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PIllegal Roads Leading to Legal Ends: Bitcoin Mining in Malaysia

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ABSTRACT

A decade ago, no one would have envisioned that Bitcoin would be as lucrative as it is today. What many first thought of as a scam, has now turned out to be one of the fastest growing digital currency in the world. This paper attempts to explain the legal framework and implications of Bitcoin mining, mostly in Malaysia, while also citing examples of other nations. The research attempts to shed light on how mining actually becomes illegal, despite not being directly penalized under most laws. The second part of the paper aims to critically analyse the solutions and reforms that can be put into motion in order to further facilitate the growth of Bitcoin in Malaysia. While some nations have started amending existing laws and promulgating new laws to address the rapid growth of Bitcoin, most countries still have no clear guidelines outlining Bitcoin mining and the Bitcoin trade in general. This paper also attempts to shed light on how the Bitcoin mining process can be made more environmentally friendly, so as to benefit both miners as well as the public at large.

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1. Introduction

According to the Cambridge English dictionary, Bitcoin is a digital currency that is produced by a public network rather than any government and uses special codes to keep it secure.[1] Bitcoin was supposedly designed by 'Satoshi Nakamoto', a pseudonym for the person or people who designed the original bitcoin protocol in 2008 and launched the network in 2009. Back then, Nakamoto posted a paper titled 'Bitcoin P2P e-cash paper', which contained a link to a white paper called 'Bitcoin: A Peer-to-Peer Electronic Cash System'. In these papers, Nakamoto laid out the concept for Bitcoin as a decentralized, digital currency.[2]

Bitcoin is a relatively new invention, which has been around for about twelve years.[3] Essentially, Bitcoin is powered by blockchain technology. Blockchain is a cryptographic distributed ledger, comprised of immutable, digitally recorded data in packages called blocks that are 'chained' together so that it can be shared and accessed by anyone with the appropriate permissions.[4] In a traditional setting, the public would spend money but this money would go through banks, which usually charge fees for the transaction. What Bitcoin does is that it eliminates the intermediary (which are mostly banks and governments) and allows people to directly send and receive money from anywhere in the world. The terms 'digital currency', 'virtual currency', 'alternative currency', 'internet currency' or 'crypto currency' are used as synonyms of Bitcoin. Bitcoin provides miners a reward or incentive for their mining services. Bitcoins are traded online on digital currency exchange platforms in broker platforms such as Coinbase and anyone can buy them with the real currencies, for example, the US dollar.[5]

2. Legality of Bitcoin Globally

Over the years, the legality of Bitcoin has been challenged globally. A few countries have in fact banned crypto currencies altogether, for instance Bangladesh, Bolivia, Ecuador, and

1 Cambridge Dictionary, 'Bitcoin' (2021) <https://dictionary.cambridge.org/dictionary/english/bitcoin>.

2 Coryanne Hicks, 'The History of Bitcoin' (USnews.com, 1 September 2020) <https://money.usnews.com/investing/articles/the-history-of-bitcoin>.

3 Tal Yellin, Dominic Aratari and Jose Pagliery, 'What is Bitcoin?' (CNNMoney, 2018) <https://money.cnn.com/infographic/technology/what-is-bitcoin/index.html>.

4 Nur Husna Zakaria, Sherin Kunhibava and Abu Bakar Munir, 'Prospects and Challenges: Blockchain Space in Malaysia' (2018) 3 Malayan Law Journal cx.

5 Mohammad Ershadul Karim and Abu Bakar Munir, 'Blockchain Technology: An Introduction in Malaysian Legal and Regulatory Landscape' (2021) 2 Malayan Law Journal xlv.

Kyrgyzstan.[6] Despite this, there are many nations which have recognized Bitcoin in their laws. In June 2021, El Salvador was the first country in the world to make bitcoin legal tender. On the other hand, in Europe, cryptocurrencies are categorised as qualified financial instruments (QFI). Under European law, banks and investment companies are not prohibited from owning crypto assets or cryptocurrencies, gaining exposure to them, or even providing crypto related services.[7] A similar flexible approach has been adopted in the United States of America, where in 2013, Bitcoin was listed as a convertible decentralized cryptocurrency by the US Treasury, while in 2015, the Commodity Futures Trading Commission (CFTC) recognized Bitcoin as a commodity.[8] Interestingly, the US Supreme Court in the case of *Wisconsin Central Ltd. v United States*,[9] had talked about Bitcoin as being a possible method of payment in future. Although this case did not directly deal with the legal status of Bitcoin, the court was faced with the question of what can be regarded as money and in part of the dissenting judgement, Justice Stephen Breyer mentioned that;

> Moreover, what we view as money has changed over time. Cowrie shells once were such a medium but no longer are; our currency originally included gold coins and bullion, but, after 1934, gold could not be used as a medium of exchange; perhaps one day employees will be paid in Bitcoin or some other type of cryptocurrency. Nothing in the statute suggests the meaning of this provision should be trapped in a monetary time warp, forever limited to those forms of money commonly used in the 1930's.

