# Okcash Long Term Sustainable Staking

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Abstract - The current Proof of Stake systems depend on a stable or short % changes in the yearly staking calculations, which results in short spans and/or unstable systems with no sustainability nor stability. In this paper a Long Term Sustainable Staking system is proposed to solve and improve over this issues.

### I. INTRODUCTION

Technical Sustainability: In aims of improving the system, sustainability and reliability in OK, while at the same time respecting scarcity.

We came up with a solution to empower OK and secure LTSS, Bitcoin has LTPoW lasting till the year 2140, with this implementation OK LTTS would be lasting till the year 2148, making it the best PoS partner for Bitcoin and MicroTransactions.

### II. SUSTAINABLE HALVINGS

Economics: the 11 planned halvings will help stabilize the currency and appreciation as they kick in. There will be some halvings with a 4 years period that will start to give OK more predictability for markets , securing the trust of services and markets, after the 11 th halving OK gets a fixated % (after year 2044\*), this will normalize the OK coins creation to grow in a constant and stable rate for the last 100 + years becoming the most secure, stable and mathematically predictable PoS coin with LTSS and scarcity.

If the % of network staking at X time grows slower than the expected % of growth, Consensus could be reached to integrate and extra halving with a higher stake % for the normalization with the schedule. Even so for this normalizing halving to get included, consensus should be reached.

## III. IMPLEMENTATION AND PERCENTAGES

Last OK coins to be PoS mined expected between years 2148 - 2188 depending on the % of Network Staking.

Glossary:

LTSS - Long Term Sustainable Staking.

LTPoW - Long Term Proof of Work.

Clean readable OK Staking % Calc. Improvements table [2.1] Html txt format [2.2]

format table:

Halvings Year end\* Year # Stake % Coins created for that year expected with 100% staking network.

\* Aprox year per block count.

|   |       |     |        |           | _ ,  | 45 45 45 4          |
|---|-------|-----|--------|-----------|------|---------------------|
| - | 2014  |     | 36,    | 297,000   | End  | of PoW Start of PoS |
| - | 2015  | 1   | 69 25  | 5044930   |      | 61,341,930          |
| 1 | 2016  | 5 2 | 20 1   | 2268386   |      | 73,610,316          |
| 2 | 2017  |     | 10 7   | 361031.6  |      | 80,971,348          |
| 3 | 2018  |     | -      | 48567.38  |      | 85,019,915          |
|   |       |     |        |           |      |                     |
| 4 | 2019  |     |        | 2125497.8 |      | 87,145,413          |
| 5 | 2020  |     |        | 42908.25  |      | 88,888,321          |
| - | 2021  | 7   | 2 177  | 77766.42  | 2    | 90,666,088          |
| - | 2022  | 8   | 2 183  | 13321.75  | 1    | 92,479,409          |
| - | 2023  | 9   | 2 184  | 49588.18  | 6    | 94,328,997          |
| 6 | 2024  | 10  | 19     | 43289.97  | 47   | 95,272,287          |
| - | 2025  |     |        | 52722.87  |      | 96,225,010          |
|   |       |     |        |           |      | 97,187,260          |
| - | 2026  |     |        | 52250.10  |      |                     |
| - | 2027  |     |        | 71872.60  |      | 98,159,133          |
| 7 | 2028  |     |        |           |      |                     |
| - | 2029  | 15  | 0.50   | 493249.   | 6435 | 99,143,178          |
| - | 2030  | 16  | 0.50   | 495715.   | 8917 | 99,638,894          |
| - | 2031  | 17  | 0.50   | 498194.   | 4711 | 100,137,089         |
| 8 | 2032  |     |        | 250342    |      |                     |
| - | 2033  |     |        |           |      | 100,638,400         |
|   |       |     | 0.25   |           | 3703 |                     |
| - | 2034  |     |        |           | 00   | 100,889,996         |
| - | 2035  |     | 0.25   |           |      | 101,142,221         |
| 9 | 2036  | 22  | 0.10   | 101142    | .221 | 101,243,363         |
| - | 2037  | 23  | 0.10   | 101243.   | 3632 | 101,344,607         |
| - | 2038  | 24  | 0.10   | 101344.   | 6066 | 101,445,951         |
| _ | 2039  | 25  | 0.10   | 101445.   | 9512 | 101,547,397         |
|   | 0 204 |     | 26 0.0 |           |      |                     |
|   | 2041  | 27  | 0.05   |           |      | 101,648,970         |
| - | -     |     |        |           |      |                     |
| - | 2042  | 28  | 0.05   |           |      | 101,699,794         |
| - | 2043  | 29  | 0.05   | 50849.8   |      | 101,750,644         |
| 1 | 1 204 | 4 3 | 0.0    |           |      |                     |
|   | 2045  | 31  | 0.03   | 30534.35  | 5085 | 101,811,704         |
|   | 2046  | 32  | 0.03   | 30543.51  | l115 | 101,842,247         |
|   | 2047  | 33  | 0.03   | 30552.67  |      | 101,872,800         |
|   | 2048  | 34  | 0.03   | 30561.84  |      | 101,903,362         |
|   | 2049  | 35  | 0.03   | 30571.00  |      | 101,933,933         |
|   |       | 36  |        | 30580.17  |      |                     |
|   | 2050  |     | 0.03   |           |      | 101,964,513         |
|   | 2051  | 37  | 0.03   | 30589.35  |      | 101,995,102         |
|   | 2052  | 38  | 0.03   | 30598.53  |      | 102,025,701         |
|   | 2053  | 39  | 0.03   | 30607.71  | 1028 | 102,056,309         |
|   | 2054  | 40  | 0.03   | 30616.89  | 9259 | 102,086,926         |
|   | 2055  | 41  | 0.03   | 30626.07  | 7766 | 102,117,552         |
|   | 2056  | 42  | 0.03   | 30635.26  |      | 102,148,187         |
|   | 2057  | 43  | 0.03   | 30644.45  |      | 102,178,831         |
|   |       |     |        |           |      |                     |
|   | 2058  | 44  | 0.03   | 30653.64  |      | 102,209,485         |
|   | 2059  | 45  | 0.03   | 30662.84  |      | 102,240,148         |
|   | 2060  | 46  | 0.03   | 30672.04  |      | 102,270,820         |
|   | 2061  | 47  | 0.03   | 30681.24  | 1596 | 102,301,501         |
|   | 2062  | 48  | 0.03   | 30690.45  | 5034 | 102,332,192         |
|   | 2063  | 49  | 0.03   | 30699.65  |      | 102,362,891         |
|   | 2064  | 50  | 0.03   | 30708.86  |      | 102,393,600         |
|   | 4004  | 50  | 0.03   | 20100.00  | 1131 | 104,373,000         |

