

DIGITAL EXTRACTIVISM IN PARAGUAY

Historical survey
on cryptocurrencies



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1. INTRODUCTION

Cryptocurrencies and blockchain technology generally are involved in the transformation of economic and social infrastructure at a global level. Paraguay has been playing a role in this scenario for some years now, mainly in relation to cryptocurrency mining, which is the process that allows new digital currencies to enter circulation.

The rapid drafting of a bill to regulate this activity and its approval in the Senate in just a few months makes it necessary to analyze the path followed by this industry in the country.

In the following pages there is an outline of the most relevant events in the history of cryptomining in Paraguay, determining the milestones and stages from its origin to the present day. Also, focusing on the last legislative period, we identify the different positions taken by the actors involved.

The information was gathered through in-depth interviews with key actors and the review of archives of national and international media repositories, as well as previous studies and reports.

2. CRYPTOCURRENCIES HESITANTLY ENTER PARAGUAY (2009 - 2016)

The idea of digital money (e-cash) originates in the 1980's. The first virtual wallets that allowed electronic transactions emerged in the following decade (PayPal, 1998) and games in which "real" money could be used to acquire digital goods or tokens appeared at the beginning of the 21st century (Second Life, World of Warcraft). These are the origins of the first digital currency, Bitcoin, created in 2008.

Bitcoin is a cryptocurrency that –like any other– can be used to purchase goods and services, but operates without a central bank or any financial authority to control its transactions and issuance. All the transactions are verified and safeguarded by a network of computers, a decentralized network known as a peer-to-peer (P2P) network, which records and validates the transactions in a public database called blockchain. This process requires complex mathematical calculations that are computationally expensive and are rewarded with new bitcoins. This work is known as mining.

At the beginning of 2009, the first bitcoins in the world were created through mining. In Paraguay, testimonies mention mining activities a year later, in 2010, in the capital of the country. In this period, the mining activity and the trading of digital currencies was carried out internally by people related to information technology.

It represented an isolated activity that was passed by word of mouth among friends. Because of that, we cannot rule out that Paraguay's relationship with Bitcoin mining and trading started even earlier, closely following the trail of other places in the world, since the activity is linked to an international community with very active communication channels.

Luis (Lucho) Benítez, a computer consultant and pioneer in this activity, states that he started mining with a consumer CPU, and then adopted step by step each of the hardware that provided more power, FPU (Floating-point unit, a mathematical processor), GPU (graphic accelerators usually used for video games), until the specialized ASIC hardware (Application-Specific Integrated Circuit, devices designed specifically for mining cryptocurrencies).

In 2011 Bitcoin achieved parity with the U.S. dollar and then a second cryptocurrency, Litecoin, appeared. Interest grew, and people associated with the company Chena Ventures¹ – linked to technology – began to mine cryptocurrencies in Asunción (J. Benítez, 2020).

In this period, the community was very small and limited to Internet forums, a space where enthusiasts shared information about the progress of blockchain technologies. Several people from Asunción and the Central Department, some people linked to the Itaipú Binacional² –a hydroelectric power plant in Ciudad del Este– as well as a group of people of German background in the city of Hohenau, Itapúa, were part of it (L. Benítez, personal communication, March 19, 2022). It was a time of exploration and research.

At that time it was still possible to mine complete blocks of bitcoin with non-specialized hardware, which is impossible today. Also, other new cryptocurrencies with lower mining difficulty were mined and at the end of the week, they were exchanged for bitcoins. Said L. Benítez

2013 was a year of expansion and revaluation of Bitcoin worldwide. Juan José Benítez Rickmann, who today is a figurehead of the crypto community in Paraguay, mentioned in an interview to a digital media to have bought his first bitcoin in 2013 at \$ 109 (J. Benítez, 2020). “You bought a file” was what his friend commented at the time. He also said that Google alerts on Bitcoin did not exceed 5 news updates per week, which shows the market at that time.

After a steady growth in its value for almost 6 months, in November of the same year it took an increase and the Bitcoin price surpassed 1000 dollars and matched its price to an ounce of gold, catapulting the blockchain technology to another stage.

2.1. The community expands (2014 - 2016)

By January 2014, there were already 12 million Bitcoin in circulation. New digital currencies also appeared, such as Dash, Monero and Tether, which made the scenario more dynamic. In that year, although the value of Bitcoin fluctuated downwards, the community in Paraguay took important steps. One of them was to move from forums hosted on websites to other platforms or social networks, such as the Facebook group called Bitcoin Paraguay³.

