SolarMineX

Cryptocurrency mining with mobile and photovoltaic system.

Convert the ebergy that comes from the sun to SolarMineX token and get mining reward.

CONTENTS

INTRODUCTION

Today, cryptocurrency mining is generally based on energy obtained from fossil energy sources. The amount of energy consumed in cryptocurrency mining, which continues to increase its popularity, has become competitive with the total energy consumption of some countries.

Apart from cryptocurrency mining, there are different factors, which increase electricity consumption. The energy requirements, especially in developed and developing countries cause a faster increase in primary energy consumption worldwide due to people's lifestyles, increasing consumption habits, and the development of the industry. The increase in energy need depending on the world population and technological developments and the continued use of fossil energy sources play a major role in the increase in global warming. In this context, meeting the energy need by renewable energy sources is important for reducing the speed and effects of global warming.

Solar energy, which is one of the renewable energy sources, stands out due to its ease of installation and easy integration into small and large systems. The heat energy from the sun is directly converted into electrical energy by photovoltaic solar panels. In addition, greenhouse gases, which have the most negative impact on global warming, are not released during electricity generation from solar energy.

On the other hand, the damage caused by fossil energy sources to the world is not acceptable and the demand for the use of solar energy is gradually increasing as the conscious approaches to the production and use of renewable energy become more widespread.

ENVIRONMENTAL DAMAGES OF CLASSICAL CRYPTO MINING

Mining can be done on different crypto networks with mining systems established in small households or huge factories.

Since mining activities require hardware with very powerful processors, it causes very high energy consumption. The mathematical puzzles used to create blocks in a cryptocurrency network become more difficult after halving the network and deducting the revenues of the miners, but the transaction volume remains constant. This means over times, the network will consume more computing power and energy for the same number of transactions.

Mining activities in the most well-known network, currently consume an average of 121 Terawatt per hour of electricity annually, which is more than electricity usage in Argentina. The biggest criticisms about these mining activities are that the electrical energy needs are met mainly from fossil fuels, this electricity causes a high amount of carbon dioxide emissions every year due to the generating electricity process, and the health of living things is endangered through air, water and soil as a result of environmental pollution.

As a result of the negative effects of the use of fossil fuels on living health and the increasing acceleration of global warming, various protocols were made between countries, and it was decided to prefer renewable energy sources as the focal point in energy supply. As a result, crypto currencies, which are the main actor in mining activities, have regulated their network to provide 56% of the electricity they consume in mining activities to use renewable energy sources. Yet mining in crypto networks relies heavily on fossil fuels. In addition, electricity is still used as an input in all these mining activities and huge energy consumption still continues.

In SolarMineX (SMX) mining, the electricity obtained from solar energy, which is an unlimited and endless resource, will not be used as an input and energy consumption in mining activities. On the contrary, miners will be rewarded with SMX in exchange for electricity they generate from solar energy.

With the SMX project, it is aimed to avoid the use of fossil fuels for electricity generation, to maximize the share of solar energy, to prevent environmental pollution by encouraging people to renewable energy sources, and to protect the health of living things.

PROBLEM

The intensive use of electrical energy from fossil energy sources in cryptocurrency mining plays an important role in global climate change. This situation causes irreparable damage to the environment and nature. Since cryptocurrency mining consumes energy close to the total energy consumption consumed by some countries, it requires renewable and sustainable solutions in this area.

SOLUTION

The electrical energy produced from solar energy will set an example in the field of cryptocurrency mining and will make investments in this field more conscious. The solution offered by SolarMineX is to encourage people and increase the amount of electricity generated from solar energy by defining the sun as a mine and rewarding the miners depending on the amount of electricity produced from solar energy.

SOLAR ENERGY

Global warming is increasing rapidly, primarily due to the influence of humans. Especially in the last century, due to the intense consumption of energy produced from fossil sources, climate change has accelerated to a great extent. Therefore, greenhouse gas emissions have caused intense environmental pollution by increasing the carbon dioxide (CO2) concentration in nature. With the increase of climate change, the average temperatures in the world will increase, heavy precipitation will occur in some regions due to excessive evaporation, and drought will be seen in other regions. With much greater global warming occurring, the oceans will warm, glaciers will melt, and sea levels will rise. In addition, fires, floods, and droughts caused by extreme temperatures will occur. In this case, the soil yields will change and there will be crop losses.

