



PEAMUN XIV



United Nations General Assembly
Environmental Impact of Cryptocurrencies



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Letter to the Delegates

Dear Delegates,

Welcome to PEAMUN XIV! My amazing Vice-Chair, Lally Lavin, and I look forward to meeting you this fall and hearing your creative ideas in committee. We hope that this background guide can aid you in your pre-conference preparation and recommend that you dig deeper with further research.

My name is Leela Gandhi and I am your Chair. I am a junior at Phillips Exeter who loves to play golf, ski, and read in my free time. I joined MUN my freshman year and have been both a delegate and a Vice-Chair at PEAMUN. My favorite part about Model UN has been the amazing opportunities to meet many delegates from all across the country. I hope that you all have a similar experience at PEAMUN this year.

Hi, my name is Lally Lavin and I am your Vice Chair. I am a four-year senior here at Phillips Exeter Academy. I like to play tennis and squash and plan on majoring in Chemistry. I've been involved in MUN since the end of my freshman year and have PEAMUN experience as both a delegate and a staffer. I'm really excited for this year's committee; we have a wonderful topic and lots of fun in store for the delegates!

We chose the topic Cryptocurrencies and their Environmental Impact because, though cryptocurrencies and their underlying technology have taken the world by storm and revolutionized the global economy, little has been done to address the incredible damage cryptocurrencies are imparting on our environment in the form of carbon emissions. We hope that when formulating your creative solutions, you take into account both cryptocurrencies' benefits as an innovative technology and the harm that they cause to our planet.

We cannot wait to hear you debate and discuss your solutions in committee! Please reach out to us if you have any further questions.

Best,

Leela Gandhi and Lally Lavin
(lgandhi@exeter.edu and elavin@exeter.edu)



Topic Overview

Event Summary

Bitcoin and other cryptocurrencies use an incredible amount of energy and release incredibly high amounts of carbon dioxide, thus contributing to the ongoing climate crisis and global warming. As international interest and use increases, so do the carbon emissions. Delegates, you are tasked with coming up with a solution to dramatically reduce these carbon emissions and use less energy.



History of the Issue

On October 31, 2008, amid the financial crisis, a “white paper” released under the pseudonym Satoshi Nakamoto appeared in the depths of the internet. It described a virtual currency referred to as bitcoin, “a purely peer to peer version of an electronic cash [that] would allow online payments to be sent directly from one party to another without going through a financial institution.”¹ Over the next few years, the innovative concept of cryptocurrencies began to gain traction.

Enthusiasts began to acquire bitcoin by “mining,” a process of validating transactions on the ledger technology known as the blockchain and then receiving a reward in the form of bitcoin. Blockchains are decentralized ledgers, are not managed by a central authority, and have no central servers or databases. Instead, thousands of individual nodes or computers help record transactions and receive rewards in the form of bitcoins as an incentive. Each node holds a copy of the same ledger. In order to maintain the veracity of the ledger and prevent an individual from recording a false transaction, each block of transactions recorded must match up with at least 50% of the other nodes’ records.

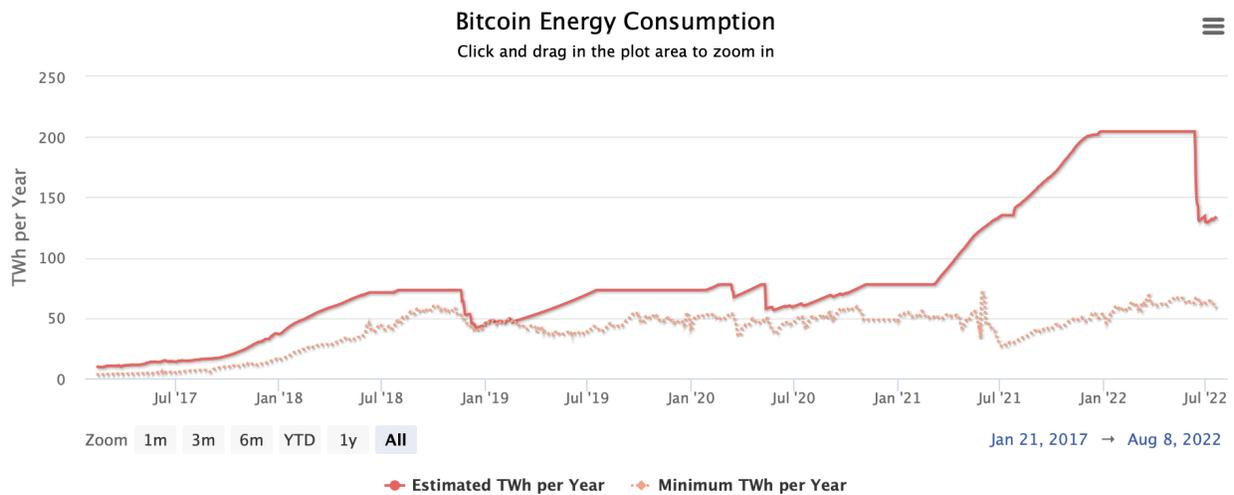
One individual could potentially take control of the blockchain by owning more than 50% of the nodes and use them to compromise the veracity of the recorded transactions. However, to prevent this from happening, each node must complete a difficult computation known as Proof of Work, that consumes large amounts of energy, before it can add a block of transactions to the blockchain ledger and receive its reward in the form of bitcoin. This energy consuming process thwarts potential rogue individuals; in order for one individual to take over