In addition, Daniel Alós, Franco Amati and Brenda Fernández, from the Bitcoin Argentina Foundation⁴ (Cardozo, 2014) came to the country, leading to a first face to face meeting of the group of nearly 30 people, in a restaurant in the Villa Morra neighborhood of Asunción. This meeting gave some confidence to the people who were already dabbling in the subject.

The first Bitcoin ATM was also installed in Paraguay, allowing bitcoin purchases starting at US\$ 20 (M. Benítez, 2014).

In 2015 the Ethereum⁵ currency was launched and gained ground among domestic miners. It is nowadays one of the most mined currencies in our country after Bitcoin.

1 <https://www.chena.com/fundador.php>

2 <https://www.itaipu.gov.py/>

3 <https://www.facebook.com/bitcoinpycom>

4 <https://bitcoinargentina.org/>

5 <https://ethereum.org/es/what-is-ethereum/>

In 2015 and 2016 there were many ups and downs in the Bitcoin price; however, they were years of gradual growth in the crypto community, attracting more and more people who showed interest in the subject, particularly from banks and telecommunications companies.

3. CRYPTO BOOM (2017 – 2020)

2017 is the proven beginning of large-scale mining in Paraguayan territory, with the entry of new participants into the country's crypto ecosystem.

Local and international media, as well as testimonies, report the installation of Brazilian mining companies in the department of Alto Paraná, on the eastern border of Paraguay. One of them was CoinPy⁶, which according to the owner, the Brazilian national Rocelo López⁷, was the first to enter the country, as early as 2013 (Jakitas, 2017). This mining company had 6,000 computers located in sheds on a 750 m² plot of land in 2017, which produced at that time more than 8 bitcoin per day. By the end of 2019, the owner mentioned 2,100 machines were producing 5 bitcoin per month and 150 ethereum (Zanini, 2019). These mining facilities are known as “farms”.

Other mining companies that settled in the area belonged to Antonio Li and Thiago Da Silva Rodríguez, with a smaller number of processors, between 100 and 350. The former was renting a shed of 800 m² at the end of 2019 with the projection of moving to a larger location closer to the Itaipú hydroelectric power plant (Zanini, 2019).

Likewise, in the same year, Antonio Silva, a Brazilian national and owner of the mining company MDX, claimed to have 12,000 machines spread across four farms located in Ciudad del Este and surrounding areas.

A computer technician from Ciudad del Este known as GLun was hired between 2017 and 2018 by several mining investor groups and worked on farms of different sizes, both for domestic and foreign investors. According to his story, in those years, mining activities near the border were going through restructuring (E. Areco, personal communication, February 17, 2022). Some computer specialists were abandoning the domestic mining activity because the network difficulty was increasing, requiring the purchase of more advanced and expensive technology to maintain profitability. On the other hand, many people who did not have the technical knowledge of mining, but had capital wanted to enter the “21 million club” (the maximum amount of bitcoins available). A dependent employment relationship then began between these new investors and the computer specialists.

In light of the informal nature of this economic activity, and the clandestine situation of many of the cryptocurrency mining farms, it is impossible to know the number of workers employed. However, based on the testimonies, it can be affirmed that it is very scarce. Two miners from Alto Paraná agreed that the largest farms have on average 5 technicians, and that a farm of up to 500 machines can operate with only one worker. “It is like having 6 acres of soybeans” affirmed the eastern miner Andrés Fretes (A. Fretes, personal communication, March 16, 2022).

6 This company is no longer in operation. Their facilities were sold to other investors.

7 <https://za.linkedin.com/in/rocelo/>

Regarding the working conditions, although it may seem simple, the temperatures inside the facilities are very high, so that – in addition to making machine maintenance difficult – the motherboards burn frequently. The machines in operation also cause a very loud noise. Andrés Fretes compares it to a jackhammer.

Although GLun is no longer engaged in this activity at present, proof of the dynamics of the market is that he gets offers at least once a month to participate in businesses related to cryptocurrencies.

In December 2017 a local newspaper published that there was an “avalanche of Bitcoin farmers” who set up in clandestine locations in Ciudad del Este, attracted by the low cost of electricity (Extra, 2017).

