

TL;DR

This proposal is to fund Nethermind to deliver a comprehensive analysis on the economic viability of [\(based\) preconfirmations](#). This topic emerged as high priority from extended conversations between Nethermind, Lido and Chainbound.

Preconfirmations have emerged as an add-on to block-proposing. It is imperative that preconfirmations are properly understood before they see mass adoption. Our deliverable will improve on this understanding, with particular focus on the economic viability of preconfirmations.

The project will take 2 months, and its cost - 65,000 USDC - will be covered by a LEGO grant.

Proposer

Conor McMenamin on behalf of Nethermind.

Terminology

- Unless otherwise specified, “preconfirmations” encapsulates both execution and inclusion preconfirmations. .
- When we mention the transaction supply chain, we refer to the stages involved in creating, sending, delivering, proposing, confirming and finalizing a transaction. This diagram from @Lin

Oshitani describes some of the different stages:

[

image

961×482 21.8 KB

](<https://europe1.discourse-cdn.com/flex013/uploads/lido/original/2X/5/5d8849ec624b8c748a5495b850d5c893146bda41.png>)

Motivation

Preconfirmations have the potential to significantly impact the Ethereum ecosystem. In terms of relative impact, there is little greater than the impact on block proposal. Whether preconfirmations are provided directly by proposers, or outsourced to third parties, they will bring many direct and indirect effects to the proposer role. This proposal will investigate “The Economic Viability of Preconfirmations”.

This is one of the main topics that proposers will need to understand before they can make an informed decision about whether or not they should offer preconfirmations. More than just providing a general economic understanding of preconfirmations, this proposal will identify which form(s) of preconfirmations are most economically viable. For any such designs, we will highlight their risks and discuss mitigations.

The Economic Viability of Preconfirmations

Proposal Description

We seek to answer the question of “Are preconfirmation protocols expected to be viable for proposers to run?”. To do this, we will tackle the following two sub-questions

- What is the expected difference in revenue between running preconfirmation protocols vs normal block building?
- What are the expected revenues, costs, and risks that different types of preconfirmations incur on each stage of the transaction supply chain?

Deliverable

A single open-source document, either directly on the Lido forum or linked from the Lido forum in a summary post, containing the following:

- A thorough analysis of the economic viability of preconfirmations, with a conclusion on how likely (under what conditions and assumptions) are preconfirmations to be economically viable.
- Clear steps protocols and transaction supply chain actors could take to:
- Improve preconfirmation revenue; which economically viable preconfirmation designs can they adopt.

- Reduce implicit and explicit costs/risks of preconfirmations.
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- Reduce implicit and explicit costs/risks of preconfirmations.

Timeline & Personnel

2 months until completion.

2 months full-time: Conor McMenamin, Protocol Researcher.

2 months full-time: Finn Casey-Fierro, DeFi Research Analyst.

This proposal has two phases:

1. A data collection and modelling phase where we identify and model all predictive variables with respect to block value. The key focus of this analysis will be identifying predictive variables that are both dependent and independent of slot time. With this, we will be able to provide insight into how preconfirmation revenue differs to normal block building revenue. Following this, we will model preconfirmation costs vs normal block-building costs, and use these comparisons of revenue and cost to deduce the economic viability of preconfirmations.
2. A protocol design phase where we take the learnings from phase 1 and consider how revenues and costs are affected by specific preconfirmation protocol designs and features. With this comparison, we will identify the protocol designs that are most economically viable, and those that are not. Together with our findings from phase 1, this will provide a clear signal to preconfirmation protocols regarding which protocol features should be included, and which should be avoided.

Funding and Budget

The total requested amount for this proposal is 65,000 USDC. This will be paid in two installments:

- 25,000 USDC upfront.
- 40,000 USDC on completion of the deliverable.

At the end of the project, the LEGO council will decide whether the provided deliverables meet the agreed requirements and, if that is the case, proceed with the payment.