3. Legal Status of Bitcoin in Malaysia

In Malaysia, cryptocurrency is referred to as 'digital assets', which essentially include digital token and digital currency. According to the Guidelines on Digital Assets (Guidelines) are issued by the Securities Commission Malaysia (SC) pursuant to Section 377 of the Capital Markets and Services Act 2007 (CMSA), digital assets is defined as a digital currency or digital token while digital currency means a digital currency that is prescribed as securities under the Capital Markets and Services (Prescription of Securities)(Digital Currency and Digital Token) Order 2019. It is to be noted that Bitcoin falls within the ambit of a digital currency, meaning that it is regulated by the Capital Markets and Services (Prescription of Securities) (Digital Currency and Digital Token) Order 2019 and Digital Asset Guidelines which was issued by the Minister under powers conferred by section 5 of the Capital Markets and Services Act 2007. In 2014, Bank Negara Malaysia (hereinafter 'BNM'') declared

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[6] Antonio Madeira, 'Bitcoin is Still Illegal in These 6 Countries' (Bitcoinist.com) <http://bitcoinist.com/bitcoin-still-illegal-six-countries/>.

[7] Hitesh Malviya, 'Where are Bitcoin & Cryptocurrencies Legal and Where are They Not?' (The Economic Times, 11 May 2021) <https://economictimes.indiatimes.com/markets/cryptocurrency/where-are-bitcoin-cryptocurrencies-legal-and-where-are-they-not/articleshow/82548574.cms>.

[8] Malviya (n 7).

[9] 138 S Ct 2067, 201 L Ed 2d 490, 2018 US LEXIS 3837, 86 USLW 4485, 2018-1 U.S. Tax Cas (CCH) P50,291, 121 AFTR 2d (RIA) 2018-2102, 27 Fla L Weekly Fed S 383, 2018 WL 3058014 (US June 21, 2018).

that Bitcoin usage is not recognised as a legal tender,[10] but it did not expressly mention that it is illegal either. Although Bitcoin does exist in Malaysia, most Malaysians are still unaware that Bitcoin, or laws relating to Bitcoin exist in our country. Hong Qi Yu, the founder of Tokenize Exchange (one of the three Digital Asset Exchanges (DAXs) which have gotten full approval from the Securities Commission Malaysia (SC)), said that less than 2% of Malaysians know about cryptocurrency. This figure represents less than 652,000 Malaysian out of a population of 32.6 million, as of 2019.[11] Despite the fact that Bitcoin has not formally been recognised in Malaysia, many private vendors are beginning to accept Bitcoin as an actual currency. For instance, a Shell petrol station at Jalan Raja Chulan, Kuala Lumpur, as well as Dae Jang Geum, a restaurant serving Korean cuisine, are now accepting Bitcoins as an official payment method.[12]

BNM had announced that from 2018 onwards, all parties acting as exchanges in digital currency would be deemed as 'reporting institutions' under the Anti-Money Laundering, Anti-Terrorism Financing and Proceeds of Unlawful Activities Act 2001. Due to the rapid development in the field of digital currencies, a more specific guideline was recently introduced in 2018, namely the Anti-Money Laundering and Counter Financing of Terrorism (AML/CFT)–Digital Currencies (Sector 6). Generally this implicates that businesses which are involved in dealing with cryptocurrencies would need to provide detailed information on buyers and sellers of such currencies.[13] This seems reasonable enough since such requirements would prevent or at least reduce the likelihood of Bitcoin being used to facilitate wrongful activities such as the sale of weapons, drugs, and other illicit goods, as well as even more alarming activities such as terrorism financing.[14]

Recently, the Ministry of Finance has stated that they see potential in digital assets and their underlying technologies, but due to the association of Bitcoin with various illegal activities and threats, the government is treading very carefully.

Another recent legal development in Bitcoin in Malaysia can be seen in the case of *Robert Ong Thien Cheng v Luno Pte & Another*,[15] where the Malaysian High Court has actually acknowledged that cryptocurrency falls within the ambit of 'anything' under Section 73 of the Contracts Act 1950. This goes to show that although cryptocurrency is not recognised as legal tender in Malaysia, it is not illegal altogether in the country. The fact that the first plaintiff is registered as a reporting entity to Bank Negara on cryptocurrency is itself proof

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[10] Bank Negara Malaysia,'Statement on Bitcoin' (2014) <https://www.bnm.gov.my/-/statement-on-bitcoin>.