Larger capital investments continued, and for the most part, they grew their infrastructure. However, at the end of 2018, when the prices of the main cryptocurrencies dropped sharply, a group of the new investors who had arrived with the 2017 surge, sold their coins at a loss, fearing to lose more.

At the end of 2019, statements made by the technician of one of the largest farms in Ciudad del Este in the Paulista newspaper Folha, estimated that there were around 60 mining companies in Paraguay (Zanini, 2019).

In those years, the community of miners grew and in May 2017 a WhatsApp group called *Sarambi* (meaning disorder or scattered in Guaraní language) was created, bringing together a diversity of people involved in cryptocurrencies (J. Morínigo, personal communication, March 15, 2022). Another communication space formed in this period is a Telegram group called Hashpy⁸, created in February 2018. To this day, it is considered the largest group, and hosts more than 3000 people.

Meetings also became more frequent. A second meeting took place on September 8, 2017, at a venue in España Avenue and another in January 2018 at a pizza shop.

The Ciudad del Este community even launched a locally developed cryptocurrency called Amero Plus at the end of 2017, but it was not well accepted by the community⁹ and lasted only a few months until all the coins were withdrawn in early 2018.

A significant fact that led to the intervention of some State agencies in the regulation of these facilities was that the Brazilian company Minerworld¹⁰ announced at the end of 2017 that it was authorized by the National Securities Commission to operate in Paraguay (Directory of the National Securities Commission, 2017). This agency responded quickly - denying the claims of the announcement, and then cited legislation that punishes with prison sentences the public offering of securities without registration, as well as the publication of false news in this regard.

Thus, during 2018 and 2019, several raids and fiscal interventions were carried out on mining farms. An enigmatic case happened in July 2018 in Ciudad del Este, where after the confiscation of more than 1,500 high-end computers, not all of them were returned to the owner (Medina, 2018).

8 <https://t.me/hashpy>

9 See Amero Plus. Hace tiempo vengo advirtiéndolo que... | by angatupyrytau | Medium

10 <https://pt.wikipedia.org/wiki/Minerworld>

In May 2019, the ANDE (National Electricity Administration) and the Public Prosecutor's Office carried out an intervention in the Mercosur Industrial Park and denounced direct connections and meters with irregular installations (ABC Color, 2019a). On that occasion, the firm Family Global SA was identified as the main infringer. Also, in the city of Santaní, department of San Pedro, irregular electrical connections were found that were supplying, in addition to a large amount of mining equipment, refrigeration equipment. The ANDE imposed fines and the authorities warned that this activity “ is a new type of energy theft” that entails significant damage to ANDE's assets (ABC Color, 2019b). It also stated that there were similar cases, in addition to Ciudad del Este, in the metropolitan area (Última Hora, 2019b).

2017 also marked the beginning of local business related to crypto. The boom encouraged entrepreneurs who were previously active in crypto as a hobby, to join with other entrepreneurs who were entering the community spaces, to start-up companies in the sector. This private venture led to meetings of a more commercial nature, and meetings of this sector with State entities.

As part of this process, in May 2019 the Bitcoin office was opened in Asuncion (Ultima Hora, 2019a), which hosts four companies that offer hosting, buying and selling, consulting, and other services. One of them was the first exchange platform in the country, Cripex¹¹: it started operating and shortly after, the Association of Banks of Paraguay (ASOBAN) terminated its accounts at all banks. This caused turmoil and brought the whole community together.

In September 2019, two public hearings addressing the issue were held by Deputy Sebastián García (PPQ) of the Committee on Science and Technology (Public Hearing on Digital Assets, 2019). Several meetings were then held with the Secretariat for the Prevention of Money or Asset Laundering (SEPRELAD), who requested reports to assess the degree of adoption, complexity and size of the virtual asset market in Paraguay (SEPRELAD, 2019). Later, a permanent inter-institutional roundtable on these assets was created (SEPRELAD, 2020). However, the bank restrictions remain to this day.

In 2020 information of both home and industrial cryptocurrency mining in the department of Guairá also surfaced. “It is public knowledge that cryptoasset companies are reaching the city of Villarrica,” stated electrical sector specialist engineer Nelson Cristaldo to the newspaper ABC Color at the beginning of 2022 (ABC Color, 2022).

