

HISAR SCHOOL

JUNIOR MODEL UNITED NATIONS 2018

**“Globalization: Creating a Common Language”**

## **Environmental Committee**

*Utilizing Blockchain Technology for Reducing Carbon Footprints*



**RESEARCH  
REPORT**

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# RESEARCH REPORT

## Forum: Environmental Committee

## Issue: Utilizing Blockchain Technology for Reducing Carbon Footprints

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### Introduction

The increasing amount of carbon dioxide in our atmosphere is becoming a significant threat for our Earth due to various human activities such as growing industries or burning of fossil fuels in order to obtain energy: used mostly for transportation. Easing the transportation and discarding the obstacles caused by great distances is a very critical step in our globalizing world. On the other hand, Blockchain technology in the 21<sup>st</sup> century is another important step towards globalization by providing facilitated and secure access to information. Blockchain is a technology developed to enable easier sharing of information such as crypto currencies (“Blockchain Technology 101- Fundamental Guide”). Blockchain technology enables any information to be shared between different parties while securing their privacy. This year’s theme “Globalization: Creating a Common Language” covers this issue as carbon footprints are a result of rapid globalization, while Blockchain technology can be used to decrease carbon emission and continuing the globalization process.



*Carbon Footprint*

### Definition of Key Terms

**Carbon Footprint:** A form of carbon calculation that measures the amount of carbon dioxide equivalent that a party produces or is responsible for. The footprint calculates the direct and indirect level of CO<sub>2</sub> emissions (“Climate Change: Glossary of Terms”).

**Direct Carbon Emissions:** Emissions of greenhouse gases from sources within the boundary or control of an organization or facility’s processes or actions. Direct emissions include the burning of fossil fuels for energy and transportation (“Climate Change: Glossary of Terms”).

**Indirect Carbon Emissions:** Indirect emissions focus on the whole lifecycle of products from procuring raw materials to waste management (“Climate Change: Glossary of Terms”).

**Fossil Fuels:** The assembly that holds the power to make and change laws (“Climate Change: Glossary of Terms”).

**Blockchain Technology:** A blockchain is an append-only transaction ledger, where the ledger can be written onto with new information, but the previous information stored in blocks cannot be edited, adjusted or changed. (“Iinuma”).

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## General Overview

As this year's theme also emphasizes, our world is currently globalizing, virtually eliminating distances between countries and creating a common language. This common language is typically achieved with the assistance of facilitated transportation. Day by day it is becoming easier to travel to farther distances, thus share a common understanding of subjects and interact with other countries. Furthermore, this facilitated global transportation infrastructure is recently developing faster depending on technology. People start to manage their work without the need to physically be present at a location. On the other hand, carbon dioxide emissions are rapidly increasing: caused both by natural and human resources. Decomposition and ocean release can be listed in the category of natural sources of carbon dioxide emissions ("Climate Change: Glossary of Terms."). Nonetheless, the greater amount of emissions is caused by human activities such as deforestation or burning fossil fuels.

A new technology in a globalizing world: the blockchain technology is sometimes referred to as a technology with the risk of disrupting many industries in the coming decade (Walker). However, there are multiple ways the blockchain technology can help environmental practices and reduce global warming. Blockchains, as a decentralized technology, help reduce fraud and make organizations more transparent. Through blockchain technology one can track the process of forming a product. Supply chain management, a subfield of the blockchain technology, helps people track the origins of a product. The data involved in this system enables anyone to be able to see where the product they are going to purchase was produced, where was it garbage dumped or how much carbon footprint it has left. (Walker). These are very beneficial information for the consumer since they will be informed on whether the products were produced ethically or not, through a reliable and transparent data sharing process. Another example of an area where blockchain technology is useful in reducing carbon footprint is that in a globalized world food commonly travel very long distances without the need to do so. Tracking local food producers can reduce carbon footprint caused by the long transportation distances of food. (Walker).

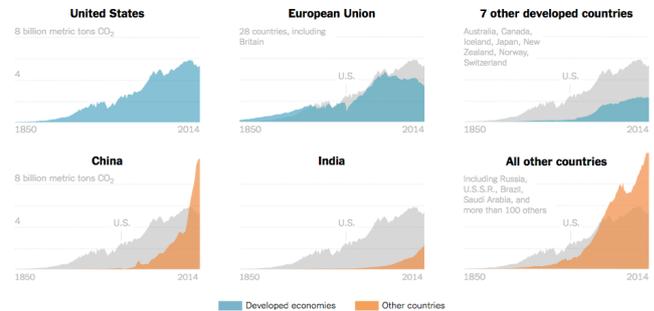


*Blockchain Logo*

Energy is another global problem that increases carbon emissions. Blockchain technology has a blockchain platform called Ecochain, which focuses on this aspect of energy production. Currently, great amounts of energy are lost while getting distributed through large distances. However, Ecochain would help governments to install renewable energy plants to local areas in order to minimize the lost energy on the way. Another source of energy: power plants are very costly institutions, thus mostly are founded by governments or private companies, yet renewable energy production sites are more cost-efficient when local and release less carbon emissions to the atmosphere.