¹ Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System.”



the blockchain by using 51% of the network's nodes to record a false transaction, it would cost them \$13 billion in electricity.²

Though Proof of Work is an innovative solution, it is highly energy inefficient. According to the Bitcoin Energy Consumption Index, Bitcoin emits 74.76 megatons of carbon dioxide annually, which is comparable to the carbon footprint of the country of Colombia.³ Even a single transaction of bitcoin causes irreparable damage; one transaction emits approximately 830 kg of carbon dioxide, which is equivalent to the carbon footprint of 1,843,219 credit card transactions.⁴



² Bitcoin Energy Consumption Index

³ Ibid.

⁴ Ibid.



Potential Solutions

In 2021, more than 250 individuals and corporations involved in the cryptocurrency field signed the Crypto Climate Accord, an agreement that vows to achieve zero emissions in the industry by 2040.⁵ Creating more treaties, accords, and agreements between countries that are diverse in resources, location, and association with the cryptocurrency industry is crucial towards ensuring a greener future for our planet.

Another solution is to replace Proof of Work with a more energy efficient alternative. In an event known as The Merge, planned for August 2022, the Ethereum blockchain will convert to a more energy-efficient cryptographic proof, known as Proof of Stake. The Ethereum Foundation explains that Proof of Work typically consumes 5.13 gigawatts of energy, while Proof of Stake only expends 0.00262 gigawatts of energy, creating a 99.95% reduction in energy use in the Ethereum blockchain.⁶ This alternative could significantly shrink Ethereum's carbon footprint, setting an example for other cryptocurrencies.

Another solution that proponents of reform have offered is using renewable forms of energy to mine bitcoin. One such example is "bitcoin fracking," or mining bitcoin off of flare gas. In the process of oil and gas extraction, extra methane that has been released is burned, releasing CO₂ into the atmosphere. This is both monetarily and energy inefficient. Two crypto enthusiasts in Texas have used generators to capture the energy released by this methane and utilized that energy to power their cryptocurrency mining farms.

⁵ "Supporters and Signatories." Crypto Climate Accord

⁶ Beekhuizen, "Ethereum's energy usage will soon decrease by ~99.95%."



However, some governments believe that even with these potential solutions, the amount of energy expended by the cryptocurrency industry in general is excessive. Spurred by this thought and fears that the anonymity associated with individuals who use cryptocurrency and the blockchain could enable an increase in money laundering and fraud, countries such as Bolivia, China, Egypt, Iraq, Qatar, Algeria, Bangladesh, and Morocco have banned cryptocurrency mining and transactions, viewing this as the ultimate solution.