In various journalistic sources, two farms are mentioned as the largest, one owned by local businessman and politician Emmanuel Friedmann, with more than 3,000 ASIC miners, and the other by the company Penguin Academy, with a slightly larger number of machines and whose CEO is the German national Bjorn Schmidtke (Blair, 2022).

The installation of large mining companies in this department is no coincidence. In Villarrica, electricity distribution is managed by the private company *Compañía de Luz y Fuerza SA* (CLYFSA), which is under a preferential price regime compared to the rest of the country. This situation creates controversy among several institutions. In fact, in 2015, the National Congress committee of the opposition coalition *Frente Guasu* (FG) had already presented a bill to terminate this concession. In 2017, a judicial process began between CLYFSA and ANDE, which resulted in the triumph of the former (ANDE, 2020).

Other areas with smaller farms have been found in *Bañado Sur* and Norte in Asunción, due to tariff exemptions for the use of electricity in these areas because of the socioeconomic level of the population.

11 <https://cripex.com.py/>

4. THE STATE AND ASIA ENTER THE SCENE (2021)

In 2021 a new phase of changes started in the national territory. First, with the boost that digital businesses gained during the COVID-19 pandemic and then with a strong migration of mining from the east to the west. China had at the beginning of the year 50% of Bitcoin's computing power (hash rate) in its territory and gradually restricted mining. Finally, in September all business activities related to digital currencies were banned (Liendo, 2021) (The Economist, 2021). This caused an exodus of Chinese mining companies intending to settle in our country, attracted by the low price of electricity (Vanci, 2022). There was an exponential growth of interest. The new demand for large-scale mining put pressure on the local business sector and talks with the State for regulation were escalated.

A businessman who offers hosting services at a local level stated in the middle of that year to the international media that there were 8 large Chinese economic groups interested in transferring their mining operations to Paraguay, and expected the entry of 500,000 miners in the next 3 years, which would imply a growth of 25 times what he estimated existed at that time (Gómez Torres, 2021).

At the same time, inspections of mining facilities with fraudulent electrical connections continued, mainly conducted by ANDE. In March 2021, the company announced the shutdown of at least three mining plants and declared an evasion of 200 million guaraníes¹² by one of them (Última Hora, 2021). By mid-year, the Regional Agency of Alto Paraná of ANDE reported having verified the existence of 16 clients engaged in Bitcoin mining, of which four were determined to be committing fraud for almost 9 billion guaraníes (ABC Color, 2021a).

In June 2021 the president of the Central American country El Salvador announced plans to adopt Bitcoin as legal currency, becoming the first country in the world to do so. A few days later, Carlos Rejala, the Paraguayan congressman of the *Hagamos* Party, reported on his social networks his visit to a “bitcoin mine” in the department of Guairá, as well as his intentions to lobby for regulation, calling mining a great opportunity to generate wealth in the country (ABC Color, 2021a). These two events were so close in time that the congressman's statements had great repercussions at the international level.

On July 14 of the same year, the bill was presented by the liberal senator Fernando Silva Facetti and the Paraguayan Chamber of Fintech¹³ (Silva Facetti et al., 2021). Between the presentation of the bill and its consideration in Congress, there were events that marked the possibility of extending it to a state level. One of these was the arrival of Binance to the country: the world's largest cryptocurrency exchange platform (Steiner, 2021). Historically, the exchange of cryptocurrencies in Paraguay had been mainly through cash, but this began to change after Binance's appearance, and Binance P2P began to be the most popular option, at the expense of the local exchange agencies that were used before (Clementín, 2021a).

Another development was the arrival of Bitfarms¹⁴, a company that operates one of the largest mining plants in North America. Bitfarms signed a 5-year electric power lease at a price of 3.6 cents per kw/h and by the end of the year had installed a mining farm with a capacity of approximately 3,000 machines in the city of Villarrica (Bitfarms, n. d.).

12 Approximately US\$ 29,000

13 <https://www.fintech.org.py/>

14 <https://bitfarms.com/>

Future Fintech Inc. (FTFT)¹⁵, a Chinese American company listed on the Nasdaq stock exchange, also published on its website its plans to build a new mining farm in the country. A significant development reported by FTFT is the advanced negotiations with the local government: talks with the minister of social development and the Mayor's office of the city of Coronel Oviedo. Also, the visit of the Paraguayan ambassador to Qatar, Ángel Barchini, who on behalf of the Paraguayan government invited the company to consider the investment, taking into account fiscal policies and available energy resources. The company hired the former Vice Minister of Mines and Energy, Emilio Boungermini, as a consultant to assess these opportunities (PR News, 2021).