For these reasons, the effects of environmental damage caused by fossil energy sources have paved the way for the use of renewable energy sources to become widespread around the world. It is predicted that the electrical energy produced from renewable energy sources will increase by 30% by the end of 2021.

Solar energy, which is one of the renewable energy sources, shows a worldwide increase, especially in electrical energy production. Accordingly, the market share of solar energy has gained momentum especially in the last 10 years (Figure 1). It is estimated that the total capacity of solar energy will increase by about 18% (approximately 145 TWh) and reach 1000 TWh in 2021.

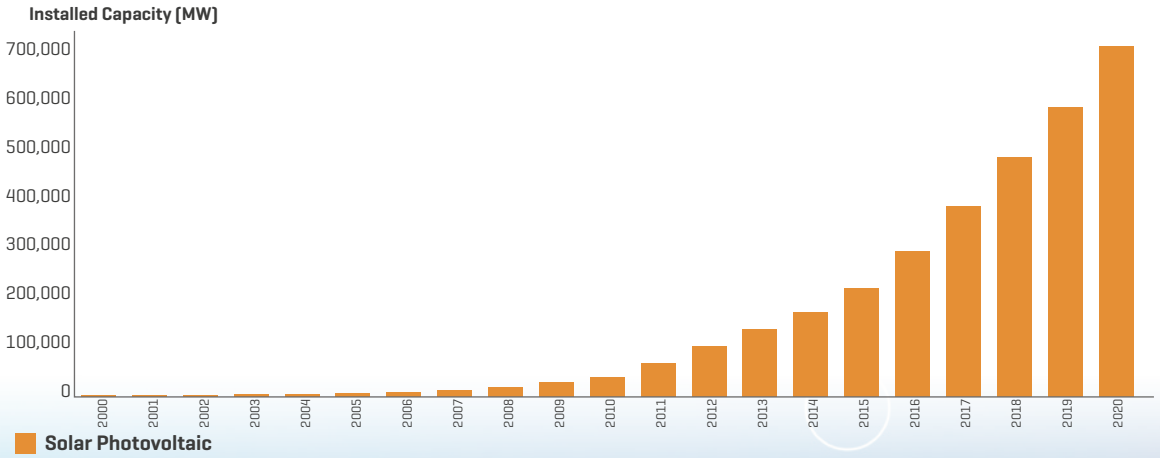


FIGURE 1 GLOBAL SOLAR ENERGY CAPACITY (2000-2020)

One of the most important reasons why electric energy generation from photovoltaic panels has become popular is that PV systems can be integrated more easily into systems compared to other renewable energy sources. In addition, PV system can be installed by making various designs in open lands and buildings.

Photovoltaic panels are a clean energy source as they do not generate greenhouse gas emissions during their lifetime. It is also advantageous that solar energy can be accessed at any location where there is no shade during the sunshine period. The maintenance and operating costs of PV panels are very low compared to other renewable energy sources. Since they do not create noise, PV panels are also suitable for use in residential areas.

With the rapid increase in the use of PV panels, the competition in the market is also increasing. Related to this, PV panel costs are gradually decreasing. This situation creates positive scenarios for the future of environmental sustainability.

DESIGN of SOLAR POWERED SYSTEMS

People will have an idea about the amount of PV energy production according to the climatic characteristics of the location, sample cities from different continents, and the number of panels required for 1 kWh energy need per day (depending on the selected PV panel). Particular attention was paid to ensure that cities in the selected countries had as different solar irradiation levels as possible. In this section, you can find technical information about the required number of photovoltaic panels, annual energy production (kWh) by checking the results obtained for your location or cities with climatic conditions close to your location.

In the design of solar energy systems, the most important parameters are the daily energy requirement, the power of the solar panel, module efficiency, and the amount of solar irradiation that comes to the location where the system will be installed. Solar irradiation varies according to years, seasons, months, and location. The amount of solar irradiation varies depending on years, seasons, months, and location. Therefore, seasons and locations need to be considered for solar system sizing.

Required number of panels and annual energy production are given below, by using the solar irradiation records of some cities selected from Europe, North America, and Asia. In the table below, monthly average irradiation amounts for different cities in Europe are given (Table 1).

