



# Annual Governance Report

OSMOSIS, 2022

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# **a41** is a blockchain infrastructure company.

We believe that active participation in governance and contribution to decentralized networks are imperative roles that crypto infrastructure players must carry out.

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# Key Insights

- Osmosis's governance responded swiftly and flexibly to the market situation changes and has served an important role in driving the development of the ecosystem.
- Specifically, proposals relevant to OSMO token incentive are closely related to ensuring participants' utilities since they directly decide on the direction of its emissions and other various tokenomics policies.
- However, a wide scope of Osmosis's governance requires specialized knowledge for understanding depending on the topic, making it hard for participants to grasp the main points on a similar level.
- On a similar note, the lack of objective discussion processes among stakeholders for the 320th governance proposal, regarding following the direction of the OFAC regulations, was the direct reason for failing to achieve neutrality in the operation of the Osmosis network.
- The imperatives of Osmosis's governance are to divide the governance scopes into sub-categories by their purposes and required expertises to improve frameworks in each area and act on fixing the harmed neutrality of the network to allow participants to easily onboard on the protocol and enjoy its fair utilities.

The purpose of protocol governance is to make sure that the protocol continues to operate in a direction that is aligned with its vision by all stakeholders who can make a decision on its operation. Thus, the entry barrier should be low enough to allow anyone to participate in governance, and the network's neutrality should be maintained so that all community members can get equal utility. Below are the criteria for assessing the governance of a protocol:

1. Isn't a protocol vulnerable to a malicious attack on its governance?
2. Are entry barriers low enough for community members to participate?
3. Is a direction of protocol governance aligned to securing participants' utility?
4. Are various stakeholders' views on each proposal well reflected in the course of consensus?
5. Does the voting result of each proposal secure the network's neutrality to prevent disproportionate reflection of specific stakeholders' interests?

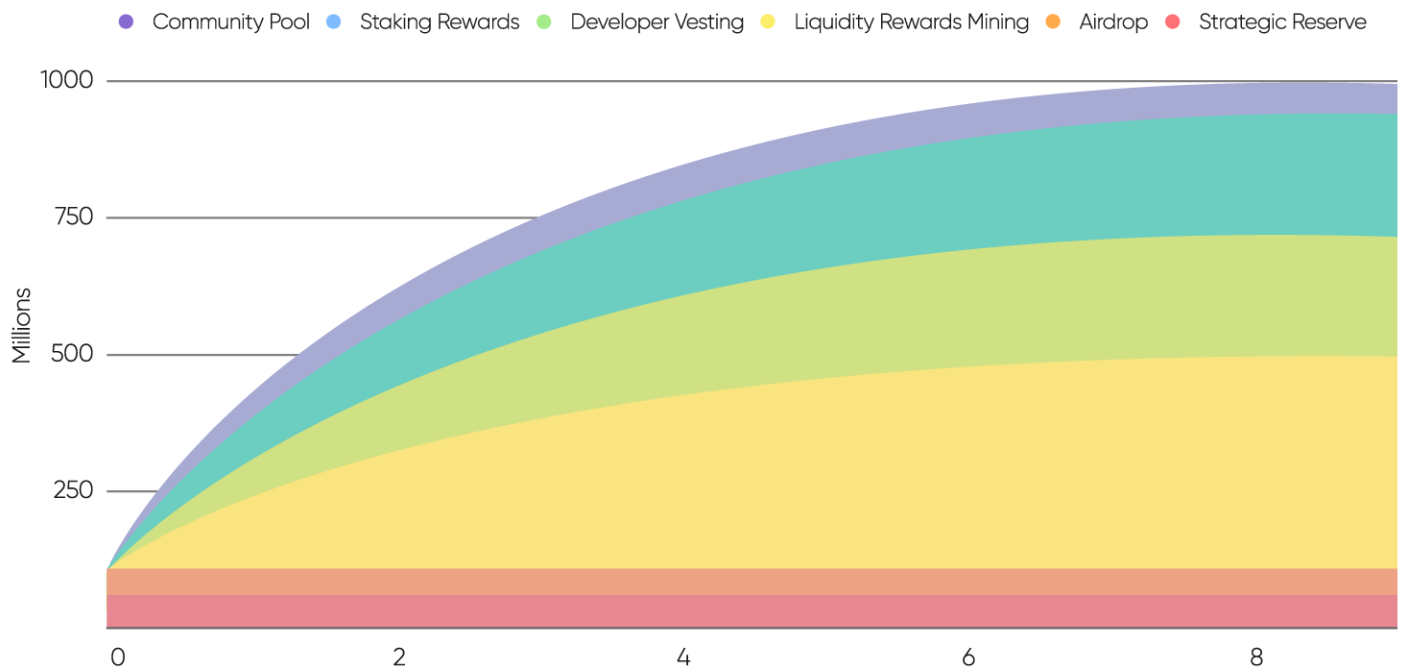
This is a 2022 governance assessment report on Osmosis in which a41 is participating as a validator. Here, we analyze the governance framework and the voting result of each proposal to evaluate the criteria described above. I hope this report will be a meaningful initiative for the development of decentralized governance of Osmosis in the future.

# Primer on Osmosis

Osmosis is a DEX app-chain built using Cosmos SDK. As with other AMM-based DEX, Osmosis users can exchange assets supported on the DEX or supply liquidity for specific assets. OSMO, the native token of Osmosis, is mainly distributed as liquidity mining incentives (45%)<sup>1</sup> for liquidity providers and staking rewards (25%) for validators and is used to pay transaction fees or network fees for incurring other transactions within the DEX.

## Distribution Plan of OSMO Token

Liquidity mining is allocated 45% of the total OSMO token distribution plan.



Source : Osmosis Labs  
Data as of Dec. 31, 2022

OSMO has exceptionally high liquidity compared to other tokens circulating within the Osmosis DEX since it is used as an intermediary for trading other assets. To make two non-OSMO trades

<sup>1</sup> Currently, Osmosis only allocates some part of it to the liquidity pool in line with the downturn of the cryptocurrency market, and put the rest to the community pool (proposals #268, #274 and #390).

from one asset to another, a non-OSMO asset is traded with OSMO first and then with another asset. Osmosis is cutting duplicated transaction fees through this Multi-hop swapping (proposals #187, #214 and #370) and establishing various incentive distribution schemes to allocate higher incentives to the pool paired with OSMO. In particular, the introduction of Superfluid Staking in March, which allows the staking of the OSMO tokens that underlie one's liquidity pool positions for the security of the network, encourages more supply to the liquidity pools.

# 2022's Major Governance Proposals

Throughout 2022, Osmosis has received 245 proposals via on-chain governance. Q1 saw 67 proposals, Q2 72, Q3 54, and Q4 received 52. By the starting point of Q3, it is observed that the number of proposals decreased dramatically. Also, mainly proposed agendas for each quarter seem to be highly dependent on the market situation at the point of occurring. Below are the proxies that show the market sentiment for cryptocurrency, which sum up the TVL trend within Osmosis DEX and major governance proposals by each quarter.