| 2065 | 51  | 0.03 | 3071  | 8.08003 | 102,424,318   |
|------|-----|------|-------|---------|---------------|
| 2066 | 52  | 0.03 | 30723 | 7.29545 | 102,455,045   |
| 2067 | 53  | 0.03 |       | 5.51364 | 102,485,782   |
|      |     |      |       |         |               |
| 2068 | 54  | 0.03 |       | 5.7346  | 102,516,528   |
| 2069 | 55  | 0.03 | 30754 | 4.95832 | 102,547,283   |
| 2070 | 56  | 0.03 | 3076  | 4.18481 | 102,578,047   |
| 2071 | 57  | 0.03 | 30773 | 3.41406 | 102,608,820   |
| 2072 | 58  | 0.03 | 30782 | 2.64608 | 102,639,603   |
| 2073 | 59  | 0.03 |       | 1.88088 | 102,670,395   |
| 2074 | 60  | 0.03 |       | 1.11844 | 102,701,196   |
|      | 61  |      |       |         |               |
| 2075 |     | 0.03 |       | 0.35878 | 102,732,006   |
| 2076 | 62  | 0.03 | 3081  | 9.60189 | 102,762,826   |
| 2077 | 63  | 0.03 | 30828 | 3.84777 | 102,793,655   |
| 2078 | 64  | 0.03 | 30838 | 3.09642 | 102,824,493   |
| 2079 | 65  | 0.03 | 30847 | 7.34785 | 102,855,340   |
| 2080 | 66  | 0.03 | 30856 | 6.60205 | 102,886,197   |
| 2081 | 67  | 0.03 |       | 5.85903 | 102,917,063   |
| 2082 | 68  | 0.03 |       | 5.11879 |               |
|      |     |      |       |         | 102,947,938   |
| 2083 | 69  | 0.03 |       | 4.38133 | 102,978,822   |
| 2084 | 70  | 0.03 |       | 3.64664 | 103,009,716   |
| 2085 | 71  | 0.03 | 30902 | 2.91474 | 103,040,619   |
| 2086 | 72  | 0.03 | 30912 | 2.18561 | 103,071,531   |
| 2087 | 73  | 0.03 | 3092  | 1.45927 | 103,102,452   |
| 2088 | 74  | 0.03 |       | 0.7357  | 103,133,383   |
| 2089 | 75  | 0.03 |       | 0.01493 | 103,164,323   |
|      | _   |      |       |         |               |
| 2090 | 76  | 0.03 |       | 9.29693 | 103,195,272   |
| 2091 | 77  | 0.03 |       | 3.58172 | 103,226,231   |
| 2092 | 78  | 0.03 | 30967 | 7.86929 | 103,257,199   |
| 2093 | 79  | 0.03 | 3097  | 7.15965 | 103,288,176   |
| 2094 | 80  | 0.03 | 30986 | 5.4528  | 103,319,162   |
| 2095 | 81  | 0.03 | 30995 | 5.74874 | 103,350,158   |
| 2096 | 82  | 0.03 |       | 5.04746 | 103,381,163   |
| 2097 | 83  | 0.03 |       | 4.34898 | 103,412,178   |
|      |     | 0.03 |       | 3.65328 |               |
| 2098 | 84  |      |       |         | 103,443,201   |
| 2099 | 85  | 0.03 |       | 2.96038 | 103,474,234   |
| 2100 | 86  | 0.03 |       | 2.27027 | 103,505,276   |
| 2101 | 87  | 0.03 | 3105  | 1.58295 | 103,536,328   |
| 2102 | 88  | 0.03 | 31060 | 0.89842 | 103,567,389   |
| 2103 | 89  | 0.03 | 31070 | 0.21669 | 103,598,459   |
| 2104 | 90  | 0.03 | 31079 | 9.53776 | 103,629,539   |
| 2105 | 91  | 0.03 |       | 3.86162 | 103,660,628   |
| 2106 | 92  | 0.03 |       | 3.18828 | 103,691,726   |
|      |     |      |       | 7.51773 |               |
| 2107 | 93  | 0.03 |       |         | 103,722,833   |
| 2108 | 94  | 0.03 |       | 5.84999 | 103,753,950   |
| 2109 | 95  | 0.03 |       | 5.18504 | 103,785,076   |
| 2110 | 96  | 0.03 | 31135 | 5.5229  | 103,816,212   |
| 2111 | 97  | 0.03 | 3114  | 4.86355 | 103,847,357   |
| 2112 | 98  | 0.03 | 31154 | 4.20701 | 103,878,511   |
| 2113 | 99  | 0.03 |       | 3.55328 | 103,909,674   |
| 2114 | 100 |      |       | 72.9023 |               |
| 2115 | 101 |      |       | 32.2542 |               |
|      |     |      |       |         | , ,           |
| 2116 | 102 |      |       | 91.6088 |               |
| 2117 | 103 |      |       | 00.9663 |               |
| 2118 | 104 |      |       | 10.3266 |               |
| 2119 | 105 | 0.03 | 312   | 19.6897 | 6 104,096,852 |
| 2120 | 106 | 0.03 | 3122  | 29.0556 | 7 104,128,081 |
| 2121 | 107 |      |       | 38.4243 |               |
| 2122 | 108 |      |       | 47.7959 |               |
| 2123 | 100 |      |       | 57.1702 |               |
|      |     |      |       |         |               |
| 2124 | 110 |      |       | 56.5474 | 104,253,091   |
| 2125 | 111 | 0.03 | 312   | 75.9273 | 6 104,284,367 |
|      |     |      |       |         |               |