In addition to these multi-national companies, Digital Assets¹⁶, a national company, announced in October 2021 the expansion of their client portfolio who are mainly foreign, as well as the construction of a new mining center near an ANDE substation (Carmona, 2021).

By October 2021, the United States had overtaken China as the world's largest Bitcoin mining powerhouse. Meanwhile, Paraguay was considered by the foreign media as "the epicenter of Bitcoin mining in South America" (Clementín, 2021b).

The Cripto Summit del Sur¹⁷ (The Crypto Summit of the South) reflected this atmosphere. It was held in Ciudad del Este on December 7, 2021. Over a hundred miners, enthusiasts and companies related to technology, mostly from Paraguay, but also a well-known international delegation, were present. It was organized by Cripto Py¹⁸ and Latinmedia Cripto¹⁹.

Ten days later, the Senate passed with modifications the bill "Regulating the industry and commercialization of virtual assets - cryptoassets" (ABC Color, 2021b).

The migration trend of large mining companies to America continued during the last month of 2021 and the first months of 2022: first China with the ban, then Iran determined to close mining farms for a few months to ensure domestic energy supply before the low temperature season started (Iribnews, 2021), and Kazakhstan had a social and political crisis related to electric power that affected mining (Martin, 2022).

As a result, there has been a worldwide restructuring of the cryptocurrency scenario, and Paraguay is one of the main countries in which negotiations are advancing, with regulations and an informal structure already in place.

15 <https://www.ftft.com/en/>

16 <https://bitcoin.com.py/about-us/>

17 <http://www.cryptosummitdelsur.com/>

18 <https://www.criptopy.com/>

19 <https://www.latinmediacrypto.com/>

5. REGULATORY AND LEGAL POSITIONS

The bill approved by the Senate “Regulating the industry and commercialization of virtual assets - crypto-assets” proposes to regulate the mining of digital assets, setting them up as electro-intensive industries²⁰. The proposers of this project, congressmen Silva Facetti, Antonio Apuril, Juan Ramírez and Carlos Rejala move away from the controversial global debate on the consideration of these as currencies. Liberal senator Fernando Silva Facetti²¹ - main sponsor of the bill - declared to be one of the most widely distributed written pieces of media at national level: “At no time is it intended to validate these digital assets as a currency. The idea is to make it a commodity and not to equate it with a currency. Seeing it as a product gives it greater visibility and it can be traded on the stock exchange like iron, copper, corn and many others” (Noe, 2021).

The project addresses the control of production, from the importation of machinery and its registration, a special regime for the use of electric energy, and the inclusion of the capital derived from this activity in the financial system. At the same time, it establishes the Ministry of Industry and Commerce (MIC), the Central Bank (BCP), the Secretariat for the Prevention of Money and Asset Laundering (SEPRELAD), and the National Electricity Administration (ANDE) as regulatory bodies.

5.1. State sector

On December 15, one day before the bill was to be considered in the Senate, the Central Bank issued a statement warning investors and the general public that cryptocurrencies, since they are not issued by a Central Bank, are not legal tender. It also added that they are high-risk investments, susceptible to fraud, and pointed out that digital currencies are used for illicit operations (Banco Nacional del Paraguay, 2021).

In the same document, a regulation for the creation of a BCP Digital Currency Working Group (CBDC) was approved, whose objective is to monitor the different initiatives internationally, as well as to analyze the implications of an eventual implementation of some type of virtual currency by the central bank.

The Ministry of Industry and Commerce did not support the bill, as it deemed that it generates a low impact on employment opportunities, in relation to the level of energy consumption required, and is also prone to possible uncertainty and volatility scenarios, as it is not regulated by the Central Bank (ABC Color, 2021b).

The SEPRELAD suggested that a technical committee be held, involving the SEPRELAD, the MIC, the Undersecretariat of State for Taxation (SET), the Securities Commission, the Central Bank and ANDE, since neither of the two working groups previously held had involved the participation of all institutions (ABC Color, 2021b).