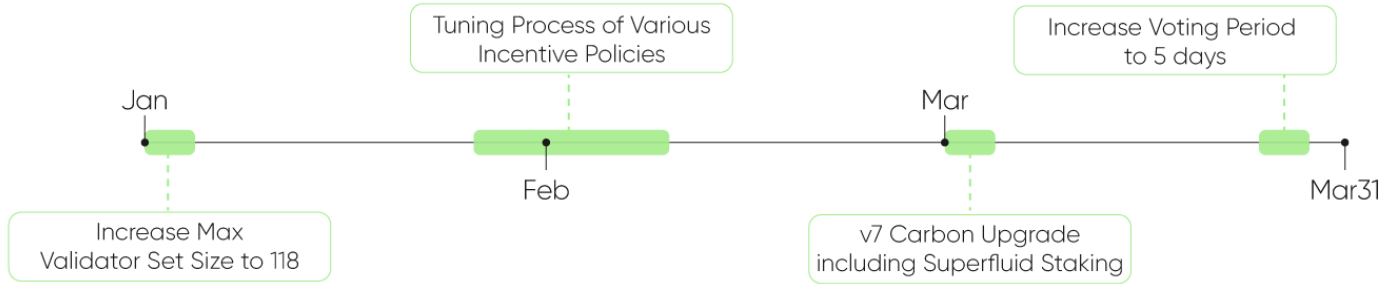
 TVL within Osmosis DEX in 2022



Source: DeFillama  
Data as of Dec. 31, 2022



## Q1 - Preparing for the Expansion of the Ecosystem



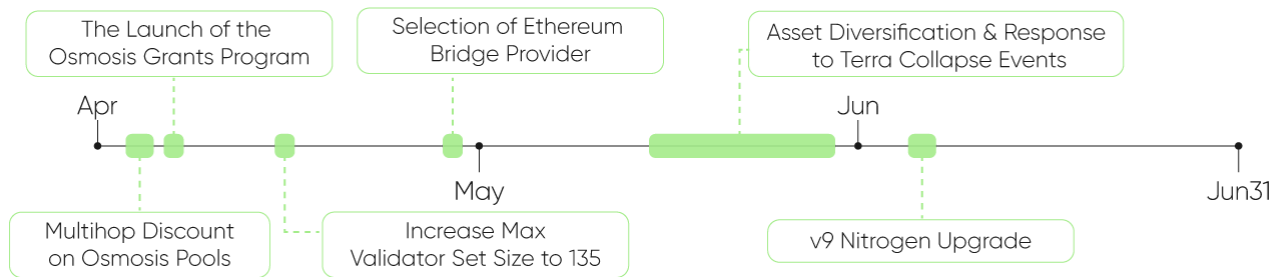
Q1 saw a flurry of proposals raised, including establishing incentive policies within Osmosis DEX and introducing various features for external expansion. Diverse incentive policies within the DEX underwent a tuning process under multiple proposals (proposals #127, #128, #133, #145, and #152), through which Osmosis created incentivized pools for about 20 assets. In particular, it is noteworthy that protocols have actively used the Osmosis DEX to increase their liquidity, as you can see from as many as 18 proposals raised for the External Incentive Matching Program<sup>2</sup>. Also, Superfluid Staking, introduced by the v7 upgrade, allowed Osmosis to grow the depth of the liquidity pool for various assets (proposal #157).

Since this quarter saw a good number of proposals raised, the voting period got extended from 3 days to 5 days so that the community could have as many discussions as possible on each governance proposal (proposal #183). The size of maximum active validators set also increased from 100 to 118 (proposal #114).

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<sup>2</sup> External Incentive Matching Program is designed to encourage each protocol to supply deep liquidity within Osmosis DEX by allocating special incentives equivalent to the value of native token which is autonomously allocated by each protocol. The maximum amount of incentives vary by the class of each asset (proposal #264).

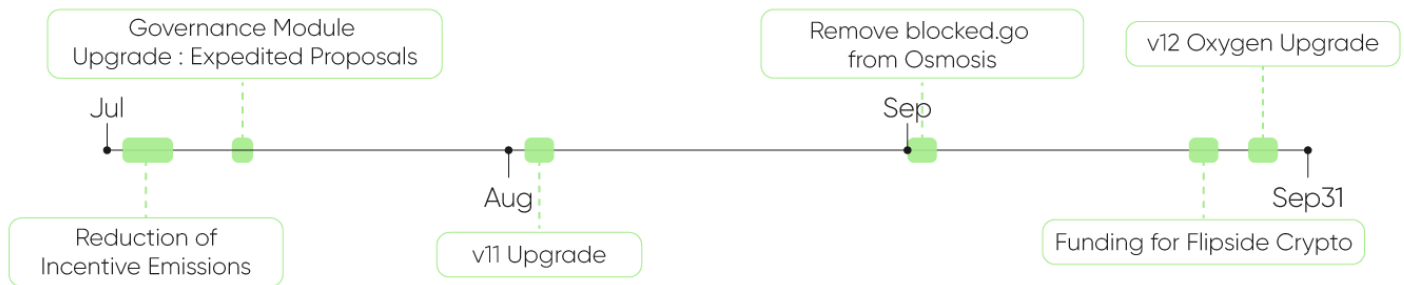
## Q2 - Diversifying Assets and Designing Flexible Governance Framework



As the incentive policies discussed during Q1 stabilized, the early days of Q2 followed the Q1 trend. Various protocols suggested to introduce External Incentive Matching Program or Superfluid Staking for their assets, and the Osmosis Grants Program (OGP) was launched (proposal #186). The maximum number of validators went up to 135 (proposal #196), and the concept of Multi-hop, which will be implemented through proposal #370 in Q4, was discussed this quarter (proposal #187). Also, Axelar Network was adopted as a bridge provider to allow ERC-assets to flow into the Osmosis DEX to diversify its asset classes (proposals #205 - #210).

However, Terra's de-pegging incident in May, followed by a liquidity crisis due to economic recession, created a new challenge within Osmosis DEX. Osmosis took an aggressive strategy to reduce its dependence on a small number of main assets (i.e., assets related to Terra) which held a disproportionate amount of incentives while diversifying other main assets. All incentives with proximity to Terra were lifted and were redistributed to ERC-based assets, including WBTC, WETH, DAI, USDC, and others through Axelar Network (multiple proposals within proposals from #222 to #239). We also saw proposals for conservative restructuring of the existing incentives (proposals #230, #244, #264). Especially, it is remarkable to see the core team and community's discussion on setting up a flexible governance framework according to the characteristics of each proposal (proposals #225, #228, and #252).

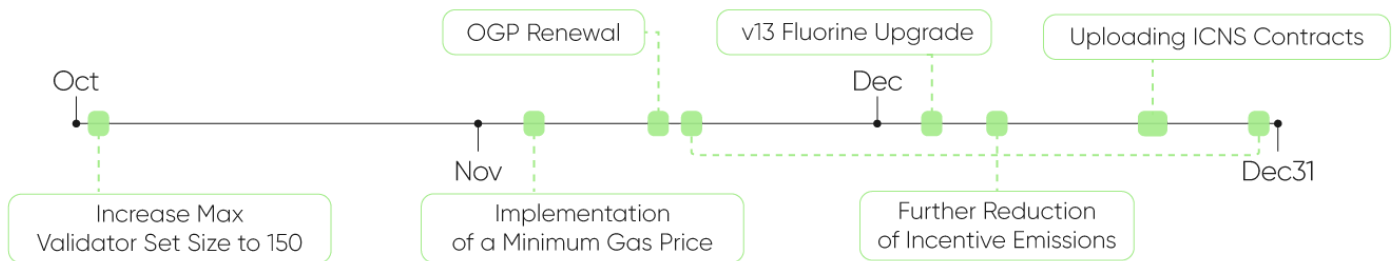
### Q3 - Reduction in OSMO Token Emissions and OFAC Sanctions



In Q3, as protocols began to supply their liquidity less actively than usual, the proportion of proposals for adding incentives had decreased compared to the previous two quarters. Emissions to the liquidity providers dropped to 80% (proposal #268), and fewer incentives went to the liquidity pools, which are less strategically important (proposals #273 and #274). Also, a special governance framework was newly introduced to expedite the process of preparing emergency cases (proposals #278 and #335). Meanwhile, the Osmosis ecosystem continued to evolve: built-in features in Osmosis were advanced (proposal #335), and funding for Flipside Crypto, data analysis tooling which enables us to query on-chain data easily, was made (proposal #330).

In particular, transaction censorship by the Office of Foreign Assets Control (OFAC) received a lot of attention from the overall cryptocurrency market this quarter, and proposal #320, which proposed a direction to operate the protocol in a non-cooperative manner, caused a heated debate in the Osmosis community.

## Q4 - Further Reduction in OSMO Token Emissions and Implementation of the Discussed Features



As with the economic downturn in the cryptocurrency market and the macroeconomy, Q4 saw further reductions in incentive emissions (proposals #364, #376, #389, and #390), and some proposals on the use of public funds were severely contested by the community (proposals #362 and #378). Similarly, incentives allocated for liquidity providers according to the platform's tokenomics were reduced to 30% of the existing 45% of the total inflation (that is, 13.5% of the total token release plan) after several rounds of proposals.

Meanwhile, besides incentive rewards, the Osmosis network keeps improving its technology and security. v13 upgrade resulted in implementing Multi-hop and Stableswap features (proposals #370 and #377), and ICNS (Interchain Name Service), a naming service that users can use for the chains supporting IBC, was integrated (proposals #381 - #383). The maximum size of the active validator set increased from 135 to 150 (proposal #337).

In short, over the past year, the Osmosis core team and community have made every effort to build a system that is flexible and responsive to the market condition harnessing governance. As a result, Osmosis has been able to stabilize the structure of its tokenomics further and advance its built-in features.

# Analysis of the Governance Framework

One of the missions of Osmosis is to develop a balanced ecosystem by aligning the interests of different stakeholders, including the OSMO token stakers and liquidity providers. Considering the low barrier to participation in Osmosis governance, it is essential to ensure various stakeholders' deep understanding of the proposals for them to make informed decisions and design a flexible and comprehensive governance framework to reflect the interests of everyone involved, to achieve this mission.