| 2126 | 112 | 0.03 | 31285.31014 | 104,315,652 |
|------|-----|------|-------------|-------------|
| 2127 | 113 | 0.03 | 31294.69574 | 104,346,947 |
| 2128 | 114 | 0.03 | 31304.08414 | 104,378,251 |
| 2129 | 115 | 0.03 | 31313.47537 | 104,409,565 |
| 2130 | 116 | 0.03 | 31322.86941 | 104,440,888 |
| 2131 | 117 | 0.03 | 31332.26627 | 104,472,220 |
| 2132 | 118 | 0.03 | 31341.66595 | 104,503,562 |
| 2133 | 119 | 0.03 | 31351.06845 | 104,534,913 |
| 2134 | 120 | 0.03 | 31360.47377 | 104,566,273 |
| 2135 | 121 | 0.03 | 31369.88192 | 104,597,643 |
| 2136 | 122 | 0.03 | 31379.29288 | 104,629,022 |
| 2137 | 123 | 0.03 | 31388.70667 | 104,660,411 |
| 2138 | 124 | 0.03 | 31398.12328 | 104,691,809 |
| 2139 | 125 | 0.03 | 31407.54272 | 104,723,217 |
| 2140 | 126 | 0.03 | 31416.96498 | 104,754,634 |
| 2141 | 127 | 0.03 | 31426.39007 | 104,786,060 |
| 2142 | 128 | 0.03 | 31435.81799 | 104,817,496 |
| 2143 | 129 | 0.03 | 31445.24873 | 104,848,941 |
| 2144 | 130 | 0.03 | 31454.68231 | 104,880,396 |
| 2145 | 131 | 0.03 | 31464.11871 | 104,911,860 |
| 2146 | 132 | 0.03 | 31473.55795 | 104,943,333 |
| 2147 | 133 | 0.03 | 31483.00001 | 104,974,816 |
| 2148 | 134 | 0.03 | 31492.44491 | 105,006,309 |
|      |     |      |             |             |

<sup>\*</sup> extra normalization halving could be integrated on any halving schedule after the 4th halving (2.5%), this normalization halving could vary between 22-33% and could be implemented to last for 1-2 year based on consensus and estimated supply growth.

# III. SUMMARY

The proposed changes are intended to improve on stability and sustainability in the Okcash POS system [ 1].

# REFERENCES

- $\label{lem:composition} \begin{tabular}{l} [1] Okcash pos protocol: https://github.com/okcashpro/okcash-whitepapers/blob/master/POS/okcash-pos-protocol-ltss-whitepaper.pdf \end{tabular}$
- [2.1] Improvement table: http://jsbin.com/pitehet/1
- [2.2] Html txt format: http://pastebin.com/ZBtKZwVG