AVERAGE IRRADIATIONS	London Hd (kWh/m²)	Lisbon Hd (kWh/m²)	Barcelona Hd (kWh/m²)	Paris Hd (kWh/m²)	Milano Hd (kWh/m²)	Berlin Hd (kWh/m²)	Vienna Hd (kWh/m²)	Moscow Hd (kWh/m²)	Copenhagen Hd (kWh/m²)	Stockholm Hd (kWh/m²)	Istanbul Hd (kWh/m²)
January	1.39	3.52	3.88	1.37	2.11	1.02	1.41	0.85	1.0	0.96	2.27
February	2.18	4.67	4.85	2.31	3.62	1.88	2.59	1.7	1.65	1.93	2.95
March	3.67	5.75	6.01	4.01	5.05	3.59	4.09	3.35	3.92	4.33	4.45
April	4.91	6.04	5.96	5.19	5.35	5.08	5.52	4.6	5.34	5.47	5.38
May	5.13	6.45	6.46	5.28	6.06	5.33	5.59	5.41	5.59	6.02	6.5
June	5.38	6.79	6.74	5.6	6.45	5.56	5.6	5.46	5.69	6.05	6.94
July	5.36	7.1	6.88	5.65	6.98	5.27	5.7	5.35	5.55	5.65	7.31
August	4.7	7.11	6.58	5.21	6.34	4.86	5.42	4.55	4.87	5.02	6.97
September	4.11	6.46	5.91	4.54	5.43	3.99	4.37	3.09	4.15	4.01	5.7
October	2.8	5.23	5.11	2.93	3.55	2.61	3.08	1.62	2.6	2.29	4.18
November	1.8	3.98	3.97	1.62	2.31	1.3	1.61	0.66	1.12	1.16	3.01
December	1.26	3.33	3.67	1.3	1.99	0.84	1.2	0.46	0.72	0.76	2.02
Yearly	**3.56**	**5.54**	**5.51**	**3.76**	**4.61**	**3.45**	**3.85**	**3.1**	**3.53**	**3.65**	**4.82**

Table 1. Solar Irradiation Amounts for Different Cities in Europe

A sample PV panel selection was made for the system sizing required for the PV system for the daily energy need of 1 kWh. Sample PV panel has 325 Wp power and 19% efficiency. While sizing the PV panel, the irradiation amount of the month was the lowest irradiation of the year, and this value is taken as reference. In Figure 2, the required number of PV panels has been determined by considering the amount of solar irradiation in some cities in Europe.

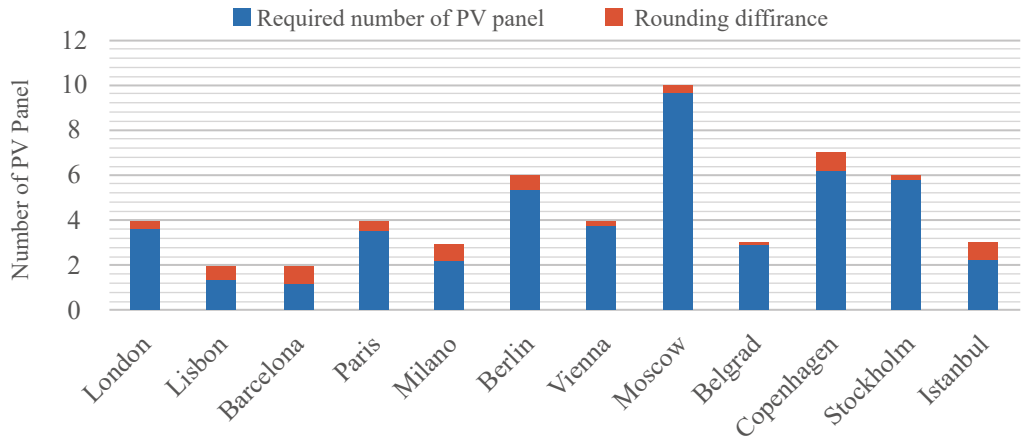


Figure 2 Number of PV panel for the cities in Europe

The annual energy production amount and the number of panels for this for the cities in Europe are given in Figure 3. In cities with lower solar irradiation, more energy was produced because more PV panels were needed.

