# HashByte

**Evolving Blockchain towards a Green and Ecological Future.**

## WHITEPAPER 2.0

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# 1.0 DISCLAIMER

***Please read the disclaimer section below along with the rest of the whitepaper. Please refrain from investing in the platform before doing so.***

The proposal contained in this whitepaper is a potentially lucrative venture. It is a high-risk investment, which is not suitable for all members of the public and businesses. Therefore, before making a purchase, ensure that all the complexity, risks and activities of the proposal are in line with your objectives and financial position. We recommend that you consult your financial and legal advisers before making any monetary decisions.

The information contained concerning this project is based on statements, estimates, and financial information that constitute a forward-looking aspect, and we are thus unaware of future risks and uncertainties caused by unforeseen events that will differ from the estimates expressed in any forward-looking statements. With that in mind, our team is putting all of our effort and expertise to meet the challenges of achieving the milestones described in the project's roadmap.

It is imperative for any potential investor to understand that the information contained herein is not exhaustive. It also does not represent any contractual relationship between HashByte and the Investor. Moreover, HashByte does not accept or guarantee any legal liability arising from the completeness, reliability, or accuracy of the information thereof, contained in this whitepaper. Proper investor due diligence is highly advised before investing in any aspect of HashByte. This whitepaper is simply providing information on an opportunity. The investor should ensure he or she does proper due diligence before deciding to invest or participate.

# 2.0 OVERVIEW

As cryptocurrency adoption increases, experts have realized that there is a hidden impact of blockchain on the environment.  Per the Guardian News, in a 1/17/18 article titled, Bitcoin's energy usage is huge – we can't afford to ignore it, "in November, 2017, the power consumed by the entire bitcoin network was estimated to be higher than that of the Republic of Ireland. Since then, its demands have only grown. It's now on pace to use just over 42TWh of electricity in a year, placing it ahead of New Zealand and Hungary and just behind Peru, according to estimates from Digiconomist. That's commensurate with CO2 emissions of 20 megatons – or roughly 1 (million) transatlantic flights."

Bitcoin alone produces 17.7 million tons of carbon emissions each day, and once other cryptocurrencies are included, the carbon emissions increase that number by close to 50 percent. Also, the energy demand of mining rigs and mining farms is creating a huge strain on the limited supply of energy available. This added demand will only increase the likelihood of energy companies turning to more and more fossil fuels to meet the demand. The HashByte team noticed this, and they have embarked on a journey to create a more sustainable cryptocurrency mining approach.

HashByte is currently beginning to solve this problem by liaising with renewable energy firms in Europe to create cloud mining contracts that rely only on wind and solar power. The technology is already there, and all that was needed was a team willing to use it to make green mining possible.

HashByte currently uses leased windmills and solar panels in different parts of the world to mine Bitcoin, Ethereum, Monero, and Litecoin efficiently and cost effectively.  The benefit over conventional mining farms is that there are no high operating costs due to high energy bills and these savings are passed back to our contract holders. This allows us to increase the profits for investors on our platform.

We are currently issuing HBS tokens, an Ethereum based ERC-20 token for HashByte to raise funds for further research and development for the next stages of our plan. Sequentially we intend to create:

- A green mining rig for miners that requires less energy to operate and returns higher profits because of that.
- HashByte is also developing the HashByte EcoChain that will use consensus algorithms with low energy consumption.
- Finally, the HashByte EcoChain will allow HashByte to offer a new cryptocurrency called Gash to users of the nHashByte EcoChain. Gash will be secured, available internationally, fast and have no transaction fees because the consensus will be provided using energy efficient algorithms. An added benefit of the Gash coins is that they will be utility coins, and as such they will not be as volatile as the speculative coins in most other blockchain startups.

If you wish to make a good income while protecting the environment from degradation, please acquire one of our cloud mining packages at https://www.hashbyte.io, or take part in our token generating event. The presale started on November 1, 2018 and it will run until November 30, 2018 with 25%t discounts. The main HBS token generating event will run from December 1, 2018 to December 15, 2018.

# 3.0 THE LANDSCAPE

## 3.1 BLOCKCHAIN ADOPTION

Bitcoin is currently the most popular cryptocurrency in the world. Even those who are not knowledgeable about cryptocurrencies have at least heard about Bitcoin from the mainstream news media. Since it is the first cryptocurrency, it also has a considerable following of enthusiasts who are loyal to it. Bitcoin controls over half of the market share with Ripple a distant second. The reason for this enthusiasm for Bitcoin is the robustness of its blockchain. It may not be the fastest cryptocurrency, but it is considered to be one of the best stores of value and the coin has appreciated considerably. Studies show that there are approximately 24 million bitcoin addresses, indicating that 24 million people at least have or have had a Bitcoin account.

