Teslacoin:
Accelerating The Transition To A New Source of Energy

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Abstract – Bitcoin and blockchain creation have opened up new possibilities for human evolution, since the evolution of the human being has always been related to the amount of available energy, it's time to get these two together. There are more than 1 billion people still without access to electricity and more than 3 billion still using fuels like wood, charcoal, coal and dung for cooking and heating. There has not been a real breakthrough in the energy field for a long time, and neither evolution nor progress in culture is inevitable, it's time for a new technology.
A New Source of Energy.

TABLE OF CONTENTS

INTRODUCTION

Since the implementation of Bitcoin in 2009, there are new possibilities of crowdfunding for projects that couldn't find their place in a world where banks and authorities had the ability to get a company financially segregated.

In order to develop a new source of energy, projects need to raise money to fund the necessary manpower, minds and materials.

In this paper we introduce Teslacoin along with TeslaStarter, that will be the currency and the crowdfunding platform for all the innovative projects willing to bring the human race forward.

ENERGY

Background

Energy as the Key to Social and Cultural Evolution

The evolution of the human being has been always related to the amount of available energy. This has been the case throuthout history and will remain so as long as man remains on the face of the earth.

The purpose of culture is to serve the needs of man. These needs are of two kinds: those which can be served or satisfied by drawing upon resources within the human organism alone. Singing, dancing, myth-making, forming clubs or associations for the sake of companionship, etc., illustrate these kinds of needs, and ways of satisfying them. The second class of needs can be satisfied only by drawing upon the resources of the external world, outside the human organism. Man must get his food from the external world. The tools, weapons, and other materials with which man provides himself with food, shelter from the elements, protection from his enemies, must likewise come from the external world. [1] [2]

The human struggle for existence expresses itself in a never-ending attempt to make of culture a more effective instrument with which to provide security of life and survival of the species. And one of the ways of making culture a more powerful instrument is to harness and to put to work within it more energy per capita per year. Thus, wind, and water, and fire are harnessed; animals are domesticated, plants cultivated; steam engines are built. The other way of improving culture as an instrument of adjustment and control is to invent new and better tools and to improve old ones. Thus energy for culture living and culture building is augmented in quantity, is expended more efficiently, and culture advances.

The urge inherent in all living species, to live and make life more secure, richer, fuller and to ensure the perpetuation of the species, seizes upon (when it does not produce) better (ie., more effective) means of living and surviving.

Let's see the different kind of energies the human as mastered in order to increase the amount of energy available, and therefore make the time to evolve and improve culture.

MUSCULAR ENERGY

At the beginning of cultural history, man had only the energy of his own body under his control for culture-living and culture-building. For a very long period of time this was almost the only source of energy available to him. Wind, water, and fire were but rarely used as forms of energy.

The amount of energy at the disposal of a community of 50, 100, or 300 persons would be 50, 100, or 300 times the energy of the average member of the community, which, when infants, the sick, the old and feeble are considered, would be considerably less than one “man-power” per capita. Since

1 ENERGY AND THE EVOLUTION OF CULTURE By LESLIE A. WHITE
https://deepblue.lib.umich.edu/bitstream/handle/2027.42/99636/aa.1943.45.3.02a00010.pdf?sequence=1
2ENERGY AS THE KEY TO SOCIAL EVOLUTION BY W. TIRASPOLSKY
(IMPACT of science on society Vol.III Nº1)
http://unesdoc.unesco.org/images/0000/000082/008246eo.pdf

one “man-power” is about one-tenth of one horse-power, we see that the amount of energy per capita in the earliest stage of cultural development was very small indeed-perhaps 1/20th horsepower per person.

Since the amount of energy available for culture building in this stage was finite and limited, the extent to which culture could develop was limited. As we have seen, when the energy factor is a constant, cultural progress is made possible only by improvements in the means with which the energy is expended, namely, the technology. Thus, in the human-energy stage of cultural development progress is achieved only by inventing new tools, the bow and arrow, harpoon, needle, etc., or by improving old ones, new techniques of chipping flint implements, for example. But when man has achieved maximum efficiency in the expenditure of energy, and when he has reached the limits of his finite bodily energy resources, then his culture can develop no further. Unless he can harness additional quantities of energy by tapping new sources cultural development will come to an end. Man would have remained on the level of savagery indefinitely if he had not learned to augment the amount of energy under his control and at his disposal for culture-building by harnessing new sources of energy. This was first accomplished by the domestication of animals and by the cultivation of plants.

As stated, on the average, a well fed workman can supply an effective output of power ranging from 1/10 to 1/20 h.p. for 8 to 10 hours a day. At the rate of 2,000 hours of actual work a year, this amounts to a total of no more than some 100 kWh, a work which an industrialist pays a few shillings if he takes it from an electricity meter. To give an immediate idea of the progress made, it ma y be noted that the present (2008) social standard of mankind represents an annual consumption of nearly 21,000 kWh per head, and that the standard of comfort of the modern American represents over 80,000 kWh[3]

Man added greatly to the amount of energy under his control and at his disposal for culture-building when he domesticated animals and brought plants under cultivation. To be sure, man nourished himself with meat and grain and clothed himself with hides and fibers long before animal husbandry and agriculture came into being. But before the new energy revolution happened, the most advanced thinkers soon realized that, if man was to develop his noblest faculties to the full, he had first to rise above the intrusive material contingencies of daily life. Two alternatives were open to him: to give up all material comfort, as did the sages —Diogenes, Socrates, Christ—or to exploit his fellow man, as did the strong. All that was necessary was to compel other men to produce more than they received in exchange. The progress of society gave birth to slavery, and only the progress of technology can bring it to an end.

The 20,000 citizens of Athens had 400,000 slaves to serve them. At the beginning of our era the 15 to 20 million Roman citizens had 130 to 135 million slaves. At the rate of 100 kWh a head, the Athenian therefore commanded an average of 2,000 kWh a year, which accounts for his relatively easy life. And when we comment admiringly on the modern conveniences which the patricians of Rome succeeded in developing, we must not forget that they were able to use the energies of thousands of slaves for the purpose. The average standard of life of an inhabitant of the United States of America would represent the output of 800 Roman slaves.

MECHANICAL ENERGY

At a fairly early date, man learnt to use the energy of the falling weight, the released spring, running

3The Internal Combustion Engine by Science and Its Times, 2001
Gale Group, Science in context

water, and wind, that is to say, the kinetic and potential energy of moving masses. Generally speaking, the means employed were more or less ingeniously designed mechanisms which made it possible to recover the labour previously put into their manufacture, such as the counterweight used in the well or the clock, the spring of the ballista, etc. Wind and water, however, as sources of energy, have exercised a considerable social influence from the very earliest time of human society.

The great trade routes have been affected by the fact that the main rivers could be navigated with laden vessels only when travelling downstream. The history of Europe would not havebeen exactly the same if the Rhone, the Loire, the Rhine, the Danube or the Dnieper had flowed the other way and thus supplied free power of movement in the opposite direction. Similarly all life in the Nile Valley was dependent on the water power supplied by the river in its floods which fed the irrigation system of the ancient Egyptians, the same was true of the great civilization of Mesopotamia.

The influence of wind and water mills on human society has been quite far-reaching. Not until the beast of burden set man free from porterage, and the mill from the task of grinding grain, was it possible to banish the old form of slavery from Europe. Anyone who has seen a caravan of bearers in Africa or listened to the haunting sound of rice being pounded from dusk to dawn by millions of women in countless villages, telling, as it has done for centuries, of the hardness of life in Asia, will understand what that liberation meant.

As early as the seventeenth century, incidentally, it was possible to take advantage of running water as a source of energy in industry, which was then slowly emerging. To give some idea of the importance of this water power we may note that in 1890 there were 70,000 mills and factories in France situated on rivers, with a total potential of one million horsepower. This was approximately equal to the potential sum of muscular energy of the entire adult population of the country. We may also mention the interesting case of the Netherlands, whose very existence and entire social structure depended on the work done by tens of thousands of "windmills", which were never used to grind anything but which kept the water level below that of the sea.

MOLECULAR ENERGY

So far, we have dealt solely with the forms of energy which ma y be described as natural, those which we share with the animal kingdom. For animals too are aware of the force of muscular effort and can take advantage of the energy of wind and water. Ants keep slaves working for them, fish make skilful use of currents in the seas and rivers, and birds are such experts on air currents that some of the precursors of flight, like Clément Ader, assumed that air travel would develop only along the natural airways, which they attempted to discover by watching the flight of storks and vultures.

On the other hand, the deliberate release and control of chemical energy and the intentional regrouping of the atoms in the molecule are man's exclusive prerogatives.

The Mastery of Fire

At the exact moment when the first of our ancestors first learnt to make conscious use of the properties of fire as a protection against wild animals and a means of overcoming cold and darkness, and only then, did he rise to a higher level than the other primates. He was no longer a highly developed ape; that day, he became a primitive man. Prometheus created homo sapiens by

bringing down from heaven the secret of fire; and it is perhaps not by pure chance that the Greek legend represents him as chained to a rock in the Caucasus, the home of petroleum and natural fire. The most important step forward in the progress of society, whereby we advanced from the race of animals to that of men, was brought about by the first great conquest in the control of energy—the mastery of fire.

For thousands of years, man was content to use the radiant energy of fire to give him light, to warm himself and to cook his food. But little by little he learned to make use of the chemical reactions set up by combustion to extract metals from their ores and to work them, bringing us first to the Bronze Age and then to the Iron Age. These two fundamental stages in our social development are simply the outcome of two advances in the mastery of molecular energy.

Gunpowder

The second great stage in the mastery of fire was reached in the fourteenth century, when men learned systematically to direct the molecular energy released by the deflagration of gunpowder. There is no doubt that the new technique had already been perfected over a fairly long period by that time. The Hundred Years War (1337-1453), which laid half Europe waste, provided a laboratory and a testing ground for the improvement of this new instrument of power.

This advance in the use of molecular energy, the second since the early days of mankind, coincided with one of the most decisive turning points in the history of our civilization. The Western mind broke free of the sterile bonds of outworn scholasticism. A spectacular flowering was to be seen in all the arts and all the sciences. Gun in hand, Europe set forth to conquer the world. Russia, with its artillery, drove back the Tartars to the borders of the steppes. Europe swept back the Moors towards Africa. Spain and Portugal, followed by Holland, England and France, set sail in Caravel and Carrack to discover and colonize America, Africa and Australia.

The far-reaching revolution of the Renaissance was founded, of course, on many other technical advances besides the use of gunpowder. The compass was perfected to assist in navigation, and the printing press to spread the new ideas. But, quite literally, it was the sound of the cannon which awakened Europe and plunged it into the ferment of the Renaissance. The social order based upon the feudal castle, surrounded by its strong walls, gave place to the social order of the military dynasties relying on the shock force of their brand new artillery.

The new masters, abandoning their predecessors prejudices, gathered around them the most gifted "engineers". As relaxation during the short periods of truce, the great lords allowed them to build palaces and ornament them with brush or chisel. But we have only to read how enthusiastically Benvenuto Cellini, in his autobiography, speaks of the "marvellous flight" of a cannon ball he fired from the Castel Sant Angelo upon the head of some enemy cardinal, or to see how modestly Leonardo da Vinci, when seeking a patron, adds, after setting forth his skill as an artillerist and engineer, that he is also able to paint as well as anybody, to realize what an important part the cannon played in the development of the modern mind. It was in fact the power released by the explosion of the powder in the bore of the cannon which brought about and consolidated the substitution of the aristocratic, military monarchies of the modern epoch for feudal society.

Steam

A new advance in the conquest of molecular energy—and the first step in the conversion of this

energy into work—was made when the idea of using as a motive agent the energy from heat, in the process of conversion of water into steam, was first born. The first industrial steam engine was produced, about 1770, by the ingenious James Watt. This marked the beginning of the industrial era.

One example will convey an idea of the social revolution brought about, from the outset, by the introduction of the steam engine. In 1760 Arkwright invented his spinning frame. At that time, 5,200 spinning-wheel operators, and 2,700 weavers, or a total of 7,900 workers, were employed in the textile industry in England. In 1774, the steam engine was sufficiently far advanced to make it possible to put Arkwright's idea into practice and to set up the first mechanical weaving mill. In 1787, the English textile industry (according to a Parliamentary report) employed 320,000 workers.

The most significant fact about the new productive power is that, in the course of a century, it made it possible to give hundreds of millions of men and women material advantages which had until that point been confined to the privileged few. The volume of correspondence between England and France, which amounted to 110 letters a day, or 40,000 a year, in 1693, had risen to 13,500,000 in 1913. In 1790, seven places a day were available for the accommodation of passengers in the stage-coaches from Paris to Lyon. That figure had risen to 16 in 1810, and 44 in 1850, to go up to 6,000 seats in railway trains in 1913.

We thus see that, once more, a revolution in our use of energy is accompanied by a no less far-reaching social revolution. The landed and military aristocracy of the eighteenth century yields first place to the middle-class industrial capitalists. The concentration of industry due to the particular nature of the new motive power not only made possible the accumulation of great fortunes but also led more or less directly to a concentration of political power which brought the modern State into being out of the mosaic of monarchies and principalities which had come down from the seventeenth century. This change did not, however, come about smoothly, and it is interesting to see that, once again, as at the time of the Renaissance, the period of transition is marked by very violent social and military upheavals.

The Internal Combustion Engine

At the end of the XIX century, when the steam engine was still by no means fully perfected, a new step forward was made in the mastery of molecular energy. Going back to one of Huyghens old experiments, men succeeded in harnessing for useful purposes the gases produced by the combustion or explosion of liquid fuels. Not only was the efficiency of these machines five times greater than that of the contemporary steam engine, but it was also found possible to produce small separate portable motors capable of taking the place of muscular energy in almost every one of the uses to which it was put. By a fortunate chance, it happened that the waste products of the developing petroleum industry, petrol and gas oil, in which an amazing quantity of accessible energy was concentrated, were the ideal fuels for the two new types of engine.

In the area of transportation, the internal combustion engine (and its variants) have been adapted for use in travel by sea, land, and air. At sea, a great number of smaller ships were, and continue to be, powered by diesel engines, speeding the movement of people and goods between any places connected by water. This has served to make trade more rapid and less expensive. Airplanes also owe their existence to the development of the gasoline engine. Many inventors had attempted powered flight at the end of the nineteenth century, but it wasn't until low-weight, high-output gasoline engines were available that the field of aviation was established.

