi protocols rarely apply Know Your Customer/Anti-Money Laundering screenings to the activity occurring on their platforms.<sup>19</sup> To the extent any are conducting checks, they are reportedly “bare-bones.”<sup>20</sup> In 2021, DeFi protocols received nearly \$1 billion in value from illicit wallets, a nearly 2,000% increase from the previous year.<sup>21</sup> In a recent report, the Financial Crimes Enforcement Network (FinCEN) cited DeFi as a means for bad actors, including ransomware attackers, to convert illicit proceeds.<sup>22</sup>

In recent years, OFAC has become increasingly reliant upon voluntary self-disclosure from sanctions violators for enforcement, with one report concluding that 67% of enforcement cases during the Trump administration were prompted by self-disclosure.<sup>23</sup> However, this model appears to be particularly ill-suited for enforcing sanctions compliance in the cryptocurrency industry given the prevalence of pseudonymity and the current weakness of the industry’s compliance programs. Moreover, when OFAC has brought enforcement actions against cryptocurrency industry participants, it has generally accorded substantial deference to

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<sup>14</sup> CoinDesk, “Marathon Miners Have Started Censoring Bitcoin Transactions; Here’s What That Means,” Colin Harper, May 7, 2021, <https://www.coindesk.com/tech/2021/05/07/marathon-miners-have-started-censoring-bitcoin-transactions-heres-what-that-means/>.

<sup>15</sup> The Block, “Marathon says its mining pool will stop censoring transactions following bitcoin community outcry,” Kollen Post, June 2, 2021, <https://www.theblockcrypto.com/linked/106865/marathon-ofac-bitcoin-mining-pool-taproot>.

<sup>16</sup> *Id.*

<sup>17</sup> Chainalysis, “DeFi Takes on Bigger Role in Money Laundering But Small Group of Centralized Services Still Dominate,” Chainalysis Team, January 26, 2022, <https://blog.chainalysis.com/reports/2022-crypto-crime-report-preview-cryptocurrency-money-laundering/>.

<sup>18</sup> The New York Times, “Crypto’s Rapid Move Into Banking Elicits Alarm in Washington,” Eric Lipton and Ephrat Livni, November 1, 2021, <https://www.nytimes.com/2021/09/05/us/politics/cryptocurrency-banking-regulation.html>

<sup>19</sup> Decrypt, “Most Crypto Exchanges Have Weak KYC, DeFi is Making It Worse,” Drew Hutchinson, October 1, 2020, <https://decrypt.co/43486/crypto-exchanges-weak-kyc-defi-dex-report>; Financial Times, “Cryptocurrency: rise of decentralised finance sparks ‘dirty money’ fears,” Gary Silverman, September 15, 2021, <https://www.ft.com/content/beeb2f8c-99ec-494b-aa76-a7be0bf9dae6>.

<sup>20</sup> Elliptic, “DeFi: Risk, Regulation, and the Rise of DeCrime,” November 18, 2021, <https://www.elliptic.co/resources/defi-risk-regulation-and-the-rise-of-decrime>.

<sup>21</sup> Chainalysis, “DeFi Takes on Bigger Role in Money Laundering But Small Group of Centralized Services Still Dominate,” Chainalysis Team, January 26, 2022, <https://blog.chainalysis.com/reports/2022-crypto-crime-report-preview-cryptocurrency-money-laundering/>.

<sup>22</sup> Financial Crimes Enforcement Network, “Ransomware Trends in Bank Secrecy Act Data Between January 2021 and June 2021,” October 15, 2021, <https://www.fincen.gov/news/news-releases/fincen-issues-report-ransomware-trends-bank-secrecy-act-data>.

<sup>23</sup> War on the Rocks, “The Past, Present, and Future of U.S. Sanctions Enforcement,” Bryan Early and Keith Preble, February 23, 2021, <https://warontherocks.com/2021/02/the-past-present-and-future-of-u-s-sanctions-enforcement/>.




mitigating factors in assessing penalties – even in cases where a company has not voluntarily self-disclosed apparent violations.<sup>24</sup> This approach has yielded penalties that are orders of magnitude below even the base civil monetary penalties for violations.<sup>25</sup> We are concerned that OFAC has not developed sufficiently strong and effective procedures for enforcement in the cryptocurrency industry.

To ensure that economic sanctions remain an effective tool for achieving our foreign policy goals, we ask that Treasury provide information on how it intends to enforce OFAC’s sanctions-compliance guidance for the cryptocurrency community and inhibit the use of cryptocurrency for sanctions evasion no later than March 23, 2022, including providing answers to the following questions:

1. How does OFAC work with foreign governments and other participants in the international banking community to ensure that cryptocurrency is not used to evade sanctions?
2. What are the challenges OFAC has faced in applying the October guidance?
3. Of all sanctions violations documented by OFAC in the virtual currency industry, what percentage of them were self-disclosed?
4. How has the growth of DeFi arrangements and services affected malign actors’ ability to circumvent sanctions, as well as OFAC’s ability to enforce sanctions?
5. What additional tools, including legal authorities or funding, might be necessary for OFAC to ensure that cryptocurrency participants are not able to help Russia or other malign actors evade U.S. and multilateral sanctions?

Thank you for your consideration.

Sincerely,

  
Elizabeth Warren  
United States Senator

  
Mark R. Warner  
United States Senator

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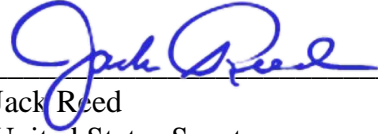
<sup>24</sup> Department of Treasury, “OFAC Enters Into \$507,375 Settlement with BitPay, Inc. for Apparent Violations of Multiple Sanctions Programs Related to Digital Currency Transactions,” Enforcement Release, February 18, 2021, [https://home.treasury.gov/system/files/126/20210218\\_bp.pdf](https://home.treasury.gov/system/files/126/20210218_bp.pdf).

<sup>25</sup> *Id.*



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Sherrod Brown  
United States Senator



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Jack Reed  
United States Senator

# United States Senate

WASHINGTON, DC 20510

May 4, 2022

Abigail Johnson  
CEO  
Fidelity Investments  
200 Seaport Blvd  
Boston, MA 02210

Dear Ms. Johnson:

We write to inquire about the appropriateness of your company's decision to add Bitcoin to its 401(k) investment plan menu and the actions you will take to address "the significant risks of fraud, theft and loss" posed by these assets.<sup>1</sup> On April 26, Fidelity announced its workplace Digital Assets Account, "the industry's first offering that will enable individuals to have a portion of their retirement savings allocated to Bitcoin through the core 401(k) plan investment lineup."<sup>2</sup> This decision follows the Department of Labor's (DOL) recent warning to 401(k) plan fiduciaries to exercise "extreme care" before adding a cryptocurrency option to their investment menu due to the high levels of risk posed by digital assets.<sup>3</sup>

In March, DOL published a compliance assistance release reminding fiduciaries of their responsibilities under the Employee Retirement Income Security Act (ERISA) and highlighted the risks that cryptocurrency may pose to retirement accounts. Under ERISA, fiduciaries "must act solely in the financial interests of plan participants and adhere to a high standard of care when managing plan participants' retirement holdings."<sup>4</sup> The Department expressed "serious concerns regarding the prudence of a fiduciary's decision to expose 401(k) plan's participants to direct investments in cryptocurrencies" and cited "the significant risks of fraud, theft and loss" presented by these digital assets.<sup>5</sup> According to DOL, these risks stem from:

- Cryptocurrencies' extreme volatility and high speculation;

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<sup>1</sup> Department of Labor, "Compliance Assistance Release No. 2022-01: 401(k) Plan Investments in "Cryptocurrencies," March 10, 2022, <https://www.dol.gov/agencies/ebsa/employers-and-advisers/plan-administration-and-compliance/compliance-assistance-releases/2022-01>.

<sup>2</sup> Fidelity, "Fidelity Investments Advances Leading Position as Digital Assets Provider With Launch of Industry's First-of-its-Kind Bitcoin Offering for 401(k) Core Investment Lineup," press release, April 26, 2022, <https://newsroom.fidelity.com/press-releases/news-details/2022/Fidelity-Investments-Advances-Leading-Position-as-Digital-Assets-Provider-With-Launch-of-Industrys-First-of-Its-Kind-Bitcoin-Offering-for-401k-Core-Investment-Lineup/default.aspx>.

<sup>3</sup> Department of Labor, "Compliance Assistance Release No. 2022-01: 401(k) Plan Investments in "Cryptocurrencies," March 10, 2022, <https://www.dol.gov/agencies/ebsa/employers-and-advisers/plan-administration-and-compliance/compliance-assistance-releases/2022-01>.

<sup>4</sup> Department of Labor, "Cryptocurrency Concerns: Why We're Working to Protect Retirement Savings from Volatile Digital Investments," Ali Khawar, March 10, 2022, <https://blog.dol.gov/2022/03/10/cryptocurrency-concerns-why-were-working-to-protect-retirement-savings-from-volatile-digital-investments?ga=2.3981236.501796348.1651200544-392574014.1651200544>.

<sup>5</sup> Department of Labor, "Compliance Assistance Release No. 2022-01: 401(k) Plan Investments in "Cryptocurrencies," March 10, 2022, <https://www.dol.gov/agencies/ebsa/employers-and-advisers/plan-administration-and-compliance/compliance-assistance-releases/2022-01>.

- The challenge for plan participants to make informed investment decisions given that “it can be extraordinarily difficult, even for expert investors, to evaluate these assets and separate the facts from the hype”;
- Custodial and recordkeeping concerns;<sup>6</sup>
- Concerns about how to reliably value cryptocurrencies, which are “compounded by the fact that cryptocurrencies are not typically subject to the same reporting and data integrity requirements that apply to more traditional investment products,”<sup>7</sup> and;
- An evolving regulatory environment.<sup>8</sup>

In short, investing in cryptocurrencies is a risky and speculative gamble, and we are concerned that Fidelity would take these risks with millions of Americans’ retirement savings.

