

Cardano new rewards distribution formula proposal

IPIB Italians Pool It Better

The goal of this proposal is to incentive the true decentralization, resilience and independence of the Cardano network. To do this we need stake pools with a good pledge, good size and solid ownership. Also there should be a way for new pools to be able to compete with the existing, on fair playing field.

The reward distribution is a good way to drive people in choosing the right pools, but now we see basically all pools give the same rewards regardless of the committed pledge. The only parameter driving the returns is the size of the pool, the bigger, the better.

So how can we modify the existing formula to achieve the above stated goal?

- Consider a minimum pledge factor
- Consider a maximum leverage factor
- Keep the current saturation limit

So how does it look like?

$$f(s, \sigma) := R \cdot Pmin_f \cdot Lev_f \cdot \sigma'$$

With:

$$Pmin_f = \left(\frac{\min(Pledge, Pmin)}{Pmin} \right)^{Pmin_{exp}}$$

$$Lev_f = \left(\frac{Lev_{max}}{\max(Lev, Lev_{max})} \right)^{Lev_{exp}}$$

$$\sigma' = \min(\sigma, z_0)$$

$$Lev = \frac{\sigma}{Pledge}$$

R, total rewards per epoch

Z₀, relative pool saturation size

σ, stake delegated to pool (including pledge)

Pledge, stake pledged by owners

Pmin, minimum pledge value

Pmin_{exp}, minimum pledge exponent (0 < Pmin_{exp} < 1)

Lev_{max}, maximum leverage factor

Lev_{exp}, leverage exponent (0 < Lev_{exp} < 1)

How does the proposed formula compare with the current one?

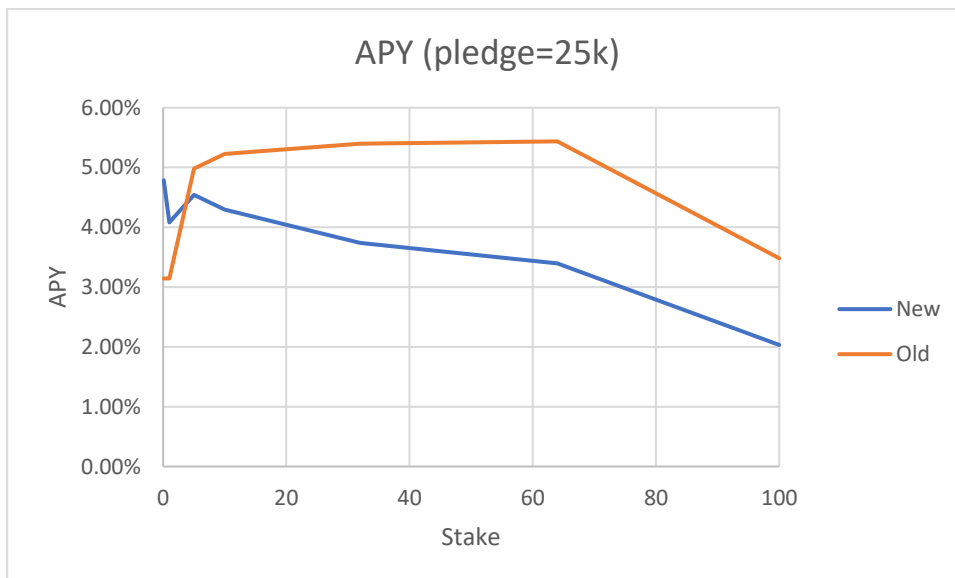
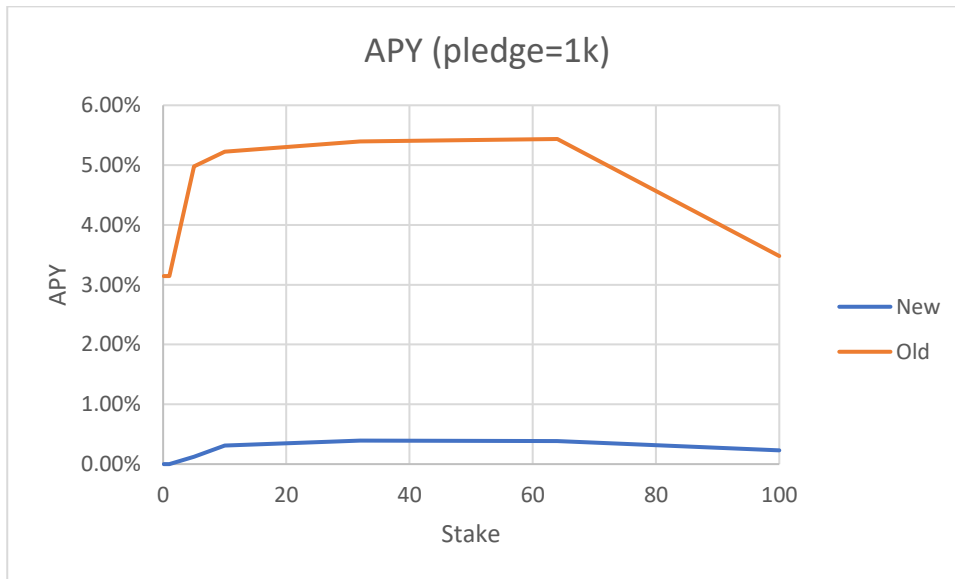
Let's run some simulations considering 0% margin fee and 340ADA fixed. Other protocol parameters like they are now (expansion factor, treasury, etc...). 32B circulating, 23B in stake, 13B in reserve.