When the law was passed in the Senate, the legal opinion of the Vice-Ministry of Energy and the National Securities Commission was not yet available.

20 Electro-intensive industries (IEI) have electricity as the main production factor, since they require a high and continuous electricity consumption. In Paraguay, companies in this industry must sign an electricity supply contract with ANDE under special tariffs.

21 <http://silpy.congreso.gov.py/parlamentario/100685>

ANDE, as the public company in charge of the transmission and distribution of electric power in the country, proposed amendments to several articles. It succeeded in adding the requirement that these mining industries be installed near its substations to avoid losses in the transmission of energy, as well as that the sale of energy be by means of a prepaid system. However, a week after the proposed amendments, the president of the state-owned company, engineer Felix Sosa presented to the economic team a proposal for a new rate structure for cryptocurrency mining companies in the country. He emphasized that these businesses would have to pay more. As an argument for the higher cost, he mentioned that they do not recruit manpower and “it must somehow leave some benefit for the country” (ABC Color, 2021c).

5.2. Private economic sector

The business sector that provides mining and crypto-assets trading services was a driving force in the drafting and negotiations of the regulatory bill. Leaders such as Juanjo Benítez Rickmann²², Fernando Arriola²³ and Luis Pomata²⁴ claim that the regulation is a need, and mention as advantages for the country the possibility of attracting foreign investments, as well as the tax collection for the importation of equipment and the boost to the GDP. They mention the possibility of opening bank accounts for the mining sector, greater access to importing and paying for equipment, and, most importantly, better electricity tariffs (IproUp, 2021).

Arriola, vice-president of Blockchain Mining Paraguay and member of the Fintech Chamber²⁵ expressed that “If the regulation is approved in Congress, then there could be billions of dollars in investments and a boost to the national economy” to the international media (IproUp, 2021).

Pomata, from Nano Mining²⁶, said that the most important thing is the price of energy, and that the guild’s wish is for it to go down much more, even to a rate of 2 cents per kw/h.

The main objective of this sector today is to be able to meet the new Chinese demand. Juanjo Benítez from Digital Assets²⁷ calculating a direct transfer, stated that “In China, 6,000 MW were turned off and that matches what there is in Paraguay, which has an energy surplus of 5,500 MW” (Gómez Torres, 2021). On this point, Pomata stated that quick decisions must be made, so that these investments do not go to other territories.

The central issue is electric energy and its price, and from this point on, the positions are divided. This debate is especially relevant because it is taking place a year before the deadline for Paraguay and Brazil to renegotiate the Itaipu Treaty, the legal instrument that established the hydroelectric power plant of the same name, which establishes how and at what cost each country uses the electricity produced.

Proponents of the law argue that encouraging the mining industry means taking advantage of Paraguay’s hydroelectric energy, and that this represents a winning card for Paraguay to play in the negotiations with Brazil in 2023, since one of the reasons the neighboring country uses more energy is the lack of demand on the Paraguayan side.

22 <https://twitter.com/juanjobr>

23 <https://twitter.com/ferarriolaarza>

24 <https://py.linkedin.com/in/luispomata>

25 <https://www.fintech.org.py/>

26 <https://www.nanominingpy.com/>

27 <https://bitcoin.com.py/about-us/>

However, some people argue that electric energy should be used to fight poverty and for the development of the country in general. One of them is the American political scientist Miguel Carter (Blair, 2018), who made an extensive report on the subject²⁸ as early as 2013, among others²⁹.

According to statements by Nicolás Ribeiro, CEO of Blockchain Mining, in Paraguay there are still barriers to the expansion of digital mining. He mentions that one of them is the maximum energy power limit established by law for industrial activities (Vanci, 2022).

Daniel Frumkin, of Braiins, a Czech Republic-based mining farm software provider, expressed in an interview his vision of a symbiotic relationship between miners and the power generation sector in the short term: “They will be best friends for a long time,” he said (Clementín, 2021b). Also, Congressman Carlos Rejala pointed out to ABC Color that “in the world it is acknowledged that cryptocurrency miners are the best allies of electric companies, especially in Canada, the US and in European countries where they operate at their best and electric companies are allowed to make big profits” (ABC Color, 2021a).

