

BLOCKCHAIN CLIMATE STANDARD (BLOCS)

Blockchain Climate Standard (BloCS) is the genesis market-based climate change, environmental and other societal cost mitigation program operating in DAO Integral Platform for Climate Initiatives (DAO IPCI) in the form of a Decentralized Autonomous Organization (DAO).

Rationales and motives for implementation of the BloCS

- Promoting implementation of sustainable economy and zero-carbon development principles on the basis of direct and explicit insertion of environmental costs and values into practice, business custom, transactions, economic activity, including investment, procurement, and decision-making policies,
- Taking into consideration unique, universal and global economic and environmental properties of GHG emissions and climate change mitigation outcomes-based assets and liabilities,
- With a perspective of establishment of a new system of international climate commitments and mechanisms on the basis of the Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC),
- Forestalling limitation of greenhouse gas emissions by the governments
- With a view on further development and integration of international GHG emission control systems and programs,
- Overcoming jurisdiction barriers and intermediary transaction costs barriers.

The BloCS principles

- Entitlement of the economic agents (including companies and individuals) to keep and trade the fruits of their targeted environmental mitigation activities, the right of property entitle the proprietor to claim all the advantages which the good's employment may generate on the one hand and burden him with all the disadvantages resulting from its employment on the other,
- Mitigation instruments should be independently assured by identified representative of the Independent entity or trusted IoT hard and soft-ware actual, quantifiable absolute target-based fungible and transferable outcomes of project activities,
- Blockchain should be public, not privileged or permissioned,
- Minimum Viable Product, intrinsic set of open source smart-contracts should be in place, tested, and working for the period enough to make sure it is reliable,
- The data, especially the results of projects and programs should be verified and registered on public blockchain. Supporting documentation should also be available in distributed file system.

BloCS ends and means

BloCS goal is to integrate climate initiatives in the form of distributed network of mitigation contributors on the basis of common principles, rules, criteria, and platform to account for quantitative commitments-based and project-based mitigation outcomes, to achieve absolute emission reduction and removal targets and ultimate balance of anthropogenic greenhouse gas emissions and anthropogenic increase in removals of GHG by sinks and reservoirs ("carbon neutrality").

BloCS goal is sought by means of introduction of progressive adjustments to existing GHG emission reduction/removal methodologies, standards and rules; by means of blockchain technology-based platform mitigation instruments' registries, smart contracts for registration, trading and retirement of environmental assets and liabilities, including registration and transaction data for carbon compliance units, Transferrable Mitigation Units (TMU), environmental mitigations credits eligible under BloCS goals and requirements.

Basic BloCS Requirements and Criteria

BloCS ensures overall absolute emissions reduction and targeted anthropogenic increase of GHG removal by sinks in whole through individual and joint activities of the stakeholders in accordance with international agreements, principles, rules, and modalities adopted in pursue of UNFCCC. Basic BloCS requirements shall include those consistent with guidance to be adopted by the UNFCCC Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement regarding the use of internationally transferred mitigation outcomes.

The Program provides for accounting of mitigation instruments (Transferrable Mitigation Units - TMU), which comply with the principles of sustainable development, socio-environmental integrity, transparency, accuracy, completeness, comparability and consistency, and robust reporting, to guarantee, inter alia, the avoidance of double counting, and provide for responsibility of the Initial Owner of mitigation units for compliance with these principles with regards to TMU issued to his account for the whole lifecycle of the instruments.

BloCS supports development, expansion and global sharing of precise physical measurement and monitoring-based verified carbon products to further promote direct management of anthropogenic greenhouse impact to the climate.

Environmental unit under the Integrated Program for Climate Initiatives is Transferrable Mitigation Unit (TMU) equal to one ton of CO₂-equivalent, embracing:

- *Carbon offset credits* – actual and absolute, independently verified, quantitatively measurable, irreversible, permanent or long-term, secure or insured, additional or target-oriented, not otherwise required by compulsory regulations anthropogenic GHG emission reductions or removals by sinks;
- *Quantitative GHG emission limitation and reduction, carbon neutrality, carbon footprint commitment-based compliance outcomes*, eligible under the requirements of the Program.

Mitigation outcomes eligible under BloCS for registration and accounting should comply with the following basic requirements:

1. Cover certain set of greenhouse gases, existing sources, installations or sinks.
2. Are independently verified absolute target-based reduction of removal (as close to 100% reductions as technically possible) of emissions relative to baseline actual emissions of the given set of existing sources and installations or for anthropogenic targeted increase of removal of greenhouse gases relative to baseline actual absorption by the established set of sinks, or provide for direct irreversible destruction of greenhouse gases, anthropogenic sources of emissions, or GHG long-term removal, conservation, capture and storage.