Bitcoin, the cryptocurrency your company has deemed sound enough for your customers’ retirement savings accounts, has a particularly volatile history. After reaching a high of nearly \$69,000 last November, the value of Bitcoin dropped down to \$33,000 just over two months later.<sup>9</sup> Indeed, Bitcoin’s value has dropped as much as 30% in a single day.<sup>10</sup> This volatility is not unusual. Last year, Bitcoin’s value swung more than two standard deviations from its average – a measure of volatility – 19 times.<sup>11</sup> Another analysis finds that “Bitcoin had five days in the last year where it plunged by at least 10%.”<sup>12</sup> By comparison, stocks in the S&P 500 had only two such drops in the last 50 years.<sup>13</sup> According to one market analyst, Bitcoin’s volatility is “not a bug, it’s a feature.”<sup>14</sup>

Bitcoin’s volatility is compounded by its susceptibility to the whims of just a handful of influencers. Elon Musk’s tweets alone have led to Bitcoin value fluctuations as high as 8%.<sup>15</sup> The high concentration of Bitcoin ownership and mining exacerbates these volatility risks. One study estimates that just 10% of Bitcoin miners are responsible for processing 90% of Bitcoin

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<sup>6</sup> Department of Labor, “Compliance Assistance Release No. 2022-01: 401(k) Plan Investments in “Cryptocurrencies,” March 10, 2022, <https://www.dol.gov/agencies/ebsa/employers-and-advisers/plan-administration-and-compliance/compliance-assistance-releases/2022-01>.

<sup>7</sup> Department of Labor, “Cryptocurrency Concerns: Why We’re Working to Protect Retirement Savings from Volatile Digital Investments,” Ali Khawar, March 10, 2022, [https://blog.dol.gov/2022/03/10/cryptocurrency-concerns-why-were-working-to-protect-retirement-savings-from-volatile-digital-investments?\\_ga=2.3981236.501796348.1651200544-392574014.1651200544](https://blog.dol.gov/2022/03/10/cryptocurrency-concerns-why-were-working-to-protect-retirement-savings-from-volatile-digital-investments?_ga=2.3981236.501796348.1651200544-392574014.1651200544).

<sup>8</sup> *Id.*

<sup>9</sup> Forbes, “Why Is Bitcoin’s Price Falling?,” Taylor Tepper, Feb 3, 2022, <https://www.forbes.com/advisor/investing/cryptocurrency/why-is-bitcoins-price-falling/>.

<sup>10</sup> Forbes, “Explaining Crypto’s Volatility,” Nicole Lapin, December 23, 2021, <https://www.forbes.com/sites/nicolelapin/2021/12/23/explaining-cryptos-volatility/?sh=26d0f2e47b54>.

<sup>11</sup> Bloomberg, “Bitcoin Went Mainstream in 2021. It’s Just as Volatile as Ever,” Vildana Hajric and Katherine Greifeld, December 21, 2021, <https://www.bloomberg.com/graphics/2021-bitcoin-volatility/>.

<sup>12</sup> NPR, “Fidelity will start offering bitcoin as an investment option for 401(k) accounts,” The Associated Press, April 26, 2022, <https://www.npr.org/2022/04/26/1094798564/fidelity-will-start-offering-bitcoin-as-an-investment-option-in-401-k-accounts>.

<sup>13</sup> *Id.*

<sup>14</sup> Bloomberg, “Bitcoin Went Mainstream in 2021. It’s Just as Volatile as Ever,” Vildana Hajric and Katherine Greifeld, December 21, 2021, <https://www.bloomberg.com/graphics/2021-bitcoin-volatility/>.

<sup>15</sup> Vox, “When Elon Musk tweets, crypto prices move,” Rani Molla, June 14, 2021, <https://www.vox.com/recode/2021/5/18/22441831/elon-musk-bitcoin-dogecoin-crypto-prices-tesla>.

transactions and that 1,000 individuals control 3 million Bitcoins<sup>16</sup> – about 15% of the current Bitcoin supply.<sup>17</sup>

We are also concerned about Fidelity’s potential conflicts of interest and the extent to which they may have affected the decision to offer Bitcoin. In 2017, you announced that Fidelity had been mining cryptocurrency, stating “We set up a small Bitcoin and Ethereum mining operation... that miraculously now is actually making a lot of money.”<sup>18</sup> Following this announcement, Fidelity expanded its crypto activities, “add[ing] a link on retail customers’ accounts to Coinbase, the crypto exchange, to track their holdings” and “open[ing] its own crypto fund for wealthy customers.”<sup>19</sup> Now, Fidelity has become “the first to offer employers exposure to Bitcoin for the core lineup of 401(k)s.”<sup>20</sup> Despite a lack of demand for this option – only 2% of employers expressed interest in adding cryptocurrency to their 401(k) menu – Fidelity has decided to move full speed ahead with supporting Bitcoin investments.<sup>21</sup>

In order to better understand how Fidelity arrived at the decision to expose retirement accounts to the risks inherent in Bitcoin and other cryptocurrencies, we request answers to the following questions by May 18, 2022:

1. Why did Fidelity ignore DOL’s “serious concerns regarding the prudence of a fiduciary’s decision to expose a 401(k) plan’s participants to direct investments in cryptocurrencies”<sup>22</sup>?
2. What risks does Fidelity assess that Bitcoin presents to its customers?
  - a. What are the specific volatility and loss risks posed by Bitcoin, and how will Fidelity address these risks?
  - b. What are the specific fraud risks posed by Bitcoin, and how will Fidelity address these risks? What are the specific theft risks posed by Bitcoin, and how will Fidelity address these risks?
  - c. How will Fidelity address the additional Bitcoin risks identified by DOL, including the challenge for plan participants to make informed investment

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<sup>16</sup> National Bureau of Economic Research, “Blockchain Analysis of the Bitcoin Market,” Igor Makarov and Antoinette Schoar, October 2021, p. 4; 29, [https://www.nber.org/system/files/working\\_papers/w29396/w29396.pdf](https://www.nber.org/system/files/working_papers/w29396/w29396.pdf).

<sup>17</sup> Coindesk, “What Happens When All Bitcoin Are Mined?” Benedict George, January 26, 2022, <https://www.coindesk.com/learn/what-happens-when-all-bitcoin-are-mined/>.

<sup>18</sup> Futurism, “Fidelity Investments Is Mining for Cryptocurrency,” Chelsea Gohd, September 30, 2017, <https://futurism.com/fidelity-investments-mining-cryptocurrency>.

<sup>19</sup> Wall Street Journal, “Fidelity to Allow Retirement Savers to Put Bitcoin in 401(k) Accounts,” Anne Tergesen, April 26, 2022, <https://www.wsj.com/articles/fidelity-to-allow-retirement-savers-to-put-bitcoin-in-401-k-accounts-11650945661>.

<sup>20</sup> Fidelity, “Fidelity Investments Advances Leading Position as Digital Assets Provider With Launch of Industry’s First-of-its-Kind Bitcoin Offering for 401(k) Core Investment Lineup,” press release, April 26, 2022, <https://newsroom.fidelity.com/press-releases/news-details/2022/Fidelity-Investments-Advances-Leading-Position-as-Digital-Assets-Provider-With-Launch-of-Industrys-First-of-Its-Kind-Bitcoin-Offering-for-401k-Core-Investment-Lineup/default.aspx>.

<sup>21</sup> Wall Street Journal, “Fidelity to Allow Retirement Savers to Put Bitcoin in 401(k) Accounts,” Anne Tergesen, April 26, 2022, <https://www.wsj.com/articles/fidelity-to-allow-retirement-savers-to-put-bitcoin-in-401-k-accounts-11650945661>.

<sup>22</sup> Department of Labor, “Compliance Assistance Release No. 2022-01: 401(k) Plan Investments in “Cryptocurrencies,”” March 10, 2022, <https://www.dol.gov/agencies/ebsa/employers-and-advisers/plan-administration-and-compliance/compliance-assistance-releases/2022-01>.

decisions, custodial and recordkeeping concerns, valuation concerns, and the evolving regulatory environment?

3. What fees will your customers incur if they decide to invest in Bitcoin?
4. How much has Fidelity earned from cryptomining activities since the establishment of its mining operation?
5. When Fidelity made its decision to allow sales of Bitcoin in retirement accounts, how did the company address its own conflicts of interest, given that the company now is both a Bitcoin miner and a purveyor of Bitcoin?

Sincerely,



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Elizabeth Warren  
United States Senator



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Tina Smith  
United States Senator

# Congress of the United States

Washington, DC 20515

July 15, 2022

The Honorable Michael Regan  
Administrator  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Room 3426 WJC North  
Washington, DC 20460

The Honorable Jennifer Granholm  
Secretary  
Department of Energy  
1000 Independence Ave. SW  
Washington, DC 20585

Dear Administrator Regan and Secretary Granholm,

We write to provide new information on our investigation of the environmental impacts of cryptocurrency mining, and to request that your agencies work together to require emissions and energy use reporting by cryptominers.

The cryptocurrency market has grown exponentially since first introduced over a decade ago.<sup>1</sup> Mining operations for Bitcoin, the largest cryptocurrency by market cap, are increasingly moving onshore, with the United States' share of global mining increasing from 4 percent in August 2019 to nearly 38 percent in January 2022 – meaning that over a third of the global computing power dedicated to mining Bitcoin is now drawn from miners in the U.S., in part due to a government crackdown in China last year.<sup>2</sup>

The networks of Bitcoin and many other tokens are secured through a “proof of work” algorithm, which involves “miners” using highly-specialized and power-intensive computers known as “mining rigs” to verify transactions by solving a mathematical puzzle, with the winning miner being rewarded in new tokens.<sup>3</sup> As more miners compete and the value of the

<sup>1</sup> MIT Technology Review, “The Cryptocurrency Market Is Growing Exponentially,” Emerging Technology from the arXiv, May 29, 2017, <https://www.technologyreview.com/2017/05/29/151496/the-cryptocurrency-market-is-growing-exponentially/>.