Also to be considered is the impact on farming and food production. Tractors and other modern

farming equipment, usually running on diesel or gasoline engines, play a significant role in the abundance of food in the developed world and in parts of the developing world. The use of tractors to till, plant, and harvest as well as to pull heavy loads has helped to increase the amount of land a single farmer can work, as well as increasing the yield per hectare. This dual increase in the efficiency of individual farmers results in more food at lower prices. In the developed world this means not only more and cheaper food available for its citizens, but more food available for export to all nations.

It is disturbing to see that, yet again, this new advance in the control of sources of energy is accompanied by military and social» upheavals comparable in scale with the magnitude of the new power supply. From 1914 to 1945 the whole world was shaken and thrown into confusion by an almost uninterrupted series of wars and revolutions.

Nuclear energy [4] [5]

The science of atomic radiation, atomic change and nuclear fission was developed from 1895 to 1945, much of it in the last six of those years for military use. After 1945 attention was given to harnessing this energy in a controlled fashion both for naval propulsion and for making electricity. And since 1956 the prime focus has been on the technological evolution of reliable nuclear power plants.

From the late 1970s to about 2002 the nuclear power industry suffered some decline and stagnation. Few new reactors were ordered, the number coming on line from mid 1980s little more than matched retirements and the share of nuclear in world electricity from mid 1980s was fairly constant at 16-17%. However, by the late 1990s the first of the third-generation reactors was commissioned – Kashiwazaki-Kariwa 6 – a 1350 MWe Advanced BWR, in Japan. This was a sign of the recovery to come. In 2008, 31 countries were operating 435 nuclear reactors with a capacity superior to 372 million kilowatts.

The reasons found to explain this growth are nuclear power plants don't emit any greenhouse gases, have an average lifespan of up to 60 years and it is the cheapest produced energy. The cost of uranium is a 5% of the cost of the electric energy produced, whereas the cost of coal and gas is about a 50% and a 70% of the costs of electric energy produced. However, among all the energy sources, nuclear energy is the most polemic one because of the first use it was developed for (Hiroshima and Nagasaki, 6 and 9 August 1945).

The next revolution

To refer once more to our basic equation: On the one hand we have energy expended, on the other,. human needs serving goods and services are produced. Culture advances as these two factors increase, hand in hand. But the energy component is resolvable into two factors: the human energy, and the nonhuman energy, factors. Of these, the human energy factor is a constant; the non-human energy factor, a variable. Hence, we obtain the law; All things being equal, culture evolves as the productivity of human labor increases.

4Outline History of Nuclear Energy by World Nuclear Association
http://www.world-nuclear.org/information-library/current-and-future-generation/outline-history-of-nuclear-energy.aspx
5NUCLEAR ENERGY AND SOCIAL IMPACT by Natividad Carpintero-Santamaria
Institute of Nuclear Fusion, Polytechnic University of Madrid, Spain
https://link.springer.com/chapter/10.1007/978-90-481-3504-2_10

Cultural advancement may cease at a certain point for lack of incentive. No incentive to progress came from the ruling class in the ancient civilizations in which the masses produced the means of life but the distribution of these goods was in accordance with rules made by the ruling class. By one method of control or another, by levies, taxes, rents, or some other means, the ruling class takes a portion of the wealth produced by the masses from them, and consumes it according to their liking or as the exigencies of the time dictate. What they appropriated from their subjects they consumed or wasted.

To obtain more wealth the ruling class merely increased taxes, rents, or other levies upon the producers of wealth. This was easier, quicker, and surer than increasing the efficiency of production and thereby augmenting the total product. On the other hand, there was no incentive to progress among the masses. If they produced more by increasing efficiency it would only mean more for the tax-gatherers of the ruling class.

We come then to the following conclusion; A social system may so condition the operation of a technological system, as to impose a limit upon the extent to which it can expand and develop. When this occurs cultural evolution ceases.

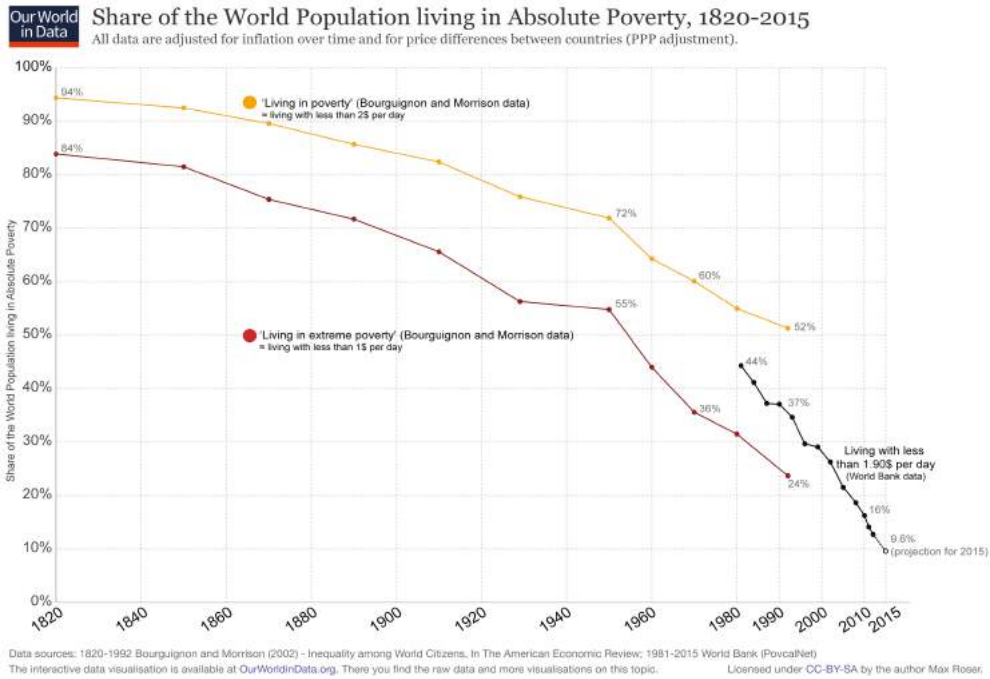
Neither evolution nor progress in culture is inevitable. When cultural advance has thus been arrested, it can be renewed only by tapping some new source of energy and by harnessing it in sufficient magnitude to burst asunder the social system which binds it.

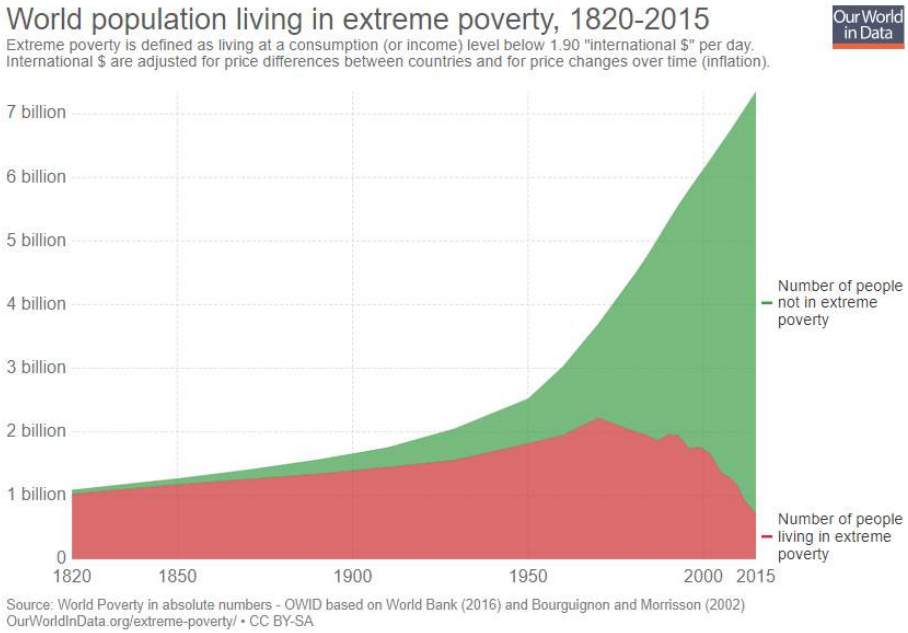
Thus freed, the new technology will form a new social system, one congenial to its growth, and culture will again advance.

World current situation

Economic situation

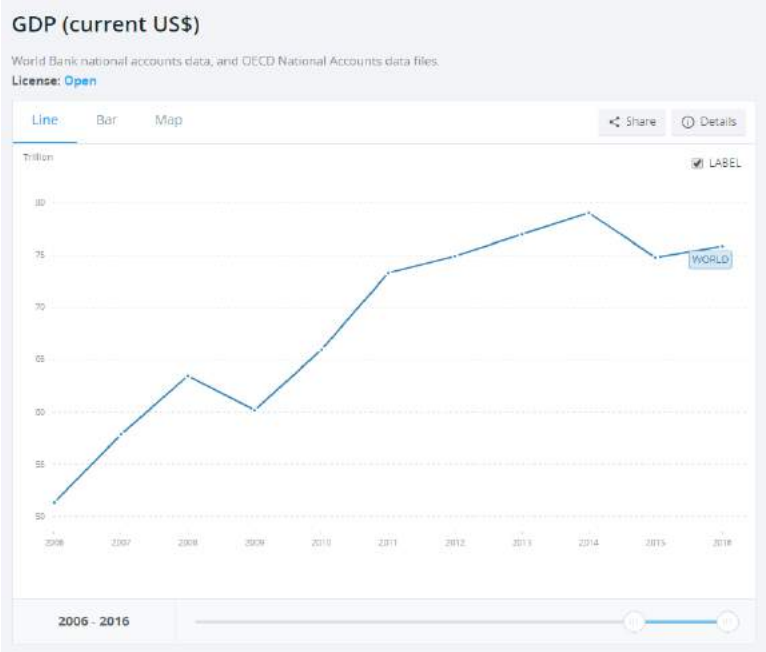
From an historic point of view we can clearly state that the world situation is getting better every decade since there are everyday less people living in poverty. [6] [7]

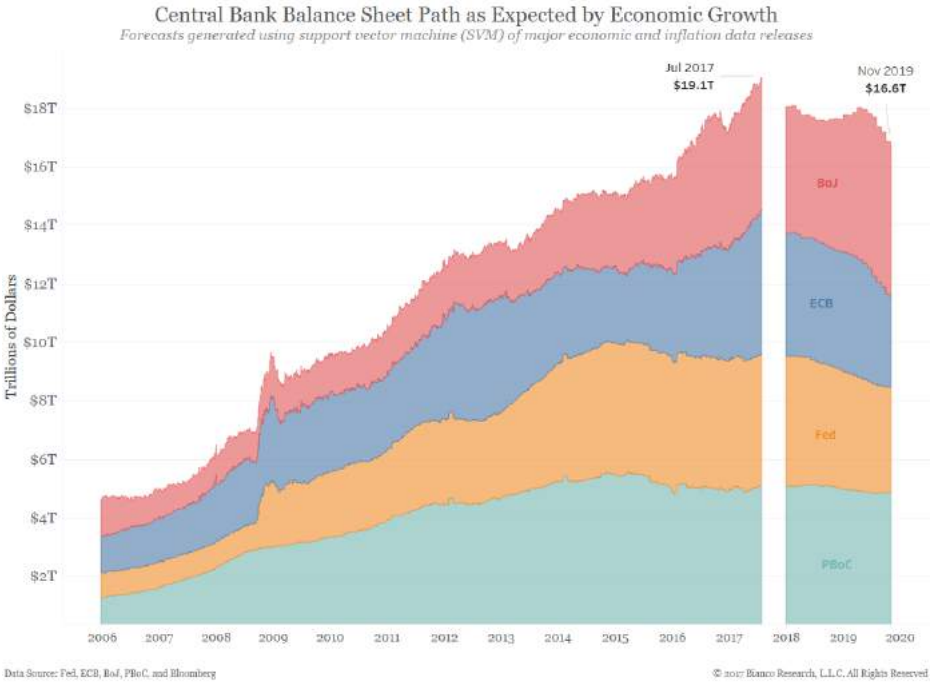




6Share of the World Population living in Absolute Poverty, 1820-2015 by Our World in Data
https://ourworldindata.org/extreme-poverty
7World population living in extreme poverty, 1820-2015 by Our World in Data
https://ourworldindata.org/extreme-poverty

However if we look more deeply only focusing in the last decade we cannot say the same. World economy has recovered from 2008 crisis but unfortunatley it's been only possible because (quantitave easing), of the printing money strategy of the central banks, mainly US's, Europe's, Japan's and China's central banks. This strategy can not last forever and that's why we need a new revolution in the energy sector the sooner the better. [8] [9]





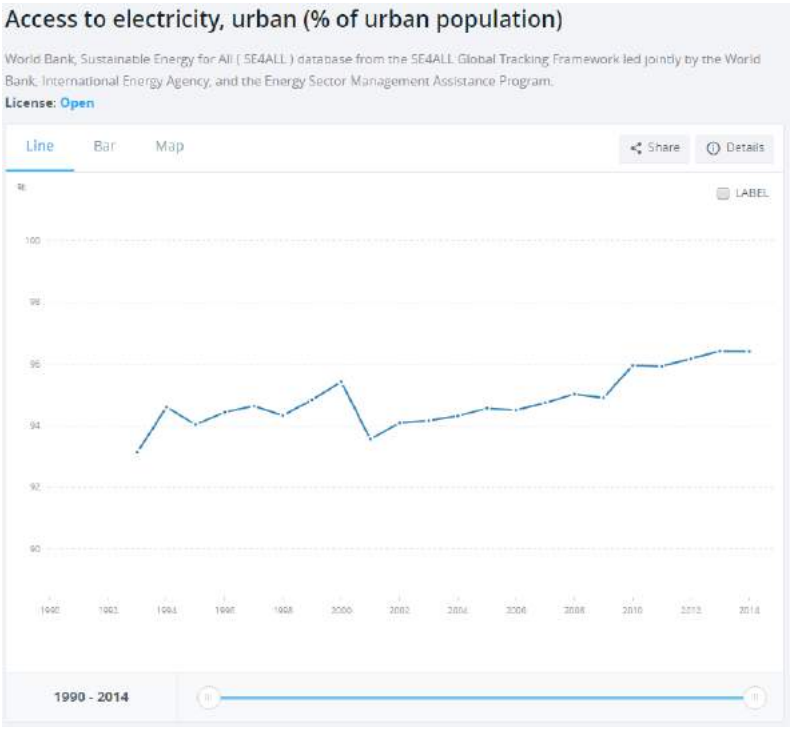
8 GDP (current US$) by The World Bank
https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?end=2016&start=2006&view=chart
9 Major Central Bank Balance Sheets
https://upfina.com/heres-why-stock-markets-are-rallying/