## Governance Parameters and Processes

In the governance process, it is essential to allow voters to access each proposal easily and have enough discussions on a common platform, not in fragmented forums so that they can fully understand and ponder upon each proposal. Also, the process of raising a proposal should not be too complicated or slow. However, there should be an optimal line - if it is too easy or there are few hurdles in the process, random or irrelevant proposals could come up too often, making voters feel decision fatigue, and the protocol could go awry.

In short, it is important to properly set the parameters necessary for governance processes so that voters and proposers do not feel fatigued when they handle proposals. The current governance process of Osmosis follows the steps below by category:

## General Governance Proposals

### *Pre-discussion*

Before listing a proposal on-chain, a proposer should create a thread on Commonwealth for three days so that the community members can thoroughly discuss it.

### *On-chain Governance Voting*

After being posted on Commonwealth for three days, a proposal can be raised as the on-chain governance proposal of Osmosis. The proposer must deposit 1,600 OSOMO within a 14-day deposit period. The deposit can be made by anyone in the community, including the proposer. But 25% of the deposited amount must be paid by the proposer. With the passing of proposal #252, all proposals can set their voting period according to their type.

During the voting period, OSMO stakers can vote for either Yes, No, NoWithVeto, or Abstain: Yes signals you agree with the proposal's passing, while No signals your disagreement with the proposal. NoWithVeto signals a significantly stronger disagreement where you want to slash the proposer's deposit. Abstain means you don't want to be in any position, and its portion is not counted for the quorum. Here, a proposal's passing requires a quorum of 20% or more, with NoWithVeto reaching under 33.4%.

### *Implementation*

Governance proposals approved by the Osmosis community will be either immediately implemented or introduced after the Osmosis core team conducts a technical inspection depending on the proposal's content.

## Expedited Governance Proposals

Osmosis also has a unique framework to address urgent matters, such as the rapid depreciation caused by the Terra collapse.

### *On-chain Governance Voting*

A proposer can set a specific proposal as “Expedited” and list it immediately. The proposer must deposit 5,000 OSMO and get 66.6% or more of YES votes in 24 hours. If it fails, the proposal will change its status from Expedited to General and follow the general governance processes afterward.

### *Implementation*

Governance proposals approved by the Osmosis community will be either immediately implemented or introduced after the Osmosis core team conducts a technical inspection depending on the proposal's content.

## Miscellaneous about Governance Processes

Osmosis adopted DPoS (Delegated Proof of Stake) as its consensus algorithm. It is only affected by the active validator set of 150 voters as of now (proposal #337). A delegator’s voting overrides the corresponding validator’s voting. In other words, if a delegator casts a different vote on a proposal from the validator, the delegator’s vote is reflected in the voting result, and the voting power of the validator on the proposal decreases as much as the staked amount of OSMO by the delegator.

Moreover, with the passing of proposal #354, which charges a minimum fee worth 0.0025 uOSMO per transaction, indiscriminate governance spam, such as DoS attacks, can be prevented to some degree<sup>3</sup>.

The expedited governance process, designed to handle special occasions which would otherwise not have been addressed promptly, adds flexibility to the existing governance framework. In addition, Osmosis integrates various tools so that all community members can easily participate in governance: Commonwealth is a place where anyone can freely express their view on a specific proposal or any other subject without restriction. Keplr Dashboard and Mintscan help each proposal to be posted and voted on quickly.

Also, the governance processes, which include mandatory pre-discussion, deposit policies, free voting period settings, and the 20%-quorum, are agreed upon by the Osmosis community through several steps of discussions for each participant's point of views on each agenda are well reflected (proposals #183, #199, #225, #232, #278, #296, and #304). Meanwhile, protocols adopting the DPoS consensus algorithm, like Osmosis, have a relatively high level of centralization<sup>4</sup> of stakes, compared with other Layer 1 chains, which can result in over-skewness of the voting result or malicious governance attacks potentially. **Osmosis makes up for this vulnerability with a multi-stage governance process and the voting-overriding feature.**

However, there is room for improvement to enhance Osmosis' governance processes. First, all governance processes are mainly conducted in English, although the users are not confined to English speakers only. **It is not favorable for non-English speaking community members to thoroughly understand proposals, which can affect the power dynamics of communities using**

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<sup>3</sup> Charging a minimum fee per transaction is a key way for protocols to prevent spam proposals, along with enforcing deposits required for on-chain governance proposals.

<sup>4</sup> Nakamoto Coefficient measures decentralization of a network and represents the number of nodes required to disrupt the network when validators band together. According to Appendix II, Osmosis Nakamoto Coefficient is 7 at this point, not a good score compared to Cosmos' and other various Layer 1 chains.



**different languages.** Second, the channels that community members use for discussions are highly fragmented. **Although the governance process specified Commonwealth as the primary forum where users can discuss proposals, many members use other venues, including Discord, Telegram, and Twitter, as their main channels.** As a result, the voting result may disproportionately reflect a minority view or a specific channel. Further governance processes may reflect on discussions in different channels or guide the community members in each channel to post their thoughts on the Commonwealth.

# Governance Scope

Governance is a space where users discuss the direction of protocol and decide how the protocol will be operated. Thus, it is essential that the protocol properly sets the governance scope and required expertise so that participants can fully understand and vote on the proposal. In other cases, a protocol's governance could fall into a stalemate where no result can be implemented, or it might lead the protocol to a direction that doesn't align with its purpose or mission.

## Definition of the Category

As of now, Osmosis governance instructs proposers to select one of three options when proposing an agenda on on-chain<sup>5</sup>; Community Pool Spend Proposals, Parameter Change Proposals, and Text Proposals. Nevertheless, proposals in the same option are sometimes shown to have opposing goals. For instance, a proposal to change parameters in liquidity pools and a proposal to adjust governance parameters have different aims but are in the same option. Thus, we conclude that more flexible criteria are needed. This report breaks down the Osmosis governance scope into four main categories: Incentive, Funds, Governance Operation (GovOps), and Technical Operation (TechOps).

## Incentive

The scope of the incentive category covers all proposals for discussing Osmosis incentives. Major proposals include operating incentivized pools for each asset, introducing superfluid staking or external incentive match programs for each liquidity pool, and adjusting incentive or fee policies.

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<sup>5</sup> <https://github.com/osmosis-labs/governance/blob/main/submitting.md>

## Funds

The scope of the funds category covers all proposals for attracting public funding for marketing, event-hosting activity, program operation, and public goods projects which would help with the development of the ecosystem. Major proposals include funding for OGP (Osmosis Grants Program), Osmosis Support Lab, and Flipside Crypto, which provides data analysis tooling.

## Governance Operation (GovOps)

The scope of the GovOps category covers proposals for the operation of the non-technical part of Osmosis. Major proposals include adjusting the maximum number of active validator set, adjusting the governance framework, selecting an Ethereum-based bridge provider, and deleting file compliant with OFAC sanctions.

## Technical Operation (TechOps)

The scope of TechOps covers proposals for the technical operation of Osmosis. The main proposals are upgrades for the regular operations of the protocol, advancement of features, and IBC client updates for individual protocols.

## Expertise Required for Each Category and Areas of Improvement

Since Osmosis is a DEX app-chain (App + Chain), its governance scope is very wide, ranging from low level (related to the network layer) to high level (in charge of the actual utility of the DEX). And all stakers have the right to decide on all proposals regardless of their scope. Reversely said, if stakers vote without enough expertise and evidence required to make informed decisions in all scopes of proposals, the result might not represent the intended direction of the ecosystem. Indeed, they are likely to search for more data than the proposal's content to inform themselves properly to vote. For instance, proposals #305 and #306 for uploading ION DAO's contracts on the Osmosis network saw more than half of Yes during the voting period. Still, they were dismissed after a validator named Larry identified a fault code.

Thus, we need to identify the knowledge and expertise required by each category and discuss which part can be complemented from the framework point of view.

	Required Knowledge and Expertise
Incentive	<p>Ability to apply tokenomics to the changing market conditions</p> <p>Ability to understand diverse incentive policies in Osmosis</p> <p>Ability to analyze the gains and risks the introduction of incentives may bring for each liquidity pool</p>
Fund	<p>Overall understanding of Osmosis' mission and ecosystem</p> <p>Ability to analyze the gains and risks funding may cause to the ecosystem</p>
GovOps	<p>Overall understanding of Osmosis' mission and ecosystem</p> <p>Experience in participating in Governance</p> <p>Understanding of Idiosyncrasy and philosophy of Blockchain</p>
TechOps	<p>Overall understanding of Osmosis' mission and ecosystem</p> <p>Ability to analyze the effect of main features to be introduced</p> <p>High level understanding of programming language grammar</p> <p>Ability to identify the Osmosis's architecture at low-level</p> <p>Knowledge on network security and performance optimization</p>

## Incentive

Diverse incentive policies mediating OSMO token are supported by the community governance, and play a key role in stably expanding the Osmosis ecosystem. Considering that the token incentives distributed to liquidity providers are limited, we need a conservative approach to introducing incentives for specific liquidity pools. Thus, participants should have a basic

understanding of Osmosis's diverse incentive policies and tokenomics as well as analytical skills to understand the gains and risks the passing of a specific proposal would bring about.