<sup>2</sup> Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, “Bitcoin Mining Map,” June 2022, [https://cbeci.org/mining\\_map](https://cbeci.org/mining_map); CoinMarketCap, “Cryptocurrency Prices, Charts And Market Capitalizations,” <https://coinmarketcap.com/>; The Wall Street Journal, “U.S. Takes Bitcoin Mining Crown After China Crackdown,” Caitlin Ostroff, October 27, 2021, <https://www.wsj.com/articles/u-s-takes-bitcoin-mining-crown-after-china-crackdown-11635327002>.

<sup>3</sup> CoinDesk, “What Is Proof-of-Work?,” Alyssa Hertig, December 16, 2020, <https://www.coindesk.com/tech/2020/12/16/what-is-proof-of-work/>; The Guardian, “Electricity needed to mine bitcoin is more than used by 'entire countries',” Lauren Aratani, February 27, 2021, <https://www.theguardian.com/technology/2021/feb/27/bitcoin-mining-electricity-use-environmental-impact>.

token increases, solving this puzzle becomes increasingly difficult, requiring more computational power and greater energy consumption.<sup>4</sup> Bitcoin’s estimated annualized global power consumption had increased nearly four-fold between the beginning of 2019 and mid-June 2022 to as high as 130 TWh, rivaling the total annual electricity usage of countries such as Norway and Sweden and reportedly exceeding the total reductions in greenhouse gas emissions attributed to electric vehicles.<sup>5</sup> The total annual global electricity consumption associated with just the two largest cryptocurrencies by market capitalization, Bitcoin and Ethereum, has been estimated to be as high as 300 TWh in May 2022, comparable to the annual electricity usage of the United Kingdom.<sup>6</sup> And this electricity usage has major emissions consequences: the energy used to mine Bitcoin and Ethereum in 2021 resulted in almost 80 million tons of carbon dioxide emissions.<sup>7</sup>

Cryptomining facilities’ energy consumption is also causing significant increases in energy costs for many small businesses and residents. Cryptomining in the city of Plattsburgh, New York reportedly resulted in residential electricity bills that were “up to \$300 higher than usual” in the winter of 2018, leading the city to introduce the nation’s first 18-month moratorium on new cryptomining operations.<sup>8</sup> A recent study estimates that “the power demands of cryptocurrency mining operations in upstate New York push up annual electric bills by about \$165 million for small businesses and \$79 million for individuals.”<sup>9</sup> Moreover, states like Texas with relatively cheap electricity costs are experiencing an influx of cryptomining companies, raising concerns about the state’s unreliable electricity market and the potential for cryptomining to add to the stress on the state’s power grid.<sup>10</sup>

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<sup>4</sup> The Wall Street Journal, “Bitcoin Miners Are Giving New Life to Old Fossil-Fuel Power Plants,” Brian Spegele and Caitlin Ostroff, May 21, 2021, <https://www.wsj.com/articles/bitcoin-miners-are-giving-new-life-to-old-fossil-fuel-power-plants-11621594803>.

<sup>5</sup> The New York Times, “Bitcoin Uses More Electricity Than Many Countries. How Is That Possible?” Jon Huang, Claire O’Neill, and Hiroko Tabuchi, September 3, 2021, <https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>; Cambridge Centre for Alternative Finance, Cambridge Bitcoin Electricity Consumption Index, “Bitcoin network power demand,” June 2022, <https://web.archive.org/web/20220612070718/https://ccaf.io/cbeci/index/>; U.S. Energy Information Administration, “Electricity,” <https://www.eia.gov/international/data/world/electricity/electricity-consumption>; Digiconomist, “Bitcoin now negating a decade of progress in deploying electric vehicles,” June 27, 2021, <https://digiconomist.net/bitcoin-now-negating-a-decade-of-progress-in-deploying-electric-vehicles/>.

<sup>6</sup> NDTV Profit, “Ethereum Upgrade To Cut Energy Consumption By Over 99%: Know More About It,” March 27, 2022, <https://www.ndtv.com/business/ethereum-upgrade-and-energy-consumption-here-s-all-you-need-to-know-2846026>; Digiconomist, “Ethereum Energy Consumption Index,” <https://digiconomist.net/ethereum-energy-consumption>; Digiconomist, “Bitcoin Energy Consumption Index,” <https://digiconomist.net/bitcoin-energy-consumption>; U.S. Energy Information Administration, “Electricity,” <https://www.eia.gov/international/data/world/electricity/electricity-consumption>.

<sup>7</sup> Forex Suggest.com, “Global Impact of Crypto Trading,” <https://forexsuggest.com/global-impact-of-crypto-trading/>.

<sup>8</sup> Congressional Research Service, “Bitcoin, Blockchain, and the Energy Sector,” Corrie E. Clark and Heather L. Greenley, August 9, 2019, <https://crsreports.congress.gov/product/pdf/R/R45863/3>.

<sup>9</sup> Berkeley Haas, “Power-hungry cryptominers push up electricity costs for locals,” Laura Counts, August 3, 2021, <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>.

<sup>10</sup> Cointelegraph, “Crypto miners eye cheap power in Texas, but fears aired over impact on the grid,” Samuel Haig, June 16, 2021, <https://cointelegraph.com/news/crypto-miners-eye-cheap-power-in-texas-but-fears-aired-over-impact-on-the-grid>.



Despite these adverse impacts from cryptomining, state and federal regulators currently know little about the scope of the problem. There is no national or state reporting requirement or compilation of the locations of cryptomining facilities in the United States, and no federal regulations specifically governing cryptomining. Consequently, policymakers and the public do not have a comprehensive source of information about where these operations are located, how much energy they consume, and what their sources of energy are – and without the energy use and source reporting, there is a subsequent lack of data regarding the associated air emissions of pollutants or carbon dioxide.

To address this concern, we wrote to seven of the largest cryptomining operations in the U.S. seeking information about the locations of their facilities, their energy sources and consumption, and the climate impacts associated with this production. None of the companies provided full and complete information in response to our questions. But the information they did provide reveals that these companies’ mining operations are significant and growing, have a major impact on climate change, and that federal intervention is necessary. Specifically, this information reveals that:

- **Cryptominers are using substantial amounts of electricity.** The seven companies alone indicated that they presently have developed over 1,045 MW capacity for cryptomining (Table 1). This is nearly enough capacity to power all the residences in Houston, Texas.<sup>11</sup>

Greenidge reported operating 50 MW of capacity for cryptomining at its Dresden facility;<sup>12</sup> Riot reported operating a total of 401 MW of capacity;<sup>13</sup> Bitdeer reported operating a total of 243 MW of capacity at three plants;<sup>14</sup> Stronghold reported operating 165 MW at its Scrubgrass and Panther Creek plants;<sup>15</sup> Marathon reported operating nearly 65 MW (in September 2021, prior to a major expansion);<sup>16</sup> and Bit Digital reported having mining agreements in place at various facilities for a total of 195 MW, with 73.6 MW of contracted hosting “in excess of the needs of our currently owned fleet and announced purchases” – indicating they currently operate just over 121 MW.<sup>17</sup> Bitfury did provide a response to our letter, but failed to include in their

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<sup>11</sup> Based on estimates that, “Nationally, based on the EIA’s average monthly residential consumption, 1 MW generated consistently would serve the monthly energy needs of roughly 800 residences.” Congressional Research Services, information provided via e-mail to the Office of Sen. Elizabeth Warren, May 23, 2022; United States Census Bureau, “QuickFacts: Houston city, Texas,” <https://www.census.gov/quickfacts/houstoncitytexas>.

<sup>12</sup> Letter from King & Spalding on behalf of Greenidge Holdings, Inc., to Senator Elizabeth Warren, Dec. 17, 2021, <https://www.warren.senate.gov/imo/media/doc/Greenidge%20Response%20Letter%2012.17.2021.pdf>.

<sup>13</sup> Letter from Riot Blockchain, Inc. to Members of Congress, February 24, 2022, <https://www.warren.senate.gov/imo/media/doc/Riot%20Response%20Letter%202.24.20223.pdf>.

<sup>14</sup> Letter from Bitdeer Inc. to Senator Elizabeth Warren, February 10, 2022, <https://www.warren.senate.gov/imo/media/doc/Bitdeer%20Response%20Letter%202.10.20223.pdf>.

<sup>15</sup> Letter from Stronghold Digital Mining to Members of Congress, February 8, 2022, <https://www.warren.senate.gov/imo/media/doc/Stronghold%20Response%20Letter%202.8.2022.pdf>.

<sup>16</sup> Letter from Marathon Digital Holdings to Members of Congress, February 10, 2022, <https://www.warren.senate.gov/imo/media/doc/Marathon%20Response%20Letter%202.10.20221.pdf>.

response answers to our questions regarding their mining locations, energy consumption, and energy sources.<sup>18</sup>

<b>Table 1: Mining Capacity of Responding Cryptominers as of February 2022*</b>		
<b>Company</b>	<b>Facility</b>	<b>Capacity</b>
Riot	Coinmint	51 MW
Riot	Whinstone	350 MW
Bit Digital	Compute North Kearney, Compute North Big Springs, Blockfusion USA Niagara Falls, Digihost Technologies Buffalo, Core Scientific Dalton	121.6 MW
Bit Deer	Pangborn	13 MW
Bit Deer	Knoxville	60 MW
Bit Deer	Rockdale	170 MW
Stronghold	Scrubgrass	85 MW
Stronghold	Panther Creek	80 MW
Marathon	Montana	57.6 MW
Marathon	South Dakota	2.2 MW
Marathon	Nebraska	4.9 MW
Greenidge	Dresden	50 MW
<b>Total</b>		<b>1,045.3 MW</b>

\*Greenidge capacity is as of December 2021, and Marathon capacity reported in February 2022 is as of September 2021

- **Cryptominers are significantly increasing production.** Although miners are already using a significant amount of electricity at present, the companies that provided information indicated that they expect considerable increases in mining capacity and therefore electricity use in future years. Marathon indicated that “In January 2021, we operated 2,060 bitcoin [mining rigs]...As of February 1, 2022, we were operating 32,710 bitcoin [mining rigs]...By early next year we intend to have deployed 199,000 bitcoin [mining rigs].”<sup>19</sup> This represents nearly a hundred-fold increase in the number of operating rigs in just two years.