These statements are true if we take into account the position of the private electricity sector in Paraguay, which is the minority. CLYFSA’s technical engineer and consultant, Nelson Cristaldo, described the Law project as one of the most relevant of 2021, due to its impact on the national economy. This company is interested in increasing the energy sales flow in this activity, and assures that it has a supply system that allows it to sell blocks of spare energy to this industry. It is worth recalling that this private company has a controversial tariff advantage in relation to the state-owned company (ANDE, 2020).

The state-owned company, ANDE, on the other hand, is hesitant about this industry, as explained in previous paragraphs, mainly because of the large amount of electricity it requires and because of its low contribution in terms of employment opportunities. Proponents of the mining law, who cannot deny this reality, argue that domestic mining can be an alternative source of income for many people.

However, both opponents and supporters of the law agree that it is designed for the investment of large companies, mostly foreign capital. Several businessmen also agree that in recent years Bitcoin mining has become an industrial activity in which the scale is important, since the required equipment and competition make domestic mining less profitable (Carmona, 2021).

In fact, during the process of drafting the bill at the beginning of 2021, several meetings were held between legislators, representatives of local companies and members of the mining community, with the intention of unifying positions. However, the participants dedicated to domestic mining were not in favor of the proposal, and criticism was expressed from this sector regarding a first draft of the law presented (L. Benítez, personal communication, March 19, 2022).

As a reaction to the bill, in view of the need for its own space, it was formed an association of miners, cryptocurrency users, researchers and others linked to services related to the field: the Paraguayan Association of Blockchain (ASOPB)³⁰. This organization, which today brings together approximately 200 people, considers that the best option is to reform some existing laws, such as the currency exchange law, so that there can be entities that operate with cryptocurrency exchange. And to take other measures to prevent money laundering, without the need to create a new bill.

28 VCC ([itaipu.gov.br](https://www.itaipu.gov.br)) Ver en: https://www.itaipu.gov.br/sites/default/files/af_df/Informe_Sachs_Esp.pdf

29 <https://ddhh2021.codehupy.org.py/itaipu-2023-oportunidad-historica-para-el-desarrollo/>

30 Available at the link: <https://www.asopb.org/>

The fear of this sector is that this bill will enable a monopoly of cryptocurrency mining. An eastern miner expresses it as “it will be a country where big miners can mine and those who mine in their homes with 2 video boards will have to stay secretive fearing that their equipment will be confiscated” (A. Fretes, personal communication, March 16, 2022). On the other hand, and in the same direction, Lucho Benítez, ASOPB referent expresses: “I want a project for the development of the country, not for the development of a few, and even less for the same few as always” (L. Benítez, personal communication, March 19, 2022).

Although the stakeholder interviews also revealed the presence of a sector within the community that opposes regulation based on ultraliberal philosophical approaches, this discourse is not public and appears to be a minority.

5.3. Civil Society

On the part of the civil society, at the beginning of this year, two spaces of articulation of social organizations were positioned against the project: the campaign “Itaipu 2023 National Cause”³¹, and the campaign “Itaipu is also sovereignty”³² linked to the rural sector. In a note addressed to the Permanent Commission of the National Congress, they requested “to stop the scam that is already being carried out through CLYFSA and cryptomining” (E’a, 2022). They also denounced the appropriation of hydroelectric energy “by corporate sectors that are based in our country, and that, without generating employment or added value, have the complicity of national authorities and are already making the State - all of us, the taxpayers and users of electric energy - subsidize their illicit profits” (E’a, 2022).

Ricardo Canese, current member of the Parliament of the Parlasur³³ and with a long trajectory in everything related to the energy administration of the country, and Mercedes Canese³⁴, former Minister of Mines and Energy in the administration of Fernando Lugo, are part of it. As well as the ANDE Workers Union (SITRANDE).

5.4. Legislative processing

In spite of the opposition and the reservations on the part of the State entities involved, on December 16, 2021, the Senate approved the bill with modifications, with 29 votes in favor, 8 against and 6 abstentions. The 29 votes in favor came from members of parliament from four different groups. The full bench of the *Liberal Radical Auténtico* Party (PLRA) voted in favor, becoming the political group that supported the approval in numbers (14 votes). The *Hagamos* Party (PPH) with 2 votes and *Patria Querida* (PPQ) with 3 votes also supported the bill. The National Republican Association (ANR) -the ruling party- was divided, but the majority voted in favor (10) and six votes against. The Progressive Democratic Party (PDP) voted against with one vote, and the *Frente Guasu* had one vote against and 6 abstentions (Senate Chamber, 2021).