Currently, when a proposal is raised in the incentive category, proposers generally provide enough explanation on the to-be mechanism. For instance, with the explanation of the proposer, voters can learn how many OSMO tokens will be used for further network security from the proposal's passing, even if they are not knowledgeable on how Superfluid staking works exactly.

Still, from the ecosystem's point of view, it remains the participant's role to analyze the potential gains and risks the passing of a specific proposal will cause. As individuals do not have deep knowledge of all types of assets, it is hard for all members of the community to have the same level of understanding. For example, proposal #135 for operating ROWAN<sup>6</sup>/OSMO as an incentivized pool was raised. Back then, the Protocol Monetary Trade Policy (PMTP) proposed by the ROWAN project was not even materialized, but it was also vulnerable to the bear market. Despite all these shortcomings, no objection was raised against the proposal. Long story short, the ROWAN project fell apart as the bear market rally went into full swing in May, and proposal #349 removed the incentives.

When such proposals are raised in the incentive category, proposers may provide evidence of the potential gains and risks the passing will bring to ensure the community members discuss the proposal with enough understanding. Besides, proposals #273 and #389, which proposed taking follow-up actions on the pools considered less effective in the Osmosis ecosystem, imply the necessity for pre-analyses when introducing new assets.

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<sup>6</sup> It is a native token of Sifchain.

## Funds

The purpose of public funds is to identify public goods which would contribute to the Osmosis ecosystem. Based on their knowledge of the Osmosis ecosystem, participants need to fully discuss what kind of impact the goods can bring to the ecosystem when funding is made. For instance, proposal #362, raised last November, caused a debate over the operation method and performance of the OGP. Over this issue, the Reverie team responsible for OGP had to share the details of OGP's performance and future operation plan.

For sure, players looking for public funds are trying to persuade the community on their proposal with a series of plans and rationale in their own way, but participants may not have the same degree of acceptance. To get public funds in time for good projects, we may consider having a common proposal framework with a set of criteria, including real-time performance release or funding by milestone under the community's consensus.

## Governance Operation (GovOps)

As agendas in the GovOps category will drive the direction of Osmosis operation, they require comprehensive experience in various areas - ranging from the platform's mission, overall understanding of the ecosystem, and experience in governance participation, to idiosyncrasy and philosophies of the Blockchain. In other words, when participants' experience varies too much, a stalemate can occur in a worst-case scenario without reaching any conclusion. Thus, the passing process can be managed flexibly by proposal after identifying how much discussion is needed.

For instance, when a proposal requires much discussion, it will go through several stages for a long time to properly consider various participants' views. We can also take the same approach as Lean management, in which various alternatives are tried quickly to make up for

shortcomings little by little. In fact, there has been two experiments from 2022 to set the default voting period for on-chain governance proposals as five days (proposals #183 and #232).

## Technical Operation (TechOps)

Proposals in the TechOps category are somewhat tricky for those unfamiliar with programming. Most proposals are about contract uploads, core upgrades and network communication-related concepts. Thus, to vote for a proposal in this category, participants must do a qualitative analysis of a specific update's effect and whether an update has a programming-related fault. Of course, each proposal usually provides access to source codes for itself, but participants need to fully understand how the codes really work before making the right decision. As introduced before, during the early stage of voting on proposals #305 and #306, more than half didn't recognize the fault code and voted 'YES': A case in point is that they weren't informed fully before the voting.

Going forward, Osmosis's governance can complement the governance framework in this category to prevent such potential degrading of the security and performance of the network. For instance, each proposal can be posted on-chain after pre-discussion handles code audits. Or, we can only measure the public sentiment on potential advantages through the passing of the proposals and implement the proposed actions after the code audit from a DAO specializing in code audits. Rather, we can also consider restricting the scope of TechOps governance itself or breaking it down into segments.

A low entry barrier for their activities should be a prerequisite to allowing participants to easily onboard and contribute to making the network be decentralized. **However, a wide range of topics covered in Osmosis's governance proposals requires varying degrees of knowledge.**



Nevertheless, each category shares a single governance framework, and often members aren't properly informed about each proposal. Although the governance processes instruct participants to go through pre-discussions in the Commonwealth, tracking all the raised agendas is not feasible. In short, the existing governance framework of Osmosis can be improved by further lowering the entry barrier to reflect participants' views better.

For sure, Osmosis is helping new users to onboard and participate in governance through the direct and indirect distribution of various documentation and information required for voting. However, governance participants, in the closest proximity to the community, should take initiative in ensuring each community member has a fair understanding of the Osmosis's structure. As such, classifying the governance scope by purpose and defining the expertise required for each scope will be the first step toward achieving a more effective and flexible governance framework.

# Analysis of Voting Results

In order to continue a more objective discussion on whether the protocol's governance has been operated well, analysis of empirical data, including actual voting results, are required. The following three analyses each provide interesting implications based on the voting results on a total of 245 proposals proposed during the year 2022.

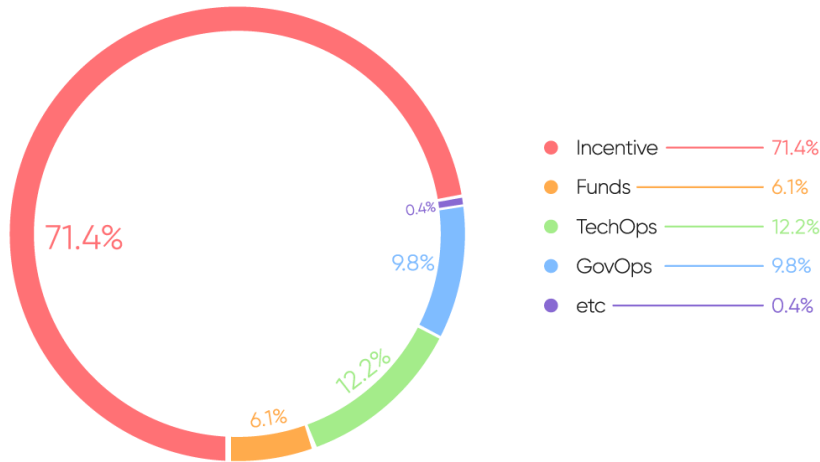
## Trends of Proposals Raised

Osmosis stakers can introduce new policies such as external incentive match programs or Superfluid staking for each liquidity pool through governance proposals. They can also configure different amounts of basic incentives distributed to different liquidity pools by classing each asset as 'major', 'minor', 'stable', or 'others'. Accordingly, liquidity providers will be incentivized to stake OSMO tokens to participate in decision-making to diversify the management strategies of their assets. Conversely, stakers are incentivized to provide liquidity to capture new strategies that can maximize rewards from the results of their decision-making from themselves. **As such, since the OSMO token acts as an intermediary between stakers and liquidity providers by structurally aligning their respective incentives, proposals in the incentive category that determine token emissions and various incentive policies are closely related to ensuring the utility of the participants.**

In fact, out of a total of 245 proposals over the past year, the proposals in the incentive category are driving the governance of Osmosis, accounting for the majority (71%).

## Proportion of Proposals by Category in 2022

Among the proposals proposed in 2022, proposals in incentive category are the most (145 of total 245)

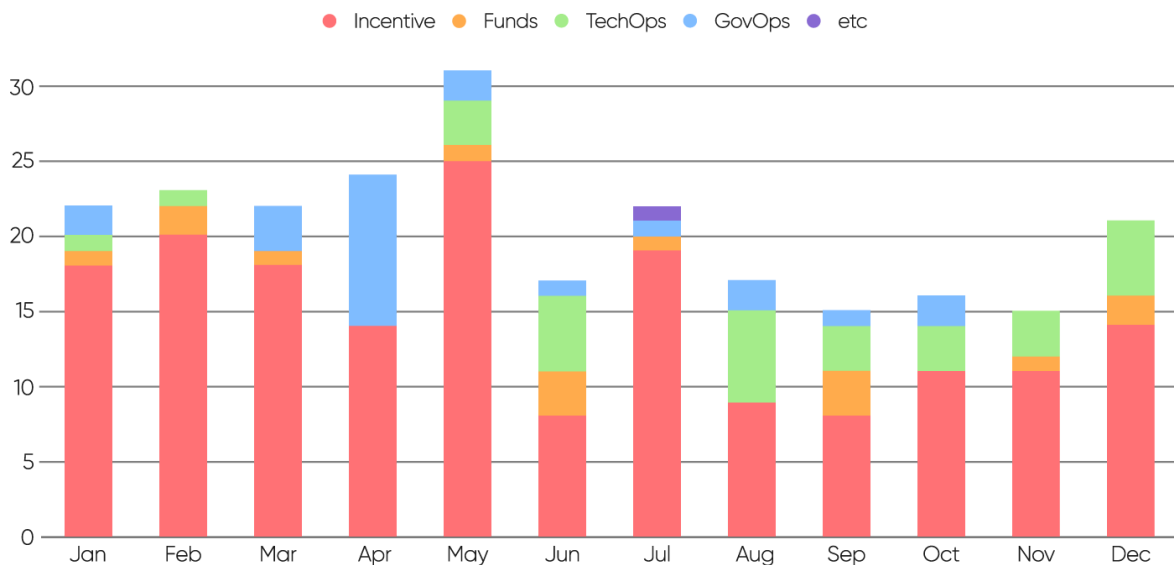


Note : etc. contains a proposal that cannot be identified its contents (i.e., Proposal #277)

Source : Mintsan  
Data as of Dec. 31, 2022

## Monthly Number of Proposals by Category in 2022

Even on a monthly basis, proposals in incentive category are the most.