<sup>17</sup> Letter from Bit Digital to Senator Elizabeth Warren, February 18, 2022, <https://www.warren.senate.gov/imo/media/doc/Bit%20Digital%20Response%20Letter%202.18.20221.pdf>.

<sup>18</sup> Letter from Bitfury to Members of Congress, February 10, 2022, <https://www.warren.senate.gov/imo/media/doc/Bitfury%20Response%20Letter%202.10.20221.pdf>.

<sup>19</sup> Letter from Marathon Digital Holdings to Members of Congress, February 10, 2022, <https://www.warren.senate.gov/imo/media/doc/Marathon%20Response%20Letter%202.10.20221.pdf>.

Bit Digital indicated that it planned to increase its capacity for mining from over 121 MW in 2021 to 173 MW in 2022, with further expansion planned to 195 MW in 2023 and beyond.<sup>20</sup> Riot indicated that it plans to double the current mining capacity of its Whinstone plant, from 350 MW to “700 MW of cutting-edge Bitcoin mining infrastructure,” within the year.<sup>21</sup> Bitdeer plans to quadruple its current capacity, expanding its existing operations by 598 MW and “developing additional Texas-based data centers with an approximate aggregate capacity of 362 MW in 2022.”<sup>22</sup> Marathon stated that “we estimate that it will require approximately 630 MW to power our fleet once fully deployed,” an increase of 565 MW.<sup>23</sup> And Greenidge stated that it “expects to have at least 500 MW of mining capacity across multiple locations by 2025” – which would represent an expansion of 450 MW.<sup>24</sup> However, the New York Department of Environmental Conservation denied Greenidge’s request for renewal of a required air permit in June 2022 on grounds that the company’s current cryptomining operations were a threat to the state’s climate goals and were “for a wholly new purpose unrelated to its original permit.”<sup>25</sup> It not clear how this decision affects Greenidge’s long-term expansion goals, though the company “said it would continue operating under its current permit while it challenged the decision.”<sup>26</sup>

Overall, this limited set of information indicates that just the few cryptominers that were part of this investigation will increase their total mining capacity by at least 2,399 MW in the next few years – an increase of nearly 230 percent, and enough new capacity to power a city of over 1.9 million residences.<sup>27</sup> For comparison, Los Angeles has 1.4 million households.<sup>28</sup>

- **Cryptomining results in substantial amounts of carbon emissions.** Several of the companies that wrote to us insisted that their mining efforts were environmentally friendly and did not have a significant adverse impact on climate and air quality. For example, Greenidge described its “clean burning natural gas facility...[that] has never

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<sup>20</sup> Letter from Bit Digital to Senator Elizabeth Warren, February 18, 2022, <https://www.warren.senate.gov/imo/media/doc/Bit%20Digital%20Response%20Letter%202.18.20221.pdf>.

<sup>21</sup> Letter from Riot Blockchain, Inc. to Members of Congress, February 24, 2022, <https://www.warren.senate.gov/imo/media/doc/Riot%20Response%20Letter%202.24.20223.pdf>.

<sup>22</sup> Letter from Bitdeer Inc. to Senator Elizabeth Warren, February 10, 2022, <https://www.warren.senate.gov/imo/media/doc/Bitdeer%20Response%20Letter%202.10.20223.pdf>.

<sup>23</sup> Letter from Marathon Digital Holdings to Members of Congress, February 10, 2022, <https://www.warren.senate.gov/imo/media/doc/Marathon%20Response%20Letter%202.10.20221.pdf>.

<sup>24</sup> Letter from King & Spalding on behalf of Greenidge Holdings, Inc., to Senator Elizabeth Warren, Dec. 17, 2021, <https://www.warren.senate.gov/imo/media/doc/Greenidge%20Response%20Letter%2012.17.2021.pdf>.

<sup>25</sup> CBS News, “New York denies permit renewal for bitcoin mining company, calling it threat to state’s climate goals,” July 1, 2022, <https://www.cbsnews.com/news/bitcoin-mining-plant-greenidge-generation-new-york-state-permit-denial-climate-goals>.

<sup>26</sup> *Id.*

<sup>27</sup> Based on estimates that, “Nationally, based on the EIA’s average monthly residential consumption, 1 MW generated consistently would serve the monthly energy needs of roughly 800 residences.” Congressional Research Services, information provided via e-mail to the Office of Sen. Elizabeth Warren, May 23, 2022.

<sup>28</sup> United States Census Bureau, “QuickFacts: Los Angeles city, California,” <https://www.census.gov/quickfacts/fact/table/losangelescalitycalifornia/PST045221>.

operated on coal under Greenidge’s ownership and will never burn coal again.”<sup>29</sup> Bit Digital emphasized that the company “has taken a step towards decarbonization by signing the Crypto Climate Accord” and bragged that in Niagara Falls, the company has converted “a former coal-burning power plant . . . into an innovative, sophisticated, and nearly carbon-free operation.”<sup>30</sup> Riot stated that “Bitcoin mining drives more demand for renewable energy than the typical U.S. energy consumer.”<sup>31</sup>

But these and similar promises about clean energy use obscure a simple fact: Bitcoin miners are using huge quantities of electricity that could be used for other priority end uses that contribute to our electrification and climate goals, such as replacing home furnaces with heat pumps. The current energy use of cryptomining is resulting in large amounts of carbon emissions and other adverse air quality impacts, as well as impacts to the electric grid. And it is worth noting that pledges like the Crypto Climate Accord are non-binding and do not hold cryptominers to specific actions.<sup>32</sup>

For example, Riot indicated that its 51 MW Coinmint facility “utilizes nearly exclusively hydroelectricity, a zero-emission, sustainable energy source.”<sup>33</sup> But its Whinstone facility, which is seven times larger, uses power from the Texas grid that relies on coal or natural gas for more than 63 percent of its generating capacity.<sup>34</sup>

Other miners reported significant amounts of carbon emissions. Bit Digital indicated that its operations resulted in an estimated 92,000 metric tons of CO<sub>2</sub> emissions in 2021, and projected 1.075 million metric tons of CO<sub>2</sub> emissions in 2022, increasing to 1.2 million metric tons in 2023 and beyond – annual emissions that are equivalent to those from over 260,000 automobiles.<sup>35</sup> Greenidge reported 273,326 tons of CO<sub>2</sub> equivalent emitted in the 12 months prior to November 30, 2021, the equivalent of nearly 60,000 cars.<sup>36</sup> Stronghold indicated that the cumulative estimated CO<sub>2</sub> emitted by its Panther Creek and Scrubgrass facilities in supplying the power required for its

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<sup>29</sup> Letter from King & Spalding on behalf of Greenidge Holdings, Inc., to Senator Elizabeth Warren, Dec. 17, 2021, <https://www.warren.senate.gov/imo/media/doc/Greenidge%20Response%20Letter%2012.17.2021.pdf>.

<sup>30</sup> Letter from Bit Digital to Senator Elizabeth Warren, February 18, 2022, <https://www.warren.senate.gov/imo/media/doc/Bit%20Digital%20Response%20Letter%202.18.20221.pdf>.

<sup>31</sup> Letter from Riot Blockchain, Inc. to Members of Congress, February 24, 2022, <https://www.warren.senate.gov/imo/media/doc/Riot%20Response%20Letter%202.24.20223.pdf>.

<sup>32</sup> Crypto Climate Accord, “Make Crypto Green,” <https://cryptoclimate.org/>.

<sup>33</sup> Letter from Riot Blockchain, Inc. to Members of Congress, February 24, 2022, <https://www.warren.senate.gov/imo/media/doc/Riot%20Response%20Letter%202.24.20223.pdf>.

<sup>34</sup> *Id.*

<sup>35</sup> Letter from Bit Digital to Senator Elizabeth Warren, February 18, 2022, <https://www.warren.senate.gov/imo/media/doc/Bit%20Digital%20Response%20Letter%202.18.20221.pdf>; The average automobile in the United States emits approximately 4.6 metric tons of CO<sub>2</sub> annually, Environmental Protection Agency, “Greenhouse Gas Emissions from a Typical Passenger Vehicle,” <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle#:~:text=typical%20passenger%20vehicle%3F-A%20typical%20passenger%20vehicle%20emits%20about%204.6%20metric%20tons%20of,8%2C887%20grams%20of%20CO2>.

<sup>36</sup> Letter from King & Spalding on behalf of Greenidge Holdings, Inc., to Senator Elizabeth Warren, Dec. 17, 2021, <https://www.warren.senate.gov/imo/media/doc/Greenidge%20Response%20Letter%2012.17.2021.pdf>.

Bitcoin mining operations is nearly 1.3 million metric tons, and that its expansion plans would result in emissions of more than 6.4 million metric tons of CO<sub>2</sub> over five years<sup>37</sup> – the equivalent of putting nearly 280,000 passenger cars on the road. These three companies that provided clear emissions data alone are currently responsible for approximately 1.6 million tons emitted annually, the equivalent of almost 360,000 cars – and these figures are only set to go upwards in the coming years.

The results of our investigation, which gathered data from just seven companies, are disturbing, with this limited data alone revealing that cryptominers are large energy users that account for a significant – and rapidly growing – amount of carbon emissions. Our investigation suggests that the overall U.S. cryptomining industry is likely to be problematic for energy and emissions. But little is known about the full scope of cryptomining activity. Given these concerns, it is imperative that your agencies work together to address the lack of information about cryptomining’s energy use and environmental impacts, and use all available authorities at your disposal, such as Section 114 of the *Clean Air Act*<sup>38</sup> and 15 U.S.C. § 772(a) and (b),<sup>39</sup> to require reporting of energy use and emissions from cryptominers.

This collected data would enable valuable public policy activities, including better monitoring of energy use and trends, better evidence basis for policy making, improved data for national mitigation analyses, better abilities for evaluating technology policies for the sector, and better modeling of national and regional grid loads and transitions, among other purposes.

Thank you for your attention to this important matter. We ask that you provide us with a written description of your authority to require such reporting, and any plan to do so, and provide us with a staff-level briefing on this matter by no later than August 15, 2022.

