



# High stakes: Singapore's taxation approach to token rewards in proof-of- stake blockchain protocols

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# LEGAL UPDATE

# In this Update

Discussions have arisen in the United States over the taxation of staking rewards for blockchain validators in proof-of-stake (“**POS**”) protocol blockchain networks, particularly in light of the abrupt and inconclusive close of the highly-anticipated Jarrett v U.S case in February 2022, which had been billed as the first case expected to provide clarity on whether cryptocurrency staking rewards are taxable as income on creation.

It is not only in the US that there is growing concern over the tax implications in relation to staking rewards. With Ethereum’s recent transition to POS consensus, there has been greater interest in determining the tax treatment on cryptocurrency staking rewards; although, other POS-based blockchains have also been gaining increasing prominence and market share, such as the Solana, Avalanche and Algorand blockchains.

This update thus seeks to provide an introduction to Singapore’s stance on the taxation of staking rewards for validators in POS networks, and how the Inland Revenue Authority of Singapore’s (“**IRAS**”) position differs from the approach taken by the Internal Revenue Service (“**IRS**”) in the United States.

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## INTRODUCTION

### KEYPOINT

*According to IRAS, the taxation of mined payment tokens on POS networks will only be triggered upon the subsequent disposal of the mined tokens, rather than when they are received.*

On 4 August 2020, a bipartisan group of members of the United States Congress sent a letter to the IRS asking that staking rewards for validators in POS blockchain networks be taxed when sold rather than treated as income. This letter is yet another in a series of letters from the US Congress to the IRS concerning cryptocurrencies, with writers seeking for a clarification of policies that would make it easy for cryptocurrency holders to actually comply. In February 2022, with the abrupt end to *Jarrett v US* before the matter could be heard before the courts, stakeholders in the blockchain industry continue to wait for regulatory clarification or the courts' guidance on the taxation of staking rewards.

One may wonder what Singapore's own tax laws are on validation protocols for blockchain networks, especially in light of Ethereum's recent transition to POS consensus. This update seeks to clarify Singapore's position on the taxation of staking rewards for validators in POS networks, and how IRAS' position differs from the approach taken by its counterpart in the US.

## PROOF-OF-WORK ("POW") AND POS CONCEPTS

The POW and POS protocols consist of different approaches to rationing maintenance responsibilities amongst blockchain network users in a way that preserves the integrity of the blockchain network on which the cryptocurrency is based. These maintenance responsibilities, broadly speaking, involve validating ledgers of recorded transactions by confirming the legitimacy of these transactions before they become a permanent addition to the network. The incentives for participating in these maintenance responsibilities commonly come in the form of block rewards, which often take the form of the blockchain's native tokens ("**native tokens**") or some other digital asset.

The flagship example of the application of the POW concept is Bitcoin. The rights to publish new blocks, containing a set of transactions, to the Bitcoin blockchain and to reap the associated block rewards (in Bitcoin) are allocated depending on who is able to first publicly share the computationally expensive solution to a cryptographic puzzle. The probability that a participant will first arrive at the answer depends on the computing power that a Bitcoin miner dedicates to the network to solve the

cryptographic puzzle. Once published, the series of transactions is added to the blockchain ledger and the successful miner obtains the block rewards. “Proof-of-work” refers to this method of allocating and verifying these block publication rights.

In contrast, the POS concept envisages a scenario where any person can validate block transactions by pledging a number of the native tokens he or she holds for the verification of transactions – notably, there are numerous ways for allocating validation opportunities according to a validator’s stake in the network, although most commonly, validators with larger stakes which have been held for a longer period of time are more likely to be chosen to validate and add new blocks to the blockchain. Since POW mining requires a great deal of computing power, POS was created as an alternative validation protocol by attributing validation power to the proportion of native tokens held by a validator. In this manner, a POS validator is limited to mining a percentage of transactions that is reflective of its ownership stake on the network.