From the 24 million accounts, 1.1 million of them are active each day. This is a considerable number of people that are connected to this particular blockchain platform even after the dip in users that occurred after bitcoin prices dropped earlier in 2018. The average volume of Bitcoin traded each day is between $2.5 billion and $6 billion per day.

More people are also diversifying their portfolios to include Bitcoin, and more companies are adding cryptocurrencies to their portfolios utilizing Bitcoin as one of their initial investments.  Experts also are beginning to suggest that individuals should hold at least 5 percent of their wealth in cryptocurrencies because cryptocurrencies are negatively correlated with the majority of other economic markets.

While cryptocurrencies are in their infant stage of financial adoption and the assets can be volatile, the gradual appreciation in value and use as a “hard” asset cannot be underestimated for the future. As a result, Bitcoin and cryptocurrency is becoming an available alternative that can protect individuals and portfolios from global economic recessions like the 2008 financial crash. Large investment firms while currently talking down the price are buying and are creating bitcoin trading desks and custody solutions.

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All of these changes will continue to drive the cryptocurrency mining industry into the future, and HashByte is positioned to help meet the demand both individually and institutionally for more Bitcoin mining.  To note, our sweet spot resides in the hundreds of thousands of people who are currently mining, or who want to mine Bitcoin or the other coins that we support with home-made grids or mining farms.

The number of cryptocurrency users has also been growing consistently. There are two kinds of investors. Speculative investors were attracted by the rise in value, particularly in 2017, but there are also strategic investors who have consistently made a decent income regularly buying and trading cryptocurrencies. Currently, it is estimated that there are approximately 20.2 million cryptocurrency users around the world.

And this number is rising!  As more countries suffer from higher inflationary pressures they are reducing their restrictions on digital currency purchases and sales, acquisitions, and trading. Blockchain advancements such as the adoption of the lightning network and the use of cross border crypto exchange will also continue to improve use in the industry.

## 3.2 CRYPTOCURRENCY MINING

Anyone who wants to join cryptocurrency mining has four existing options they can use. First is mining from home, the second is using cloud mining, the third is hosting miners in third-party facilities while the fourth is building proprietary mining facilities. The first two approaches are mainly for individuals while the second is mainly for businesses. Unfortunately, most individuals are finding it harder to join mining as individuals.

Mining is an integral part of how blockchain technology works. The miners validate the transaction blocks before there are added to the distributed ledger. While the industry was in its infancy, mining was quite easy. All you needed was a computer that can handle the large mathematical computations and you could start your home mining rig. However, mining has become more complicated. You now need a computer with multiple GPUs and Ram just to solve the problems. At the moment, home-based mining is slowly becoming obsolete. The type of equipment used by most miners is quite expensive, and it consumes a lot of energy. GPUs are better than CPUs when it comes to mining, but they consume more power. Running a mining rig with multiple GPUs uses so much energy that sometimes the miners are constantly making losses.

As a result, most miners are turning to commercial rigs. However, many of these commercial rigs suffer from the same problem. There is a high cost of energy. Additionally, the mining equipment becomes quite hot. The high heat increases the likelihood of breakdowns. The rigs have to incur greater operational costs just cooling the equipment. Additionally, most mining rigs do not give details of the equipment that they use.

Conversely, there is a gap in the industry. There is demand for cost-effective mining rigs that are transparent in their operations. Many people who are transitioning from home-based mining want commercial rigs that have low operational costs. This will increase the margins they make especially are self-built rigs are out of the reach of thousands of miners.

It is hard for individuals to build mining rigs at home due to the high cost of components as well as the increase in power required to run these systems. Less than five years ago running a Bitcoin mining rig at home could be done using a simple gaming computer. However, right now you need computers with multiple GPUs and high RAM just to start. In a few years, home miners will become obsolete.

On the other hand, cloud-based mining is extremely opaque. As a rule, users have no knowledge of their equipment's brand name, model number, serial number, power efficiency and consumption, breakdown of costs, mining pool name or even the location of the facility. Many individuals struggle just to break even using these mining rigs. Self-built mining farms are very expensive running to over a million putting it out of the reach of any individuals. There is a need to make mining more accessible to individuals.