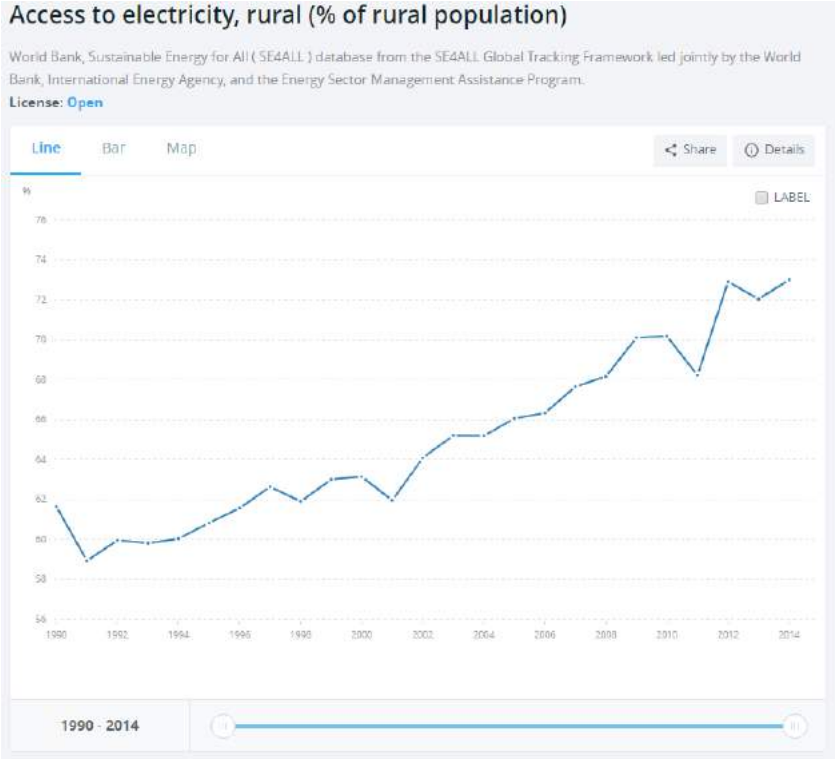
Energetic situation

Looking to the worldwide energetic situation it's quite similar. Looking a large number of years we can clearly see we're improving but once we check the number of people still living without energy is a devastating panorama.

Between 2000 and 2014, there were advances in electrification, with the global electricity deficit declining from 1.3 billion to 1.06 billion—and the global electrification rate rising from 77.7 percent to 85.5 percent. Progress with rural electrification is evident, with the global rural electrification rate increasing from 63 percent in 2000 to 73 percent in 2014. Urban areas across the world are already close to universal access at 97 percent. [10] [11] [12]

10 Access to electricity (% of population) by The World Bank
https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?end=2014&start=1990&view=chart
11 Access to electricity, urban (% of urban population)
https://data.worldbank.org/indicator/EG.ELC.ACCS.UR.ZS?end=2014&start=1990&view=chart
12 Access to electricity, rural (% of rural population)
https://data.worldbank.org/indicator/EG.ELC.ACCS.RU.ZS?end=2014&start=1990&view=chart

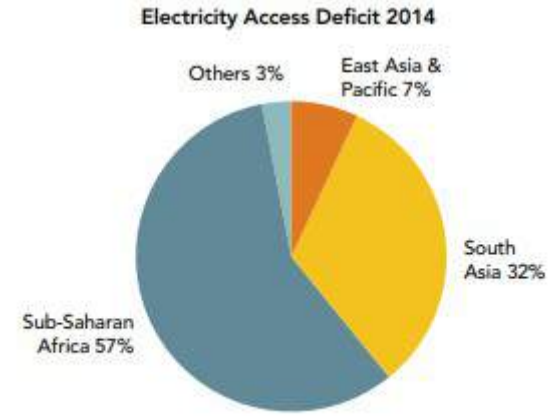




With more than 1 billion people still without access to electricity and more than 3 billion still use fuels like wood, charcoal, coal and dung for cooking and heating in 2014, achieving universal access to modern energy services by 2030 will not be possible without stepped-up effort by all stakeholders and as we have mentioned previously, access to energy is a key factor for sustainable development, break the vicious circle of poverty and to ensure acceptable basic living standards of

populations. [13]

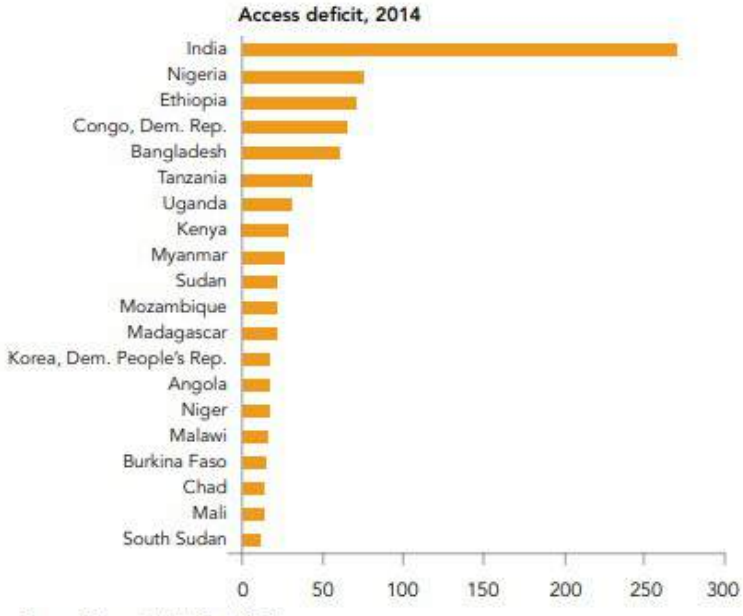
The electricity access deficit is overwhelmingly concentrated in Sub-Saharan Africa (62.5 percent of Sub-Saharan Africa population) and South Asia (20 percent), followed by East Asia and the Pacific (3.5 percent), and Latin America (3 percent) and the Middle East and North Africa (3 percent). In Sub-Saharan Africa, 609 million people (6 out of 10) do not have access to electricity, and in South Asia, 343 million people do not have access to electricity .



Source: Data from IEA and World Bank 2017.

14

At the country level, India alone has a little less than one-third of the global deficit (270 million for electricity), followed by Nigeria and Ethiopia for electricity—and the 20 highest access deficit countries for electricity account for 80 percent of the global deficit.



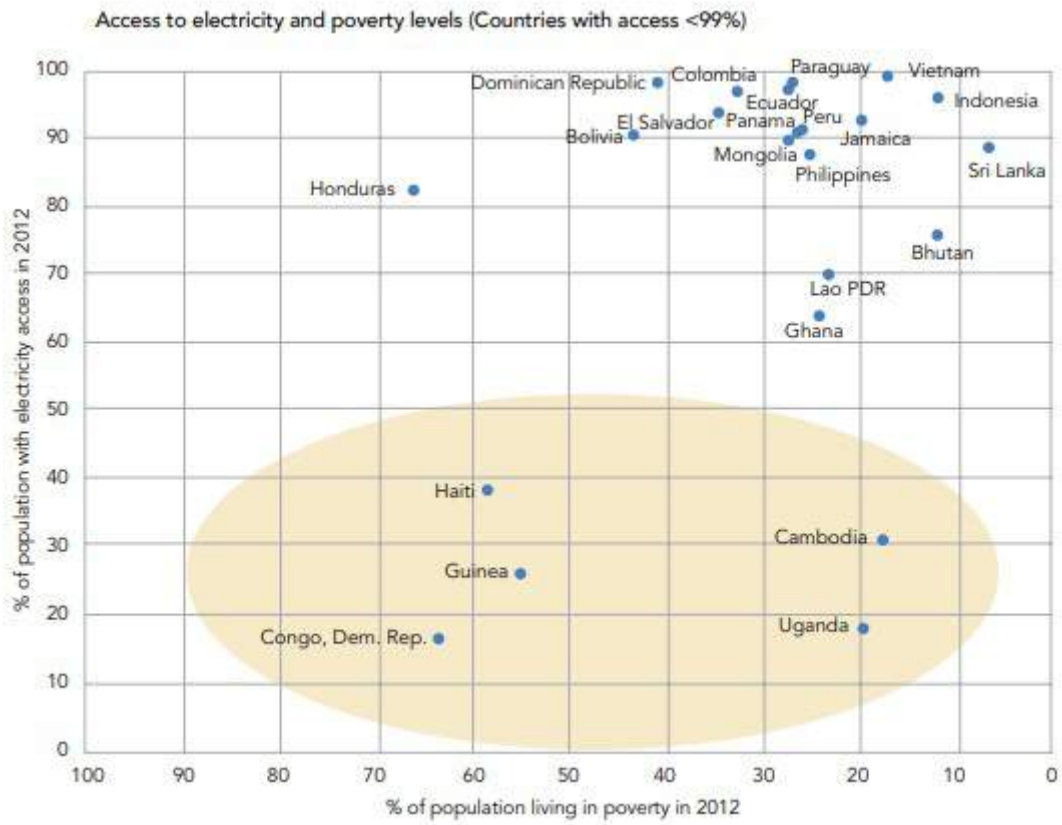
Source: IEA and World Bank 2017
Note: These countries account for more than 81 percent of the global access deficit.

15

13 State of Electricity Access Report 2017 by The World Bank https://openknowledge.worldbank.org/bitstream/handle/10986/26646/114841-WP-v2-FINALSEARwebopt.pdf?sequence=6&isAllowed=y
14 Electricity access Deficit 2014 by The World Bank https://openknowledge.worldbank.org/bitstream/handle/10986/26646/114841-WP-v2-FINALSEARwebopt.pdf?sequence=6&isAllowed=y
15 Top 20 countries for access deficit in electricity, 2014) by The World Bank

Countries with the highest levels of poverty tend to have lower access to modern energy services, a problem that is most pronounced in Sub-Saharan Africa and South Asia, where a large share of the population depends on traditional biomass for cooking and heating and lacks access to electricity.

Poor households lack the resources to purchase modern energy services (especially when there is a connection charge to obtain the modern energy source, as with electricity). At the same time, households lacking access to electricity and other modern energy sources have fewer opportunities for income generation (especially from agriculture). These households earn less, spend more time collecting biomass and less time on education, and pay more per unit for the limited amounts of modern energy that they can purchase (such as batteries for lighting and phone charging).



16

https://openknowledge.worldbank.org/bitstream/handle/10986/26646/114841-WP-v2-FINALSEARwebopt.pdf?sequence=6&isAllowed=y
16 Access to electricity and poverty levels (Countries with access < 99%) by The World Bank
https://openknowledge.worldbank.org/bitstream/handle/10986/26646/114841-WP-v2-FINALSEARwebopt.pdf?sequence=6&isAllowed=y

Energy current situation

Knowing where we are is the first step to know where we want to go. Having that in mind we are going to learn more about the Levelized Cost Of Electricity (LCOE) of each power source. The LCOE is an economic assessment of the average total cost to build and operate a power generating asset over its lifetime divided by the total energy output of the asset over that lifetime. It can also be regarded as the average minimum cost at which electricity must be sold in order to break even over the lifetime of the project. [17]

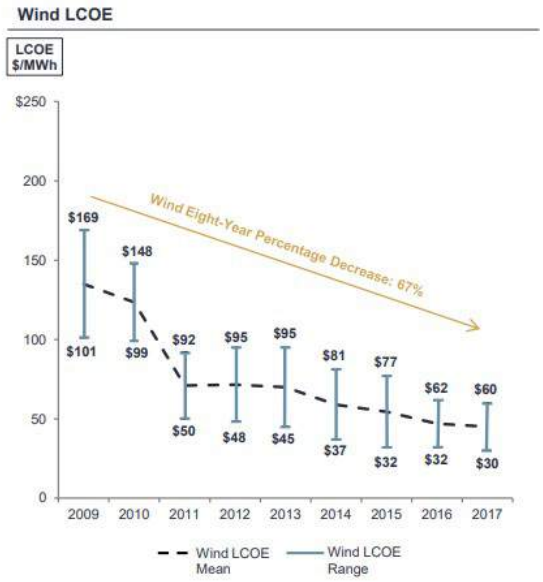
The levelized cost of electricity (LCOE) is given by:

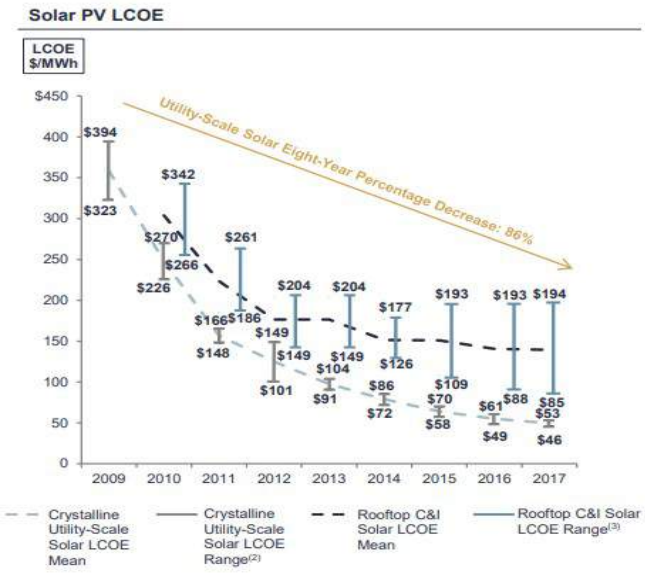
$$\mathrm{LCOE} = \frac{\text{sum of costs over lifetime}}{\text{sum of electrical energy produced over lifetime}} = \frac{\sum_{t=1}^{n} \frac{I_t + M_t + F_t}{(1+r)^t}}{\sum_{t=1}^{n} \frac{E_t}{(1+r)^t}}$$

I_t	:	investment expenditures in the year t
M_t	:	operations and maintenance expenditures in the year t
F_t	:	fuel expenditures in the year t
E_t	:	electrical energy generated in the year t
r	:	discount rate
n	:	expected lifetime of system or power station