[11] Afiq Aziz, 'Luno Malaysia Back in Business' (TheMalaysianReserve.com, 2019) <https://themalaysianreserve.com/2019/10/23/luno-malaysia-back-in-business/>.

[12] Team Luno, 'Where to Spend Bitcoin in Malaysia' (Luno, 27 March 2017) <https://www.luno.com/blog/en/post/spend-bitcoin-in-malaysia>.

[13] Daniel Khoo, 'Bank Negara to Issue Guidelines on Cryptocurrencies' (The Star, 20 September 2017) <https://www.thestar.com.my/business/business-news/2017/09/20/guidelines-on-cryptocurrencies/>.

[14] Sean Foley, Jonathan R Karlsen and Tālis J Putniņš, 'Sex, Drugs, and Bitcoin: How Much Illegal Activity is Financed Through Cryptocurrencies?' (2019) 32 The Review of Financial Studies 1798.

[15] Civil Appeal No. 12BNCVC-91-10-2018 (Shah Alam High Court).

that the its operations are not illegal. If the plaintiffs operations were considered illegal, then it would follow that the first plaintiff would have not been able to be registered as a reporting entity by Bank Negara. The Court further explained that the fact that Bank Negara started the initiative to have cryptocurrency exchanges registered as reporting institutions under the Anti-Money Laundering and Counter Financing of Terrorism (AML/CFT) – Digital Currencies (Sector 6) proved that Bank Negara acknowledged and concurred that cryptocurrency posses value which may be exchanged with real money.[16] This case is the first case in Malaysia to directly discuss cryptocurrencies.

4. Bitcoin Mining

New bitcoins are generated by a decentralized process called mining. In essence, it is the process of keeping the Bitcoin network stable and secure by adding new validated blocks to the Bitcoin's blockchain.[17] Transaction fees paid by users and the emission of newly minted digital currencies reward the effort of writing data to Bitcoin's blockchain. Anyone can try to write a block of valid transactions on the distributed ledger, but the network will only accept it if it is the first to generate a hash, which is a digital signature. The larger a participant's mining capability, or hashrate, the more likely he or she is to be the first to find the correct digital signature for the next block of transactions.[18]

Generally, there have been numerous issues involving the misuse of Bitcoin, for instance, fraud, money laundering and terror financing.[19] This paper focuses on one of the major issues arising from the widespread use of Bitcoin, which is the legality of the mining process. Since most nations do not have specific laws to address what constitutes illegal mining, one would argue that all mining would be legal, but this is not always the case.

In recent times, Bitcoin mining has been compared to gold mining, with many labelling Bitcoin as 'digital gold'. In fact, in March 2017, for the first time ever, the price of one bitcoin surpassed that of a single troy ounce of gold.[20] According to CoinMarketCap, as of 18th August 2021, a Bitcoin was worth $45,008.27.[21] Although this figure is constantly changing, it

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[16] Tommy Wong, 'Cryptocurrency Falls Within Section 73 of the Contracts Act 1950' (5 June 2020) <https://mahwengkwai.com/cryptocurrency-bitcoin-section-73-contracts-act-1950/>.

[17] Le Vu Trung Duong, Nguyen Thi Thanh Thuy and Lam Duc Khai, 'A Fast Approach for Bitcoin Blockchain Cryptocurrency Mining System' (2020) 74 Integration 107 <https://doi.org/10.1016/j.vlsi.2020.05.003>.

[18] Carlos L Bastian-Pinto, Felipe V de S Araujo, Luiz E Brandão and Leonardo L Gomes, 'Hedging Renewable Energy Investments with Bitcoin Mining' (2021) 138 Renewable and Sustainable Energy Reviews 110520 <https://doi.org/10.1016/j.rser.2020.110520>.

[19] Rehana Parveen and Alanoud Alajmi, 'An Overview of Bitcoin's Legal and Technical Challenges' (2019) 22 Journal of Legal, Ethical and Regulatory Issues <https://www.abacademies.org/articles/an-overview-of-bitcoins-legal-and-technical-challenges-7863.html>.

[20] Avalon Zoppo, 'For First Time, a Bitcoin is Worth More than an Ounce of Gold' (NBC News, 2017) <https://www.nbcnews.com/business/economy/bitcoin-value-surpasses-gold-first-time-currency-s-history-n728456>.