Even those who are able to set up decent home-based mining rigs suffer from periods of inactivity due to breakdowns. Most mining rigs are under such high loads that product problems are quite common. The high heat and computational load can fry RAM, processors, GPUs and other components. When this happens, mining has to be halted for sometimes weeks before the components are shipped and repaired in service centers. This down-time results in loss of revenue for the home-based miners.

# 3.3 CRYPTOCURRENCY IMPACT ON CLIMATE CHANGE

While the sustained growth in the popularity of bitcoin and other cryptocurrencies increases, there is an untold impact on the environment. Over 73% of all the cryptocurrencies rely on the proof-of-work architecture. These blockchains rely on miners who provide consensus by allowing their platforms to run complicated GPU intensive commands on their devices. Additionally, most of the miners mine Bitcoin combined with one, two, or three other cryptocurrencies concurrently.

The climate problem is that Proof-or-Work relies on powerful hardware capable of completing the complex instructions, and as a result, these computers consume a lot of power. The powerful computer components also require adequate cooling, and that also consumes a lot of power.  Per the Economist, 7/9/2018, “BITCOIN has been alarming people for years because of the amount of electricity needed to mint new virtual coinage. Alex de Vries, a bitcoin specialist at PwC, estimates that the current global power consumption for the servers that run bitcoin’s software is a minimum of 2.55 gigawatts (GW), which amounts to energy consumption of 22 terawatt-hours (TWh) per year—almost the same as Ireland… What’s more, bitcoin “miners” consume about five times more power than they did last year, and orders of magnitude more than just a few years ago, and there are no signs of a slowdown”.

As a result, in just a few years, the current projected power consumption will be equal to that of Europe and the United States. The problem with this is that the increase in power consumption puts a strain on the existing power production in the areas where these mining farms are located. The power companies need additional output that they acquire from fossil fuels. These mining farms also use diesel and petrol powered generators to meet the additional power needs. This increases environmental degradation, worsening the climate problems that exist.
This seems to be quite counter-intuitive to most people. Cryptocurrencies are supposed to be the currency of the future, but the mining industry seems to be negatively contributing to the worsening climate change.

# 3.4 FUTURE EFFECTS AND IMPLICATIONS

The current situation means that at the current rate, Cryptocurrencies will be producing as many carbon emissions as the United States in the next five years. It will also increase the cost of energy in most of the countries where large mining farms are located, as governments shift away from increasing allocations to alternative fuel to meet the increased energy demand. Even with increased utilization of carbon emitting energy, as things stand, the energy required to support the mining industry is anticipated to create a problem in the industry.

Another potential problem is that the rising cost of energy may end up harming the mining dynamics. As more people are locked out from mining because of the increase in hardware requirements and high energy cost, the likelihood of “51 percent attacks” through the alliance of big node operators’ increases. Already over 40 percent of the mining is controlled by large mining farms, and the rising energy costs may also lead to increased startup or maintenance costs that will make mining dynamics prohibitively expensive to enter or to maintain.

At the current energy trajectory, Bitcoin mining is slowly becoming unsustainable and at HashByte we aim to increase the breadth of the mining market so that future needs and requirements for miners can be met. To note, many people in the United States that were mining are not mining anymore, and most of the new mining farms that are being built are being built in areas that are cooler to reduce the energy used for cooling and also in countries where the cost of energy is lower than that found in historical mining farms. A more effective long-term solution is required.

# 4.0 HASHBYTE: THE GREEN FUTURE

## 4.1 ABOUT HASHBYTE

HashByte was formed with the aim of introducing green energy mining to the cryptocurrency industry. The aim is to set up the infrastructure that can facilitate truly green mining for investors and broaden the landscape for miners around the world.  This includes the creation of state of the art machines and grids that are energy efficient and that require less cooling. Currently our facilities use cutting-edge renewable energy and no money is being paid to any electrical companies. Going forward we are creating an energy efficient architecture for our blockchain to ensure that mining costs and demands are low.  The green mining rigs we are developing will also require less computing and energy power to mine Cryptocurrencies.

We are already mining several different coins from our mining facilities. They include Bitcoin, Ethereum, Litecoin, and Monero. The platform relies on cloud mining where investors don’t need to run the machines for themselves. Instead, they are purchasing smart contracts which allow them the mining rights in our facilities. Since the energy demand is so low, the profits that HashByte is currently offering are substantially higher than in conventional mining farms.