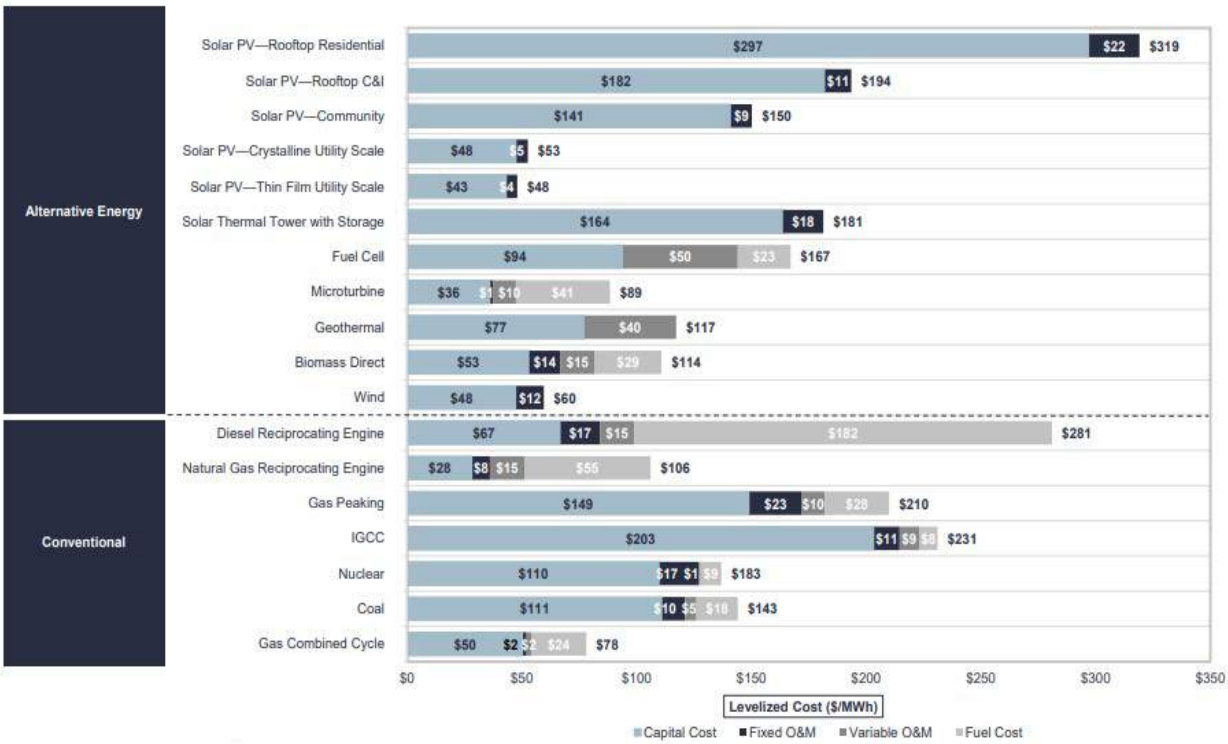
Over the last eight years, wind and solar PV have become increasingly cost competitive with conventional generation technologies, on an unsubsidized basis, in light of material declines in the pricing of system components (e.g., panels, inverters, racking, turbines, etc.), and dramatic improvements in efficiency, among other factors. [18]

17 Cost of electricity by source by Wikipedia
https://en.wikipedia.org/wiki/Cost_of_electricity_by_source
18 Lazard's levelized cost of energy analysis – Version 11.0 by Lazard
https://www.lazard.com/media/450337/lazard-levelized-cost-of-energy-version-110.pdf





With the improvements made the last years certain alternative energy generation technologies are already cost competitive with conventional generation technologies. This is a very good improvement for the long term success of the technology but it does not provide the needed breakthrough in technology to push the human race forward as the previous improvement analysed in the first chapter made.



19 Levelized Cost of Energy Components – High End by Lazard
https://www.lazard.com/media/450337/lazard-levelized-cost-of-energy-version-110.pdf

Conclusions

The first thing we have to point out is the more than 1 billion people without electricity and the 3 billion people cooking and heating with fuels like wood, charcoal, coal and dung.

The next thing to point out is that a new financial crisis is coming and it seems this time central banks won't be able to solve the issue by printing more money since they are the ones that will be needed to bail out.

The third thing we clearly can state is that a new revolution in the energy field is needed. One like the previous revolutions, one that pushes the humanity forward.

The fourth thing is that alternative generation technologies after being developed for almost a decade, the LCOE's are not much better than the conventional generation technologies so we can therefore assume there is no revolution in those technologies.

The fifth is questions. Is there anyone impeding the increase of efficiency? Are the incentives to progress still there? Is someone ceasing the cultural evolution?

We do know that when cultural advance has thus been arrested, it can be renewed only by tapping some new source of energy and by harnessing it in sufficient magnitude to burst asunder the social system which binds it. Thus freed, the new technology will form a new social system, one congenial to its growth, and culture will again advance.

A new source of energy. There is where we have to go. And that is Teslacoin's objective.

ENERGY MARKET

When we talk about discovering and developing a new source of energy we are talking about disrupting the companies that are using the previous source of energies to satisfy their customers.

Disrupting in this case means taking the business away from one of the biggest sector companies in the world and getting 3 billion more people as customers. During the year 2016 the 50 biggest energy companies in the world had a **turnover of more than 3 trillion dollars** ($3,000,000,000,000) alltogether. Since most of them are listed in the biggest market exchanges of the world we do know their **market capitalization** today (15/2/2018) **is 2.8 trillion dollars** ($2,866,324,000,000).

This is the value the next source of energy and the companies related to it will be worth. This calculation is made assuming there won't be any growth in the number of people using electricity. This is not true but we can not make a real estimation of the value electricity will create for those new 3 billion users. We do know this is an underestimation of the value this new source of energy will provide to the companies and investors but we prefer to use the number that are using electricity right now, so we're able to provide more accurate data.

We are aware there are thousands of companies in the energy sector around the world, but knowing the revenue and the market cap of the biggest ones lets us see how big the market we're about to disrupt is, and the level of resistance we will meet to change the paradigm.

You can see the detailed list of their revenue in 2016 and their actual market cap down below.

	Company	2016 Revenue (million USD)
1	PetroChina Co Ltd (China)	359.830
2	China Petroleum & Chemical Corp (Sinopec) (China)	284.146
3	Royal Dutch Shell plc (Netherlands)	233.600
4	Exxon Mobil Corp (USA)	218.600
5	BP plc (UK)	183.000
6	TOTAL SA (France)	127.900
7	Chevron Corp (USA)	114.500
8	JXTG Holdings (Japan)	102.630
9	Public JSC Gazprom (Russia)	91.100
10	Eni SpA (Italy)	90.980
11	PJSC LUKOIL Oil Co (Russia)	90.690
12	Electricite de France SA (France)	88.000
13	Valero Energy Corp (USA)	87.800
14	Enel SpA (Italy)	87.330
15	Petróleo Brasileiro SA – Petrobras (Brazil)	87.000
16	Phillips 66 (USA)	84.280
17	Marathon Petroleum Corp (USA)	72.260
18	Uniper SE (Germany)	70.891
19	CNOOC Ltd (Hong Kong)	68.994
20	ENGIE SA (France)	66.600
21	PSJC Rosneft Oil Co (Russia)	64.749
22	RWE AG (Germany)	56.691
23	PTT Plc (Thailand)	55.290
24	Reliance Industries Ltc (India)	51.000
25	Repsol SA (Spain)	46.290
26	Statoil ASA (Norw ay)	45.873
27	Iberdrola SA (Spain)	38.860
28	Centrica plc (UK)	37.654
29	Gas Natural SDG SA (Spain)	28.832
30	China Shenhua Energy Co Ltd (China)	27.357
31	Ecopetrol SA (Colombia)	26.990
32	ConocoPhillips (USA)	24.360
33	OMV Aktiengesellschaft (Austria)	23.823
34	Suncor Energy Inc (Canada)	23.580
35	Husky Energy Inc (Canada)	22.400
36	Oil & Natural Gas Corp Ltd (India)	22.000
37	Sasol Ltc (South Africa)	21.780
38	National Grid plc (UK)	21.000
39	Southern Co (USA)	19.900
40	Coal India Ltd (India)	13.055
41	Edison International (USA)	11.830
42	Tenaga Nasional Berhad (Malaysia)	11.610
43	Occidental Petroleum Corp (USA)	10.090
44	CEZ, a.s. (Czech Republic)	9.858
45	Inpex Corp (Japan)	8.896
46	OAO Tatneft (Russia)	8.650
47	Anadarko Petroleum Corp (USA)	8.447
48	Apache Corp (USA)	5.367
49	Fortum Oyj (Finland)	4.490
50	Woodside Petroleum Ltd (Australia)	3.539
		3.004.562

Data from Companies Financial Reports and Statista

	Company	Market cap (million US dollars)
1	PetroChina Co Ltd (China)	218.858
2	China Petroleum & Chemical Corp (Sinopec) (China)	115.025
3	Royal Dutch Shell plc (Netherlands)	268.433
4	Exxon Mobil Corp (USA)	323.291
5	BP plc (UK)	131.821
6	TOTAL SA (France)	142.127
7	Chevron Corp (USA)	215.180
8	JXTG Holdings (Japan)	20.616
9	Public JSC Gazprom (Russia)	56.876
10	Eni SpA (Italy)	60.255
11	PJSC LUKOIL Oil Co (Russia)	54.717
12	Electricite de France SA (France)	36.300
13	Valero Energy Corp (USA)	39.155
14	Enel SpA (Italy)	58.458
15	Petróleo Brasileiro SA – Petrobras (Brazil)	79.372
16	Phillips 66 (USA)	47.512
17	Apache Corp	14.362
18	Marathon Petroleum Corp (USA)	32.274
19	Uniper SE (Germany)	10.340
20	CNOOC Ltd (Hong Kong)	62.873
21	ENGIE SA (France)	37.796
22	PSJC Rosneft Oil Co (Russia)	83.095
23	RWE AG (Germany)	11.893
24	PTT Plc (Thailand)	43.556
25	Reliance Industries Ltc (India)	91.880
26	Repsol SA (Spain)	28.717
27	Statoil ASA (Norw ay)	73.542
28	Iberdrola SA (Spain)	48.095
29	Centrica plc (UK)	10.025
30	Gas Natural SDG SA (Spain)	22.857
31	China Shenhua Energy Co Ltd (China)	73.578
32	Ecopetrol SA (Colombia)	33.921
33	ConocoPhillips (USA)	63.745
34	OMV Aktiengesellschaft (Austria)	18.953
35	Suncor Energy Inc (Canada)	54.964
36	Husky Energy Inc (Canada)	13.067
37	Oil & Natural Gas Corp Ltd (India)	36.816
38	Sasol Ltc (South Africa)	21.381
39	National Grid plc (UK)	35.139
40	Southern Co (USA)	44.782
41	Coal India Ltd (India)	29.702
42	Edison International (USA)	19.604
43	Tenaga Nasional Berhad (Malaysia)	23.655
44	Occidental Petroleum Corp (USA)	53.353
45	CEZ, a.s. (Czech Republic)	13.241
46	Inpex Corp (Japan)	17.563
47	OAO Tatneft (Russia)	21.760
48	Anadarko Petroleum Corp (USA)	31.286
49	Fortum Oyj (Finland)	18.611
50	Woodside Petroleum Ltd (Australia)	20.760
		2.866.324

Data from Bloomberg

NIKOLA TESLA

History [20]

Tesla was born the 10th July of 1856 “at the stroke of midnight” with lightning striking during a summer storm. He was born to a Serbian family in Smiljan near Gospić, Lika, (the Military Frontier of Austria-Hungary, now in Croatia). Tesla was baptized in the Old Slavonic Church rite. His Baptism Certificate reports that he was born on June 28 (Julian calendar; July 10 in the Gregorian calendar) 1856, and christened by the Serbian orthodox priest, Toma Oklobdzija.

In 1862, Tesla's father receives appointment as pastor to a church in Gospić where the family moves and Tesla completes “Lower” (Primary School) and then attends “Lower Real Gymnasium” (Normal School) followed then by the “Real Gymnasium”. In 1863 his older and only brother Dane dies at age 12 after falling from a horse. Some accounts indicate Tesla caused the accident by spooking the horse.

Tesla's home and the “Real Gymnasium” (far right) in Gospić

In 1870, Tesla moves to Karlovac (Carlstadt), Croatia and stays with his aunt and Col. “Old War-Horse” Brankovic. He attends “Higher Real Gymnasium” where teacher Martin Sekulic teaches him math and physics and has a decisive influence on him. Tesla graduates Gimnazije Karlovac a year early. Three years later, Tesla returns to Gospić in spite of his father's instructions otherwise. Shortly after arriving he contracts Cholera. He is bedridden for 9 months and was near death many times. Tesla's father, in a moment of desperation, agreed to send him to an engineering school if he recovered from the illness. During the next year he went to Tomingaj to recover from Cholera and avoid the Army, from which he was a fugitive. Later stated, “For most of this term I roamed in the mountains, loaded with a hunter's outfit and a bundle of books, and this contact with nature made me stronger in body as well as in mind”.

In september 1875, he enrolled at the Austrian Polytechnic School in Graz on a Military Border scholarship. In his first year, Tesla never missed a lecture, made the highest grades possible and started a Serbian culture club. During his second year, Tesla came into conflict with Professor

20 Nikola Tesla Timeline by Teslauniverse.com
https://teslauniverse.com/nikola-tesla/timeline/1856-birth-nikola-tesla

Poeschl over the Gramme dynamo when he suggested that commutators weren't necessary. At the end of the second year, Tesla lost his scholarship and took up gambling. Near the end of the third year, Tesla stopped attending lectures and dropped out the following year.

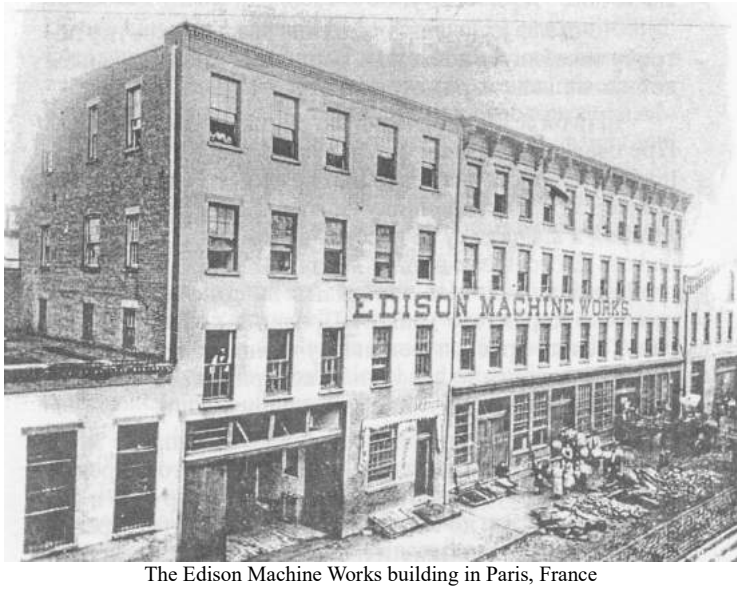
He then moved to Maribor, Slovenia as his next stop. He took his first job as a draftsman for a local engineering firm. Tesla spent his spare time in a pub called “Happy Peasant” where he played chess and cards. Even if his father tried to convince him to return to Gospic it wasn't until the Maribor police noticed he didn't have a residence permit and administrative proceedings were started he returned under police guard. In january 1880, Tesla's uncles, Petar and Pavle, came to his rescue and put together enough money to help him escape from Gospić. Tesla travelled to Prague, but arrived too late to enroll in Karl-Ferdinand University. He lived at 13 Smeckach St. And spent most of his time at the Klementinum Library and Narodni Kavarna (People's Cafe). Tesla did attend lectures at the University as an auditor, but did not receive marks for the courses.