- a. Baseline emissions cannot exceed baseline actual emissions. Baseline actual emissions are calculated based on consecutive 12 or 24-month period immediately preceding target-based mitigation activity.
 - b. Removals should be independently verified as target-based, not otherwise achievable under natural conditions in the absence of mitigation activity, and not otherwise registered, traded or used for compliance or offsetting purposes.
 - c. Precise physical measurement-based monitoring, reporting and verification in real-time mode should be applied where technically and economically applicable.
 - d. Effective period before revocation (annulment) or reassurance of the units depending on the risk related to issuance of the units, sector of sources or sinks, applicable methodology of mitigation is specified as limited by certain period or unlimited and confirmed by the Independent Entity.
 - e. Represent not partial but total removal or substitution by renewable energy sources' emissions of the baseline actual emissions of the given set of sources.
3. Relate to certain independently verified commitments regarding quantitative emission limitation and reduction, or quantitative balance between anthropogenic emissions and anthropogenic removals by sinks, or quantitative commitments to reduce carbon footprint of production, goods and services and to certain accounting period starting the 2013 -2020 period.
 - a. Baseline year is the year immediately preceding the effective period of quantitative commitments starting the year 2013.
 - b. Quantitative commitments-based mitigation outcome should be at least 5% of actual baseline quantitative level for the initial accounting year and increasing up to 100% before the year 2030.
 4. Are based on robust monitoring and reporting system. Efficiency of the system is verified by the Independent Entity.
 5. Are not otherwise required by compulsory regulations or registered as carbon compliance units, project results or mitigation outcomes, commitments and pledges under other than BloCS programs and mechanisms of limitation and reduction of GHG emissions.
 6. Are enforced by pledges of the Initial Owner and by reservation of certain share of the units to ensure compensation and revocation of TMU in case mitigation outcomes or mitigation outcomes-based units issued are recognized as void under BloCS for physical or legal reasons within one calendar year after such decision is confirmed.
 7. Full potential of emissions from the new sources of the BloCS participant is subject to offsetting in the ratio of 1:1.2 by absolute reductions of emissions from existing sources.
 8. Indirect emissions, consumption-based emissions, and quantitative mitigation outcomes from reduced consumption of electricity, heat, fossil hydrocarbon fuels, including the outcomes of substitution of fossil hydrocarbon fuels-based power generation by power grid-connected renewable energy sources-based power generation should be calculated on the basis of factors of emissions confirmed by specific relevant producers and suppliers of electricity, heat or fuels, or on the basis of most conservative assessment of the grid emission factor and assured by the Independent Entity.

- a. The Independent Entity has verified cross reference of indirect emissions reductions, consumption-based emissions reductions with relevant direct emissions and has verified absence of double counting of direct emission-based and indirect emissions-based mitigation outcomes.
9. Mitigation outcomes are achieved in accordance with specific project methodologies or relative to quantitative commitments compliant with BloCS requirements and criteria and confirmed by the Independent Entity.
 - a. Relevant methodologies, commitments and statements of the Independent Entity are provided to the BloCS Operator.
 10. Independent Entity is an entity with sufficient relevant professional experience, expertise, competence and high international reputation in the sphere of auditing services, which accepts these Basic BloCS Requirements and Criteria for TMU and is accredited (added to the List of Independent entities) by the BloCS Operator. Independent Entity is represented by individual or multisignature public-key address in the public blockchain network.
 11. Calculations and independent assurance of original data, baseline level of emission, outcomes and relevant quantity of TMU comply with existing IPCC methods and guidance under the UNFCCC, and standards and methodologies based on and derived from methods and guidance under the Convention. Applicable standards and methodologies include
 - a. UNFCCC Kyoto Protocol CDM and JI methodologies,
 - b. The International Auditing and Assurance Standards Board (IAASB) issued the International Standard on Assurance Engagements (ISAE) 3410, Assurance Engagements on Greenhouse Gas (GHG) Statement,
 - c. ISO 14064 series standards, and its' national interpretations,
 - d. ISO TS 14067: 2013, and its' national interpretations (ex., GOST R 56276-2014),
 - e. "Gold Standard",
 - f. "Verified Carbon Standard",
 - g. "GHG Protocol",
 - h. Physical measurement-based real time mode monitoring protocols,
 - i. et al.

subject to compliance with the requirements and criteria herein and to calculation of baseline emissions and outcomes relative to baseline actual emissions of the given set of sources and installations and for anthropogenic removal of greenhouse gases relative to baseline actual conservation of greenhouse gases by established set of sinks, taking into account direct irreversible destruction of greenhouse gases and anthropogenic sources of emissions or GHG long-term removal, conservation, capture and storage.

12. Carbon footprint assessment for goods and services, commodities and products to be registered complies with the following requirements:
 - a. Scope, set of sources of direct and indirect, production and consumption based GHG emissions related to the product life-cycle are defined;

- b. Calculations and assessments comply with the chosen applicable standard and methodologies according to p. 11;
 - c. Owners or operators of the sources of GHG emissions related to specific links and activities of the product life-cycle have confirmed acknowledgment of inclusion of relevant data into the goods and services, product or commodity carbon footprint assessment;
 - d. Carbon footprint assessment is verified by the Independent Entity or by trusted hard and software;
 - e. Carbon footprint assessment and offsetting carbon footprint policy and offer of the supplier are disclosed, publically available and communicated to the customers, buyers of the goods and services, product or commodity.
13. The BloCS allows for registration of carbon units issued by alternative programs and accounting platforms or for conversion and exchange of such units for TMU subject to compliance with BloCS requirements and criteria and confirmed cancelation of alternative registry entries and units turnover. In case carbon units are transferred from BloCS registries or from DAO IPCI to alternative programs, standards or accounting systems, the BloCS Operator shall cancel relevant registration entries and units' circulation.

Operator

The BloCS Operator is a collective body of identified international entities and persons represented by at least three public key-addresses in the public blockchain directly functioning jointly from multisignature public key address as program operator in the BloCS program in DAO IPCI.

Verification

The BloCS verification procedure is performed by the Independent entity according to p. 10, or by trusted IoT hard and software, or by verification nodes of the public blockchain to be developed and introduced in the future.