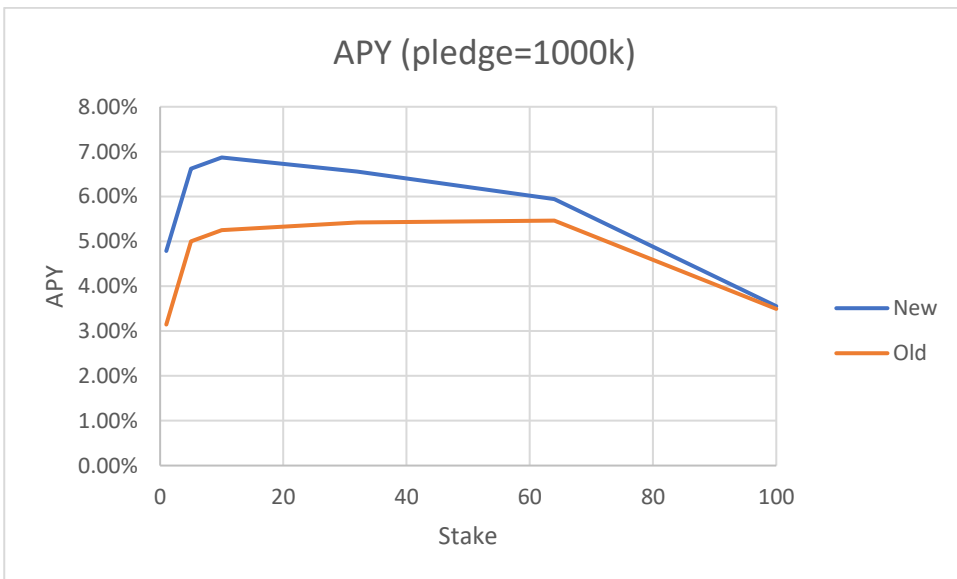
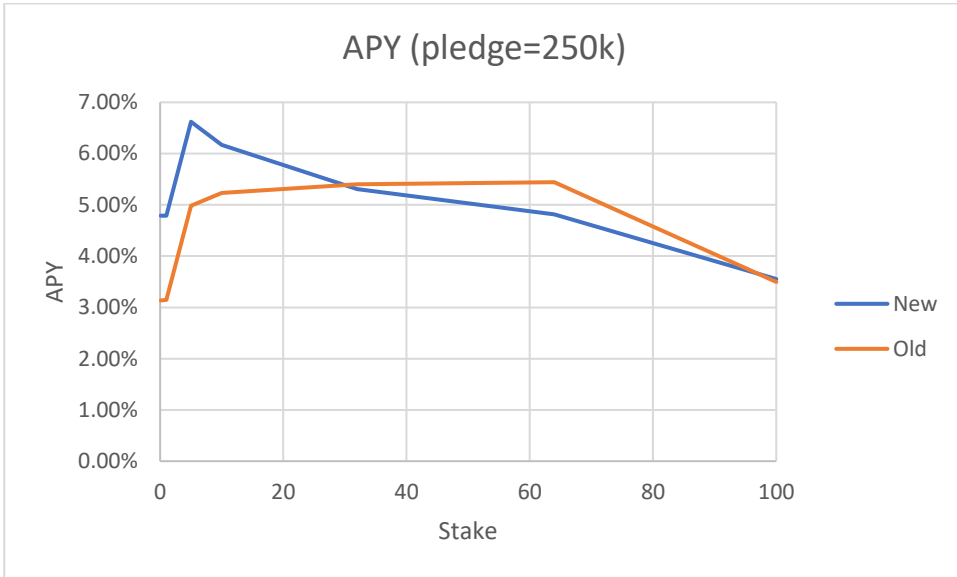
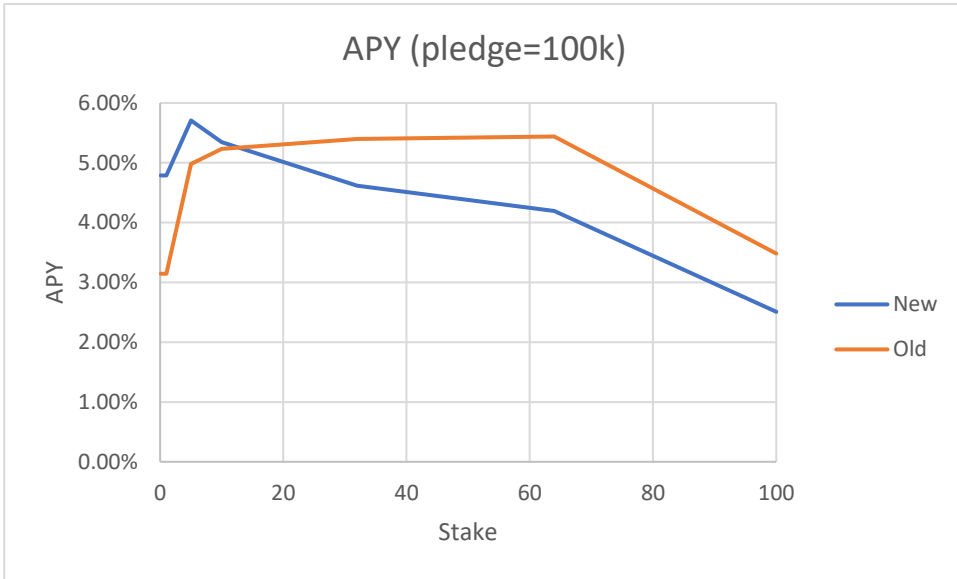
$P_{min} = 25000ADA$

$P_{min_{exp}} = 0.5$

$Lev_{max} = 20$

$Lev_{exp} = 0.15$





APYmax (Leverage=20)