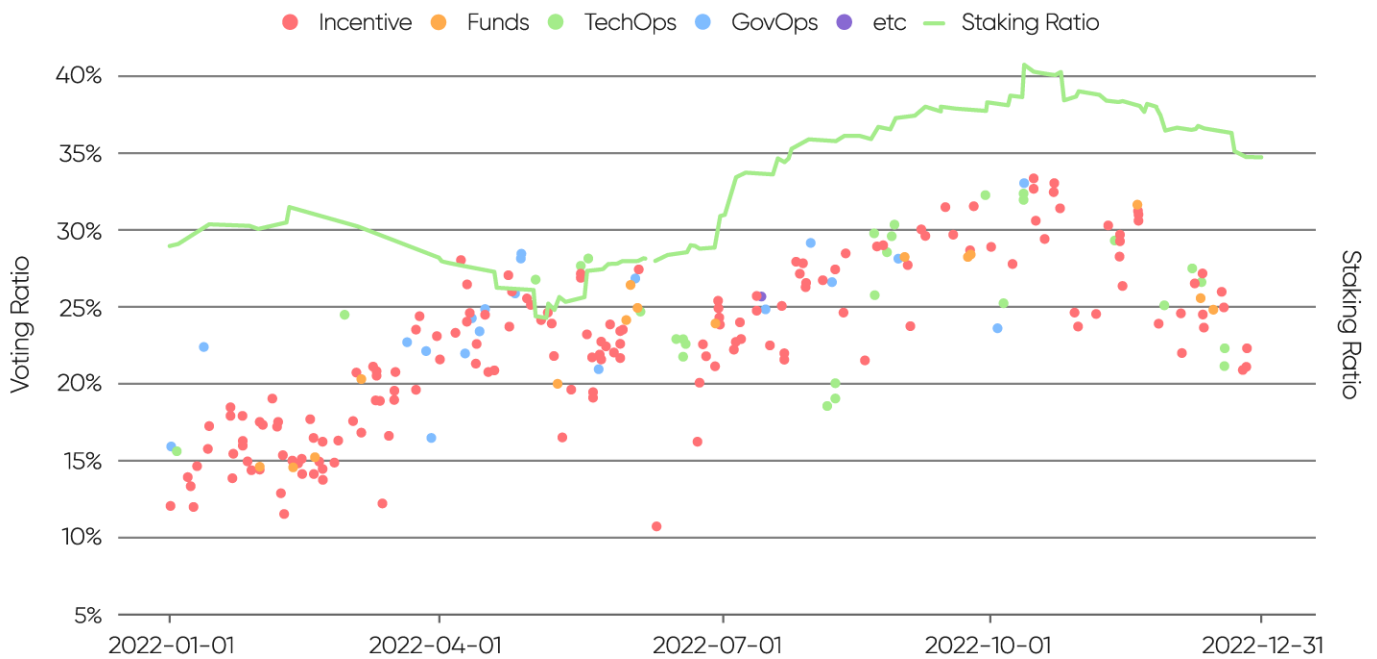
Source : Mintsan  
Data as of Dec. 31, 2022

This is even more evident when looking at the percentage of agenda items in each category by month. Incentive category always accounts for the highest percentage, not limited to a specific month. When market conditions were fair, proposals introducing incentives for individual assets

were mainly suggested. When the market situation was less than fair, agendas for tightening policies on token incentives were mainly discussed. Overall, this trend can be interpreted as the community using governance in the incentive category to react quickly to market conditions.

On the other hand, it is also interesting to note that the proportion of proposals in the TechOps and Funds categories have increased, while the total number of proposals has declined overall since May, which was when Terra’s de-pegging incident took place. Introduction of TokenFactory module, TWAP, Interchain Account, emergency governance proposal module, stable-swap and cross-swap function, ICNS, and advancement of IBC and CosmWasm all took place in the second half of the year.

### Voting Ratio and Staking Ratio



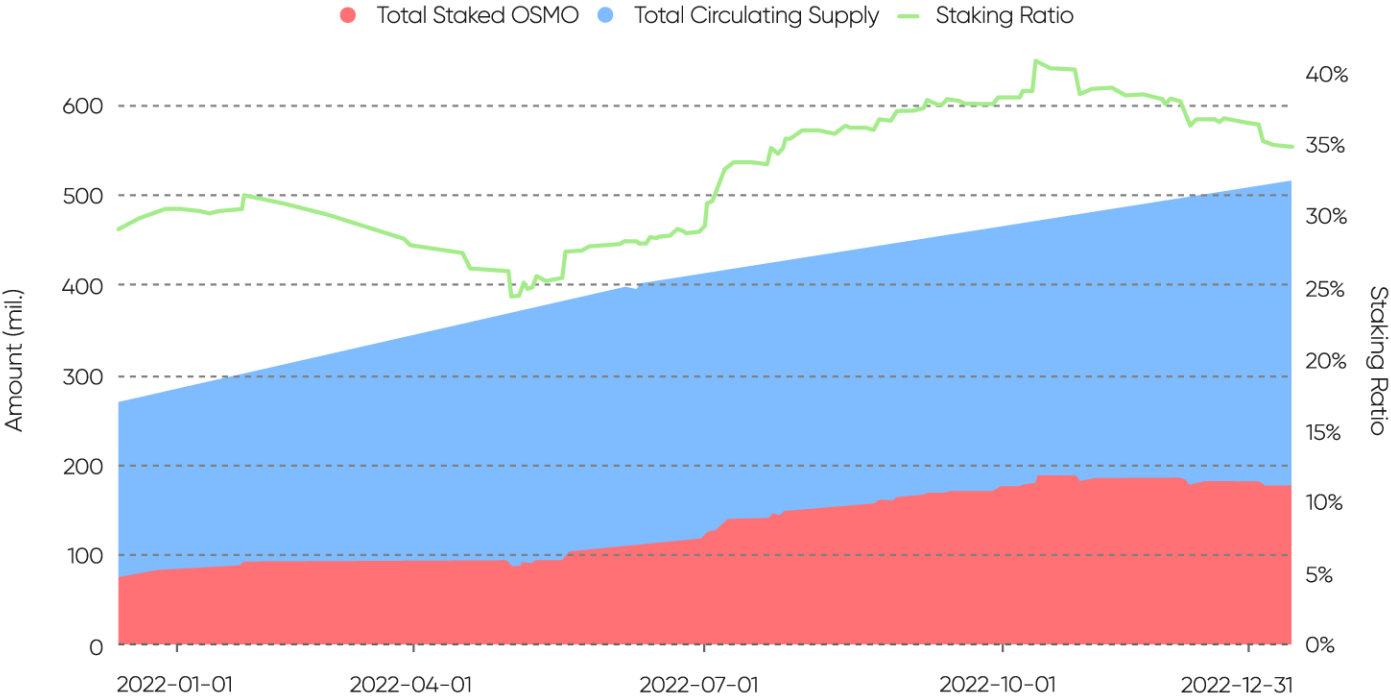
Note :

- (1) Staking Ratio = Total Staked OSMO / Total # of Tokens in Circulation
- (2) Voting Ratio = Total # of Tokens Used for Voting / Total # of Tokens in Circulation
- (3) Staking Ratio do not reflect the amount of staked tokens form Superfluid Staking
- (4) Staking data could not be collected for both days from June 8th to 9th, when the Osmosis network was exploited.

