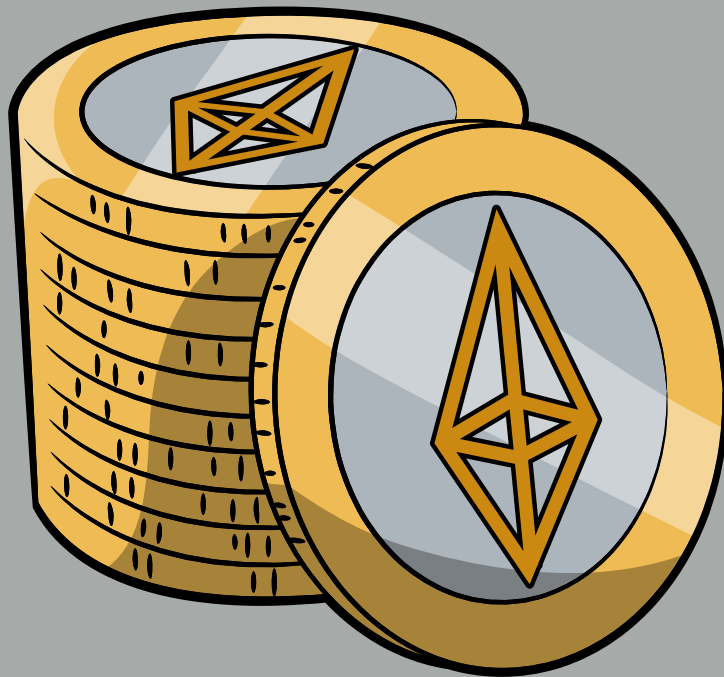# ETHEREUM MINING

Calculating The Profitability Of Ethereum Mining

Calculating the Profitability of Ethereum Mining

Ethereum mining is a process of solving complex cryptographic puzzles on a Blockchain network. It is the fuel that keeps the Ethereum network going, and miners are the engine that helps to validate the Blockchain whenever a transaction is made.

By continuously mining, miners support the Ethereum network while happily making a profit in the process. The reward the miners receive is based on two things, these are the block reward and the transaction fees.

The transaction fee or mining fee, depending on what your Ethereum wallet calls it, are those added fees you get charged when you decide to spend some Ethereum. That fee usually gets paid to whichever miner solves the puzzle and completes the block. They also earn "block rewards" for successfully mining a block. All of these contribute to how a miner gets paid on the Ethereum network.

Note, however, that these earnings are not profits. The miner has to take into consideration the various expenses paid out while earning block rewards. After that is done, the miner should be able to get a clear figure of how much profit he has made from his mining efforts.

This report will provide you with a basic understanding of the necessary things you need to keep in mind when calculating your Ethereum mining profits. It also explains the various mining calculators that you can use and how to calculate your mining profits correctly.

Things to Keep in Mind When Calculating Ethereum Mining

In order to determine if Ethereum mining is profitable enough for you, there are a few things that you will need to keep in mind. These are the various factors or parameters that are highly essential to the success of your mining operation, but which also affect how much profit you will ultimately make from your mining operation.

They include the cost of hardware, cost of software, cost of electricity, the network's hash rate, ETH to USD conversion rate, along with a host of other variables. In the paragraphs that follow, we will be analyzing in detail each of these parameters and how they contribute to determining your Ethereum mining profits.

Cost of hardware

One of the main factors that affect your Ethereum mining profitability is the cost of hardware. Ethereum mining, as you already know, requires the use of specialized hardware. Purchasing efficient Ethereum mining hardware will help reduce your electricity bills and cut down on your costs significantly.

This specialized hardware is known as graphics processing units (GPU). Ethereum was originally intended to be mined on a computer's central processing unit (CPU) by its developers, but they soon realized that these GPUs gave them more hashing power. They then switched to GPUs instead. So basically, a GPU is a specialized mining computer.

A standard GPU comes with a high upfront cost, so it may take a while to break even and make back the initial investment. Until then, you haven't started profiting from your Ethereum mining operation. Some of the most common and efficient GPUs available for sale along with their respective prices include:

1. Radeon R9 295X2

This GPU has the highest hash rate of 46.0 MH/s on the market and currently goes for $600. It consumes $1.44 worth of power per day and gives a return per day of about $1.62. It also has a cost per MH/s of $13.04 and gives a yearly return of $586.43. So, it'll take more than a year before you start making profits from it.

2. Radeon R9 HD 7990

This GPU costs $680 but has a lower power cost per day than the R9 295X2, at $1.08. It also has a significantly lower hash rate at 36 MH/s. With this GPU, you will enjoy a return per day of $1.29, a cost per MH/s of $18.89, and a yearly return of $469.40.