[21] CoinMarketCap, 'Bitcoin Price Today, BTC Live Marketcap, Chart, and Info' <https://coinmarketcap.com/currencies/bitcoin/>.

has shown a steady increase over the last few months. In the first quarter of 2021, miners from nations such as Quebec, Texas, Kazakhstan, and Malaysia have earned more than double the profits they generally do and this phenomenon is attributed to the Chinese government's attempt at shutting down the Bitcoin mining industry in the country.[22] Just to provide context, about 60% of all the world's circulating Bitcoins were mined in China but things are now becoming harder for Chinese miners, with the government of Inner Mongolia shutting down all cryptocurrency mining operations. According to analysis by researchers at Cambridge University, the Bitcoin economy uses more electricity annually than the whole of Argentina.[23] Due to the high amount of electricity needed to facilitate Bitcoin mining, many miners have resorted to power theft in order to sustain their mining activities.[24]

5. Bitcoin Mining in Malaysia

Mining itself is not illegal in Malaysia and there are no laws technically governing it, but the problem lies in the methods of mining, namely channelling electricity illegally from local power grids, which makes it illegal. Under S.37 of Malaysia's Electricity Supply Act 1990, those who are found guilty of electricity theft face a maximum penalty of RM100,000 (approximately $23,000) or 3 years imprisonment. Most cases of electricity theft for the usage of bitcoin mining fall under this provision.

To illustrate a few examples of illegal mining in Malaysia, in June 2021, Miri District Police and Sarawak Energy teamed up to perform a power theft surveillance operation, where the team managed to seize 44 cryptocurrency mining machines worth RM225,000 (approximately $53,000). The mining centre was based in an abandoned wooden hut at an oil palm plantation in Jalan Padang Kerbau, Miri.[25] The remote location, as well as the attempt to disguise the hut as a humble residential unit in the middle of the plantation grounds clearly points to the negative intentions by the miners to conceal their actions.

Similarly, in August 2020, Malaysian police arrested four cryptocurrency mining operators after discovering that they were stealing electricity from the state-owned power firm, Sarawak Energy Berhad. The authorities spent almost two days searching through houses and shop lots which were suspected of being used as mining warehouses along Jalan Tun Ahmad Zaidi Adruce, Jalan Pahlawan and Jalan Tunku Abdul Rahman located in

[22] Shawn Tully, 'Bitcoin Mining is Suddenly One of the Most Profitable Businesses on the Planet' (Fortune, 6 August 2021) <https://fortune.com/2021/08/05/bitcoin-mining-is-suddenly-one-of-the-most-profitable-businesses-on-the-planet/>.

[23] Frida Qi, 'Bitcoin Mining is Still Huge in China Despite New Ban in Inner Mongolia' (SupChina, 9 March 2021) <https://supchina.com/2021/03/09/bitcoin-mining-is-still-huge-in-china-despite-new-ban-in-inner-mongolia/>.

[24] Frances Coppola, 'Bitcoin's Need for Electricity is Its "Achilles Heel"' (Forbes, 2018) <https://www.forbes.com/sites/francescoppola/2018/05/30/bitcoins-need-for-electricity-is-its-achilles-heel/>.

[25] Sarawak Energy, 'Hidden Cryptocurrency Centre in Oil Palm Plantation Found Stealing Electricity' (27 June 2021) <https://www.sarawakenergy.com/media-info/media-releases/2021/hidden-cryptocurrency-centre-in-oil-palm-plantation-found-stealing-electricity>.

Kuching, Sarawak. After a thorough investigation, it was found out that the offenders stole over RM250,000 (approximately $59,000) per month from the power company. The shophouses which were being used for this operation had generated RM800 (approximately $191) in monthly electricity bills.[26] These numbers clearly go to show that the miners had most probably tweaked the local energy meters to mask their illegal activities.

6. Mining in Other Countries

In order to get a clearer picture of how widespread the issue of stealing electricity to power Bitcoins is, it would be useful to look at some global examples on the matter. To illustrate, in July 2021, Ukrainian authorities seized 3,800 gaming consoles which were used to facilitate crypto mining using stolen electricity from the city. The mining facility was set up by residents of Vinnytsia and the capital Kyiv in a former warehouse of JSC Vinnytsiaoblenerho. It has been estimated that the illegal mining operation was responsible for losses of electricity of approximately 5 to 7 million hryvnia, which amounts to an amount between $183,000 and $256,000, making this one of the largest electricity thefts in the country.[27] On the other hand, back in 2019, Chinese authorities arrested a man who was caught tampering with oil cables in order to channel the electricity to mine Bitcoins. Police from the Qiqihar District Public Security Bureau found that a single cable had been laid across a distance of roughly 200 meters to drain power from the oil well's electricity supply, channelling it instead to a nearby shed which had 20 active Bitcoin mining rigs.[28]

These are just a handful of the numerous incidents where miners were found to be in violation of local electricity laws. Although mining Bitcoin is legal in most countries, including in Malaysia, it is practices like this which have made the activity an illegal one, tainting the public's general impression on the legality of Bitcoin mining.