# 4.2 EVOLVING BLOCKCHAIN TOWARDS A GREEN FUTURE

Blockchain technology needs to evolve towards a sustainable environmentally friendly platform. Even though mining coins is required for 73 percent of cryptocurrencies, that does not mean that the environment should suffer for it. Studies indicate that as blockchain becomes more popular, the energy demands will increase. Since consensus is a crucial part of blockchain technology, the future will require us to find a more sustainable way of improving things. There is already a need to create more efficient blockchains. The algorithms need to be less CPU and GPU intensive to reduce the need for advanced components. More effective algorithms will be easier to provide consensus and they will require less complicated equipment like ASIC devices.  This is where HashByte is beginning work on developing an EcoChain that will use consensus algorithms with low energy consumption.

## 4.3 WHY GREEN?

Going green has two main benefits as highlighted below. They are:

- **Going green saves the environment**

Bitcoin mining is producing 17.7 million tons of carbon emissions per year. Adopting green mining will help reduce and minimize these carbon emissions. While not everyone will be willing to go this route, HashByte is one of the first companies to adopt a fully environmental mining farm that is both profitable and effective and that produces less carbon emissions to help to save the environment.

- **Going green will reduce mining costs**

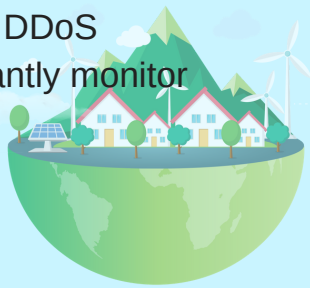
The most expensive part of mining is the recurrent energy cost and miners spend a large portion of their proceeds paying these high costs. Most miners stop mining when the energy costs of running their rigs become too much. This means that in the future most miners will have problems making money because of the high utility bills they will get.

- **Security of the mining farm**

One of the greatest operational costs is the security of the plant. This involves protection from intruders as well as protection from physical disasters that may occur. Monitoring the site is the most important thing. We will equip the mining plant with surveillance systems that provide round the clock 24/7 video feed. The cameras will be able to detect motion around the compound and notify the police and one of the contracted security firms.
Additionally, the plant will be built using non-combustible, fire resistant materials. Heat sensors will be placed all over to ensure that any of the hardware components that gets dangerously high is turned off before it ignites. Additionally, instead of typical fire sprinklers, HashByte will use alternatives that are more suited for electrical fires. The plant will also be insured so that in case of catastrophic losses, there will be compensation.

- **Constant internet access**

A stable and secure internet connection is one of the perquisites of a mining plant. HashByte will prevent downtime by using more than one internet service providers. If one of them goes down, the other will be able to maintain the mining. We will create our private network that will be protected by Cisco’s intrusion prevention program and several firewalls. This will secure the plant from hackers, DDoS attacks, malware and trojan attacks. Our network engineers will constantly monitor to reach in the event of an attempted breach.



## 4.4 CRYPTOCURRENCIES TO MINE

Miners now have a variety of cryptocurrencies that they can mine. However, it is not profitable to choose every altcoin on the market. It is always better to mine something that has greater market value.

**a. Ethereum mining**

Ethereum is one of the most popular altcoins (Bitcoin alternative). It uses a different architecture that is slightly more advanced. It started out relying on proof-of-work but in 2017 Ethereum stated that it will shift to proof-of-stake that is less energy dependent. However, at the moment it can be considered a hybrid blockchain that supports both proof-of-work and proof-of-stake consensus. It is currently the most widely used platform because it hosts many other cryptocurrencies using the ERC20 protocol.

Therefore, miners on Ethereum use PoW to earn ETH. However, in comparison to Bitcoin and other PoW cryptocurrencies, Ethereum does not have a complicated blockchain. Some of the reasons why Ethereum mining is so popular is because it is still reliant on GPU mining. Unlike Bitcoin where ASIC miners complicated the extraction process, Ethereum can still be mined using GPUs in a non-intensive method. When this is coupled with the popularity and the unlimited number of coins to be mined, it becomes one of the most sought-after mining coins.

**b. Bitcoin mining**

Bitcoin mining is inherently different from GPU mining. Bitcoin's blockchain is so advanced that it is very difficult to mine using CPUs effectively. Using GPUs for mining may work, but there is no real ROI due to the high costs of energy. As a result, most miners are shifting to ASIC mining. ASIC systems are more specialized, but they provide that balance of power to energy that makes it efficient.

**D. Monera**

Monera is a privacy coin that is popular in many industries that other cryptocurrencies do not find attractive. It is commonly used in the gambling and adult video streaming industries because it provides users with 100 percent privacy with its fungibility. Monera cam still be mined using GPUs because the blockchain has not become complicated.