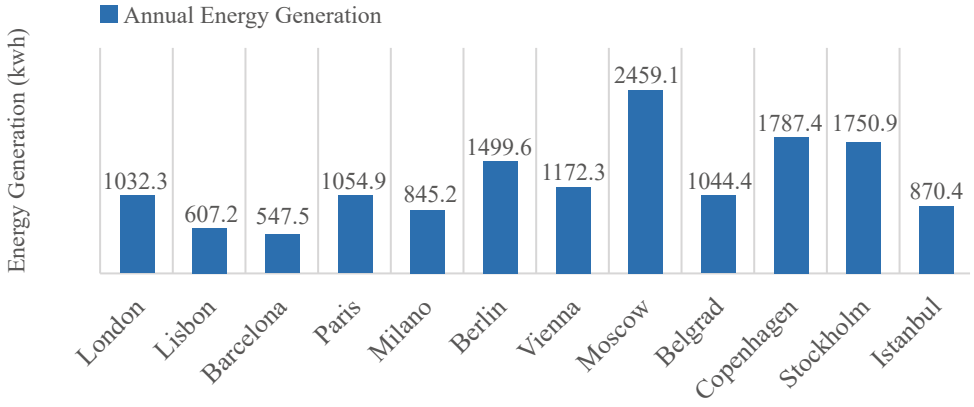


Figure 3 Annual Energy Generation based on December irradiations for the cities in Europe

The table below shows the monthly average irradiance amounts for different cities in North America. [Table 2].

AVERAGE IRRADIATIONS	Washington Hd (kWh/m²)	New York Hd (kWh/m²)	California City Hd (kWh/m²)	Oklahoma Hd (kWh/m²)	Los Angeles Hd (kWh/m²)
January	3.43	3.02	3.44	4.57	5.03
February	4.28	3.62	4.96	5.31	6.04
March	4.77	4.15	6.78	5.64	6.82
April	5.58	5.03	7.41	5.58	6.97
May	6.29	5.80	6.93	4.80	5.59
June	5.11	5.12	7.36	6.50	6.09
July	5.68	5.86	7.20	6.33	6.32
August	6.05	6.43	7.37	6.05	7.02
September	5.24	5.46	6.69	6.32	6.88
October	4.82	4.33	5.86	5.45	5.81
November	3.89	3.38	5.29	4.81	6.33
December	2.89	2.17	3.85	4.44	5.16
Yearly	**4.84**	**4.53**	**6.09**	**5.48**	**6.17**

Table 2 Solar Irradiation Amounts for Different Cities in North America

In Figure 4, the required number of PV panels has been determined by considering the amount of solar irradiation in some cities in North America.

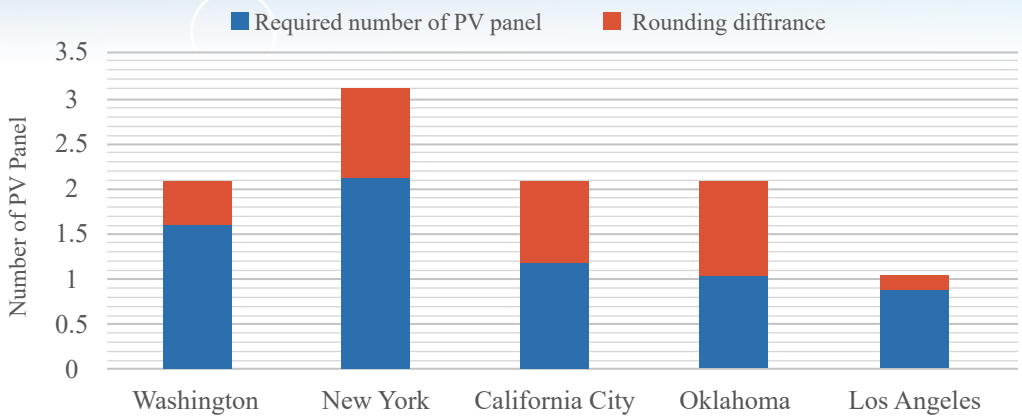


Figure 4 Number of PV panel for the cities in North America

The annual energy production amount and the number of panels in the cities in North America are given in Figure 5.