Source : Mintscan  
Data as of Dec. 31, 2022

Even in terms of voting ratio and staking ratio, each governance agenda is somewhat sensitive to market conditions. Both indicators experience two downtrends, one after the de-pegging of Terra in May and the other after the FTX crash in October. Data from 'Appendix I - Daily Net Staked OSMO' shows that many participants unstaked during these periods<sup>7</sup>. It is also noteworthy that voting ratio and staking ratio have a strong positive correlation with each other.

 Total Staked OSMO & Total Circulating Supply of OSMO



Note: Staking Ratio do not reflect the amount of staked tokens from Superfluid Staking. Source: Mintscan, Flipside Crypto Data as of Dec. 31, 2022

In the graph above, it can be observed that the staking ratio increased despite the linear increase in the circulating supply of OSMO tokens. Considering the up-trend of voting ratio in the previous graph together, this means that new stakeholders have become involved in the governance or existing stakeholders have become more active in voting.

<sup>7</sup> The staking ratio starts to drop from mid-February. However, according to 'Appendix I - Daily Net Staked OSMO', this is not due to more unstaking compared to staking, but rather effective staking was maintained relative to an increasing supply. This could be related to preparation for the Superfluid staking update.

## Average Voting Ratio by Categories

	Q1	Q2	Q3	Q4	Q1 → Q4
Incentive	16.7% (55)	22.8% (48)	26.0% (36)	27.2% (36)	10.5%p ▲
Funds	16.2% (4)	23.5% (5)	27.2% (4)	27.3% (3)	11.1%p ▲
GovOps	19.92% (5)	26.28% (12)	27.22% (4)	28.33% (2)	8.4%p ▲
TechOps	20.04% (2)	24.67% (8)	25.97% (9)	26.77% (11)	7.7%p ▲

Note : Figure in parenthesis represents the # of proposals.

In particular, it is very surprising that voting ratio for the incentive and funds categories<sup>8</sup> increased by more than 10%p on average in Q4 compared to Q1.

In short, since the incentive emission structure of the OSMO token, which is the core of Osmosis tokenomics, is mainly implemented through proposals in the incentive category, proposals in the incentive category are the most directly related to the utility of the participants. In addition, the increasing staking ratio and voting ratio are highly correlated with the proposal in the incentive category, and are reactive to market conditions.

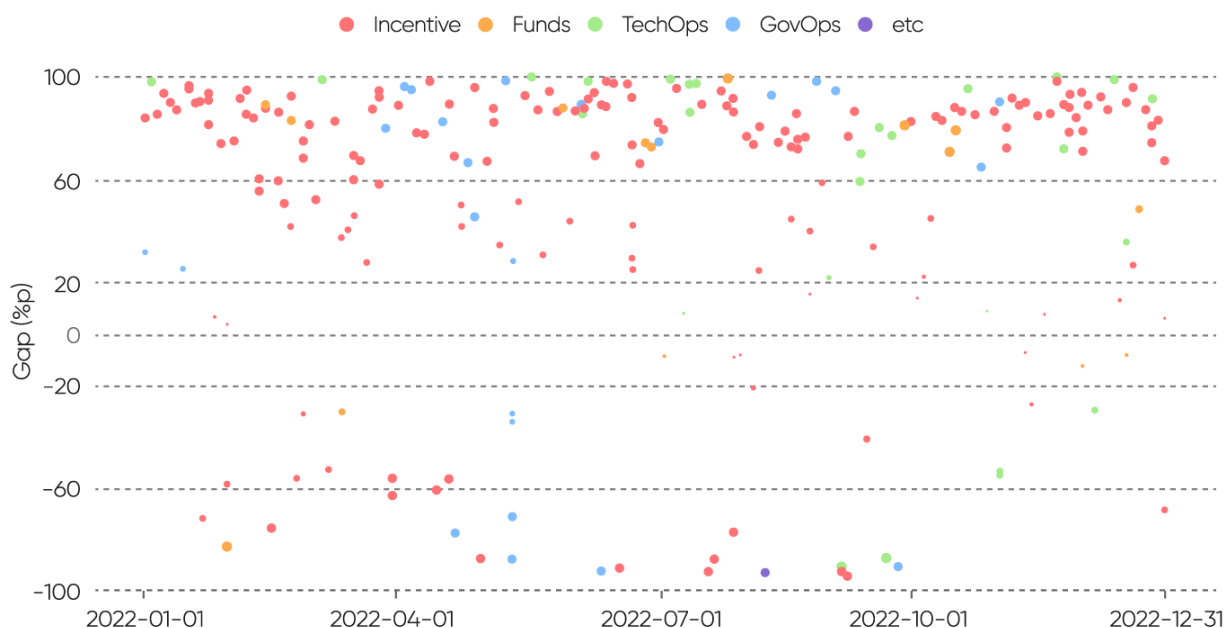
<sup>8</sup> However, as can be observed in the table, the number of proposals in the funds category is less than 10 on a quarterly basis.

# Stakeholder Consensus on Each Proposal

Even if the direction of governance guarantees the stakeholders' utility and they actively participate in the governance at the same time, if each stakeholder's position is not sufficiently represented in the process of reaching a consensus for each proposal, the protocol's governance is not sustainable anymore. The proposal #16 of the Juno protocol and hard-fork events in Bitcoin and Ethereum are the cases in point where consensus was not achieved due to poor representation of various stakeholder positions during the governance process.

The diagram below shows the gap in percentage between 'YES' and 'Not YES' votes for each governance proposal made in 2022.

 Gap between 'YES' and 'Not YES' on Each Proposal



Note:

- (1) The y-axis shows the gap between 'the percentage who voted YES' and 'the percentage who did not vote to YES' for each proposal.
- (2) During 2022, all proposals achieved a quorum.
- (3) The size of the dot is proportional to the voting ratio.

Source : Mintscan  
Data as of Dec. 31, 2022

## |Gap| >= 60%p

- Shows proposals with a voting ratio of over 80% in either 'YES' or 'Not YES'.
- Most of the voters on these proposals reached a consensus.
- 73.7% (129/175) of proposals in the Incentive category fall within this range.
  - Proposals in the Incentive category include adding/removing incentives, operating an external incentive match program, introducing Superfluid staking, and regularly adjusting incentives according to the agreed policy for each liquidity pool.
- 68.8% (11/16) of proposals in the Funds category fall within this range.
  - Proposals in the Funds category include issues related to the execution of marketing/promotional event expenses, operation of bug bounty programs and the Grants Program, and support to projects contributing to the ecosystem.
- 73.9% (17/23) of proposals in the GovOps category fall within this range.
  - Proposals in the GovOps category include proposals for governance parameter changes, module changes for expedited governance, increase of maximum active validator set numbers, selection of bridge provider, and managing file regarding OFAC's Tornado Cash sanctions, etc.
- 73.3% (22/30) of proposals in the TechOps category fall within this range.
  - Proposals in the TechOps include updating the IBC client, implementing an emergency hard fork (related to the Terra's de-pegging incident), adding major features and uploading contracts, fixing bugs, imposing minimum transaction fees, and introducing ICNS.



## 20%p =< |Gap| < 60%p

- Shows proposals with a voting ratio of over 60% and less than 80% in either ‘YES’ or ‘Not YES’.
- Most of the voters on these proposals agreed to a certain degree.
- 20.6% (36/175) of proposals in the Incentive category fall within this range.
  - Most of the proposals are to introduce new incentive policies to liquidity pools that pair ROWAN, VDL, XKI, DARK, XPRT, CHEQ, UMEE, DEC, LIKE, BAND, PSTAKE, SWTH, CRBRUS, Fetch.ai, AssetMentle, KAVA, LINK, CMDX, BLD, GRAV, etc.
  - Other proposals include modifying incentive distribution policies and reducing incentives for ‘Others’ category and liquidity pools with low trading volume.
- 12.5% (2/16) of proposals in the Fund category fall within this range.
  - Proposals include allocating public funds to the Osmosis Support Lab and the Osmosis Ministry of Marketing in relation to marketing for Osmosis.
- 26.1% (6/23) of proposals in the GovOps category fall within this range.
  - Proposal #114, which is a proposal to increase the maximum size of the active validator set from 100 to 118, was proposed on-chain without much discussion of the network’s performance at the time.
  - Other proposals include mandatory use of Commonwealth for governance proposals, signaling of fund movement to ION DAO Treasury, and selection of bridge providers other than Axelar Network.