Aerial view of Prague, Czech Republic where Tesla tried to go to school

In 1881, Tesla's uncle Pavle arranges for Tesla to work for Ferenc Puskas at the Budapest Telephone Exchange in Hungary, which was then under construction. When Tesla arrived, he found that the new business was not anywhere near operational and instead worked as a draftsman in the Central Telegraph Office. Within a few months, the Budapest Telephone Exchange became operational and Tesla was assigned the position of Chief Electrician. During his employment, Tesla made numerous improvements to the equipment and developed an amplifier device.

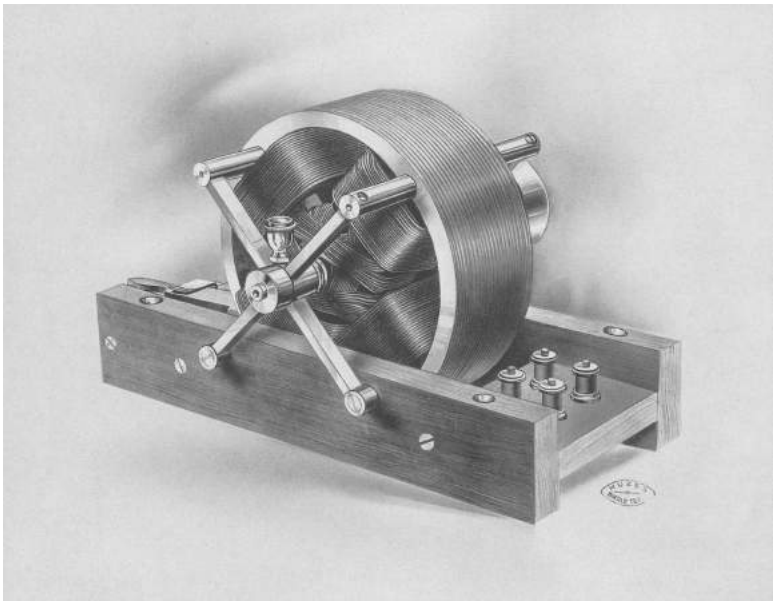
A year later, Telas was obsessed with solving the riddle of A.C., suffers a mental breakdown and isn't expected to live. A short time later, Tesla begins to recover and during a walk in the Varosliget city park of Budapest with friend Anthony Szigety, the solution comes to Tesla in a vision. At the very moment the idea came to him in a flash, he drew a diagram of the motor in the sand with a stick. Months later Tesla and his good friend Anthony Szigety accepted positions with the Continental Edison Company, which had recently been started in Paris. Tesla worked for Charles Batchelor at the Ivry-sur-Seine lamp factory and installed lighting systems in the Paris Opera House

and a theater in Bavaria. He submitted a plan for improving the Edison dynamos to Mr. Rau, an administrator for the company. The plan was approved and Tesla was likely expecting to be compensated but was dispatched to Strasbourg before payment was awarded. His job there was to repair a new D.C lighting system installed at the German Railway company. Unfortunately even if the job was done, Tesla never received the compensation he was promised for the work.



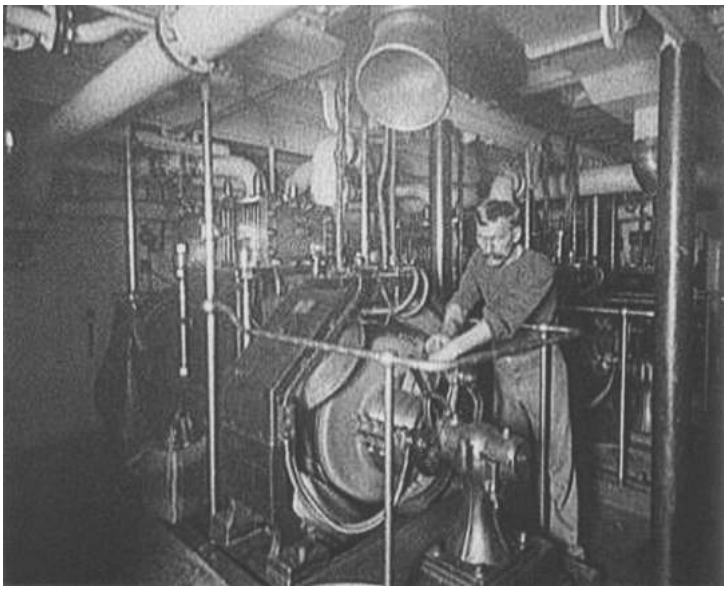
The Edison Machine Works building in Paris, France

The 10th June of 1883, Nikola Tesla demonstrates newly completed A.C. induction motor before Mr. Bauzin, former mayor of Strasbourg, and several potential investors. They watched the motor with interest, but it was apparent they did not understand the value of the invention.



In the next spring, Tesla with funds provided by uncles Petar and Pajo, packed his gear and caught the next boat for America. His trip didn't start too smoothly because his ticked, money and some of his luggage were stolen. Through his strong resolve, Tesla was not deterred and the 6th June arrived in New York with four cents in his pocket, a few poems and remnants of his belongings. The next

day he was already hired by Edison. He worked to Henry Villard's ocean liner, the Oregon, the first boat ever to have electric lighting. The set of dynamos that powered the ship were badly damaged and Edison was amazed to learn that Tesla had repaired them. While Tesla worked for Edison he also installed and repaired incandescent and arc lamps, reassembled D.C. generators and designed 24 different types of machines that became standards replacing original Edison designs. Edison would hear nothing of Tesla's A.C. power system, however he was quoted as calling Tesla " a damn good man".



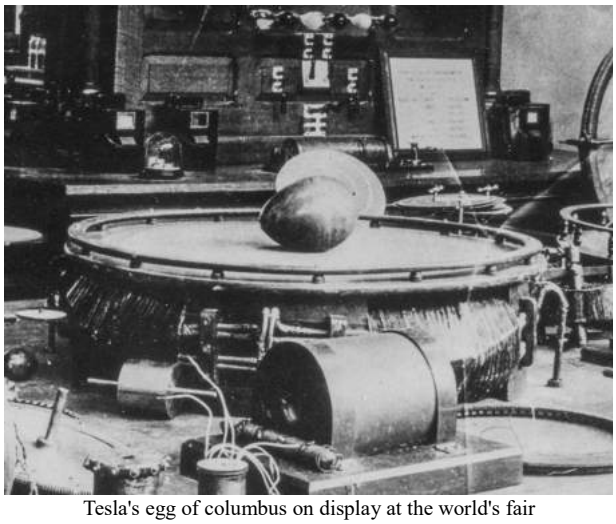
The dynamo aboard the Oregon shortly after Tesla's repair

At some point during Tesla's employment, Edison promises to pay him $50,000 if he can improve the performance of Edison's D.C. Dynamo. Tesla succeeds beyond Edison's expectations, but he reneges on his promise to pay Tesla. Edison is quoted as stating to Tesla, "You don't understand our American humor". Deeply hurt, Tesla resigns. Some accounts state that Edison offers Tesla a raise if he will reconsider but Tesla declined.

In march 1885, investors approached Tesla and asked him to develop an improved arc lighting system. Although this was not the opportunity he had hoped for, the group was willing to finance the Tesla Electric Light Company in Rahway, New Jersey. The proud new owner set to work and invented a unique arc lamp of beautiful design and efficiency. After completing the work, Tesla was forced out of the company and left with nothing but worthless stock certificates. Tesla later referred to this as "the hardest blow" he'd ever received.

A stock certificate from the Tesla Electric Light Company.

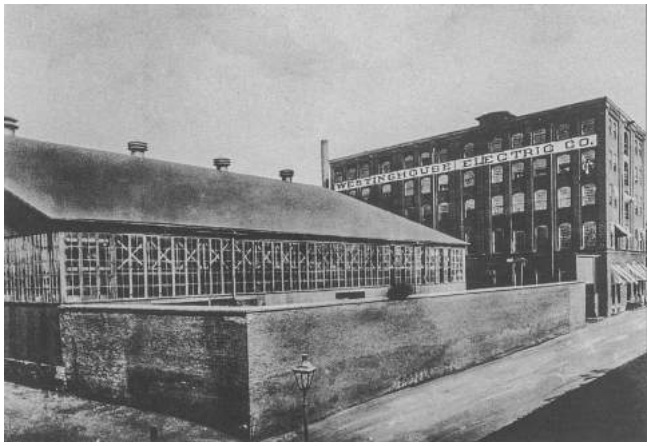
Betrayed by men he trusted, Tesla considered the winter of 1886/1887 a time of “terrible headaches and bitter tears”. He was forced to work as a ditch digger for $2.00 per day and questioned the value of his education. In April 1887, Tesla was introduced to Alfred S. Brown, director of Western Union, and Charles F. Peck, a New York City attorney, who were sold on his alternating current system after he demonstrated his “Egg of Columbus”. Tesla agreed to split his patents on a fifty-fifty basis in exchange for funding. Brown located the laboratory at 89 Liberty St. and the company filed for its first patent by the end of the month. Tesla's oldest and best friend, Anthony Szigeti, landed in New York the 10th May. By the end of the week he was working as Tesla's assistant at the Liberty St. Lab.



Tesla's egg of columbus on display at the world's fair

The 16th may of 1888, “A New System of Alternate-Current Motors and Transformers” paper was

read before the American Institute of Electrical Engineers (now the IEEE) at Columbia University in New York. On the 7th july Tesla sold patents for A.C. Polyphase System to George Westinghouse for $25,000 in cash, $50,000 in notes and a royalty of $2.50 per horsepower for each motor. He then had to travel to Westinghouse headquarters in Pittsburgh to finalize the contract for the A.C. Polyphase system and to help develop his motor. He stays there for around one year.

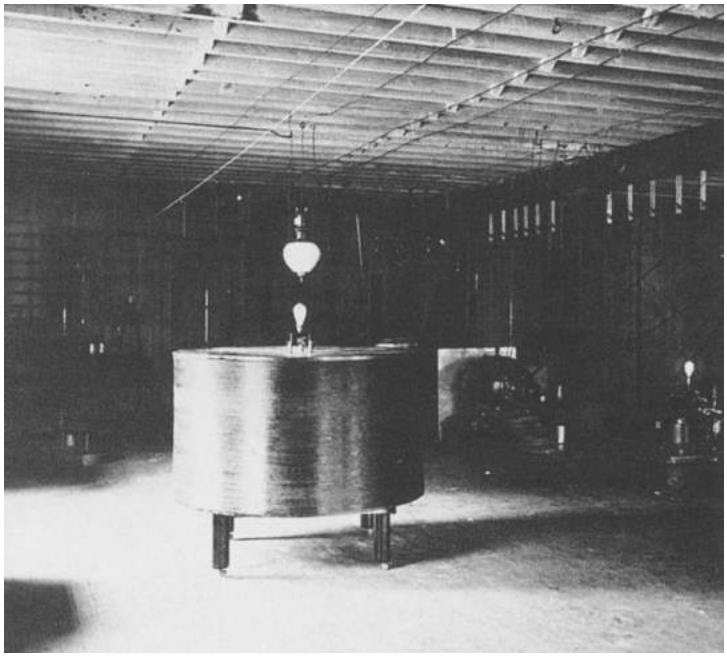


In 1889, upon returning to New York, Tesla located a new laboratory at 175 Grand St. There is little information known about this laboratory, but here Tesla would begin work with high frequency apparatus, wireless transmission and theories on the relationship between electromagnetic radiation and light. Tesla toured several hotels after his return to New York and chose the astor House for his new abode. It was a posh, five-story establishment situated by a trolley line in the heart of the city. The same year, he visited Paris for the Universal Exposition and unveiling of the Eiffel Tower. While he was there he met Professor Wilhelm Bjerknes, a Norwegian physicist from the University of Stockholm. Bjerknes had replicated the work of Heinrich Hertz and allowed Tesla to study his oscillator. Tesla also visited his homeland, including Smiljan, Raduc, Tomingaj and Plitvice Lakes before returning to New York.

The Astor House, one of the New York's most luxurious hotels of the time

Next year, Tesla relocated his laboratory to 33-35 South 5th Ave. (now called West Broadway). It was there where in November, with high frequencies, Tesla developed some of the first neon and

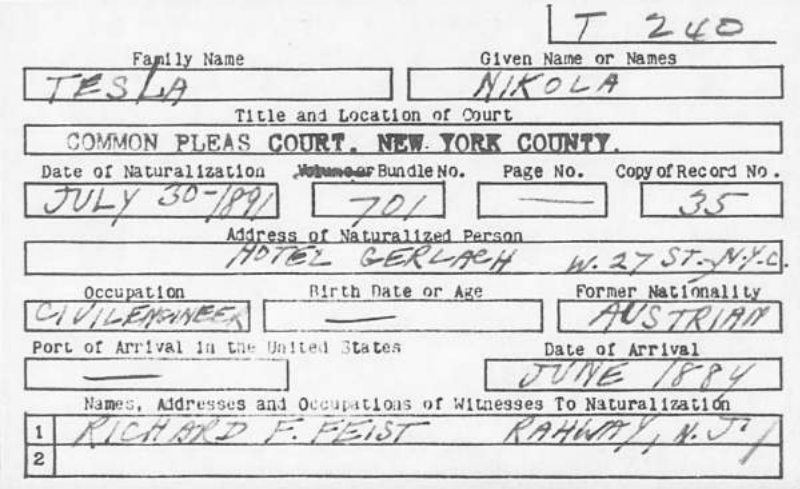
fluorescent illumination. He also took the first x-ray photographs. But these discoveries paled in comparison to his illuminating of a vacuum tube wirelessly, having transmitted energy through the air. This was the beginning of Tesla's lifelong obsession – the wireless transmission of energy.