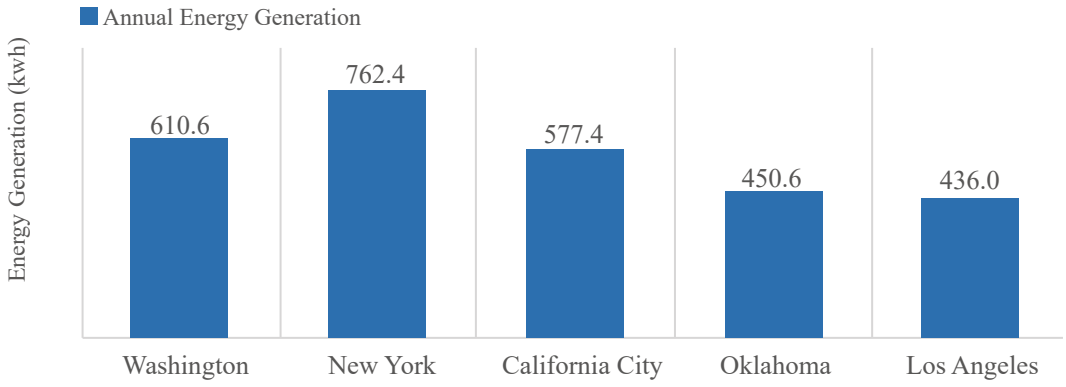


Figure 4 Number of PV panel for the cities in North America

In Figure 6, the required number of PV panels has been determined by considering the amount of solar irradiation in some cities in Asia.

AVERAGE IRRADIATIONS	Bangkok Hd (kWh/m²)	Delhi Hd (kWh/m²)	Hanoi Hd (kWh/m²)	Singapore Hd (kWh/m²)	Xian Hd (kWh/m²)
January	6.01	4.52	2.42	5.18	4.61
February	6.74	6.40	3.66	6.17	5.09
March	6.60	6.48	3.36	5.63	4.89
April	6.95	6.95	4.78	5.28	4.52
May	6.08	6.39	4.72	4.46	4.98
June	5.03	6.02	5.48	4.64	5.20
July	5.09	4.95	5.09	4.59	4.81
August	5.40	5.03	4.62	4.72	3.68
September	5.11	6.69	4.74	5.01	4.56
October	5.38	6.30	4.19	4.78	4.20
November	5.70	5.74	3.22	4.56	5.44
December	5.52	4.95	3.75	4.67	4.68
Yearly	**5.80**	**5.87**	**4.17**	**4.97**	**4.72**

Table 3 Solar Irradiation Amounts for Different Cities in Asia

In Figure 6, the required number of PV panels has been decided by considering the amount of solar irradiation in some cities in Asia.