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As carbon footprints of companies and individuals increase and more carbon dioxide is released to our atmosphere, the greenhouse gases in our atmosphere increase, causing a rapid increase in global temperatures. This climate change largely depends on carbon dioxide emissions, as “the surface-air temperature has risen by 0.8 degrees Celcius since the beginning of the industrial age” (Pappas).



*Global data of carbon emissions*

This anomaly in global temperatures causes sea levels to rise, threatening the lives of aquatic creatures. When the reason for this phenomenon is analyzed, it has been observed that when the origin of atmospheric carbon is traced it can be found that it comes from burning of fossil fuels. At this point, the blockchain technology is a very helpful technology to reduce the amount of carbon emissions in the atmosphere. Through blockchain technology, the amount of carbon emissions industries produce can be tracked without fraud and getting lost in bureaucracy. Furthermore, blockchain technology allows decreasing the carbon footprint caused by the transportation of great distances through supply chain management.

### Major Parties Involved and Their Views

#### United Nations Framework Convention on Climate Change (UNFCCC):

UNFCCC was established in 1992 at the Rio Earth Summit and currently has 189 signatory parties. The framework is based upon the goal of stabilizing atmospheric concentrations of greenhouse gases. (“Introduction to Climate Action”).

#### United Nations Environment Programme (UNEP):

UNEP is one of the leading authorities on setting the environmental agenda and providing the world with data on environmental issues. Reports of gas emissions globally are gathered year by year by them and the organization’s new challenge is to slow down the increase in the global temperatures. (“Climate Change”).

### Timeline of Events

Date of Event	Description of Event
<b>1991</b>	Cryptographically secured block of chains were created.
<b>1992</b>	United Nations Framework Convention on Climate Change was established.
<b>11 December 1997</b>	Kyoto Protocol was signed.
<b>1998</b>	First decentralized digital currency was in marketplace.
<b>2009</b>	Bitcoin was introduced to the public.
<b>12 December 2015</b>	Paris Agreement on climate change was established.
<b>September 2019</b>	UN 2019 Climate Summit [future event]

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## Treaties and Events

**Kyoto Protocol:** An international agreement linked to the UNFCCC and sharing its aim of stabilizing atmospheric concentration of greenhouse gases, but requiring separate ratification by governments. The protocol sets binding targets for the reduction of greenhouse-gas emission by industrialized countries (“Kyoto Protocol- Targets for the first commitment period.”).

**Paris Agreement:** Parties to the UNFCCC reached an agreement on combatting climate change and take actions in order to create a sustainable low-carbon future. Its main goal is to limit the global temperature increase to below 2 degrees Celsius. (“What Is Paris Agreement?”).

**Sustainable Development Goal #13:** The 13<sup>th</sup> Sustainable Development Goal (SDG) aims to “take urgent action to combat climate change and its actions”. Some of the goals of SDG 13 are to integrate climate change measures into national policies, strategies and planning (“Goal 13: Take urgent action to combat climate change and its impacts.”).

## Evaluation of Previous Attempts to Resolve the Issue

Implementing climate credit mechanisms in developed industries, was an attempt that has not been as effective as the blockchain solution. Climate credit mechanisms work by lowering the economic costs of products with reduced greenhouse gas emissions. However, the bureaucracy involved in this process makes it harder for the authorities to decide on whether the industry is reporting their greenhouse gas emissions transparently, which leads to a longer process of investigation. (“Climate Credit Mechanisms.”). This laborious process of investigation and the projects involved may result in higher costs from the conventional ones, making the product undesirable for the consumer, no matter how low its carbon footprint is.

## Possible Solutions

One of the most critical reasons why carbon emissions in our world keep increasing is that member states may fail to accord with environmental treaties. Blockchain technology can be used to track compliance to treaties while making sure that all organizations and member states are acting transparently and conform the standards of environmental treaties. Data entered to the public blockchain are permanent. This would also decrease the amount of fraud in presenting data belonging to countries (Walker).

Another way to decrease carbon emissions in the atmosphere is by encouraging people to use products with lower carbon footprints. This can be achieved through the blockchain crediting system, where companies or governments are rated on the basis of their carbon footprints. This rating system can be used for carbon taxing, where products are taxed according to the amount of greenhouse gas emissions released to the atmosphere. This would make products with lower carbon footprints more affordable, thus more desirable for the consumers (Walker).

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