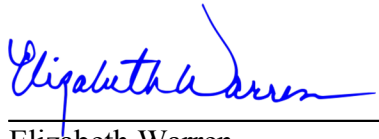
Sincerely,

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<sup>37</sup> Letter from Stronghold Digital Mining to Members of Congress, February 8, 2022, <https://www.warren.senate.gov/imo/media/doc/Stronghold%20Response%20Letter%202.8.2022.pdf>.

<sup>38</sup> Govinfo.gov, “§7414. Recordkeeping, inspections, monitoring, and entry,” U.S. Government Publishing Office, <https://www.govinfo.gov/content/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapI-partA-sec7414.htm>. This section of the Act provides that “the [EPA] Administrator may require any person who owns or operates any emission source, who manufactures emission control equipment or process equipment, who the Administrator believes may have information necessary for the purposes set forth in this subsection, or who is subject to any requirement of this chapter ... to ...establish and maintain such records... make such reports... keep records on control equipment parameters, production variables or other indirect data when direct monitoring of emissions is impractical...and... provide such other information as the Administrator may reasonably require.”

<sup>39</sup> Govinfo.gov, “§772. Administrator’s information-gathering power,” U.S. Government Publishing Office, <https://www.govinfo.gov/content/pkg/USCODE-2010-title15/html/USCODE-2010-title15-chap16B-subchapI-sec772.htm>. This section of the U.S. Code provides this authority to the Administrator of the Energy Information Administration under DOE: “The Administrator shall collect, assemble, evaluate, and analyze energy information by categorical groupings...of sufficient comprehensiveness and particularity to permit fully informed monitoring and policy guidance...” and “All persons owning or operating facilities or business premises who are engaged in any phase of energy supply or major energy consumption shall make available to the Administrator such information and periodic reports, records, documents, and other data...as the Administrator may prescribe by regulation or order as necessary or appropriate for the proper exercise of functions under this chapter.”



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Elizabeth Warren  
United States Senator



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Jared Huffman  
Member of Congress



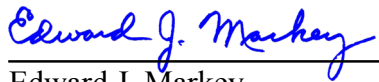
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Sheldon Whitehouse  
United States Senator



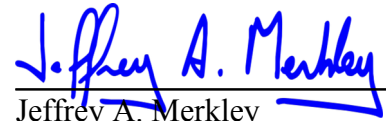
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Rashida Tlaib  
Member of Congress



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Edward J. Markey  
United States Senator



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Jeffrey A. Merkley  
United States Senator

# United States Senate

WASHINGTON, DC 20510

August 10, 2022

The Honorable Michael J. Hsu  
Acting Comptroller of the Currency  
Office of the Comptroller of the Currency  
400 7<sup>th</sup> St. SW  
Washington, DC 20219

Dear Acting Comptroller Hsu,

We write to inquire about the Office of the Comptroller of the Currency's (OCC) November 2021 interpretive letter authorizing banks to engage in certain cryptocurrency (crypto) activities, and the activities that banks have been permitted to engage in under OCC's guidance.<sup>1</sup> Each of the prudential regulators, including the OCC, is responsible for safeguarding our financial system from undue risk and ensuring the safety and soundness of the banking system. In light of recent turmoil in the crypto market, however, we are concerned that the OCC's actions on crypto may have exposed the banking system to unnecessary risk, and ask that you withdraw existing interpretive letters that have permitted banks to engage in certain crypto-related activities.

Under your predecessor, Acting Comptroller Brian Brooks, the OCC unilaterally issued a series of interpretive letters related to cryptocurrencies in July 2020 (Interpretive Letter 1170), October 2020 (Interpretive Letter 1172), and January 2021 (Interpretive Letter 1174).<sup>2</sup> In these letters, the OCC determined that banks were authorized to engage in certain crypto-related activities, including: providing cryptocurrency custody service for customers, holding deposits that serve as reserves for certain stablecoins, and operating independent node verification networks (INVN)s and stablecoins for payment activities.<sup>3</sup> Under your leadership, the OCC issued an additional interpretive letter on crypto-related activities in November 2021 (Interpretive Letter 1179) confirming that the previously addressed activities "are legally permissible for a bank to engage in, *provided* the bank can demonstrate, to the satisfaction of its supervisory office, that it has controls in place to conduct the activity in a safe and sound manner."<sup>4</sup>

The interpretive letters issued under your predecessor essentially granted banks unfettered opportunity to engage in certain crypto activities and remain problematic. Under your watch, the OCC issued updated guidance with the aim of reining in potential risks posed by your

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<sup>1</sup> Office of the Comptroller of the Currency, "Interpretive Letter #1179," November 18, 2021, <https://www.occ.gov/topics/charters-and-licensing/interpretations-and-actions/2021/int1179.pdf>.

<sup>2</sup> Office of the Comptroller of the Currency, "Interpretive Letter #1170," July 22, 2020, <https://www.occ.gov/topics/charters-and-licensing/interpretations-and-actions/2020/int1170.pdf>; Office of the Comptroller of the Currency, "Interpretive Letter #1172," September 21, 2020, <https://www.occ.gov/topics/charters-and-licensing/interpretations-and-actions/2020/int1172.pdf>; Office of the Comptroller of the Currency, "Interpretive Letter 1174," January 4, 2021, <https://www.occ.gov/news-issuances/news-releases/2021/nr-occ-2021-2a.pdf>.

<sup>3</sup> *Id.*

<sup>4</sup> Office of the Comptroller of the Currency, "Interpretive Letter #1179," November 18, 2021, <https://www.occ.gov/topics/charters-and-licensing/interpretations-and-actions/2021/int1179.pdf>.

predecessor's policies.<sup>5</sup> Yet, despite these efforts, we are concerned that the OCC has failed to properly address the shortcomings of the preceding interpretive letters and the risks associated with crypto-related banking activities, which have grown more severe in recent months.

Cryptocurrencies are highly volatile assets that offer few, if any, protections to retail investors. The crypto market has plunged over the last several months, astonishingly erasing about \$2 trillion in value since its high in November 2021 and triggering the collapse of several major crypto lenders and firms.<sup>6</sup> In May 2022, two of the three largest stablecoins – cryptocurrencies intended to maintain a set value through a peg to another cryptocurrency, fiat currency or other exchange-traded commodities – failed to maintain their pegs, with the collapse of Terra, an algorithmic stablecoin that was supposed to be pegged to the U.S. dollar, “end[ing] with a bank run that made \$40 billion of tokens virtually worthless.”<sup>7</sup> And in July 2022, crypto “banks” Celsius and Voyager and crypto hedge fund Three Arrows Capital filed for bankruptcy protection.<sup>8</sup> While you declared that “there has been no contagion from cryptocurrencies to traditional banking and finance” during this recent market turmoil,<sup>9</sup> it is clear that stronger protections are necessary to mitigate crypto’s risks to the financial system and consumers.

This is why we are concerned that Interpretive Letter 1179 maintains that each of the crypto activities specified in the preceding letters are “legally permissible,”<sup>10</sup> generally affirming, rather than rescinding, the crypto interpretive letters issued under your predecessor – letters that “helped make it easier for traditional financial institutions to get into crypto”<sup>11</sup> and “that the

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<sup>5</sup> Banking Dive, “OCC will revisit crypto charters, interpretive letters, acting chief says,” Anna Hrushka, June 3, 2021, <https://www.bankingdive.com/news/occ-will-revisit-crypto-charters-interpretive-letters-acting-chief-says/601228/>.

<sup>6</sup> Newsweek, “Cryptocurrencies Lose \$2 Trillion in Value Since 2021 Peak,” Rob Minto, June 13, 2022, <https://www.newsweek.com/cryptocurrencies-lose-trillion-value-since-peak-1715207>; Wall Street Journal, “Market Rout Shows Dangers of Margin Lending, Crypto Style,” Justin Baer and Orla McCaffery, July 20, 2022, [https://www.wsj.com/articles/market-rout-shows-dangers-of-margin-lending-crypto-style-11658334507?mod=markets\\_lead\\_pos6](https://www.wsj.com/articles/market-rout-shows-dangers-of-margin-lending-crypto-style-11658334507?mod=markets_lead_pos6); Wall Street Journal, “They Thought the ‘Crypto Banks’ Were Safe, and Then Came the Crash,” Rachel Louise Ensign and Angel Au-Yeung, July 23, 2022, <https://www.wsj.com/articles/they-thought-crypto-banks-were-safe-and-then-came-the-crash-11658568780>.

<sup>7</sup> Bloomberg, “Tether Loses Dollar Peg as Crypto Anxiety Hits No. 1 Stablecoin,” Emily Nicolle and Muyao Shen, May 12, 2022, <https://www.bloomberg.com/news/articles/2022-05-12/tether-moves-to-reassure-market-after-biggest-stablecoin-slips>; Bloomberg, “A \$2 Trillion Free-Fall Rattles Crypto to the Core,” Emily Nicolle and Olga Kharif, June 26, 2022, <https://www.bloomberg.com/news/articles/2022-06-26/crypto-winter-why-this-bitcoin-bear-market-is-different-from-the-past>.

<sup>8</sup> CNBC, “Crypto hedge fund Three Arrows files for Chapter 15 bankruptcy,” Arjun Kharpal, July 2, 2022, <https://www.cnbc.com/2022/07/02/crypto-hedge-fund-three-arrows-files-for-chapter-15-bankruptcy.html>; Wall Street Journal, “Market Rout Shows Dangers of Margin Lending, Crypto Style,” Justin Baer and Orla McCaffery, July 20, 2022, [https://www.wsj.com/articles/market-rout-shows-dangers-of-margin-lending-crypto-style-11658334507?mod=markets\\_lead\\_pos6](https://www.wsj.com/articles/market-rout-shows-dangers-of-margin-lending-crypto-style-11658334507?mod=markets_lead_pos6); Wall Street Journal, “They Thought ‘Crypto Banks’ Were Safe, and Then Came the Crash,” Rachel Louise Ensign and Angel Au-Yeung, July 23, 2022, <https://www.wsj.com/articles/they-thought-crypto-banks-were-safe-and-then-came-the-crash-11658568780>.

<sup>9</sup> Office of the Comptroller of the Currency, “Remarks by Acting Comptroller Michael J. Hsu at the DC Blockchain Summit 2022,” May 2022, <https://www.occ.treas.gov/news-issuances/speeches/2022/pub-speech-2022-60.pdf>.

