

TechRate
April, 2023



SMART CONTRACTS SECURITY AUDIT REPORT



Techrate_audits



Techrate



Techrate1

Audit Details



Audited project

NRG



Deployer address

Not deployed



Client contacts:

NRG team



Blockchain

Not deployed



Project website:

Not provided

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the disclaimer below – please make sure to read it in full.

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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

Background

TechRate was commissioned by NRG to perform an audit of smart contracts on commit:

<https://github.com/TronNinjasProject/NRGSmartContracts/commit/a108f65342fe11b6ce0244e92f080d8772f9b1ea>

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Issues Checking Status

Issue description	Checking status
1. Compiler errors.	Passed
2. Race conditions and Reentrancy. Cross-function race conditions.	Passed
3. Possible delays in data delivery.	Passed
4. Oracle calls.	Passed
5. Front running.	Passed
6. Timestamp dependence.	Passed
7. Integer Overflow and Underflow.	Passed
8. DoS with Revert.	Passed
9. DoS with block gas limit.	Passed
10. Methods execution permissions.	Passed
11. Economy model of the contract.	Passed
12. The impact of the exchange rate on the logic.	Passed
13. Private user data leaks.	Passed
14. Malicious Event log.	Passed
15. Scoping and Declarations.	Passed
16. Uninitialized storage pointers.	Passed
17. Arithmetic accuracy.	Passed
18. Design Logic.	Passed
19. Cross-function race conditions.	Passed
20. Safe Open Zeppelin contracts implementation and usage.	Passed
21. Fallback function security.	Passed

Security Issues

✓ High Severity Issues

No high severity issues found.

✓ Medium Severity Issues

No medium severity issues found.

✓ Low Severity Issues

No low severity issues found.

Notes:

- Only if settings.userFailSafeEnabled user can withdraw funds in emergency way.

Owner privileges (In the period when the owner is not renounced)

- Energy:
 - Admin can vote.
 - Admin can withdraw voting rewards to the contract.
 - Admin can unfreeze a specific amount of resource for a user.
 - Admin can change ProxyContract, StakingContract and DAOContract address.
 - Admin can change the allowance for compounding.
 - Admin can add/remove addresses to the allow, admin and DAO lists.
 - Admin can toggle the user fail-safe enabled status.
 - Admin can call unfreezeToContract().
 - Admin can manage funds.
 - Admin can call unStakeTP(), addToTeamBufferAndFreeze(), freezeClaimVotingRewards(), unstakeTeamBuffer().
 - Admin can add funds to teamBufferTotal.
 - Admin can withdraw team buffer.
 - Admin can add/remove approved contracts.
 - Admin can set contracts necessary parameters and addresses.
 - Admin, DAO and AllowList addresses can change energyPrice.
 - Admin, DAO and AllowList addresses can switch stopNRG, stopBuy and removeNRGOverride values.
 - Admin, DAO and AllowList addresses can change unstakePeriod.
 - Admin, DAO and AllowList addresses can change regenerationPeriodMultiplier.
 - Admin, DAO and AllowList addresses can change maxDays.
- Token:
 - Owner can add WL addresses.
 - WL address can change isLiquid.
 - WL address can change NRGContract.
- FundsManager:
 - Owner can change community address.
 - Owner can withdraw team and community funds.

Conclusion

Smart contracts does not contain high severity issues! Liquidity pair contract's security is not checked due to out of scope. The further transfers and operations with the funds raise are not related to this particular contract.

Liquidity locking details are NOT provided by the team.

Security score: 60.

TechRate note:

Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.