- 20.0% (6/30) of proposals in the TechOps category fall within this range.
  - This includes uploading ION DAO and CW3 Fixed Multisig smart contracts, and proposing IBC client updates for individual protocols.

|Gap| < 20%p

- Shows proposals with insignificant difference between 'YES' and 'Not YES' votes.
- Voters on these proposals did not reach a consensus.
- 5.7% (10/175) of proposals in the Incentive category fall within this range.
  - This includes proposals to introduce new incentive policies to liquidity pools that pair DIG, MNTL, INJ, LIKE, STARS, etc.
  - This includes proposals to decrease/remove incentives respectively for a liquidity pool that pairs MNTL and ROWAN, and a liquidity pool that consists of non-OSMO assets.
- 18.8% (3/16) of proposals in the Funds category fall within this range.
  - Proposal #251 and #362 propose funding for the operation of the Osmosis Ministry of Marketing and Osmosis Grants Program, respectively.
  - Proposal #375 suggests executing a transfer of funds to the ION DAO Treasury.
- None of the proposals in the GovOps category fall within this range.

- 6.7% (2/30) of proposals in the TechOps category fall within this range.
- This includes proposals on the IBC client update for LUM Network and the upload of the Apollo Liquid Staking contract.

Proposal ID	Category	'YES(%p)' - 'Not YES(%p)'
130	Incentive	6.8
133	Incentive	3.9
270	Incentive	-8.9
271	Incentive	-8.2
294	Incentive	15.5
323	Incentive	14.1
349	Incentive	-7.1
352	Incentive	7.8
372	Incentive	13.1
389	Incentive	6.1
251	Funds	-8.6
362	Funds	-12.3
375	Funds	-8.0
256	TechOps	8.4
339	TechOps	9.0

Overall, voters had difficulty reaching an agreement in just over 6% of the agenda items (that is,  $|gap| < 20\%$ ). Ten proposals were in the Incentive category, 3 in the Funds category, and 2 in the TechOps category. Disagreements on some of the proposals in the Incentive category may be

natural. After all, there are liquidity pools of various assets within the Osmosis DEX and the interests of each stakeholder is also very diverse. One interesting point is that these issues are closely related to the discussion of the liquidity pools made up of non-OSMO assets and the incentive policy for minor-class asset. This implies the need for clear criteria in the protocol for onboarding/offboarding of assets that the community can all agree on.

Among the proposals in the Funds category, there are issues related to funding for the Osmosis Ministry of Marketing and OGP, as well as the transfer of funds from ION DAO. The difference between most of the items that have been agreed on and the items in question can be found in whether the proposal was specific or not. For example, proposals #147, #219, and #330, each specifically proposed funding for a particular event or product, and were successfully passed. On the other hand, in the case of items voters could not agree on easily, the community pointed out ambiguities in the proposal. In particular, despite the fact that the extension of operation of OGP had already been continuously made through two proposals (proposals #186 and #246), disagreement rose within the community over the ambiguity of OGP's standards for awarding grants. Also, the nature of the category means that unfavorable market conditions may also affect the probability of an agreement reached over an proposal (e.g., #251 - June, #362 - November, #375 - December).

For proposals in the remaining categories (i.e., GovOps & TechOps), there are a few items that voters could not reach an agreement on, one way or another. That is, however, not to say that there was strong agreement on most. What these proposals have in common is that the risk measurement is ambiguous. This is somewhat in line with the proposal of the Funds category. For example, many proposals related to ION DAO had been rejected because ION DAO's identity<sup>9</sup> had not been clear during the period.

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<sup>9</sup> ION DAO is currently pivoting with the \$IBCX (the Interchain Index Token) project.

	Total # of Proposals	Average % of 'Not YES'
Incentive	175	22.2%
Fund	16	27.2%
GovOps	23	34.9%
TechOps	30	25.7%

In short, where there is discord over any Osmosis proposal, it mainly stems from the fact that the different participants have different interests, or that the proposal itself was ambiguous. Improvements can be made to the governance proposal process according to each category taking these lessons. On the other hand, just because the consensus was hard to reach doesn't mean that the voting results of each proposal aren't accepted by the community. Issues were handled without problem according to the voting results, and the community did not try to re-discuss the issues once the voting results were in. **Therefore, we can accept that each participant's position was well-reflected during the proposal's lifecycle in which participants vote on Osmosis proposals and results are produced.**

# Neutrality of the Voting Results

To the extent that some say a multi-chain paradigm has begun in the blockchain ecosystem, the industry assumes that each protocol has an independent and unique color and that users are easily participating in multiple protocols and freely using the various advantages the protocols offer. However, this does not mean that protocols do not need to be neutral. Neutrality is necessary because there are very diverse people participating in each protocol and the protocol should guarantee utility to all participants in a fair manner. Therefore, in order to determine whether the protocol is neutral in terms of governance, it is very important to examine each agenda related to the operation of the protocol and analyze whether the voting result of a specific agenda is (potentially) biased toward specific stakeholders.

As such, among the four categories included in this analysis, a total of 53 governance proposals that fall into the TechOps and GovOps categories were examined. This is because proposals in the incentive and public fund categories are deemed to only reflect the interests of each stakeholder and do not directly affect the neutrality of the system.

## Governance Operation (GovOps)

- Proposals #114, 196, 337
  - These proposals intend to increase the maximum size of the Osmosis network's active validator set.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.

- Proposal #120
  - This is a proposal to transfer 16572 IONs in the Osmosis community pool to ION DAO when it is materialized in the future. This amount would be obtained fairly by the ION Treasury through the Osmosis genesis airdrop.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.
  
- Proposals #176 and #182
  - These propose an agreement with the Regen Network to address carbon emissions from the operation of the Osmosis network.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.
  
- Proposals #183, #199, #225, #232, #278, #296, #304
  - These propose to modify the governance framework of Osmosis. Each proposal includes fixing voting periods, forcing a minimum deposit for proposal, requiring mandatory prior discussion in the Commonwealth, and introducing expedited proposal process.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.
  
- Proposal #191
  - This proposes to differentiate payment of limited amounts of staking rewards to validators so that low-ranking validators can have a high APR.
  - The intent of the proposal is to further decentralize the network but it is potentially exploitable and more critically, does not consider equity among validators.

- **Therefore, the passing of this agenda could be biased toward specific stakeholders.**
- Proposals #205 - #210, #249
  - These proposals are related to the bridge provider selection process. At the time of the proposal, the process of selecting candidate providers was deemed transparent based on objective criteria and included a process where any members of the community could freely submit recommendations.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.
- Proposal #320
  - This proposes the removal of the Blocked.go<sup>10</sup> file discovered in the Osmosis Git Repository.
  - This file contains 68 Ethereum addresses that have a history of using the Tornado cash potentially subject to OFAC sanctions.
  - This was proposed to rectify the damaged neutrality of the Osmosis network operating with a Blocked.go file.
  - **Therefore, the rejection of this agenda could sustain a biased result toward specific stakeholders.**
- Proposal #341
  - This is a signaling proposal to support the development of ProtoRev modules at the protocol level.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.

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<sup>10</sup> <https://github.com/osmosis-labs/osmosis/blob/main/app/blocked.go>



## Technical Operation (TechOps)

- Proposals #115, #213, #256, #257, #258, #259, #357, #367, and #374
  - These proposals are related to client updates for IBC communication.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.
- Proposals #157, #252, #335, and #370
  - These proposals are for fixing bugs, improving UX and modules, and upgrading other functions for the Osmosis network.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.
- Proposals #226, #228
  - These proposals are intended to urgently protect liquidity pools associated with Terra-related assets.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.
- Proposals #303, #319, #339
  - This proposal proposes uploading a CW3-Fixed multisig contract to distribute Apollo Safe from Apollo DAO, and a contract for liquidity staking.

- As this would be releasing audited open source codes simply for their functionality addition, it would be difficult to claim that the passing of this agenda would be biased toward specific stakeholders.
- Proposals #305, #306, #315, #316, #321, #322
  - These propose the deployment of several smart contracts exclusively for ION-related liquidity pools on Osmosis.
  - From the overall perspective of the Osmosis network, it would be difficult to claim that the passing of this agenda would be biased toward specific stakeholders.
- Proposals #342 and #343
  - These propose the deployment of limited order and stop loss features from Autonomy Network to the Osmosis network.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.
- Proposal #354
  - This proposes to charge a minimum gas fee per transaction to prepare for potential spamming attacks on the Osmosis network.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.

- Proposals #381 - #383
  - These proposals are for contract uploads for the ICNS introduction.
  - It would be difficult to claim that the passing of this proposal would be biased toward specific stakeholders.

Of the 53 proposals that fall under the GovOps and TechOps categories, most do not bias the results to any particular stakeholder, no matter which way the vote goes. There was concern that proposal #191 if passed, could compromise the network's neutrality, but the proposal was rejected in the end. However, in the case of proposal #320, if rejected, the parties related to those Ethereum addresses in the Blocked.go file will continue to be exposed to the potential risk of restrictions from OFAC in using Osmosis services.