<sup>10</sup> Office of the Comptroller of the Currency, “Interpretive Letter #1179,” November 18, 2021, <https://www.occ.gov/topics/charters-and-licensing/interpretations-and-actions/2021/int1179.pdf>.

<sup>11</sup> Wall Street Journal, “Cryptocurrency Giant Binance.US Hires Former Top Bank Regulator,” Alexander Osipovich, April 20, 2021, <https://www.wsj.com/articles/cryptocurrency-giant-binance-hires-former-top-bank-regulator-11618912800>.



industry widely praised as one that could help mainstream adoption of crypto.”<sup>12</sup> This is despite your previously stated concerns “that these initiatives were not done in full coordination with all stakeholders” or as “part of a broader strategy related to the regulatory perimeter.”<sup>13</sup>

The inclusion of a grandfather clause in Interpretive Letter 1179 also raises concerns. According to this clause, “[b]anks already engaged in cryptocurrency, distributed ledger, or stablecoin activities as of the date of publication of this letter do not need to obtain supervisory non-objection,”<sup>14</sup> meaning that banks that engaged in crypto-related activities prior to the letter’s issuance can avoid putting in place proper risk management controls and systems. Instead, the OCC merely “expects that a bank that has commenced such activity will have provided notice to its supervisory office.”<sup>15</sup>

Given the risks posed by cryptocurrencies to banks and their customers, we request that you withdraw OCC Interpretive Letters 1170, 1172, 1174, and 1179 and coordinate with the Federal Reserve and the Federal Deposit Insurance Corporation to develop a comprehensive approach that adequately protects consumers and the safety and soundness of the banking system.

Additionally, in order to better understand banks’ exposure to the crypto market, please provide responses to the following by August 24, 2022:

1. Since the issuance of Interpretive Letter 1179 in November 2021, which banks have obtained OCC permission to engage in the crypto-related activities specified under Interpretive Letters 1170, 1172, and 1174? As part of your response, please provide the following information.
  - a. Specify the activities each bank has been approved to engage in under your guidance and the estimated dollar volume of their activities.
  - b. Has the OCC denied any banks’ request to engage in crypto-related activities?
2. In total, please specify the number and names of banks regulated by the OCC which are currently engaged in the following activities:
  - a. Providing cryptocurrency custody services.
  - b. Holding dollar deposits serving as reserves backing stablecoins.
  - c. Acting as nodes to verify customer payments.
  - d. Facilitating stablecoin payment transactions.
3. In connection with the banks listed in question number two, please specify which engaged in the following activities prior to the issuance of Interpretive Letter 1179:
  - a. Providing cryptocurrency custody services.
  - b. Holding dollar deposits serving as reserves backing stablecoins.

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<sup>12</sup> Coinbase, “Banks Won’t Rush to Hold Crypto – But OCC’s Regulatory Approval Makes It Harder to Ignore,” Nikhilesh De and Ian Allison, July 24, 2020, <https://www.coindesk.com/policy/2020/07/24/banks-wont-rush-to-hold-crypto-but-occs-regulatory-approval-makes-it-harder-to-ignore/>.

<sup>13</sup> Written testimony of Michael J. Hsu to the U.S. House of Representatives Committee on Financial Services, May 19, 2021, <https://financialservices.house.gov/uploadedfiles/hhrg-117-ba00-wstate-hsum-20210519.pdf>.

<sup>14</sup> Office of the Comptroller of the Currency, “Interpretive Letter #1179,” November 18, 2021, <https://www.occ.gov/topics/charters-and-licensing/interpretations-and-actions/2021/int1179.pdf>.

<sup>15</sup> *Id.*

- c. Acting as nodes to verify customer payments.
  - d. Facilitating stablecoin payment transactions.
4. For each OCC-regulated bank engaged in crypto-related activities, please specify the estimated total dollar volume of the following activities:
  - a. Providing cryptocurrency custody services.
  - b. Holding dollar deposits serving as reserves backing stablecoins.
  - c. Acting as nodes to verify customer payments.
  - d. Facilitating stablecoin payment transactions.
5. Are banks regulated by the OCC engaging in other crypto-related activities, such as lending crypto assets or trading crypto assets or derivatives? If so, please specify the bank(s), the activities they are engaging in, and the estimated dollar volume of each activity.

Thank you for your prompt attention to this request.

Sincerely,



Elizabeth Warren  
United States Senator



Richard J. Durbin  
United States Senator



Sheldon Whitehouse  
United States Senator



Bernard Sanders  
United States Senator

July 7, 2021

Gary Gensler  
Chairman  
U.S. Securities and Exchange Commission (SEC)  
100 F Street NE  
Washington, DC 20549

Dear Chairman Gensler,

I write to request information regarding the Security and Exchange Commission's (SEC's) authority to properly regulate cryptocurrency exchanges and to determine if Congress needs to act to ensure that the SEC has the proper authority to close existing gaps in regulation that leave investors and consumers vulnerable to dangers in this highly opaque and volatile market.

Cryptocurrency exchanges are platforms where individuals buy and sell cryptocurrencies.<sup>1</sup> These exchanges vary in the type of cryptocurrencies they allow individuals to trade, the fees charged to consumers for using the platform, the disclosures they provide, and whether or not the exchange simultaneously keeps crypto assets in custody. As demand for cryptocurrencies has grown in recent years, the amount of trading activity on cryptocurrency exchanges has also grown, particularly amongst the largest exchanges.<sup>2</sup> The volume of trading on Coinbase, the largest cryptocurrency exchange in the United States, grew from \$30 billion in the first quarter of 2020 to \$335 billion in the first quarter of 2021, a more than 10-fold increase.<sup>3</sup> Moreover, Coinbase recently became the first major cryptocurrency company to list its shares on a U.S. stock exchange when it began trading on the Nasdaq in April 2021 – giving “mainstream investors who may be wary of directly buying risky digital securities the ability to own stock in a Securities and Exchange Commission-approved business that facilitates the transactions.”<sup>4</sup>

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<sup>1</sup> Congressional Research Service, “Digital Assets and SEC Regulation,” Eva Su, January 30, 2020, [https://www.crs.gov/Reports/R46208?source=search&guid=9da4d9162360473c967131c5f8e5c87b&index=0#\\_Toc31292659](https://www.crs.gov/Reports/R46208?source=search&guid=9da4d9162360473c967131c5f8e5c87b&index=0#_Toc31292659).

<sup>2</sup> Forbes, “Crypto Exchanges And Bitcoin Are Poised For Massive Growth By 2030,” Leeor Shimron, June 20, 2020, <https://www.forbes.com/sites/leeorshimron/2020/06/20/crypto-exchanges-and-bitcoin-are-poised-for-massive-growth-by-2030/?sh=12049da73f83>; Yahoo Finance, Big Three Crypto Exchanges Handle 77% Of Global Trading Volume, Says New BDC Consulting Study, BTC Peers, April 24, 2021, <https://finance.yahoo.com/news/big-three-crypto-exchanges-handle-171755919.html>.

<sup>3</sup> Coinbase, Letter to Shareholders, First Quarter 2021 Earnings, May 13, 2021, [https://s27.q4cdn.com/397450999/files/doc\\_financials/2021/q1/Q1'21-COIN-Shareholder-Letter.pdf](https://s27.q4cdn.com/397450999/files/doc_financials/2021/q1/Q1'21-COIN-Shareholder-Letter.pdf).

<sup>4</sup> New York Times, “Coinbase’s Public Listing is a Cryptocurrency Coming-Out Party,” Erin Griffith, April 14, 2021, <https://www.nytimes.com/2021/04/14/business/coinbase-ipo-stock.html>; Coindesk, “Coinbase Direct Listing

The increased use of cryptocurrency exchanges presents unique risks to consumers. Although they describe themselves as cryptocurrency “exchanges,” these platforms lack the same types of basic regulatory protections as traditional national securities exchanges like the New York Stock Exchange or Nasdaq.<sup>5</sup> And even though they share many features of traditional securities exchanges, such as “bring[ing] together buyers and sellers, execut[ing] trades, and display[ing] prices,”<sup>6</sup> cryptocurrency exchanges may be able to escape federal regulation if the digital asset being traded does not qualify as a security under federal law.

As you acknowledged in May, “these exchanges do not have a regulatory framework at the SEC or at our sister agency, the Commodity Futures Trading Commission,” and as a result, “there’s really no protection around fraud or manipulation.”<sup>7</sup> Instead, these platforms are generally subject to state-level regulations for money transfer or payment services.<sup>8</sup> These regulations were not initially designed to provide oversight for sophisticated, exchange-like operations and are insufficient to ensure a safe cryptocurrency marketplace.<sup>9</sup>

The lack of regulation ensures that “investors have no way of knowing whether the trading volume and prices they report reflect real activity or market manipulation.”<sup>10</sup> In order to receive a higher ranking on sites that list cryptocurrency exchanges, “many exchanges routinely fake their volumes to attract more coins and users.”<sup>11</sup> One study indicated that 95% of the volume of trading of Bitcoin listed on CoinMarketCap, a website used to measure cryptocurrency trading volume, “is fake and/or non-economic in nature.”<sup>12</sup> According to another study, half of the increase in the price of Bitcoin in 2017 was due to manipulation by a single entity trading on some of the major exchanges, suggesting that “instead of thousands of investors moving the price of Bitcoin, it’s just one large one.”<sup>13</sup>

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Gets \$100B+ Valuation as Share Price Jumps in Nasdaq Debut,” Bradley Keoun, Damanick Dantes, April 14, 2021, <https://www.coindesk.com/coinbase-shares-crypto-exchange-stock-listing-nasdaq>.

<sup>5</sup> Congressional Research Service, “Digital Assets and SEC Regulation,” Eva Su, January 30, 2020, [https://www.crs.gov/Reports/R46208?source=search&guid=9da4d9162360473c967131c5f8e5c87b&index=0#\\_Toc31292659](https://www.crs.gov/Reports/R46208?source=search&guid=9da4d9162360473c967131c5f8e5c87b&index=0#_Toc31292659).