7. Key Takeaways on the Mining Situation

Strictly speaking, the problem here is not of the legality of the mining process itself, since there are no laws which directly prohibit people from engaging in the activity. However, Bitcoin mining starts going down the wrong path when miners try to find illegal shortcuts to overcome the issue of high electricity bills. By illegally channelling electricity from local lines to power their mining machines, they have tainted the concept of Bitcoin mining, creating a bad impression on the whole concept of Bitcoin.

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[26] Felipe Erazo, 'Malaysian Crypto Miners Were Caught Stealing Electricity from the State' (Cointelegraph, 12 Auguest 2020) <https://cointelegraph.com/news/malaysian-crypto-miners-were-caught-stealing-electricity-from-the-state>.

[27] Lubomir Tassev, 'Ukraine Uncovers Country's Largest Illegal Mining Farm to Date' (Bitcoin News, 10 July 2021) <https://news.bitcoin.com/ukraine-uncovers-countrys-largest-illegal-mining-farm-to-date/>.

[28] Charlie Osborne, 'Fish Ponds Disguised Theft of Oil Field Power in Cryptocurrency Mining Scheme' (ZDNet, 13 June 2019) <https://www.zdnet.com/article/fish-ponds-provide-cover-for-stealing-oil-rig-power-in-cryptocurrency-mining-scheme/>.

8. Solutions and Suggestions for Reform

Given that crypto mining is an extremely grey area, certain reforms must be affected to prevent illegal mining. It is conceded that there is no complete protection against illegal crypto mining. Instead, various security and legal aspects have to be amended and improved in order to combat illegal mining. Essentially, understanding how cyber criminals perform illegal crypto mining and the tools they use is critical to come up with pragmatic solutions to the issue at hand. It is only with this understanding that states and government bodies can curb electricity theft for Bitcoin mining.

According to bankers, regulators, and legacy operators, 'Bitcoin is a solution in search of a problem that does not necessarily exist'.[29] Reality, on the other hand, paints a completely different picture. Inflation bubbles, bailouts, questionable regulations, unfair policies, inequality, lack of transparency, poverty, and other flaws plague the current financial system.[30] Many consider the system broken, with a select few gaining unfair advantages over others. Due to these problems with the current system, a growing number of countries have expressed their concerns in Bitcoin. Despite the numerous benefits of Bitcoin in various areas, such as speed, cost, streamlined operations, and increased efficiency, attention has now shifted to the various challenges and bottlenecks that are preventing proper implementation, one of the spotlights being the legality of the Bitcoin mining process.

8.1 Issue Guidelines on Mining

On the national level, enforcement agencies and respective governmental bodies should issue adequate guidelines on crypto mining so that miners can take note of how exactly they can legally mine Bitcoins in their locality. For instance, the United States Cybersecurity & Infrastructure Security Agency (CISA) published guidelines for law enforcement agencies to combat the illegal practices of mining cryptocurrencies, such as to check electrical system privilege policies and review user accounts to verify that users with administrative rights have a need for those privileges.[31] Besides that, the agency also illustrates the act of crypto jacking that can occur on any internet-connected device that has a CPU.

Steps must also be taken to improve transparency and investor protection on a national front through various governmental financial bodies. If initial coin offerings must be registered, then mining large amounts of Bitcoin, which affects the market's supply and demand conditions as well as the integrity of the market's transfer-of-value network, should

[29] OECD (2020), 'Digital Disruption in Banking and its Impact on Competition' <http://www.oecd.org/daf/competition/digital-disruption-in-financial-markets.htm>.

[30] Alberto Guerrero, '9 Problems Solved by Crypto' (Geek Culture Medium, 20 June 2021) <https://medium.com/geekculture/9-problems-solved-by-crypto-b885a9016ec5>.

[31] Cybersecurity & Infrastructure Security Agency, 'Security Tip (ST18-002) Defending Against Illicit Cryptocurrency Mining Activity' (26 June 2018) <https://us-cert.cisa.gov/ncas/tips/ST18-002>.

also be registered and disclosed. These requirements would reassure current and prospective Bitcoin network participants on the security of their investments.[32]