At the time of the vote on the issue, the opposing or abstaining position was that the file should not be removed because the purpose of the OFAC sanctions -to prevent money laundering and financing of terrorism- was justifiable. The supporting position was that although the legitimacy of any actions related to the OFAC sanctions is recognized, the nature of the blockchain is censorship-resistant, so censorship is essentially against the development of the industry. However, the proponents were not very vociferous, and in the end, the proposal was rejected, with only 4.9% of the total voters voting in favor.

**As such, the Osmosis network is currently operating without removing the Blocked.go file. This could be interpreted as the network running with its neutrality compromised to a certain degree. If this potentially leads to stricter enforcement of related regulations from OFAC or other regulatory bodies, there is a sufficient risk that direct restrictions may be imposed on some stakeholders.**

# Conclusion

Osmosis has recently integrated features such as ICNS and stable swap. In the first half of next year, various features for order book, MEV, and cross-chain swap, etc., are expected to be released or upgraded. In less than two years of launch, Osmosis has gone beyond the Cosmos ecosystem and emerged as a DeFi-hub in the entire blockchain scene thanks to the mutual and complementary development of the core team and the community. The core team releases inventive features based on an in-depth understanding of IBC, and the community plays a role in verifying the marketability of the features and fine-tuning them. Osmosis' governance, in particular, plays a key role in the latter.

Osmosis' governance, mainly focused on incentive-related agendas, is optimized for OSMO's tokenomics structure and reacts flexibly to market conditions. In particular, it is worth noting how last May, in a situation where the liquidity of protocols were disrupted due to the collapse of the Terra ecosystem, the governance framework was given more flexibility, and asset-classes were rapidly diversified. In line with market conditions, TVL decreased significantly compared to the beginning of the year, but the staking ratio and voting ratio have been steadily increased, which proves that the community has strong resilience centered on governance.

On the other hand, since the scope of governance of Osmosis is quite wide, with discussions ranging from low-level core logic to high-level feature additions and incentive adjustments, it can be pointed out that the voting results of the participants are less significant. In order to address this issue and make onboarding easier for more users, it is necessary further to subdivide the scope of governance into objectives & required specialized units and improve each category's framework. In addition, sometimes there are some agendas that do not end in consensus, but it is reasonable to see that these are due to the difference in the interests of

various entities or ambiguous contents of the agenda. The issues can be addressed through improved governance processes in the future.

Finally, efforts are also needed to address the compromised neutrality of the Osmosis network. In August, a proposal (i.e., proposal #320) was introduced that went against OFAC's regulatory direction. There was an active discussion in the community about the objectives of the OFAC sanctions -combating money laundering and terrorism financing- and the possibility of how the governance proposal, if passed, could reduce network-wide profits. However, little was talked about what it means for the Osmosis network to lose neutrality and censorship resistance. Eventually, this led to the rejection of Proposal #320, which acts to undermine the neutrality of the Osmosis network. In addition to the improvement of the governance framework mentioned above, what is most needed for the current governance of Osmosis is to re-engage in an objective discussion of the results of Proposal #320. This would serve in providing a code of conduct for governance in the future so that we can ensure that the results are not biased to any entity when discussing potential proposals.

## Limitations and Further Researches

This report qualitatively analyzes Osmosis' governance framework and quantitatively analyzes the voting results of individual proposals. In other words, it is a macroscopic examination of the Osmosis' governance. In order to gain deeper insights on governance participation patterns, an analysis of the dynamics of voting power or panel data analysis of participants could be conducted. For example, after segmenting validators and stakers based on their voting power, each entity's voting behavior could be analyzed. Dividing the stakers into newcomers and existing voters and analyzing the difference between the two groups could also provide significant implications.

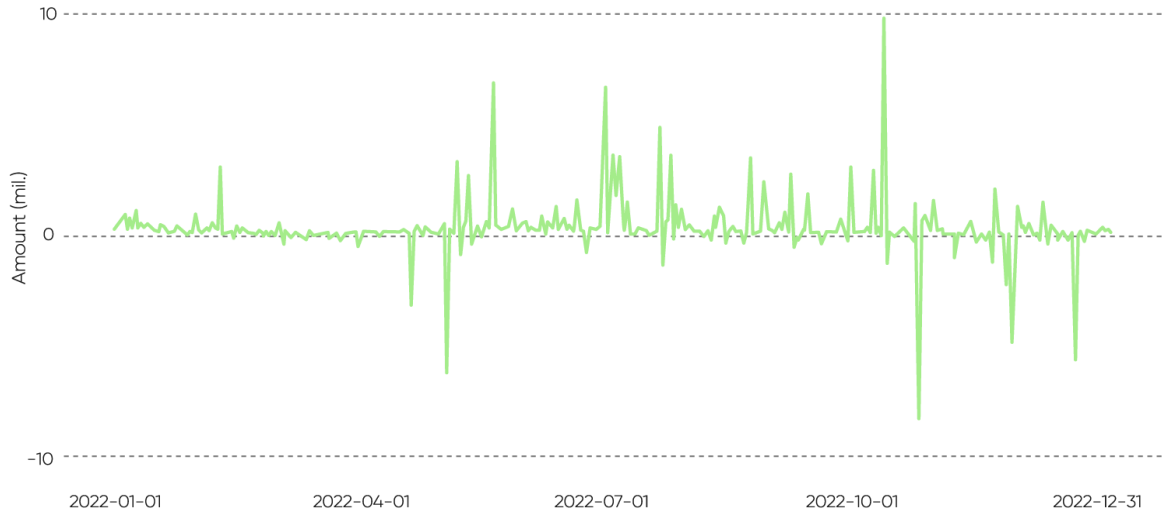
In addition, this report does not actively examine or reflect the effects of Superfluid staking and various other policies. Future research may reflect them or include in-depth analysis of each item.

Finally, this report lacks specific action items for substantive improvements in governance frameworks. However, the major implication of this report lies in forming an initiative to list particular action items by discussing why it is necessary to categorize Osmosis governance agendas into several categories according to the required expertise and objectives. Therefore, based on the discussions in this report, future research will be able to derive practical action items through including detailed case studies on each category and analysis results of participants' behavior.

# Appendix

## I. Daily Net Staked OSMO

 Daily Net Staked OSMO

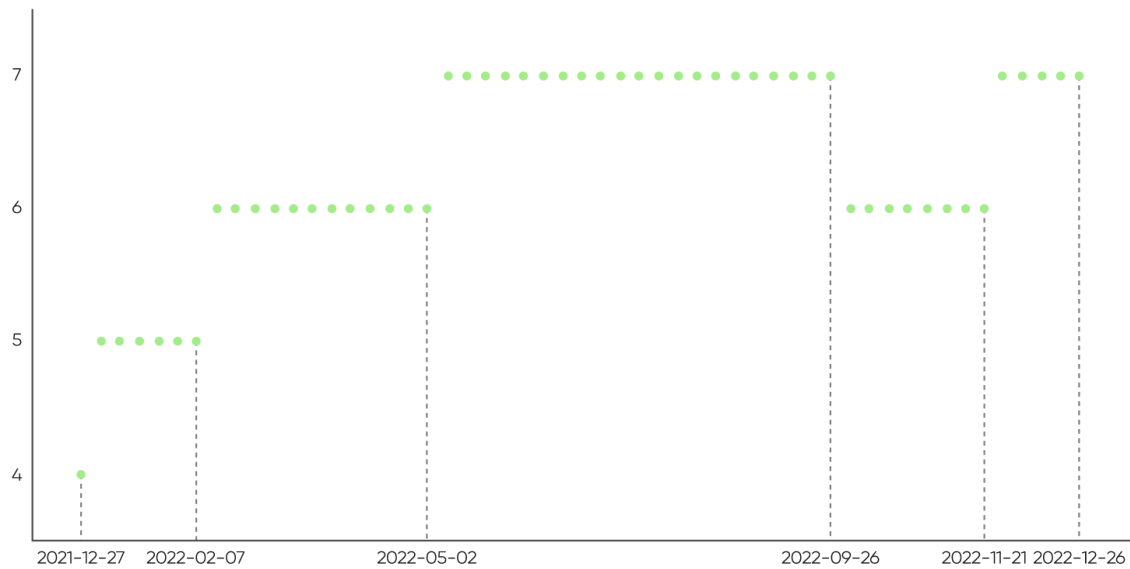


Note : Voting Ratio = Staked \$OSMO do not contain the amount of staked tokens from Superfluid Staking.

Source : Flipside Crypto  
Data as of Dec. 31, 2022

## II. Weekly Nakamoto Coefficient of Osmosis

 Weekly Nakamoto Coefficients of Osmosis



Source : Mintsan  
Data as of Dec. 31, 2022

# **Q41** is a blockchain infrastructure company.

We believe that active participation in governance and contribution to decentralized networks are imperative roles that crypto infrastructure players must carry out.

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