31 <https://www.facebook.com/Itaipu2023CausaNacional/>, <https://mobile.twitter.com/itaipu2023>

32 <https://www.facebook.com/PartidoParaguayPyahura>

33 <https://www.parlamentomercosur.org/innovaportal/v/3369/1/parlasur/canese-krivoshein-ricardo.html>

34 <https://twitter.com/mercedescanese>

After the vote in the first constitutional instance, it continued to the second constitutional instance, the Chamber of Deputies approved the proposed law with modifications and sent it to the Chamber of Senators for its revision in May 2022. There were discussions and important changes in the public hearing as well as in the Chamber of Deputies session, adding comments from ANDE and improving some definitions that included the intervention of anti-money laundering agencies. They also took contributions from the Paraguayan Blockchain Association to modify the legislative proposal. (El Nacional, 2022) Meanwhile, Congressman Tadeo Rojas (Central- ANR) gave statements against the bill days before the consideration (Chamber of Deputies, 2022).

The voting on May 25, 2022, was as follows: Out of a total of 66 ballots, 43 voted in favor, 15 voted against, 8 did not vote. The ANR again had a divided vote as in the first instance: 11 in favor and 14 against. On the other hand, the PLRA obtained 23 votes in favor and 1 against, PPQ with 3 votes in favor, *Cruzada Nacional* (CN) had 1 vote in favor and finally PPH with 2 votes in favor (National Congress, 2022).

At the time of the last documentary review, it was sent to the Presidency of the Republic for enactment. The bill was approved on July 14 by a simple majority in the Senate -third constitutional instance- accepting all the modifications made by the Chamber of Deputies (National Congress, 2022). Senator Fernando Silva Facetti, one of the drafters of the law that seeks to boost the cryptoassets market, recalled that the legislative proposal will continue to stand despite the fall of Bitcoin. (El Nacional, 2022). The Bitcoin currency had a plunge in the last months and represented more than 6.5 billion US dollars in losses (Deutsche Welle, 2022).

6. CONCLUSION AND RECOMMENDATIONS

Although on a much smaller scale, the beginning of cryptocurrency mining in Paraguay took its first steps in parallel to mining at a global level. This process had its incubation period with domestic mining, in several niches isolated from each other, but composed of people linked to IT and digital technology.

This dynamic changed in an abrupt way since 2017 with the entry of capital from foreign investors, initially from Brazil, and then diversified. National capital was incorporated providing services to miners and local investors, but in a very short time, it turned to become a landing platform for large foreign capitals, seeing that the greatest profit possibilities were in the sale of our electric power.

The characteristics of large-scale cryptocurrency mining, as it is being considered in our country, recall the enclave economy of the post-war historical period at the end of the 19th century. This economy was based on the investment of foreign capital for the extraction of raw materials for export, with exploitation of precarious labor. With differences aside, we are faced with a similar economic approach: the extraction of our electrical energy for the production of virtual assets for the global market, with a very low workforce uptake and with a small fiscal benefit in relation to the profits it generates.

The size of the investment offers and the energy consumption of this industry highlighted the need for regulation to provide guarantees to investors. Political party forces, as well as people linked to State institutions, have rapidly sought their place in this business and have even made commitments for the future. Today, as the issue begins to be part of the public debate, it is evident how advanced the negotiations are in the highest levels of power.

A crucial turning point is the energy issue. The situation underlying the movement of all the economic and political mechanism around the massive installation of the cryptocurrency mining industry in Paraguay is the revision of the Itaipu Treaty between Paraguay and Brazil to be enabled in 2023. The Treaty enables Paraguay to have a greater amount of electric power, even at a lower cost than the current one. Cryptocurrency mining could indeed absorb a large amount of this electric power. The question is whether that would be the most convenient output for the national economy.

At a time of global energy crisis, and in view of the historical dispossession of Paraguay, the use of energy takes on a fundamental importance. The definition of what to do with it should not be resolved among minority sectors, nor should it be based on taking advantage of an opportunity presented by external factors in the global market, such as the interests of Asian investors.

The final outcome of the country's electric energy must be defined on a broad debate that will allow a national development plan to be designed that includes all sectors and aims at reducing the gap of economic inequality existing in the country.

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