Even though Bitcoin has no central authority, there could be a potential for respective states to implement a governing body solely focused on monitoring the mining processes. For instance, the Bitcoin Mining Council is a non-profit, open forum of Bitcoin miners who are dedicated to the network and its guiding principles. They advocate for openness, discuss best practises, and educate the public about the benefits of Bitcoin and Bitcoin mining.[33] Despite being a non-governmental international organisation, the structure and architecture of such an organisation may be used to create a national governing body to monitor a state's bitcoin mining activities. Be that as it may, the issue with regulating Bitcoin and other cryptocurrencies is that they operate on a peer-to-peer network. While governments have been successful in regulating sites such as the Pirate Bay and Silk Road which are websites hosting a platform for illegal data transfer, for instance downloading full length movies and pornographic videos, to name a few, cryptocurrencies are a slightly more sensitive matter, since it is technically an asset, belonging to real people, rather than mere illegal sites.[34]

As a result, the blockchain technology used to mine Bitcoin can be overseen by a central authority, with each node in the network reaching the same conclusion and completing the algorithm. Following the completion of the procedure, the authority can construct a replica of the public ledger by acting on information supplied across unsecure network connections to make it more safe and watertight.[35] With such a system in place, state authorities would be able to ensure that miners comply with the due processes in mining Bitcoin, making this activity a more secure and watertight transaction process for everyone in general.

8.2 Enact Legislations

In terms of legal developments, most nations currently do not have specific laws or statutes addressing Bitcoin mining. For instance, the use of Bitcoin currency for the formation and implementation of 'smart contracts' is very popular in countries such as Russia. The transition to distributed ledger systems and virtual contracts, in particular, will clash with existing, centralised registers, which are now legally required for certain activities and

[32] Jake Frankenfield, 'Initial Coin Offering (ICO)' (Investopedia, 3 November 2020) <https://www.investopedia.com/terms/i/initial-coin-offering-ico.asp>.

[33] Bitcoin Mining Council, 'Welcome to the Bitcoin Mining Council' <https://bitcoinminingcouncil.com>.

[34] Anwar Sheluchin, 'A National Digital Currency has Serious Privacy Implications' (The Conversation, 6 February 2020) <https://theconversation.com/a-national-digital-currency-has-serious-privacy-implications-130520>.

[35] Robert Herian, 'Legal Recognition of Blockchain Registries and Smart Contracts' (2018) <https://www.researchgate.net/publication/329715394_Legal_Recognition_of_Blockchain_Registries_and_Smart_Contracts>.

transactions.[36] Legislators must also ensure that the legislative process can keep up with the rapid development of blockchain technology.

In Malaysia, albeit there are no specific laws addressing Bitcoin mining specifically, there are laws which generally address the issue, such as the Capital Markets and Services Act 2007 ('CMSA') and the Anti-Money Laundering and Counter Financing of Terrorism (AML/CFT) – Digital Currencies (Sector 6)[37] However, such a statute is not as thorough or specific towards the spectrum of the bitcoin currency. Thus, there should be a distinctive specification within legislation in order to ascertain this technology and there are various steps which such can potentially be done. The first and most important step is to characterise between Bitcoin network activities and its interfaces with the traditional financial system. Conversion into cash, as well as offering and trading in Bitcoin-based assets or tokens as securities or derivatives, are examples of such interfaces. This is especially important given Bitcoin's growing popularity. The concentration of miners and owners opens the door to market manipulation, which leads to potential illegal mining and energy theft due to the high frequency of electrical usage by the growing population.[38] Where there are no laws within a country pertaining to regulating Bitcoin mining, the legislative body of a country may table or even draft laws pertaining to the logistics of Bitcoin mining. The reason for implementing such specific legislations is to ensure that miners have a standard set of guidelines they can turn to in regards to Bitcoin mining. By having these legislations in place, miners would be estopped from taking advantage of the lacunae in the law to illegally mine Bitcoin in Malaysia.

To regulate Bitcoin, policymakers must first determine the Bitcoin currency's relevancy to their country's treasury system. This is due to the fact that a substantial part of this world does not recognise bitcoin as a currency that is acceptable in their respective states. Should there be no relevancy to the bitcoin currency, there would not be any need to regulate such tenders. Despite the fact that Bitcoin is well-known as a digital currency or cryptocurrency, there have been uncertainties as to whether the Bitcoin currency itself is in fact a currency.[39] According to the International Monetary Fund (IMF), a currency should be issued by a central bank and backed by a government. Similarly, the United States Department of Treasury regarded cryptocurrency as distinct from actual currency. However, the Bank of

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[36] Josias Dewey, 'Blockchain & Cryptocurrency Regulation 2019' (1st edn, Global Legal Insights 2019) <https://www.morganlewis.com/-/media/files/publication/outside-publication/chapter/gli-blch1_russia_sept2018.ashx>.

[37] Karim and Munir (n 5).

[38] Robby Houben and Alexander Snyers, 'Cryptocurrencies and Blockchain: Legal Context and Implications for Financial Crime, Money Laundering and Tax Evasion' (Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, July 2018) <https://www.europarl.europa.eu/cmsdata/150761/TAX3%20Study%20on%20cryptocurrencies%20and%20blockchain.pdf>.