Experimental tuning table used to receive wireless power in Tesla's 5th Ave. New York Lab.

Unfortunately it was during the same year when Tesla took a fateful decision and a sacrifice that would haunt him for the rest of his life. After failing to adapt to the higher frequency Westinghouse engineers required, work on the Tesla induction is abandoned. It was then when Tesla and Westinghouse renegotiate and Tesla agrees to remove the royalties clause from their contract. Furthermore it was the same year when as part of an Edison-sponsored smear campaign against Westinghouse, H.P Brown, began electrocuting animals with A.C. The process was termed "Westinghoused" and was used to demonstrate the dangers of the new technology.

The 20th may of 1891, "Experiments with Alternate Currents of Very High Frequency and Their Application to Methods of Artificial Illumination" lecture is given before the American Institute of Electrical Engineers (now the IEEE) at Columbia University in New York. 1 month later, the Gold King Mine, signed a contract with Westinghouse to install the Tesla A.C. Power system and this facility was the first power station in the world to transmit alternating current at high voltage for power purposes, for a long distance. 1 months later, the 30th July, Tesla becomes an American citizen. He often told friends that he valued this citizenship more than any scientific honors he'd received. It was also during 1891 the Tesla Coil is born. Maybe not the most successful or Tesla's invention, but certainly the invention he is most famous for. The Tesla coin was originally developed to power Tesla's new wireless lighting systems, but later became the basis of the ill-fated World-Wide Wireless System, otherwise known as Wardenclyffe.

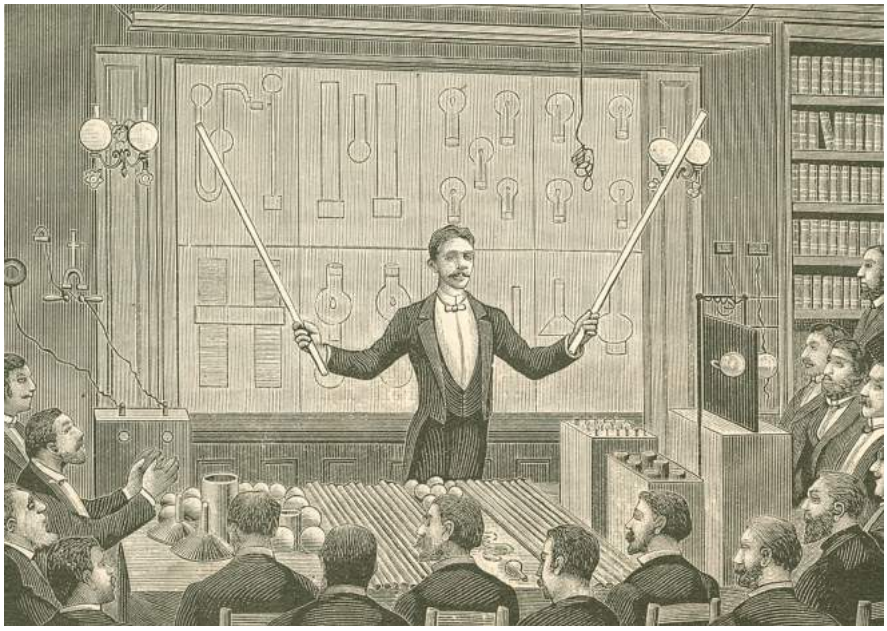


T 240

Family Name: TESLA
Given Name or Names: NIKOLA
Title and Location of Court: COMMON PLEAS COURT. NEW YORK COUNTY.
Date of Naturalization: JULY 30-1891
Volume or Bundle No.: 701
Page No.: —
Copy of Record No.: 35
Address of Naturalized Person: HOTEL GERLACH W. 27 ST. N.Y.C.
Occupation: CIVIL ENGINEER
Birth Date or Age: —
Former Nationality: AUSTRIAN
Port of Arrival in the United States: —
Date of Arrival: JUNE 1884
Names, Addresses and Occupations of Witnesses To Naturalization
1 RICHARD F. FEIST RAHWAY, N.J.
2

Tesla's naturalization record, more prized to him than any of his inventions

In 1892, three “Experiments with Alternate Currents of High Potential and High Frequency” lectures are given. First one before the Institution of Electrical Engineers and the second one before The Royal Institution of Great Britain, both in London, England. The third one before the Société Francaise de Physique in Paris, France. Another lecture was planned for Paris but was cancelled when Tesla received a telegram from his uncle Petar notifying him of his mother's failing health. The mother pass away in April, Tesla arriving from Paris hours before her death. After that, Tesla fell ill. He spent two to three weeks recuperating in Gospić and the village of Tomingaj, a village in the southern part of Like, Croatia, his mother's birthplace.



Tesla lecturing before the French Physical Society

After his recovery he continued giving lectures in Europe. He first visited the Croatian capital Zagreb where he gave a lecture about alternating current and the construction of a hydroelectric generating station at Plitvice Lakes. On the occasion Tesla said, “As a son of my homeland I feel it is my duty to help the city of Zagreb in every respect with my advice and work”. A commemorative monument of Tesla echoes these words. Days later, Tesla arrived in Belgrade due to the call from Belgrade municipality. Several thousand people greeted him at the Belgrade train station. The next

day, Tesla met the young Serbian King, Alexander Obrenovic, who awarded Tesla with the Medal of St. Sava for extraordinary contribution to science the following year.

During the same year, Tesla moved from the Astor House to the Hotel Gerlach, which was a much more modern hotel equipped with elevators, electric lights and sumptuous dining rooms. The hotel was fireproof and was located just a few blocks from the newly finished Madison Square Garden. He was also elected vice president of the AIEE for two consecutive years.

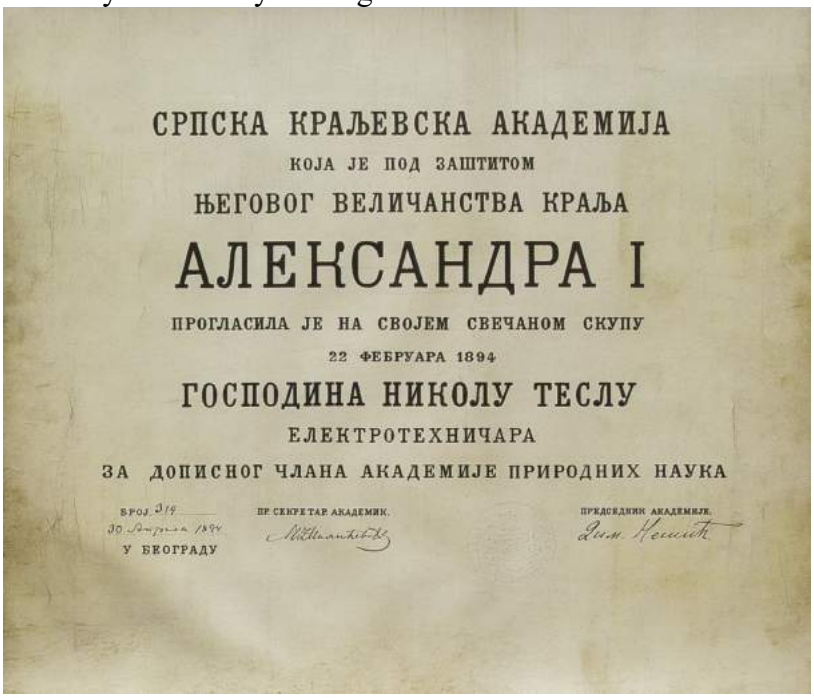
During 1893, Tesla continue giving lectures. The first one, in february, “On Light and Other High Frequency Phenomena” is given before the Franklin Institute of Philadelphia. Same lecture on march this time before the National Electric Light Association in St. Louis, Missouri. The third lecture was in august, “Mechanical and Electrical Oscillators” before the members of the International Electrical Congress at the Columbian Exposition in Chicago, Illinois.

The 1st may, George Westinghouse won the contract to power the Columbian Exposition. The Westinghouse company, with Tesla's guidance, built a power system for the exposition that produced three times more energy than was being utilized by the entire remainder of Chicago. Tesla had a large display including phosphorescent lighting (a precursor to fluorescent lamps) powered without wires by high-frequency fields and the Egg of Columbus. The success of the Tesla Polyphase System installed at the exposition ensured Westinghouse would be selected to harness Niagara. And it was finally in october when Westinghouse was awarded the initial Niagara Falls contract signifying the end of “The War of the Currents”.

The “Electricity Hall” of the Columbian Exposition (World's Fair)

The next year Thomas Commerford Martin, vice-president of the AIEE published the first book on Tesla's research. “The inventions, Researches and Writings of Nikola Tesla” is a comprehensive

compilation of Tesla's work with many illustrations. This same year, Tesla is voted corresponding member of the Serbian Royal Academy of Belgrade.



СРПСКА КРАЉЕВСКА АКАДЕМИЈА

КОЈА ЈЕ ПОД ЗАШТИТОМ

ЊЕГОВОГ ВЕЛИЧАНСТВА КРАЉА

АЛЕКСАНДРА I

ПРОГЛАСИЛА ЈЕ НА СВОЈЕМ СВЕЧАНОМ СКУПУ

22 ФЕБРУАРА 1894

ГОСПОДИНА НИКОЛУ ТЕСЛУ

ЕЛЕКТРОТЕХНИЧАРА

ЗА ДОПИСНОГ ЧЛАНА АКАДЕМИЈЕ ПРИРОДНИХ НАУКА

БРОЈ. 319
30. Јануара 1894
У БЕОГРАДУ

ПР. СЕКРЕТАР АКАДЕМИЈ.

ПРЕДСЕДНИК АКАДЕМИЈЕ.

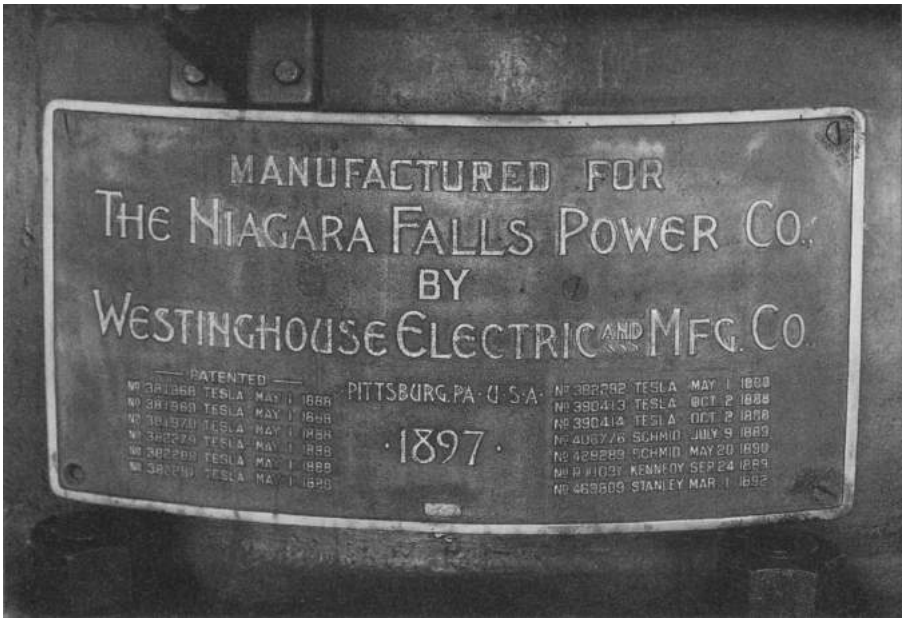
Certificate of Tesla's membership to the Serbian Royal Academy

The 13th march of 1895, a fire broke out in the basement of 33-35 South 5th Ave. And swept through the entire structure, including Tesla's laboratory, which occupied the entire fourth floor of the six-story building. All of his hundreds of inventions models, plans, notes, laboratory data, tools, photographs, valued at $50,000, were destroyed. Tesla is quoted by “The New York Times” as saying, “I am in too much grief to talk. What can I say?”. After fire destroyed the lab, Tesla was allowed to use Thomas Edison's workshop at Llewellyn Park, New Jersey, but this was only a temporary solution. Within a few weeks, Tesla had rented a laboratory below Greenwich Village, near Chinatown, at 46 and 48 Houston St.

THE SOUTH FIFTH AVENUE FIRE.

The fire of Tesla's New York laboratory at South 5th Ave.

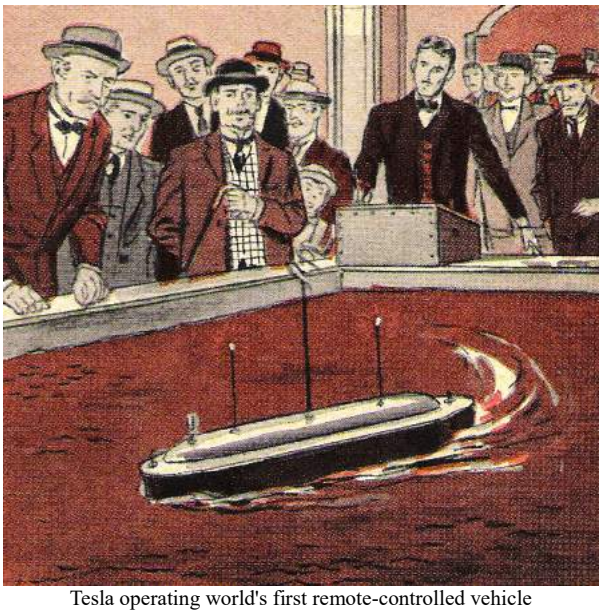
A few weeks later after the fire, the first large generator of the Niagara Falls Power Plant, which bore Tesla's name and patent numbers, was ran at full speed, 250 revolutions per minute, and proved quite satisfactory.



The plaque on each Niagara generator displaying Tesla's patents

The next year, the new A.C. Power system enjoyed a flawless inauguration, transmitting electricity to Buffalo, New York 22 miles away. It came first to the Buffalo Railway Company – 1,000 horsepower, switched into the company's powerhouses at exactly midnight with a signaling of the event to the city by the firing of cannons, the blowing of steam whistles and the ringing of bells.