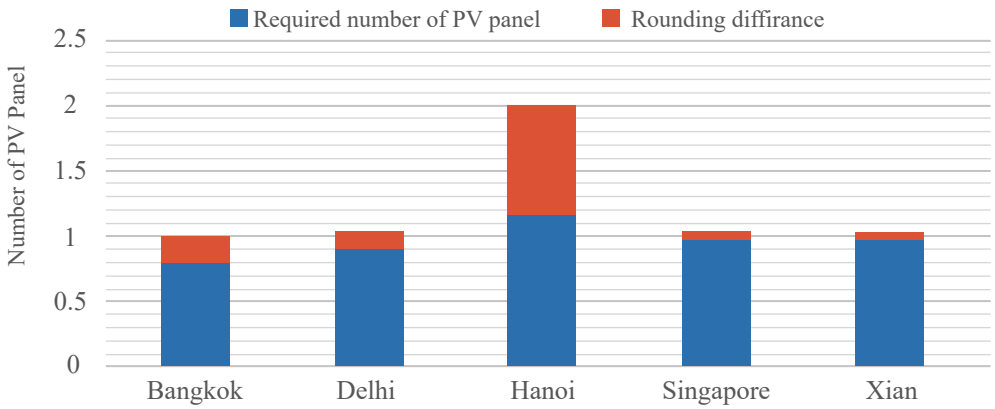


Figure 6 Number of PV panel for the cities in Asia

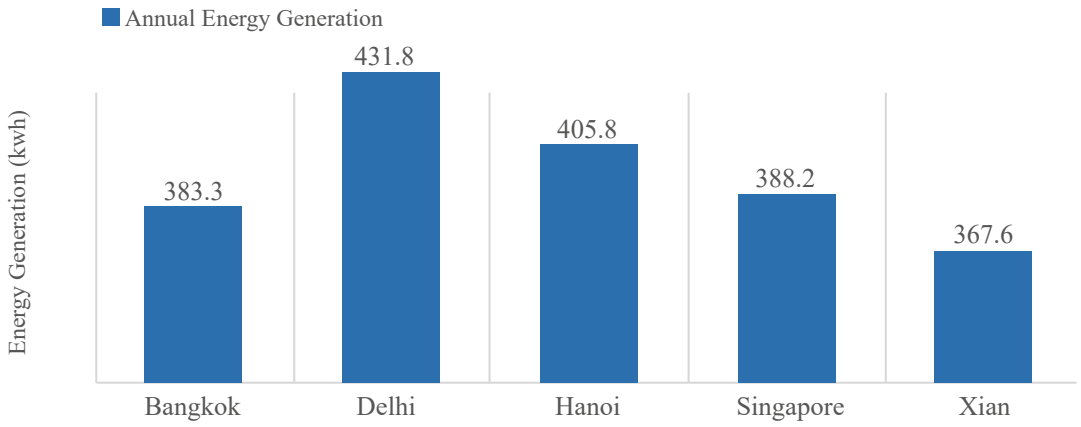


Figure 7 Annual Energy Generation based on December irradiations for the cities in Asia

ABOUT SOLARMINEX?

SolarMineX project is integrating electricity generation from solar energy with crypto money as a starting point. In this direction, it is aimed to minimize the use of fossil energy resources, to reduce the negative effects of these resources on the world, and to reduce the monopolizing and harmful effects of cryptocurrency mining on the environment. Thus, it is also aimed to contribute to the environment and economy by ensuring the widespread use of renewable energy.

As a result, SolarMineX allows mining rewards to be earned based on the energy to be produced from solar energy. Through the project, miners will contribute to the reduction of environmental pollution and global warming as well as earning income.

WHAT IS SOLARMINEX?

It is a blockchain project in which mining rewards are given according to the amount of electricity produced from solar energy. In this type of mining, there is no need for graphics cards, processors or mining rigs, or electricity consumed for their operation. In SolarMineX mining, electricity is not spent to earn the mining reward, but rather electricity is generated.

HOW TO MINE WITH SOLARMINEX?

Mining with SolarMineX will have two options. People who want to do mining can use one of these ways, or they can use both and increase their mining income. Mining earnings will be calculated based on electrical energy generated by the SolarMineX Mobile Solar Mining Panel or the miners' photovoltaic systems. SolarMineX Mobile Charger is designed for charging devices such as phones, tablets, and power banks.

SOLARMINEX MOBILE SOLAR MINING WITH PV PANEL

With SolarMineX's mobile solar mining panel, SolarMineX Token can be mined using the sun's rays at any time and place. In SolarMineX mobile solar mining, the detection of energy production depends on wifi or Bluetooth technology. In cases where data transfer via Wi-Fi or Bluetooth is possible, mining income will be instantly recorded in the database. However, this whole process will be easily managed by the miners with the SolarMinex mobile application.

Sometimes Wi-Fi or Bluetooth access is not possible. In this case, the internal memory of the mobile panel will be activated. Thanks to these features, the current passing through the panel can be monitored instantly and the records can be kept in the internal memory. When there is wifi or bluetooth access, the information in the internal memory is synchronized with the smartphone app and the mining rewards are transferred to the miner's account.

With the SolarMineX Mobile Solar Mining Device, mining can be done while traveling by car or public transportation, while spending time in a cafe or restaurant, enjoying swimming in the sea or the pool, in short, anywhere there is sunlight and the SolarMineX Mobile Solar Mining Device. Also, this whole process will be easily managed by miners with the SolarMineX mobile application.

PHOTOVOLTAIC SOLAR MINING SYSTEM

The fact that miners produce energy in any area such as home, workplace, any place with a photovoltaic system is enough to receive the SolarMineX mining award. With the permission of the miners, the amount of energy produced will be controlled by SolarMineX by using the control monitoring method and it will be possible to monitor the earnings.

Mission:

To establish a secure and effective network with a decentralized structure that is environmentally friendly, beneficial to society, using solar energy in cryptocurrency mining.