[39] Chi Lo, 'What is the Problem with Cryptocurrency (Bitcoin)?' (Investors' Corner, 12 February 2021) <https://investors-corner.bnpparibas-am.com/markets/what-is-the-problem-with-cryptocurrency-bitcoin/>.

Canada is now investigating the possibility of issuing digital currency as legal tender that is as a currency that is legally recognised.[40]

Having determined the stance of bitcoin currency in a nations currency alternative, the draft laws may envisage cryptocurrency mining to become a taxable business activity if it exceeds certain electricity consumption thresholds set by the respective governments for a certain period of time. In terms of existing legislation that may be applicable to mining activities, certain mining hardware may currently be recognised as devices containing encryption and cryptographic tools.[41]

In enacting these laws, countries could turn to those which already have such laws in place, for example, in Sweden, there are no prohibitions under Swedish law that ban, limit, or otherwise stipulate any required conditions that are especially applicable to the selling of virtual currency mining devices in Sweden. As long as such equipment are not offered to consumers, the parties to any sale of virtual currency mining machines are free to establish the conditions of the transaction at their discretion.[42]

8.3 Make the Mining Process Greener

One of the main reasons the global Bitcoin mining network has come under increased scrutiny is due to its energy consumption. Critics, most notably Elon Musk, have attempted to argue that Bitcoin consumes an unacceptably large amount of electricity generated by fossil fuels, with Musk even going so far as to cancel Tesla's policy of accepting the cryptocurrency as payment.[43] New research, on the other hand, demonstrates how spurious these criticisms are. The Bitcoin Mining Council (BMC) releases the results of its survey of over 32% of the current global Bitcoin network in its very first report, revealing that participants use electricity with a 67 percent sustainable power mix. According to the data, the total sustainable power mix could be as high as 56%, making Bitcoin mining one of the most sustainable industries in the world.[44]

Such revelations have sparked outrage over Bitcoin mining's high environmental cost. They have also prompted businesses to seek out more environmentally friendly and cost-effective methods of mining the valuable cryptocurrency.[45] In the Nordic regions, Northern Bitcoin established a data centre in a former Norwegian metal mine, using hydroelectric and

[40] International Monetary Fund, 'Considerations on the Role of the SDR' (2018) <https://www.imf.org/-/media/Files/Publications/PP/2018/pp030618role-of-the-sdr.ashx>.

[41] Yo-Der Song and Tomaso Aste, 'The Cost of Bitcoin Mining has Never Really Increased' (Frontiers, 22 October 2020) <https://www.frontiersin.org/articles/10.3389/fbloc.2020.565497/full>.

[42] Niclas Rockborn and Rikard Soundstedt, 'The Virtual Currency Regulation Review: Sweden' (Thelawreviews.co.uk, 2 September 2021) <https://thelawreviews.co.uk/title/the-virtual-currency-regulation-review/sweden>.

[43] Rob Berger, 'Elon Musk Dismantles Bitcoin Bit by Bit' (Forbes, 17 May 2021) <https://www.forbes.com/sites/robertberger/2021/05/17/elon-musk-dismantles-bitcoin-bit-by-bit/>.

[44] Sebastian Sinclair, 'Bitcoin Mining Council Says Sustainable Power Mix on the Rise' (CoinDesk, 2 July 2021) <https://www.coindesk.com/bitcoin-mining-council-sustainable-power-mix-survey-crypto>.

wind power to power its computers and cold water from a nearby fjord to cool them. In that regard, a number of promising initiatives are currently underway to improve Bitcoin's and other cryptocurrencies' energy profiles and accelerate the transition to a sustainable blockchain sector. These include increased use of renewable energy, as well as a variety of other initiatives to adopt more energy-efficient protocols, carbon offsets, demand response, and greener mining pools.[46]

As such, another plausible solution would be to use renewable sources of energy to mine Bitcoins. For instance, much of North America's sustainable mining capacity is in Quebec, where hydropower provides the majority of its energy. Bitfarms operates five industrial-scale mining facilities in Québec, all of which are powered entirely by hydroelectricity via long-term power contracts. Argo, a publicly traded blockchain technology company, has acquired two hydro-powered data centres in Quebec. Argo is also sourcing renewable energy for its massive and expanding mining operation in West Texas, where it has purchased 320 acres of land and plans to construct a 200-megawatt mining facility over the next 12 months, with 'the majority' of the energy coming from renewable sources.[47]

Besides that, in South America, El Salvador has confirmed that it would mine cryptocurrency using geothermal energy from its volcanoes. El Salvador's Premier President Bukele has stated that the country is already planning a mining hub that will be powered by 'very cheap, 100 percent clean, 100 percent renewable' energy from volcanoes. While switching to renewable energy may not reduce overall energy consumption, it may reduce the use of fossil fuels.[48] In conclusion, the problem with the legality of bitcoin mining is that the concept is so new that many governments are sceptical to formally implement it into their legal systems. However, if the mining process is improvised to be more efficient and environmentally-friendly, then perhaps more nations and international bodies such as the International Monetary Fund (IMF) would agree to recognize bitcoin as a global legal tender.