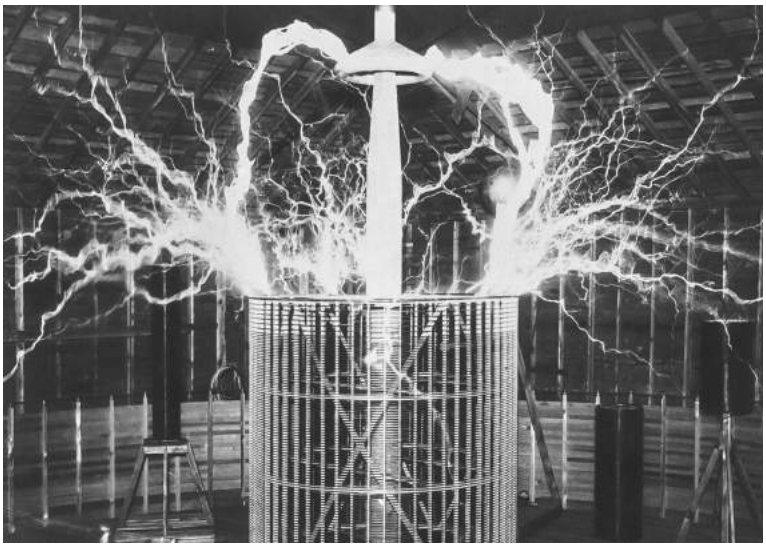
In 1898, Tesla publicly demonstrate his “automaton” technology by wirelessly controlling a model boat at the Electrical exposition held at madison Square Garden in New York City during the height of the Spanish-American War.


Tesla operating world's first remote-controlled vehicle

In may 1899, he decided to move to Colorado Springs to continue high-voltage/high-frequency experiments that had become too large for his New York lab. In June the first experiments in Colorado Springs Experimental Station were performed. Tesla records his initial spark length at five inches long, but very thick and noisy. In july 3rd he claimed discovery of a new geo-electrical phenomenon, which he said would allow for the transport of electrical around the world. Terrestrial stationary waves were first observed by Tesla and formed the basis for his wireless energy transfer plans and wireless communications.

Colorado Springs, Colorado from around the time Tesla was there

In 1900, in his “My Inventions” autobiography Tesla states, “When in 1900 I obtained powerful discharges of 100 feet (in the Colorado Springs laboratory) and flashed a current around the globe, I was reminded of the first tiny spark I observed in my Grand St. Laboratory and was thrilled by sensations akin to those I felt when I discovered the rotating magnetic field”.

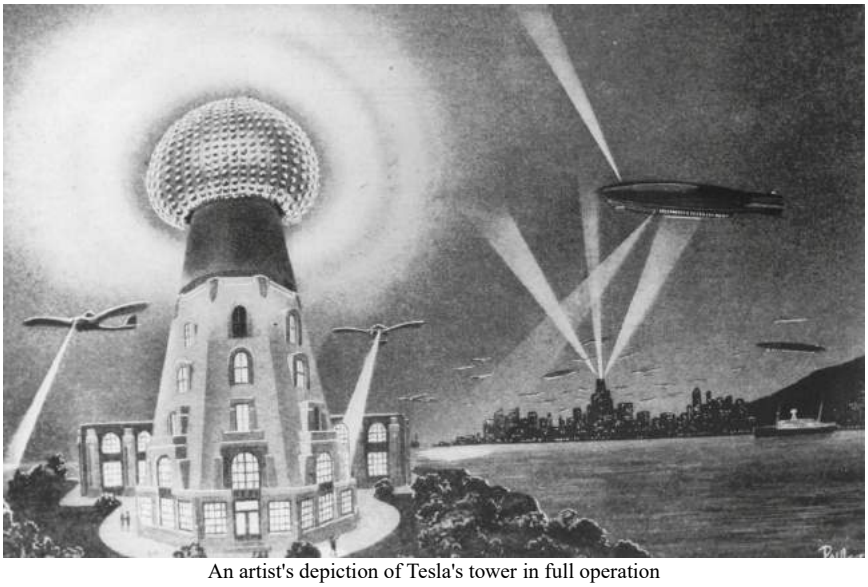


Colorado Springs experimental laboratory in operation

The 1st march of 1901, Tesla signs over 51 percent interest in his patents and inventions, including future ones, relating both electric lighting and wireless telegraphy or telephony for a mere $150,000. The 11th december, Tesla's most ambitious project construction finally begins. The World-Wide Wireless System known as Wardenclyffe Tower.

Tesla's Wardenclyffe lab and tower before dome construction began

It was after almost 2 years, exactly the 15th july of 1903 when the Wardenclyffe testing begins. “The New York Sun” reported the strange goings-on at Tesla's transmitter. It stated, “all sorts of lightning were flashed from the tall tower and poles” and “the air was filled with blinding streaks of electricity which seemed to shoot off into the darkness on some mysterious errand”.



An artist's depiction of Tesla's tower in full operation

Just a year later, the Colorado Springs power company sued Tesla for electricity used at that experimental station. Tesla's Colorado laboratory is torn down and is sold for lumber to pay the $180 judgment; his electrical equipment is put in storage.

Colo Spgs Gazette 7/2/1904 p. 5

TESLA'S ELECTRICAL STATION IS SOLD FOR VALUE OF LUMBER

The Nicola Tesla experimental electrical station, near the Deaf and Blind school east of the city, has been abandoned. The building still stands there but even that trace of the visit of the great electrician is soon to disappear, for the station has been sold.

Five years ago last May, Tesla decided to construct this station and did so. He stated that he intended to carry on wireless telegraphy experiments from the summit of Pike's Peak to this station. So far as can be learned he never really carried on any important experiments here. He left tnis city shortly after erecting his station and has not returned since. He was recently sued for an electricity bill, for power furnished by the Colorado Springs Electrical company. He failed to answer the summons either personally or by an attorney and his property was advertised for sale. He later sent the sheriff enough money to cancel the bill and the station again became his property.

Supposedly on his order the property has been sold; that is, all but the apparatus. This has been stored and will probably be shipped to Tesla in the near future.

The building has been sold to C. E. Maddocks, who is erecting a new house in Ivywild and will use the lumber in its construction or for some other purpose about his property, it is understood. The piping has been sold to St. John Bros.

The Colorado Springs Gazette announces the sale of Tesla's Colorado Springs experimental station

2 years later, in 1906, Tesla was forced to lay the the employees of the Wardenclyffe tower off since he was unsuccessful trying to obtain funding after J.P. Morgan withdrew his support. In July 10th, 1906 Tesla announced in an article published on his 50th birthday his bladeless turbine to the world. The invention was based on adhesion and viscosity, two fundamental properties of all fluids. This same year, Tesla was contracted by Waltham Watch Company to build the world's first and only air-friction speedometer, which he also patented. It was used in Packard, Lincoln and Pierce-Arrow luxury cars.

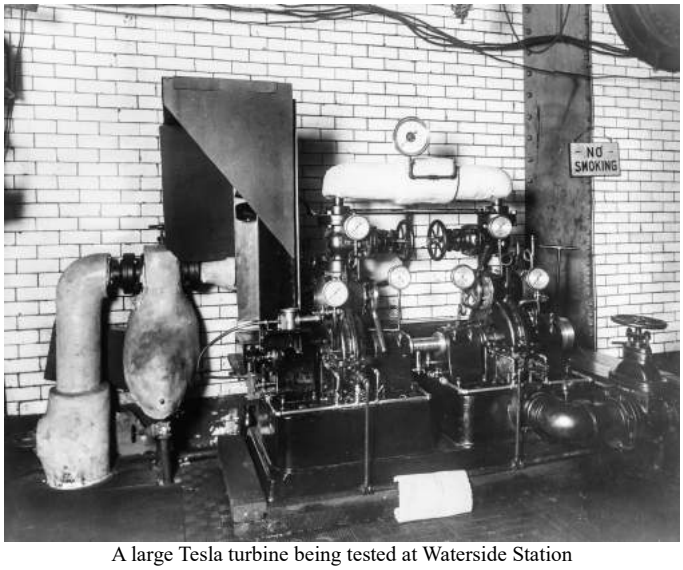
Tesla's air-friction speedometer manufactured by The Waltham Company

In 1907, Nikola Tesla eager to locate alternate funding for the wardenclyffe project, Tesla opens an office at 165 Broadway, which is now 1 Liberty Plaza, and begins working on other inventions such as propulsion systems and the vertical take-off and landing aircraft. He also stated in an article entitled “Tesla's Tidal Wave to Make War Impossible” form “English Mechanic and World of

Science", that his magnifying transmitter has obtained rates of 25 million horsepower. Years later, in 1910, after gaining some initial success with his turbines, Tesla relocates his office to the prestigious 48-story Metropolitan Tower, which was the world's tallest building at the time.

The magnificent metropolitan tower in New York City

In 1911, over a period of several months, Tesla tests numerous models of steam turbines at the waterside Station of the New York Edison Company. When interviewed about the tests, Tesla stated, "In one of the disks are only nine inches in diameter and the whole working part is two inches thick. With steam as the propulsive fluid it develops 110 horse powers, and could do twice as much".



A large Tesla turbine being tested at Waterside Station

In 1912, the 14th april the wealthiest and most generous investor of Tesla died. John Jacob Astor invested $100,000 in 1899 for Tesla to, as he understood it, further develop and produce a new

lighting system. Tesla instead, used the money to fund his Colorado Springs experiments. Mr. Astor was understandably unhappy with Tesla's deception and avoided him for several years. They did later reconcile and worked together on aircraft and propulsion systems in 1908. Unfortunately, Mr. Astor and his wife were aboard the Titanic which began to sink after colliding with an iceberg. Mr. Astor was able to help his wife into a lifeboat was unable to join her. His body was found a few days later and is buried in Trinity Church Cemetery in New York City.

One of Tesla's benefactors, John Jacob Astor and his wife Madeleine

Two years after, Tesla moved his office from Metropolitan Tower to the Woolworth Building, then the world's tallest building, but behind in rent after only a few months and was forced to leave. He then relocates his office to 8W 40th St., which was directly across the street from Bryant Park and his beloved pigeons. A year later, in order to keep a roof over his head, Tesla had given two mortgages on Wardenclyffe to George C. Boldt, proprietor of the Waldorf-Astoria, to secure payment of hotel bills amounting to almost $19,000. Tesla requested that they not be recorded, fearing that all his projects would be destroyed if the matter became public. He was unable to make any payments at all, and was forced to sign the deed over to Waldorf-Astoria, Inc., through a silent intermediary.

The Woolworth building in downtown Manhattan where Tesla had an office

In november of 1915, “The New York Times”, followed by other prominent news sources, carried a story, based upon a Reuters dispatch from London, stating that Tesla and Edison were to share the Nobel Prize in physics. Both Tesla and Edison told reporters they had received no official notification of the award. A few days later the Nobel Committee announced that the prize for physics would, in fact, be shared by Professor William Henry Bragg of the University of Leeds, England and his son. The committee did not deny that Tesla and Edison were the first choices, but never made public the true reason for the change. Some speculate that either Tesla or Edison or both refused to share the prize with the other.

In 1916, even though Tesla had some minor successes, he continued to fall deeper and deeper into debt primarily due to his high overhead. He was called into the state supreme court for $935 in unpaid taxes on the Wardenclyffe property. Under oath before Justice Finch, Tesla revealed that he was essentially penniless and owned no real assets. “New York World” ran an embarrassing article exposing Tesla's financial crisis.

THE WORLD: SATURDAY, MARCH 18, 1916.

TESLA NO MONEY WIZARD; SWAMPED BY DEBTS, HE VOWS

Inventor Testifies He Owes the Waldorf, Lives Mostly on Credit, Hasn't a Cent in Bank, and "Hocked" Stock in His Company.

Nikola Tesla, electrical wizard, is so hard up that he cannot pay the city $935 personal taxes. He says so himself and states in effect that being a wizard isn't always a profitable business.

That Mr. Tesla owes so much money he hasn't the slightest idea when he will be able to meet his obligations became known yesterday when Corporation Counsel Hardy filed in the Supreme Court the minutes of an examination he made of Tesla in supplementary proceedings.

The inventor said he possessed no real estate or stocks and that his belongings, all told, were negligible.

"But don't you live at the Waldorf-Astoria?" he was asked.

"I do, and I owe the hotel a bill which has not been paid for several years," was the reply.

"Well, how do you live?"

"Mostly on credit."

Mr. Tesla said that at one time he had owned nine-tenths of the stock of the Nikola Tesla Company, but he had pledged the stock for money to build an electric plant. He added that the company now has no assets, but is receiving enough royalties on patents to pay expenses.

All of Tesla's inventions—about 200—have been made over to the company, according to the witness.

Asked concerning his debts he said there were "scores of them" and that five or more proceedings were pending against him. No one owed him any money, he declared, and he had no money in bank.

"Well, haven't you got any jewelry?" asked the Corporation Counsel.

"No jewelry; I abhor it."

"Any automobiles?"

"No."

"Any horses?"

"No."

The inventor said he is still President and Treasurer of the Nikola Tesla Company.

Justice Finch yesterday appointed Robert Marsh receiver for the inventor.

and will make energetic and capable

INDICT CRONES FOR MURDER.

I. C. COMMISSION JOINS RAILROADS TO END CONGESTION

Interstate Commissioner Clark Confers With Presidents of Railways, and They Announce Traffic Plans.

The Interstate Commerce Commission and the Presidents of all the big railroads of the East have cooperated in a plan for the betterment of railroad conditions.

The plan was announced yesterday after a conference between Interstate Commerce Commissioner Clark and representatives of these roads: Baltimore and Ohio, Boston and Maine, Central of New Jersey, Delaware and Hudson, Delaware, Lackawanna and Western, Erie, Lehigh and Hudson River, Lehigh Valley, New York Central, New York, New Haven and Hartford, Ontario and Western, Pennsylvania, Reading, and Western Maryland. The official statement said in part:

Resolution Adopted.

An article form “New York World”

Even if originally rejected the offer of the AIEE's highest award, The Edison Medal, he accepts after being encouraged by Bernard A. Behrend. During the introduction, Tesla disappears and is later found at the library feeding his beloved pigeons. He is persuaded to return and gives his acceptance speech. In the month of july, the Wardenclyffe Tower was reported in the media as being suspected of being used by German spies, so it was actually ordered to be destroyed to cover debt incurred by Tesla at the Waldorf Astoria where he lived for almost 20 years. A few days later, Tesla moves to Chicago since it contracts with Pyle National on the perfection of his turbines. He moves into the Blackstone Hotel where he stays for the next 16 months. In was in august when Tesla envisions the radar. In the “Electrical Experimenter” magazine, Tesla stated, “For instance, by their (standing electromagnetic waves) use we may produce at will, from a sending station, an electrical effect in any particular region of the globe; (with which) we may determine the relative position or course of a moving object, such as a vessel at sea, the distance traversed by the same, or its speed”.