Vision:

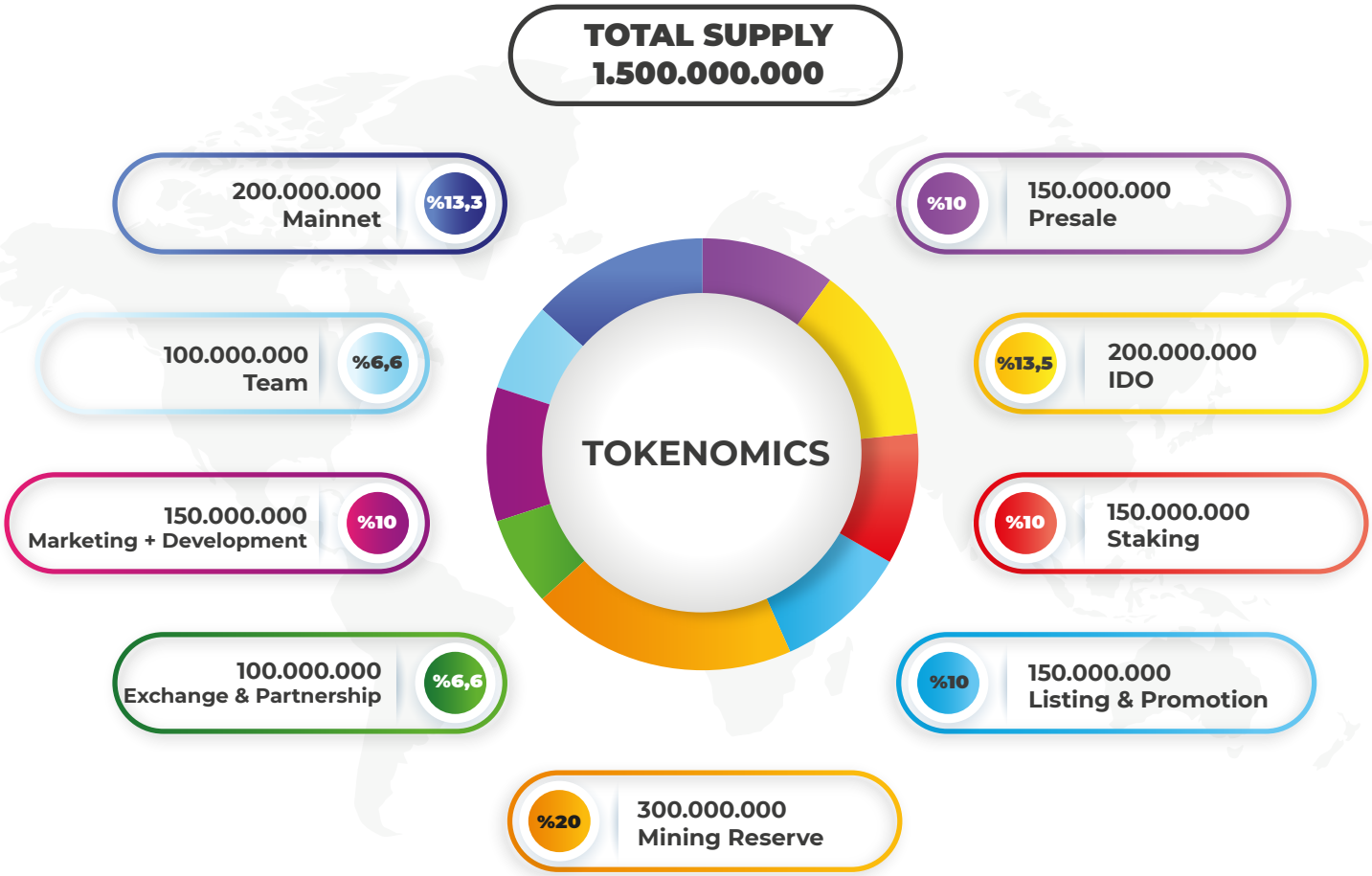
To create permanent benefits by pioneering the transition to mining based on renewable energy sources, unlike the classical cryptocurrency mining, which is widely used in the world, and to make a difference between cryptocurrencies with environmental goals.

SOLARMINEX PRE MINING MOBILE APPLICATION

SolarMineX Mobile application aims to teach and popularize solar energy and electricity generation by making it a game. Users who download this application will have a virtual area (meaning field, soil) and a virtual solar energy panel with a certain electricity generation power on this area, and a virtual battery where it can store the electricity produced.

The application aims to teach people how the SolarMineX solar mining system will work and to earn while learning it. In this way, when the SolarMineX solar mining system is available to SolarMineX miners, they will know how to use it.

TOKENOMICS


TOTAL SUPPLY
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Marketing + Development
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