The different coins can be mined using three different packages for each. These are the silver, gold and diamond packages. The earnings increase based on the findings provided.

## 4.5 RETHINKING CONSENSUS ALGORITHM

At HashByte we understand that the reason why most blockchains are so reliant on hardware intensive mining is because they rely greatly on Proof-of-Work architecture. This architecture requires complicated and expensive equipment to provide consensus. HashByte seeks to avoid this by looking at alternative architectures that are like Proof-of-stake that can be combined with energy efficient hash-functions. HashByte is fostering benchmark consensus algorithms which reflect true decentralization in which it will become possible for individuals to mine cryptocurrencies without the use of complicated machines.

# 5.0 GREEN ECOSYSTEM

## 5.1 INTRODUCING GREENHASH

The first step in creating a Green ecosystem is accepting that the existing mining equipment is not efficient enough to run on renewable energy. Most of the current mining machines rely on rudimentary methods of cooling that increase the current power consumption. The HashByte team understands this, and so we are developing GreenHash TM, the first miner powered by renewable energy. This proprietary miner is energy efficient, and the architecture used allows for effective cooling without relying very much on power driven features.

An advanced battery system is used to save energy generated for use during times when there is not enough power so that you can generate solar power during the day and store a substantial amount in batteries to power the miner at night.
The energy efficiency of the GreenHash miner will ensure that it consumes substantially less power than conventional ASIC devices or GPU powered computers used in conventional mining farms.

## 5.4 E-COMMUNITY

Another aim of the HashByte team is to create an e-community of cryptocurrency enthusiasts who are environmentally conscious. The community can share ideas on more ways that the cryptocurrency industry can reduce harmful carbon emissions that are being generated by the industry. HashByte will hold an ongoing forum on the platform where users can share their ideas on the best ways for us to reduce our carbon emissions. The e-community will be led by the HashByte EcoChain developers, renewable energy companies, and other key stakeholders who want to increase renewable energy use in the blockchain sphere.

# 7.0 HASHBYTE TOKEN SALE

## 7.1 TOKEN STRUCTURE

The total supply of HS tokens available will be 20,000,000 HS . Our aim is to raise enough money to build GreenHash and then the HashByte EcoChain platform. The Soft cap is $10 million while the hard cap is $30 million. The initial exchange rate will be 1ETH for 70 HSB. The presale starts on November 1, 2018 till the end of November while the public token generating event will start on December 1, 2018 and run until December 15, 2018. There is a 25% discount for purchasing the HS tokens before the end of the presale.

## 7.2 TOKEN PARTICULARS

| **Name:** | **HashByte:** |
|---|---|
| Tickers: | HS |
| Total Supply: | 20,000,000 |
| Soft Cap: | $10,000,000.00 |
| Hard Cap: | $30,000,000.00 |
| Currencies accepted: | BTC, ETH |
| Exchange rate: | 1 ETH=70 HS or 1 BTC=2174 HS |
| Minimum purchase: | 0.5 ETH / 35HS |
| Presale: | 11/1/2018 – 11/30/2018 |
| Public sale: | 12/1/2018 – 12/15/2018 |

## 7.3 TOKEN SALE AND DISTRIBUTION

The token distribution will be subdivided into four main groups. 5% will go to the advisors while 10%t will go to the change believers or the development team. The platform will reserve an additional 25% while 45% will be available for supply to the public. This is better shown in the following graphical description.

Once the Token sale is completed, the proceeds will be distributed into the following four main areas. First, 44% of the funds will be allocated to the GreenHash research and development and the platform will be fully developed and rolled out. 15% will be reserved for running operations, 26% will be allocated for marketing and 15% will be allocated to the creation of the HashByte EcoChain development.

# 8.0 ROADMAP AND SUMMARY

The team of climate change believers and cryptocurrency enthusiasts was formed in the fourth quarter of 2015 after the founding members realized the damage that cryptocurrency mining was having on the environment. In the second quarter of 2018, partnerships with European energy companies allowed HashByte to launch the first renewable energy cloud mining platform. The fourth quarter of 2018 is where the HSB Token Generating Event is being launched to raise funds to create GreenHash.

After the HBS Token Generating Event, the first quarter of 2019 will see the rollout of the HashByte EcoChain test-net for the eco-developer community and by the third quarter, the HashByte EcoChain Main-net will be launched, and Gash cryptocurrency will be available to  the public. The fourth quarter of 2019 will see the release of the GreenHash miner and the team also aims to release the HashByte EcoChain consensus algorithm to the public on a large scale by the first quarter of 2020.