<sup>6</sup> *Id.*

<sup>7</sup> Barron’s, “Cryptocurrency Exchanges Need Direct Regulation, SEC Chair Says,” Avi Salzman, May 6, 2021, <https://www.barrons.com/articles/cryptocurrency-exchanges-regulation-sec-coinbase-51620335275>.

<sup>8</sup> Congressional Research Service, “Digital Assets and SEC Regulation,” Eva Su, January 30, 2020, [https://www.crs.gov/Reports/R46208?source=search&guid=9da4d9162360473c967131c5f8e5c87b&index=0#\\_Toc31292659](https://www.crs.gov/Reports/R46208?source=search&guid=9da4d9162360473c967131c5f8e5c87b&index=0#_Toc31292659).

<sup>9</sup> *Id.*

<sup>10</sup> Bloomberg, “On Crypto Exchanges, the Trades Don’t Always Add Up,” Olga Kharif, July 25, 2019, <https://www.bloomberg.com/news/articles/2019-07-25/on-crypto-exchanges-the-trades-don-t-always-add-up#:~:text=Outside%20the%20blockchain%2C%20transaction%20data%20is%20vulnerable%20to%20manipulation>

<sup>11</sup> *Id.*

<sup>12</sup> Bitwise Asset Management Presentation to the U.S. Securities and Exchange Commission, May 19, 2019, <https://www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf>.

<sup>13</sup> John Griffin and Amin Shams, “Is Bitcoin Really Untethered?,” *Journal of Finance*, June 15, 2020, <https://onlinelibrary.wiley.com/doi/full/10.1111/jofi.12903>; Yahoo News, “A single whale on Bitfinex likely manipulated bitcoin’s historic surge in 2017, academics say,” Yogita Khatri, November 9, 2019, <https://news.yahoo.com/single-whale-bitfinex-likely-manipulated-073100397.html>.

These regulatory gaps also extend to the way that cryptocurrency exchanges hold an individual's crypto-assets, which would not be allowed on a traditional securities exchange.<sup>14</sup> As a result, cryptocurrency traded on exchanges is “deposited and probably co-mingled with the deposits of others. It is not recorded on the blockchain; it is represented by an entry in an electronic, centralized ledger. It is uninsured and there is no guarantee [the trader] will get it. [Traders] must rely on—trust—the intermediary.”<sup>15</sup> Additionally, because cryptocurrency exchanges lack the same type of regulation as traditional securities exchanges, they can also engage in practices like proprietary trading and wash trading to take advantage of their customers without sufficient disclosures.<sup>16</sup> An investigation of several major cryptocurrency exchanges by the New York State Office of the Attorney General in 2018 found that nearly 20% of the executed volume on Coinbase's platform was attributable to its own trading, exposing customers to liquidity risks they may not be aware of.<sup>17</sup>

The harms to consumers as a result of this under-regulated market are real and continue to proliferate in the absence of effective SEC regulations. During the six-month period from October 2020 to March 2021, nearly 7,000 people reported losses from cryptocurrency scams, resulting in a cumulative \$80 million lost—“about twelve times the number of reports and nearly 1,000% more in reported losses” compared to the same period a year earlier.<sup>18</sup> Scams have surged on “decentralized finance” (DeFi) platforms in particular, which offer investors higher interest rates and whose developers are often anonymous – making it “easy to carry out ‘rug pulls,’ a scam in which unscrupulous operators raise money for a project, only to abscond with an investors’ funds.”<sup>19</sup> According to reports, “[f]rom January through April, DeFi fraudsters stole \$83.4 million, more than double the haul from all last year.”<sup>20</sup> Investors may also be exposed to risks indirectly as publicly traded firms amass their own cryptocurrency holdings. News reports suggest that MicroStrategy, a business intelligence firm, may be serving as a “kind of pseudo Bitcoin ETF...enabling investors to get exposure to Bitcoin without owning it.”<sup>21</sup>

As the cryptocurrency markets continue to grow and expand, the lack of regulation to provide basic investor protections is unsustainable. The SEC regulates national securities exchanges, and cryptocurrency exchanges that operate in a similar manner should be subject to similar regulatory standards. To better understand the SEC's existing authority to protect consumers and investors who participate in cryptocurrency exchanges, and the potential need for Congress to

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<sup>14</sup> Brookings, “It’s Time to Strengthen the Regulation of Crypto-Assets,” Timothy G. Massad, March 2019, <https://www.brookings.edu/wp-content/uploads/2019/03/Timothy-Massad-Its-Time-to-Strengthen-the-Regulation-of-Crypto-Assets-2.pdf>.

<sup>15</sup> *Id.*

<sup>16</sup> *Id.*

<sup>17</sup> Office of the New York State Attorney General, “Virtual Markets Integrity Initiative Report,” Barbara D. Underwood, September 18, 2018, <https://virtualmarkets.ag.ny.gov/#key-findings>.

<sup>18</sup> Federal Trade Commission, “Cryptocurrency buzz drives record investment scam losses,” Emma Fletcher, May 17, 2021, <https://www.ftc.gov/news-events/blogs/data-spotlight/2021/05/cryptocurrency-buzz-drives-record-investment-scam-losses>.

<sup>19</sup> Wall Street Journal, “Crypto Frauds Target Investors Hoping to Cash In on Bitcoin Boom,” Alexander Osipovich, June 7, 2021, <https://www.wsj.com/articles/crypto-frauds-target-investors-hoping-to-cash-in-on-bitcoin-boom-11623058380>.

<sup>20</sup> *Id.*

<sup>21</sup> Decrypt, “Is MicroStrategy Becoming a De Facto Bitcoin ETF? Experts Disagree,” Liam Frost, February 17, 2021, <https://decrypt.co/57977/is-microstrategy-becoming-a-de-facto-bitcoin-etf-experts-disagree>.

take additional action on these matters, I ask that you provide a response to the following questions by no later than July 28, 2021.

1. Do you believe that cryptocurrency exchanges are currently operating in a “fair, orderly, and efficient” manner? If not, what problems has the SEC identified that are associated with the use of these exchanges?
2. How do the characteristics of assets traded on cryptocurrency exchanges differ from those of assets traded on traditional securities exchanges? Do these characteristics warrant additional investor and consumer protections for cryptocurrency exchanges relative to those provided for traditional exchanges?
3. Describe the extent of the SEC’s existing authority to regulate existing cryptocurrency exchanges. To what extent does that authority differ from the agency’s authority over traditional securities exchanges?
4. Foreign regulators have moved to restrict cryptocurrency exchanges in their jurisdictions in recent years while calling for international coordination to address regulatory gaps.<sup>22</sup> One specific regulatory challenge may arise from the unique organizational structure of some global exchanges. For example, Binance, one of the largest cryptocurrency exchanges in the world by trading volume, “is everywhere and yet based nowhere. The cryptocurrency exchange has processed trillions of dollars in trades this year as it transfers digital and conventional money around the world through a constellation of affiliates. And yet it has no headquarters.”<sup>23</sup> In your view, to what extent is international coordination needed to address gaps in the regulation of cryptocurrency exchanges and ensure the protection of investors and consumers in the United States?
5. In a recent address, Commodity Futures Trading Commission (CFTC) Commissioner Dan M. Berkovitz stated: “In a pure ‘peer-to-peer’ DeFi system... [t]here is no intermediary to monitor markets for fraud and manipulation, prevent money laundering, safeguard deposited funds, ensure counterparty performance, or make customers whole when processes fail. A system without intermediaries is a Hobbesian marketplace with each person looking out for themselves. Caveat emptor—‘let the buyer beware.’”<sup>24</sup> Berkovitz further argues that DeFi derivative instruments are likely illegal under the Commodity Exchange Act.<sup>25</sup>
  - a. Do you agree with Commissioner Berkovitz’s assessment of DeFi platforms?

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<sup>22</sup> Wall Street Journal, “Binance Crypto Exchange Ordered to Cease U.K. Activities,” Anna Hirtenstein, June 27, 2021, <https://www.wsj.com/articles/binance-crypto-exchange-ordered-to-cease-u-k-activities-11624812672>; Bloomberg, “IMF Calls for Global Talks on Cryptocurrencies,” Shelly Hagan and Andrew Mayeda, January 18, 2018, <https://www.bloomberg.com/news/articles/2018-01-18/imf-calls-for-global-talks-on-digital-fx-as-bitcoin-whipsaws>.

<sup>23</sup> Financial Times, “Binance crackdown: regulators tussle with ‘wild west’ of crypto,” Adam Samson and Brooke Masters, July 2, 2021, <https://www.ft.com/content/a10c297f-c8dd-48b1-9744-09d4ff2e89ca>.


<sup>24</sup> Commissioner Dan M. Berkovitz, “Climate Change and Decentralized Finance: New Challenges for the CFTC,” June 8, 2021, <https://www.cftc.gov/PressRoom/SpeechesTestimony/opaberkovitz7>.

<sup>25</sup> *Id.*

- b. Do decentralized platforms raise similar investor and consumer protection concerns within the SEC's jurisdiction? If so, what challenges does the SEC face in addressing these concerns?
- c. Do the characteristics of decentralized cryptocurrency exchanges warrant additional investor and consumer protections relative to those needed for centralized cryptocurrency exchanges?

Thank you for your attention to this important matter, and I look forward to your response.

Sincerely,

  
Elizabeth Warren  
United States Senator

July 26, 2021

The Honorable Janet Yellen  
Secretary  
United States Department of Treasury  
1500 Pennsylvania Avenue, N.W.  
Washington, D.C. 20220

Dear Secretary Yellen:

I am writing to you in your capacity as Chair of the Financial Stability Oversight Council (FSOC) regarding the need for a coordinated and cohesive regulatory strategy to mitigate the growing risks that cryptocurrencies pose to the financial system. FSOC is responsible for identifying and responding to emerging risks to financial stability, and I am pleased to see that the Council has begun devoting more attention to this critical issue.<sup>1</sup> I urge FSOC to act with urgency and use its statutory authority to address cryptocurrencies' risks and ensure the safety and stability of our financial system.