Background

On February 1, 2018, the Development Strategy and Policy Analysis Unit hosted a seminar titled “Understanding Bitcoin, Blockchains, and the Crypto Economy,” labeling it a “frontier issue.”⁷ Panelists included “Ferdinando Ametrano (@Ferdinando1970), Adjunct Professor of “Interest Rate Derivatives” and “Bitcoin and Blockchain Technology” at the [Università Milano Bicocca](#) and [David Yermack](#), Chair of the Finance Department of New York University [Leonard N. Stern School of Business](#),”⁸ who answered questions about cryptocurrency. The UN’s 2018 World Economic and Social Survey included multiple sections about cryptocurrency, categorizing it as a “Frontier technology for a sustainable future.”⁹ Though the report didn’t include information on Bitcoin’s environmental concerns, it did mention another form of cryptocurrency, the climatecoin, which “[were] being considered as a basis for creating a global market for carbon emissions.”¹⁰ Since 2018, the topic of cryptocurrency has appeared in several UN reports, conferences, and objectives, but nothing specifically connecting Bitcoin to environmental concerns. The UN also published several news stories, one titled “Sustainability solution or climate calamity? The dangers and promise of cryptocurrency technology,”¹¹ which is particularly compelling to our topic. Though the UN hadn’t shied away from discussing or reporting on Bitcoin, it failed to offer advice or create any policies about its regulation until June of 2022. Then, in UNCTAD Policy Brief No. 100, titled “All that glitters is not gold: The high cost of leaving cryptocurrencies unregulated,”¹² the UN strongly recommended restricting

⁷ “Seminar: Understanding Bitcoin, Blockchains and the Crypto Economy”

⁸ Ibid.

⁹ *World Economic And Social Survey 2018: Frontier Technologies For Sustainable Development*

¹⁰ Ibid.

¹¹ “Sustainability solution or climate calamity? The dangers and promise of cryptocurrency technology”

¹² “All that glitters is not gold: The high cost of leaving cryptocurrencies unregulated”



cryptocurrencies. Though they emphasize that “There is no one-size-fits-all policy response” and that “Countries need to tailor recommended policies,” they still recommended three policies: 1) “Ensuring comprehensive financial regulation,”¹³ 2) “Restricting or prohibiting the advertisement of crypto-exchanges and digital wallets in public spaces and on social media,”¹⁴ and 3) “Creating a public payment system.”¹⁵ They recommended these policies solely to curtail non-environmental related risks, as they failed to mention the energy consumption and large carbon footprint associated with Bitcoin.

¹³ Ibid

¹⁴ Ibid

¹⁵ Ibid



Potential Bloc Positions

There are various potential blocs that could be formed in committee. One approach is to create a bloc based on the government's approach to regulation. Countries with stricter regulations and complete bans on cryptocurrency mining such as China, Bangladesh, Russia, Turkey, Egypt, and Iraq may work with each other, while countries such as El Salvador and the Central African Republic who have encouraged the adoption of cryptocurrencies as legal tender, may form a bloc.

Another approach to forming blocs could be based on the government's approach to environmental crises. Countries with more robust plans of action may work with other countries who have similar agendas. However, another solution could be creating alliances amongst countries who have access to these resources and countries who may not.



Guiding Questions

1. How does my country benefit from regulations on cryptocurrencies? How do regulations disadvantage my country?
2. How has my country responded to other environmental crises? Does it have policies to regulate its carbon emissions?
3. How is the future growth of Bitcoin going to impact my country?
4. What other countries feel similarly to my country? Do those countries also have similar energy consumption laws? What makes those countries similar to mine, aside from cryptocurrencies?
5. What solutions align with my country the best? Is it best to pursue ways to make cryptocurrency more environmentally friendly, or to place restrictions on it, or to ban it all together?



Guidelines for Position Papers

Position papers are not mandatory at PEAMUN, however if you would like to submit one and receive feedback, you can email your position paper to lgandhi@exeter.edu and elavin@exeter.edu by October 30. We are also more than happy to answer any questions you may have about the committee or PEAMUN in general!



Links to Further Research

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2. [https://www.forbes.com/advisor/investing/cryptocurrency/bitcoins-energy-usage-explained/#:~:text=It's%20estimated%20that%20Bitcoin%20consumes,terawatt%2Dhours%20\(TWh\).](https://www.forbes.com/advisor/investing/cryptocurrency/bitcoins-energy-usage-explained/#:~:text=It's%20estimated%20that%20Bitcoin%20consumes,terawatt%2Dhours%20(TWh).)
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<https://news.un.org/en/story/2021/06/1094362> .



8. *World Economic And Social Survey 2018: Frontier Technologies For Sustainable Development. United Nations Department of Economic and Social Affairs. October 8, 2018.*

<https://www.un.org/development/desa/dpad/publication/world-economic-and-social-survey-2018-frontier-technologies-for-sustainable-development/>.