Although there is no denying that Bitcoin, like all other things that add value in our lives, consumes a lot of energy, but some argue that the negative environmental impact of Bitcoin mining has been exaggerated and brought out of context. This is because the vast majority of Bitcoin's energy consumption happens during the mining process. Once coins

[45] Joe Hernandez, 'El Salvador Plans to Use Electricity Generated from Volcanoes to Mine Bitcoin' (KSJD, 11 June 2021) <https://www.ksjd.org/2021-06-11/el-salvador-plans-to-use-electricity-generated-from-volcanoes-to-mine-bitcoin>.

[46] Ragnhildur Sigurdardottir, Lars Paulsson and Jesper Starn, 'Nordic Region, Bitcoin's Green Haven, is Running Out of Surplus Electricity' (Bloomberg Green, 17 April 2021) <https://www.bloomberg.com/news/articles/2021-04-17/bitcoin-s-green-haven-is-running-out-of-surplus-electricity>.

[47] Helene Braun, 'Why Crypto Miners are Expanding Beyond Quebec' (CoinDesk, 13 July 2021) <https://www.coindesk.com/why-crypto-miners-are-leaving-quebec>.

[48] Vishwam Sankaran, 'El Salvador to Use Energy from Volcanoes for Bitcoin Mining' (The Independent, 10 June 2021) <https://www.independent.co.uk/life-style/gadgets-and-tech/el-salvador-bitcoin-mining-volcano-b1863065.html>.

have been issued, the energy required to validate transactions is minimal. Therefore, merely dividing the total energy used for Bitcoin mining by the number of transactions does not make sense because most of the energy is used to mine Bitcoin and not to support transactions, which require minimal energy. The fact that energy costs associated with mining Bitcoin will continue to grow exponentially is therefore a myth and exaggerates the impact of Bitcoin on the environment.[49]

9. Conclusion

In conclusion, the earlier part of this paper has established that most countries are still sceptical on the security and privacy threats that come along with the legalization of Bitcoin. This is why most nations around the world have not recognized Bitcoin as a legal tender. Despite this, Bitcoin is gaining more popularity around the globe for the numerous benefits it brings. For instance, Bitcoin is fast and easy to use since it is a peer-to-peer currency and it does not need to go through a central governing bank or regulatory body.[50] Additionally, Bitcoin also provides anonymity, where users do not need to provide their email, name, social security number, or any other identifying information when making peer-to-peer Bitcoin transactions.[51]

Due to this increased demand in Bitcoin over the past few years, the Bitcoin mining industry has seen an enormous boom. One of the major issues with Bitcoin mining is the amount of electricity it takes up, which is the reason why many miners, including those in Malaysia, have resorted to stealing electricity from local power lines to power their Bitcoin mining activities. As illustrated, this problem is not just happening in Malaysia, but is plaguing local governments all around the world.

The final part of this paper looked at certain plausible reforms and suggestions to combat the problem of illegal Bitcoin mining. The paper presents an in-depth analysis of three such reforms, namely to issue guidelines on mining, to enact legislations, as well as to making the Bitcoin mining process more eco-friendly. These recommendations, although by no means exhaustive, would further promote the use of Bitcoin as a form of currency. As mentioned, the problem is not that the mining process is deemed illegal or is outright prohibited, but it is unethical practices like stealing electricity from local electricity boards that has given governments a bad impression on the idea of Bitcoin as a whole. The suggestions, if implemented correctly, could provide a remedy for this dilemma.

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[49] Nic Carter, 'How Much Energy Does Bitcoin Actually Consume?' (Harvard Business Review, 2021) <https://hbr.org/2021/05/how-much-energy-does-bitcoin-actually-consume>.

[50] Azmaan Onies, Giancarlo Daniele and Tunmise Olayinka, 'Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency: Advantages ' (2021) <https://cs.stanford.edu/people/eroberts/cs201/projects/2010-11/DigitalCurrencies/advantages/index.html>.

[51] Bitcoin.com, 'The Benefits of Bitcoi' <https://www.bitcoin.com/get-started/the-benefits-of-bitcoin/>.

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