For example, the Tezos network utilises a POS protocol to distribute opportunities to users to perform validation by lottery, with a validator’s stake in the network determining the number of lottery tickets and therefore the probabilistic frequency of opportunities to perform the necessary validation tasks that yield block rewards (in the form of Tezos network native digital tokens).

Since the supply of native tokens on POS networks continuously increases, and the native tokens are then distributed to network users who participate in the staking process, every user is encouraged to participate in the maintenance of the network through staking, lest they be effectively “punished” with token dilution. In some networks, individuals need to stake native tokens just to break even against inflation.

As compared to POW protocols, where network maintenance and token ownership are separate from one another and can be handled by different actors, native token holders on POS protocols work to maintain the same level of security on the network through the staking of their earned native tokens.

## US' APPROACH: TAXATION UPON RECEIPT

To date, the most commonly cited guidance from the IRS regarding the taxation of blockchain transactions is Notice 2014-21, 2014-16 IRB 938 (the “**Notice**”). Importantly, the Notice states that mining rewards (citing the example of Bitcoin mining) are includable by a miner in gross income and is taxable. The amount included is the fair market value of the virtual currency comprising the mining reward, as at the date of receipt of the mining reward. The Notice does not specify whether mining rewards would be subject to tax at ordinary or capital gains rates. As the Notice specifically characterizes Bitcoin (which uses a POW protocol) as a convertible virtual currency, one would expect the IRS to similarly characterize the receipt of mining rewards for other POW (and by extension, POS) protocols.

However, this approach has been met with much criticism. Among other reasons, experts argue that the taxation of POS block rewards at the time of receipt as gross income may overstate taxpayers' actual gains from participating on the network. This happens because:

- (a) Taxing staking rewards at the moment native token rewards are received fails to consider possible future fluctuations in the value of the native token. If users are incentivised to maintain the network through staking their native tokens but were taxed on the value of the earned native tokens at the point of receipt, the user would be left with a huge tax burden if the value of the native token fell thereafter.
- (b) Staking encourages users to participate in network maintenance at the risk of token dilution. Should every user stake their native tokens, the native token rewards would be distributed pro rata based on the network inflation rate. This would result in the functional equivalent of a stock split, which is generally not taxable as it is understood that stock splits do not create gain. Under the Notice, however, a user would be required to pay taxes on the total dollar value of these native tokens at the time they were received, even if his or her pro rata share of the network did not increase.
- (c) There is a principle in American law that taxpayer-created property is not income until such property is sold or exchanged in a realization event. For example, a baker would not have to pay income tax until his cake is sold, or a farmer tax on his crops. Similarly, staked native tokens created through the holder's staking activity would constitute such created property and non-taxable until such time as a transaction is made. In addition, taxing staking rewards at creation would also raise issues of valuing the rewards, particularly given the dilution likelihood after the rewards are released as set out at (a) above.

The case of *Jarrett et al v U.S.*, before the Middle District of Tennessee, considered whether the staking of Joshua and Jessica Jarrett's Tezos tokens on the Tezos public blockchain (POS-operated), which resulted in the creation of 8876 new Tezos tokens, was taxable as income tax. For

context, the Jarretts had initially declared their staking income as ordinary income but subsequently filed an amended tax return, asserting that the staking rewards were not income, requesting a refund for the tax paid. As matters escalated, the Jarretts sued for a refund on the basis that staking rewards should only be taxable upon the sale or transfer of the Tezos tokens. Unfortunately, before the court had the opportunity to rule on the matter, the IRS provided the Jarretts with a full refund and interest, and hence the court did not have the opportunity to consider whether native tokens generated through staking are taxable upon genesis. The Jarretts have since declined the refund but counsel for the US has moved that the case be dismissed on grounds of mootness. Hence, the position in the US on the taxation of staking rewards still requires regulatory clarity.

