

# Volcanic growth for bitcoin in chilly Iceland

March 28 2018, by Jérémie Richard

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I lava you Iceland! - Bitcoin miner Genesis Mining has set up shop in the middle of a lava field

At a secret location in the midst of one of Iceland's breathtaking lava fields stands a warehouse whose non-descript siding belies the fact it is ground zero in a digital gold rush for cryptocurrencies that is burning through more electricity than Icelanders' homes.

Iceland's combination of fire and ice not only makes it a stunning site to film parts of the medieval fantasy epic Game of Thrones.

It also offers a unique combination of cheap renewable energy and free air conditioning that is making it a promised land for those "mining" virtual currencies, including bitcoin, using powerful computers that are voracious users of electricity and throw off lots of heat.

And noise.

The din from shelves and shelves of computers whirring inside the 400-square-metre (4,300-square-foot) warehouse rivals a jet during takeoff.

Unlike the dollar and the euro, bitcoin is not issued by central banks. Instead it is "mined" or created in computer "farms" like this one.

It uses computers souped up with six graphics cards tasked with the heavy lifting of thousands of thousands of calculations needed to solve complex algorithms to process bitcoin transactions and be rewarded with bitcoins in exchange.

## **Cheap and cool Iceland**

"It's possible for everyone to do it at home. There is no one stopping you (and) there are no technical limitations," said Philip Salter, head of operations at Genesis Mining, told AFP.



Souped-up computers called mining rigs operate 24/7, using huge amounts of electricity and generating lots of heat

Last year saw a meteoric rise of hundreds of virtual currencies led by bitcoin, which was fetching almost \$20,000 per unit in December as both amateur and professional miners jumped onto the bandwagon.

Home miners often use an old computer, have no choice where they operate, and are lucky if they get a fraction of a bitcoin every now and then.

Professionals like Genesis Mining need to invest serious amounts to build and equip a facility like this one with a surface area a third of an Olympic-size pool, but which has a much greater chance of catching part

of the 12.5 bitcoins created every ten minutes.

They can choose where to set up operations, however, and that choice can have a huge impact on their profits as the price of the electricity to power and cool the computers varies considerably from country to country.

Iceland is attractive for cryptocurrency mining because of its cheap electricity, which has the added advantage of being generated from clean geothermal energy.

At a 0.065 euros (\$0.081) per kilowatt per hour before tax, the cost of electricity is nearly half the EU average.

This makes Iceland one of the most competitive nations in Europe after Serbia, Macedonia and Bosnia.



A rich seam in the bitcoin gold rush

But Iceland also has an advantage in its average annual temperature is about five degrees Celsius (41 Fahrenheit), meaning mining farms can for most of the time just suck in cool air from the outside instead of running energy-hungry air conditioners.

The power usage efficiency "is really good in Iceland because of the natural cooling," said Johann Snorri Sigurbergsson, director of business development at Iceland's power company HS Orka.

## **Shocking rise in demand**

A growing number of firms like Genesis Mining, which was previously based in Bosnia, have chosen to set up shop in Iceland, which means demand for electricity has shot up.

"The demand has been increasing exponentially, especially the last three months," said Sigurbergsson.

The increase has come as the price of bitcoin has plunged from its peak of nearly \$20,000 to below \$9,000 currently, with analysts saying that the price decline has made operating costs even more of a concern for miners.

Salter, who fears the growing competition in the sector, said bitcoin's "price isn't a very good indicator on how bitcoin mining industry is doing".



Philip Salter, head of operations at Genesis Mining, inside the company's bitcoin "farm"

He may not have that much more competition from neighbours as Sigurbergsson said HS Orka "will not be able to supply all the demand" from miners wanting to set up operations.

He said his firm is "in the great position of we can pick and choose who we can do business with".

HS Orka estimates that Iceland's three largest [bitcoin](#) farming companies in 2018 will consume more electricity than the nation's 350,000 inhabitants.

Miners also have another worry: Even a virtual gold rush attracts real thieves.

Between December 2017 and January 2018, equipment worth an estimated 1.6 million euros was stolen.

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Citation: Volcanic growth for bitcoin in chilly Iceland (2018, March 28) retrieved 24 April 2024 from <https://phys.org/news/2018-03-volcanic-growth-bitcoin-chilly-iceland.html>

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