3. Radeon RX 480

The Radeon RX 480 costs $199 and is the most economical of the other GPUs. It has a significantly lower power cost per day of $0.4320, a hash rate of 25.0 MH/s with a cost per MH/s of $7.96. It gives a return per day of $1.21 and a return per year of $440.91.

4. Radeon RX 470

Finally, we have the Radeon RX 470 which costs $219. It has a power cost per day of $0.4320 which is the exact same cost as the RX 480. It has a hash rate of 24.0 MH/s and a cost per MH/s of $9.13. It gives a return per day of $1.15 and a return per year of $418.16.

Cost of software
The cost of software is another factor that affects your Ethereum mining profitability. There are various types of software for Ethereum mining, and they are available for different running environments and operating systems.

Most of the software is downloadable for free, but they do not all produce the same output. This is what really determines your profitability because the more output a particular software generates, the more profitable your mining operation will be. It is therefore important to go for Ethereum mining software that is highly efficient, and that is downloadable from reputable online sources.

Some of the best Ethereum mining software that you can go for and that comes with high-profit yielding features include:

1. Ethminer

This software works specifically on a Windows computer and is equipped with some powerful features like OpenCL mining, realistic benchmarking against arbitrary epoch/AG/block number, Nvidia CUDA mining, On-GPU DAG generation, and many more. Ethminer can be downloaded for free [here](#).

2. Dual Miner

This Ethereum mining software also runs on the Windows platform. It has some noteworthy features like Vega cards support, Nvidia cards support, Assembler kernels for ETH + LBC mining mode and SIA support for Nicshash. The Dual Miner software is available in many different versions and can be downloaded for free [here](#).

3. OneETH

Arguably the easiest to install and most user-friendly mining software available, the OneETH offers a "one-click" mining for Ethereum. It runs on the Windows operating system and has some power-packed features including an Ethereum wallet for easy payouts, one or more GPU supporting OpenCL or CUDA with 3GB ram or higher, offers background

mode for low-power mining, supports ETC (Ethereum Classic), and so on. You can download it for free [here](#).

Cost of Electricity

The cost of electricity is another major determinant of the profitability of your Ethereum mining operation. Electricity costs are one of the most expensive things in any mining operation, and if you do not check it properly, you may actually be consuming more than you are earning from your mining.

Your monthly earnings from your Ethereum mining operation should more than cover your monthly electricity bill. If, after weighing the difference, you realize that you are spending more on electricity than you're earning, it is time to change your tactics.

You can go for more cost-effective mining hardware that does not consume a lot of electricity and/or mine from a location where electricity is cheaper. Countries like Iceland, China, and Venezuela have cheaper electricity than most other parts of the world. As a result, most of the cryptocurrency mining operations are concentrated there. It is therefore in your best interest to consider your options and see if your current location makes energy costs cost-effective for mining.

How to Calculate Profit
To calculate the profitability of Ethereum mining, you will need to make use of an online cryptocurrency mining calculator. Some popular Ethereum mining calculators that you can use to calculate your mining profits are:

   1. Etherscan

Etherscan is a Block Explorer and Analytics Platform for Ethereum. It has a simple mining calculator that displays your expected earnings in both Ether and Dollars. It takes into account your hash rate (MH/s), power consumption (in Watts), cost per KW/h ($), network hashRate (GH/s), average block time (Sec), and price of 1 Ether (USD).

2. Cryptocompare

This online Ethereum mining calculator uses metrics that are based on a network hash rate of 204,562 GH/s. It uses an ETH to USD exchange rate of 1 ETH = $697.73. There are; however, instances where these figures may vary depending on the total network hash rate and the ETH to USD exchange rate at the time. It has a fixed block reward at 3 ETH, and it doesn't take into account future block reward reductions. It has an average block time of 15 seconds for calculation and an electricity price of $0.12 per kWh used for generating these metrics.

3. CoinWarz

The CoinWarz Ethereum mining calculator and profit calculator can be found and accessed directly on the CoinWarz website. It computes the total profits earned on an hourly, daily, weekly, monthly, and annual basis and presents them in a tabular format. All you have to do is enter the following into the required fields: hash rate (MH/s), power consumption (Watts), power cost ($/kWh), difficulty, block reward, pool fees %, ETH/BTC, BTC/USD value, and hardware costs (USD).

Conclusion
It is important to determine the profitability of your Ethereum mining operation before even getting started. To ensure that you're getting the right results, make sure that your calculations take into account all of the above-mentioned factors. Also, if you're joining a mining pool, bear in

mind that your profit will vary greatly depending on the pools efficiency, fees, and stale/reject/orphan rate.