

Senator Andrew Bragg
Chair
Senate Select Committee on Australia
as a Technology and Financial Centre

By email: fintech.sen@aph.gov.au

Dear Senator Bragg

Senate Select Committee on Australia as a Technology and Financial Centre

Thank you for your invitation to contribute to the Committee's inquiry.

The Authority has not given specific attention to matters relating to cryptocurrencies and the carbon emissions associated with the high amounts of energy used to power the computer processing necessary to support cryptocurrency transactions.

However, I can draw the Committee's attention to a paper released by the Authority last week to, [Paris Plus: From cost to competitive advantage](#), which may be of some help to the Committee's consideration of these issues and its inquiry more generally. I can also make some general observations about addressing cryptocurrency related emissions.

A key theme of the Authority's paper is that for Australia to compete successfully in international markets, and continue to be an attractive destination for foreign capital, it makes sense to see reducing emissions not as a cost but as a source of competitive advantage. This reflects emerging trends in trade and investment around the world as governments, investors, companies and consumers increasingly favour low emissions products and services. These trends are still in their early days and are likely to strengthen.

The Authority's forthcoming research report on low emissions trade and investment trends, which sits behind many of the insights in *Paris Plus*, will make the observation that growing global demand for low and zero emissions finance and financial services will create opportunities for Australia's sophisticated financial services industry.

Cryptocurrency appears to have the potential to become a carbon intensive industry of some consequence. For example, [research](#) published by *Nature Communications* earlier this year projects that Bitcoin mining in China in 2024 could consume 297 terawatt hours of electricity and generate 130 million tonnes of carbon emissions. To put this in some context, total greenhouse gas emissions in Australia in the 12 months to March 2021 are estimated to have been 494 million tonnes.



The biggest factor in determining the level of emissions associated with cryptocurrency mining activity is the emissions intensity of the electricity used to power the necessary computer processing. The electricity consumer is generally a 'taker' of the emissions intensity of the grid electricity they are consuming.

Electricity generation in Australia is transforming from high emissions to low emissions through the widespread deployment of both large-scale and small-scale renewable energy, and associated energy storage technologies such as batteries and pumped hydro-electricity, and the retirement of ageing coal-fired generation. Hence, the emissions intensity of grid electricity is declining. There is some uncertainty as to how far and how fast this transformation can proceed - this will depend on the path of technology costs and pace of technology developments. However, the Government [projects](#) further significant reductions in electricity emissions in the National Electricity Market. This will further reduce the average emissions intensity of the grid electricity used to power a given volume of cryptocurrency transactions in Australia.

Cryptocurrency miners in Australia could directly address their emissions through purchasing renewable electricity. For example, large electricity users can enter into power purchase agreements for renewable electricity with an electricity generation company. An alternative would be to purchase large-scale generation certificates created under the Renewable Energy Target. While the electricity delivered to the customer is still from the grid, either approach ensures the customer's power use is backed by renewable electricity generation and could be regarded as carbon neutral.

It would also be possible for the emissions from cryptocurrency transactions to be addressed through the purchase of carbon offsets, such as Australian Carbon Credit Units (ACCUs) which are issued by the Clean Energy Regulator under the Government's Emissions Reduction Fund scheme. Other offsets are also available for purchase – the purchaser should undertake due diligence to satisfy themselves that offsets they are considering purchasing are of high integrity – that is, they represent genuine, additional abatement activities.

Given that electricity generation emissions are relatively straightforward to address through the other, abovementioned options, carbon offsets are more likely to be necessary, and have higher value, for more difficult to abate emissions, for example those associated with resource extraction, industrial processes in manufacturing, and in agriculture.

I note that organisations can seek accreditation for their operations as carbon neutral under the Australian Government's [Climate Active](#) program, which offers certification to businesses and organisations that have credibly achieved carbon neutrality.

Improving the energy efficiency of cryptocurrency mining, through improvements in the efficiency of the computer technology (hardware and software) that supports cryptocurrency transactions, would lower power use for a given volume of transactions and hence also reduce emissions associated with those transactions.

I hope this information is of assistance to the Committee.

Yours sincerely,
Brad Archer
Chief Executive Officer

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