## SINGAPORE'S APPROACH: TAXATION UPON DISPOSAL

While IRAS has not provided specific guidance on the taxation of staking rewards via POS protocols, IRAS' e-Tax Guide on the Income Tax Treatment of Digital Tokens published on 17 April 2020 and revised on 9 October 2020 ("**Income e-Tax Guide**") stated that a miner's profits will not be taxed at the time he or she successfully mines the block reward (defined as "**payment tokens**" in the Income e-Tax Guide), but instead will only be taxed upon the disposal of the payment token. This is because while the miner is entitled to a right to own a payment token at the point of successful mining, no income is derived by his or her mere holding of the payment token. This stands in contrast to the position provided by the IRS' Notice, which taxes mining rewards as at the date of receipt.

While the term "*mining*" is usually found in the context of POW networks, the Income e-Tax Guide defines "*mining*" broadly, stating that it is "*a process by which digital token transactions are verified and added to the blockchain, and the means through which new digital tokens are released.*" This definition appears sufficiently broad to capture rewards obtained by validators on both POW and POS blockchains, as both these protocols involve processes that validate and verify blocks on a blockchain network, and release new tokens upon successful validation of a new block to the responsible validator.

In addition to the general principle that mining rewards (which is likely to encompass staking rewards for the reasons above) will be taxed only upon disposal, other notable features of the existing taxation regime for mining activities in Singapore include:

- (a) The taxability of a miner's profits from the disposal of payment tokens (including those obtained from a mining pool) depends on whether the miner performs the mining activity with an intention to profit. Miners may perform mining as a hobby or a trade. An individual engaging in mining activities will, *prima facie*, be considered as undertaking the

activity as a hobby. If so, any gains from the sale of mined payment tokens are treated as capital gains and are not taxable. Mining expenses will also not be deductible. However, if an individual shows “a habitual and systematic effort to make a profit from the activities”, he may be considered as carrying on a vocation of a miner and his profits from the sale of the mined payment tokens will be subject to tax.

- (b) In contrast to (a), for a company, which is generally set up with a profit-seeking motive, such company engaging in mining activities will be regarded as carrying on a business of mining and general tax rules will apply. It will be allowed to claim deduction on its mining expenses on an “incurred” basis from the date of commencement of business. A company will thus be taxed on profits from the sale of mined payment tokens upon disposal of the payment tokens. Singapore’s corporate income tax rate currently stands at 17%.
- (c) Any fees received by a mining service provider for the provision of mining services are taxable, regardless of whether the payment is in the form of digital tokens or fiat.
- (d) Further to (c), IRAS has clarified that the mining of digital payment tokens (such as Bitcoin, Ether) does not constitute a supply for GST purposes, though if the miner provides services to an identifiable party or parties in return for consideration, this constitutes a taxable supply of services. The miner, if GST-registered, has to charge and account for GST unless zero-rating applies. If the miner is unable to determine the belonging status of the transacting party, the miner should standard-rate its supply of services and account for GST.
- (e) The subsequent sale or transfer of mined digital payment tokens to a customer belonging in Singapore by the miner will be an exempt supply if the supply takes place on or after 1 January 2020. If the mined digital payment tokens are exchanged for goods or services on or after 1 January 2020, the miner will not be regarded as making a supply of the digital payment tokens.

## CONCLUSION

As it stands, blockchain validators that are carrying on the business of mining / validation in Singapore (whether utilising a POW, POS, or other mining / validation protocols) may glean some comfort from the fact that their block rewards earned from mining / validation will not be taxed as at the point of mining / validation, but only upon disposal.

In addition, individual retail investors which may be considered to undertaking the activity as a hobby, may not be subject to taxes at both the receipt of rewards and upon disposal of the rewards.

Nevertheless, individuals and corporate entities ought to keep in mind of scenarios where their engagements in blockchain validation are potentially taxable, and participants in this continually evolving blockchain legal landscape should remain flexible and keep updated with regulatory developments. As the activity of mining / validation (including staking) in the blockchain context is a recent and novel development, it raises tricky questions in relation to tax law, and it is recommended that legal advice be sought when in doubt.

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