I have become increasingly concerned about the dangers cryptocurrencies pose to investors, consumers, and the environment in the absence of sufficient regulation in the United States.<sup>2</sup> However, as the demand for cryptocurrencies continues to grow and these assets become more embedded in our financial system, the Council must determine whether these trends raise concerns beyond investor and consumer protection and extend to broader systemic vulnerabilities that could threaten financial stability.

As of June 2021, there are estimated to be more than 2,000 cryptocurrencies in global circulation, with a market value that could exceed \$2 trillion.<sup>3</sup> There are a number of ways that our financial system has become exposed to these assets to such an extent that material distress

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<sup>1</sup> Financial Stability Oversight Council, "Minutes of the Financial Stability Oversight Council," June 11, 2021, [https://home.treasury.gov/system/files/261/FSOC\\_Minutes\\_6-11-21\\_1.pdf](https://home.treasury.gov/system/files/261/FSOC_Minutes_6-11-21_1.pdf); Financial Stability Oversight Council, "Minutes of the Financial Stability Oversight Council," March 31, 2021, [https://home.treasury.gov/system/files/261/FSOC\\_Minutes\\_6-11-21.pdf](https://home.treasury.gov/system/files/261/FSOC_Minutes_6-11-21.pdf).

<sup>2</sup> Letter from Senator Warren to Securities and Exchange Commission Chair Gensler, July 7, 2021, <https://www.warren.senate.gov/imo/media/doc/Draft%20SEC%20Crypto%20Exchange%20Letter%2007.7.2021%20clean.pdf>; Remarks from Senator Warren to the U.S. Senate Banking, Housing, and Urban Affairs Committee's Subcommittee on Economic Policy, June 9, 2021, <https://www.banking.senate.gov/newsroom/majority/at-hearing-warren-delivers-remarks-on-digital-currency>.

<sup>3</sup> Written testimony of Sarah Hammer to the U.S. House Committee on Financial Services, June 30, 2021, <https://financialservices.house.gov/uploadedfiles/hrg-117-ba09-wstate-hammers-20210630.pdf>.



in the cryptocurrency market could spread throughout the financial sector. Some examples of this exposure include:

- **Exposure to Hedge Funds and Other Investment Vehicles that Lack Transparency:** Hedge funds are “aggressively increasing exposure to blockchain technologies and cryptocurrency,”<sup>4</sup> with a recent survey of “hedge funds managing an average of [\$]7.2 billion show[ing] that North American funds expect to have a 10.6% average exposure to cryptocurrency by 2026.”<sup>5</sup> According to another survey, 27% of institutional investors in the United States – including hedge funds, pension funds, and family offices – held crypto assets in 2020, up from 22% in the previous year.<sup>6</sup> At the same time as their participation in this market increases, the lack of standardized data reporting requirements makes the exact extent of hedge funds and other institutional investors’ exposure to this market a “blind spot for regulators and banks acting as prime brokers to these funds.”<sup>7</sup>
- **Risk to Banks:** As the Bank of International Settlements has noted, “the growth of crypto-assets and related services has the potential to raise financial stability concerns and increase risks faced by banks.”<sup>8</sup> Some cryptocurrencies are highly volatile, which presents liquidity, credit, market, and operational risks for banks.<sup>9</sup> These risks may be further amplified if cryptocurrency companies are able to gain banking charters without being required to abide by the same safety and soundness regulations to which traditional banks are subject.<sup>10</sup>
- **Unique Threats Posed by Stablecoins:** Stablecoins are a particular type of cryptocurrency pegged to the value of one or multiple assets. Because of the interconnectedness of a potential global stablecoin network, a “poorly designed and unregulated”<sup>11</sup> stablecoin initiative could pose risks to financial stability, particularly in the event there is a run “where many holders attempt to liquidate their stablecoins at the same time...with potentially severe consequences for domestic or international economic activity, asset prices, or financial stability.”<sup>12</sup>

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<sup>4</sup>Forbes, “Hedge Funds Invest in Crypto,” Carrie McCabe, July 21, 2021,

<https://www.forbes.com/sites/carriemccabe/2021/07/21/hedge-funds-invest-in-crypto/?sh=5a5558c7570c>.

<sup>5</sup> Written testimony of Alexis Goldstein to the U.S. House Committee on Financial Services, June 30, 2021,

<https://financialservices.house.gov/uploadedfiles/hrg-117-ba09-wstate-goldsteina-20210630-u1.pdf>

<sup>6</sup> Business Insider, “As many as 36% of large investors own crypto assets, and bitcoin is the most popular, Fidelity says,” Carmen Reinicke, June 9, 2020, <https://markets.businessinsider.com/currencies/news/crypto-assets-bitcoin-owned-large-investors-institutional-fidelity-survey-percentage-2020-6>.

<sup>7</sup> *Id.*

<sup>8</sup> Bank for International Settlements, “Discussion Paper: Designing a prudential treatment for crypto-assets,” Basel Committee on Banking Supervision, December 2019, <https://www.bis.org/bcbs/publ/d490.pdf>.

<sup>9</sup> *Id.*

<sup>10</sup> Independent Community Bankers of America, “Cryptocurrencies & Digital Dollar,” <https://www.icba.org/our-positions-a-z/payment/payments/cryptocurrencies>.

<sup>11</sup> Board of Governors of the Federal Reserve System, “Financial Stability Report,” November 2019, <https://www.federalreserve.gov/publications/files/financial-stability-report-20191115.pdf>.

<sup>12</sup> *Id.*

- **Use in Cyberattacks that Can Disrupt the Financial System:** In its 2017 Financial Stability Report, the Office of Financial Research noted that cryptocurrencies “can increase the incentive to conduct malicious cyber activity.”<sup>13</sup> Indeed, between 2019 and 2020, the cost of ransomware attacks reported to the Federal Bureau of Investigation grew by more than 200%, a spike cybersecurity professionals partly attributed to the growth of cryptocurrencies, which are “less regulated and harder to trace than other forms of payment, making them attractive to hackers.”<sup>14</sup> According to the Office of Financial Research, these cyber incidents can, in turn, threaten financial stability when the affected firm provides a service that cannot be substituted, or there is a loss of confidence among market participants and data integrity is compromised.<sup>15</sup>
- **Risks from “Decentralized Finance” (DeFi):** DeFi refers to a fast-growing and highly opaque corner of the cryptocurrency market which allows users to engage in a variety of financial activities – including lending, borrowing, and trading derivatives to take on leverage – without an intermediary like a bank.<sup>16</sup> Given that participants and project developers may remain anonymous, DeFi could present particularly severe financial stability risks. According to a 2019 Financial Stability Board report, decentralized financial technologies may raise new forms of concentration risks, unclear allocation of liability, and recovery and resolution challenges.<sup>17</sup>

These examples demonstrate the extent to which cryptocurrencies currently touch or can ripple through nearly every corner of the financial system. As such, it is essential that the policy response to the risks posed by these assets is coordinated and holistic, rather than fragmented amongst individual financial agencies. As the body responsible for coordinating amongst U.S. financial regulators, FSOC should take a leading role in developing a comprehensive regulatory regime for cryptocurrencies, especially since “no single regulator inspects cryptocurrency exchanges or brokers,” leaving much of the cryptocurrency market outside of regulators’ individual jurisdictions.<sup>18</sup>

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<sup>13</sup> Office of Financial Research, “Financial Stability Report,” 2017, [https://www.financialresearch.gov/financial-stability-reports/files/OFR\\_2017\\_Financial-Stability-Report.pdf](https://www.financialresearch.gov/financial-stability-reports/files/OFR_2017_Financial-Stability-Report.pdf).

<sup>14</sup> PBS News Hour, “Why ransomware attacks are on the rise – and what can be done to stop them,” Lynsey Jeffery and Vignesh Ramachandran, July 8, 2021, <https://www.pbs.org/newshour/nation/why-ransomware-attacks-are-on-the-rise-and-what-can-be-done-to-stop-them>.

<sup>15</sup> *Id.*

<sup>16</sup> Wall Street Journal, “DeFi is Helping to Fuel the Crypto Market Boom – and Its Recent Volatility,” Paul Vigna, June 3, 2021, <https://www.wsj.com/articles/defi-is-helping-to-fuel-the-crypto-market-boomand-its-recent-volatility-11622712602>.

<sup>17</sup> Financial Stability Board, “Decentralised financial technologies,” June 6, 2019, <https://www.fsb.org/wp-content/uploads/P060619.pdf>.

<sup>18</sup> Wall Street Journal, “Bitcoin Fraud Concerns Draw Scrutiny From Regulators,” Dave Michaels and Andrew Ackerman, July 6, 2021, <https://www.wsj.com/articles/bitcoin-draws-more-scrutiny-from-regulators-worried-about-fraud-11625576400>.

One of FSOC’s statutory purposes is “to respond to emerging threats to the stability of the United States financial system”.<sup>19</sup> Beyond its ability to serve as a forum for regulators to discuss and coordinate strategies in response to financial stability threats, FSOC was given special authorities to address these risks. In addition to its authority to designate individual institutions as “systemically important,” FSOC also has the power to designate certain financial activities to be subject to heightened regulation. Specifically, Section 120 of the Dodd Frank Wall Street Reform and Consumer Protection Act gives FSOC the ability to “provide for more stringent regulation of a financial activity by issuing recommendations to the primary financial regulatory agencies” when the “conduct, scope, nature, size, scale, concentration, or interconnectedness of such activity or practice could create or increase the risk of significant liquidity, credit, or other problems spreading among bank holding companies and nonbank financial companies, financial markets of the United States, or low-income, minority, or underserved communities.”<sup>20</sup>

FSOC should review this matter and determine whether it is appropriate to utilize its statutory authority to contain the systemic risks posed by the growing cryptocurrency market. The longer that the United States waits to adapt the proper regulatory regime for these assets, the more likely they will become so intertwined in our financial system that there could be potentially serious consequences if this market comes under stress.

Thank you for your attention to this important matter.

Sincerely,



Elizabeth Warren  
United States Senator

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<sup>19</sup> Dodd-Frank Wall Street Reform and Consumer Protection Act, Public Law 111-203.

<sup>20</sup> *Id.*