THE · EDISON · MEDAL

COMMEMORATING · THE · TWENTY-FIFTH ANNIVERSARY · OF · THE · SUCCESSFUL · INTRODUCTION · AND · COMMERCIAL · DEVELOPMENT OF · THE · INCANDESCENT · LAMP

ESTABLISHED · BY · THE FRIENDS · ASSOCIATES · AND · ADMIRERS · OF THOMAS · ALVA · EDISON ON · HIS FIFTY-SEVENTH · BIRTHDAY FEBRUARY · ELEVENTH · NINETEEN · HUNDRED · AND · FOUR IN · THE · AMERICAN · INSTITUTE · OF · ELECTRICAL · ENGINEERS FOR MERITORIOUS · ACHIEVEMENT · IN · ELECTRICITY

THIS · CERTIFIES · THAT · THE · GOLD · MEDAL · HAS · BEEN · AWARDED · TO

NIKOLA · TESLA

FOR · MERITORIOUS · ACHIEVEMENTS · IN · HIS · EARLY ORIGINAL · WORK · IN · POLYPHASE · AND · HIGH-FREQUENCY ELECTRIC · CURRENTS BY THE AMERICAN · INSTITUTE · OF · ELECTRICAL · ENGINEERS

The Certificate of the Edison Medal awarded to Nikola Tesla in 1917

When moving back to New York he stayed in room number 1607 of the Hotel St. Regis, one of the most exclusive hotels of the city. It was in 1919 when a series of articles entitled “My Inventions” by Tesla published in the “Electrical Experimenter” magazine began. Tesla was also featured on the cover of the issue with the initial article. To persuade the great Tesla to write his own autobiography was no small feat, and editor Hugo Gernsback considered it one of his greatest journalistic achievements. The articles were later converted into the book with the same title.

The cover of the Electrical Experimenter with Nikola Tesla featured in it

In 1923, Tesla was being charged $15 per day in rent, an exorbitant amount for the time, while staying at the St. Regis. After not paying anything toward a balance of over $3,000 he ran up over a seven-month period, he was forced to leave. Always seeking lavishness, Tesla moved to the luxurious Hotel Marguery on the west side of Park Ave. between 47th and 48th. Six months later after never making an effort to resolve the debt, Tesla was sued for the balance by Hotel St. Regis. Shortly afterward, a sheriff's deputy was sent to Tesla's office at 8W 40th St. To seize furnishings in order to satisfy the debt. Tesla managed to persuade the officer to grant him an extension.

In 1925, Tesla, for unknown reasons, rents another room at the Hotel Pennsylvania and makes it his primary residence while continuing to rent the room at Hotel Marguery. He confided in Kenneth Swezey, telling him that the room at Hotel Marguery was for meeting “special” friends and acquaintances. It was the same year when Katharine McMahon Johnson died. She was according to some accounts, the only woman Tesla ever loved. She was the wife of Tesla's lifelong friend, Robert Underwood Johnson. Though the two often exchanged flirtatious letters, their relationship was totally platonic. Not forgetting Tesla even at death, she charged Robert to keep in close touch with him always.

Katharine McMahon Johnson, one of Tesla's closest friend

In 1926, Tesla received two diploma of honorary doctorate from the Faculty of Engineering, University of Belgrade and the University of Zagreb. He also met his nephew Sava N. Kosanovic for the first time. She was also a diplomat carrying the title of Ambassador of the Federal people's Republic of Yugoslavia. She will later play an important role in Tesla's life.

In 1930, he was asked to leave the Hotel Pennsylvania after residents complained about the droppings from his “flying rats” and because he was $2,000 behind in his rent. Tesla's friend and admirer, B.A. Behrend, helped with the debt and Tesla relocates to the Hotel Governor Clinton. The year later, he turns 75, receiving many congratulatory letters from prominent scientists, including Albert Einstein. “Time” magazine honored the great inventor by placing his portrait on the cover.

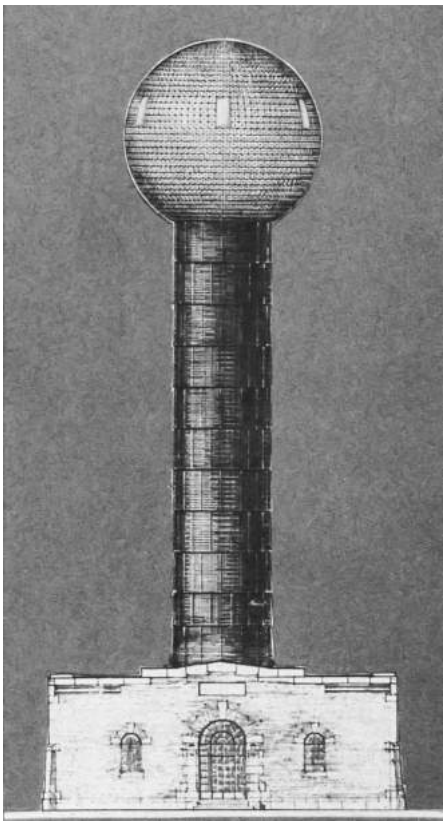
Time magazine honoring Tesla's 75th birthday

In 1934, a settlement was reached with the Westinghouse Corporation that provided Tesla with a consulting rate of $125 per month along with the agreement to pay his monthly rent expenses. Upon signing the agreement, Tesla promptly moved to the Hotel New Yorker where he'd live rent free for the rest of his days. The debt owed to Hotel Governor Clinton was never paid. On march, an article by Tesla called “Possibilities of Electrostatic Generators” is published in “Scientific American” which features “Colossus”, a two-million volt Van de Graaff generator which is now on display at the Boston Museum of Science. On June, the City of Philadelphia awarded Nikola Tesla with the John Scott Medal for the invention of the rotating magnetic field and induction motor.

The John Scott medal awarded to Tesla from the City of Philadelphia

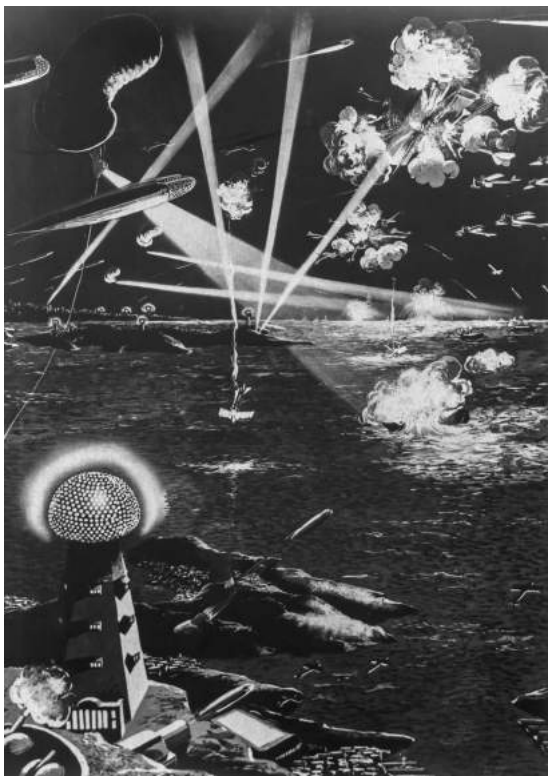
On 11th july, the headline on the front page of “The New York Times” read, “Tesla, at 78, bares new

`Death Beam´”. The article reported that the new invention “will send concentrated beams of particles through the free air, of such tremendous energy that they will bring down a fleet of 10,000 enemy airplanes at a distance of 250 miles...”. Tesla stated that the death beam would make war impossible by offering every country an “invisible Chinese wall”. In 1935, in a “Liberty” magazine article entitled “A Machine to End War”, G.S. Viereck, a friend of Tesla's and a Nazi spokesperson, reported on what Tesla believed the world would be like in the years 2035 and 2100.



Artist's representation of Tesla's particle beam weapon

In 1937, one nigh around midnight, Tesla left the Hotel New Yorker to feed his pigeons in the park. While crossing the street, he was struck by a taxicab and, by some reports, was thrown 35 to 40 feet. Tesla returned to his hotel and later stated, “It merely caused customary bruises and upset my digestion a bit”. Other accounts indicate three ribs were broken. Tesla refused treatment and remained in his room for many months. During the same year, realizing war was imminent, composed a treatise entitled “The Art of Projecting Concentrated Non-dispersive Energy through the Natural Media” concerning a charged particle beam weapon. The document was published in an attempt to expound on the technical description of a “super weapon that would put an end to all war”. Tesla tried to interest the U.S. War Department and European allies, but none were willing to make the investment required to build the device.



An illustration of Tesla's vision of future wars fought by machines

In 1942, the young King Peter II visited Nikola Tesla in his apartment in the Hotel New Yorker. In his diaries “A King's Heritage”, writes: “After I had greeted him, the aged scientist said, 'It is my greatest honor. I am glad you are in your youth, and I am content that you will be a great ruler. I believe I will live until you come back to a free Yugoslavia. From your father you have received his last words: 'Guard Yugoslavia'. I am proud to be a Serbian and a Yugoslav. Our people cannot perish. Preserve the unity of all Yugoslavs – The Serbs, the Croats and Slovenes'”.

Tesla meeting with King Peter II in his room at the Hotel New Yorker

The 7th January of 1943, Tesla died quietly and alone in room #3327 on the 33rd floor of the Hotel New Yorker in New York City. The coroner would later estimate the time of death at 22:30 EST. Tesla was 86 years old.

CRYPTOCURRENCIES

What is Bitcoin?

Bitcoin is the first cryptocurrency ever created and it was born in 2009. It was made by an unknown developer known by the pseudonym “Satoshi Nakamoto”. It's strength is the decentralised digital ledger that allows transactions of any value entirely free from any governmental or authority interference. [21]

These benefits include the fact that cryptocurrency transactions cannot be faked or reversed and due to the low cost of using it, it makes it more reliable and efficient than fiat currencies. The fact that it is decentralised means that it is available to everyone, whereas banks can impose limits on who can open an account, and how much money can be sent or received and from where.

How will cryptocurrencies change the world?

Although cryptocurrencies were initially developed to facilitate cryptocurrency transactions, entrepreneurs are now developing the technology for employing smart contracts. To develop a smart contract, parts of the terms that make up a traditional contract are coded and uploaded to the blockchain, producing a decentralized smart contract that does not rely on a third party for recordkeeping or enforcement. Contractual clauses are automatically executed when pre-programed conditions are satisfied. This eliminates ambiguity regarding the terms of the agreement and disagreement concerning the existence of external dependencies. [22]

The first application the blockchain is disrupting is the financial markets, payment settlement being the first of it. In contrast to national or regional payment settlement (SEPA in Europe), which is often already highly efficient, the global payment settlement system is still based on a network of clearing bodies or correspondent banks. There is only limited standardisation and digitisation, meaning that costs and settlement periods are correspondingly high. Blockchain technology could remedy these specific problems and therefore appears to be particularly worthwhile. [23]

Another area were regulatory requirements designed to guarantee the reliability and veracity of the entries are particularly high and which may be a factor in the comparatively low level of digitisation in this area is accounting. The current system is based on multiple entries and duplications to preclude the possibility of fraud as much as possible and frequently involves manual work steps. The basic standard is still the system of double entry accounting, which was first introduced during the Renaissance in the 15th century. Third parties then have to verify a company’s accounts. Blockchain technology could automate this process, at least for standard transactions. Instead of double entry accounting, companies would also enter their transactions in a shared Blockchain database (triple entry accounting). The change could be introduced on a gradual basis, with Blockchain technology initially used to guarantee the integrity of existing systems.

Applications of Blockchain technology in the real estate industry can be applied to both public and

21 Bitcoin: A Peer-to-Peer Electronic Cash System by Satoshi Nakamoto
https://bitcoin.org/bitcoin.pdf
22 The blockchain revolution: An analysis of regulation and technology related to distributed ledger technologies
http://www2.caict.ac.cn/zscp/qqzkgz/qqzkgz_zdzsq/201702/P020170217552542388789.pdf
23 The Blockchain (R)evolution – The Swiss Perspective by Deloitte
https://www2.deloitte.com/content/dam/Deloitte/ch/Documents/innovation/ch-en-innovation-blockchain-revolution.pdf

private sectors. In the public sector, land registry records and public records of land ownership can be placed on the Blockchain, allowing the relevant stakeholders and agencies real time access to the ownership records. This considerably reduces ownership disputes and the need for middlemen to authentic documents and adjudicate disputes, ultimately saving cost and time for the end consumer. This application is explored by various jurisdictions around the world including the government of Honduras. Within the private sector, residential rental agreements between private counterparties can be placed on Blockchain and executed using smart contracts. This will streamline private contracts and real estate agency workflow, saving resources and time.

There are multiple applications of Blockchain technology to the healthcare industry, including in the distribution pipeline for various goods and services. One specific case is the drug delivery pipeline from the factory floor to the end user, whereby the drug packages are authenticated and time stamped at each intermediate delivery point. For example, for a batch of drugs being shipped from the factory floor, the batch record is authenticated, time-stamped and placed on the Blockchain and is subsequently authenticated and time-stamped again at each intermediate delivery point. This allows for tracking of the drug as it makes its way through the delivery pipeline. This greatly simplifies and streamlines the drug distribution pipeline management which can prevent the drugs from falling into the wrong hands, authenticating the drug for the end consumer which greatly reduces the counterfeiting possibility, price manipulation and delivery of expired drugs.

Also government agencies can benefit considerably from the near instantaneous and simultaneous access to a distributed database that stores public records. An important example is identity management, e.g. “are you who you say you are”. Although solutions for identity management on the Blockchain are yet to be fully developed, there is a considerable amount work being done on this topic. For example, passports or drivers’ licenses can be placed on the Blockchain, enabling multiple agencies to share, access and verify identification in real time. The Estonian government is experimenting with identity management solutions on the Blockchain.

Transformational impact of Blockchain technology on strategy and operating processes

	01. Organisation (people)	02. Processes	03. Governance (stakeholders & legal)	04. Data & technology (security)	Cumulative effect	Trend
Mechanical engineering and electronics	0,5	1,8	2,3	1,7	6,3	Upwards
Pharmaceuticals	2,0	1,9	2,0	1,5	7,4	Upwards
Healthcare	2,2	1,5	1,8	2,0	7,5	Upwards
Logistics	1,7	1,7	2,4	2,3	8,1	Upwards
Insurance	1,7	2,2	2,2	1,8	7,9	Upwards
Public administration	1,3	1,0	1,4	2,1	5,8	Flat
Tourism	0,7	0,8	1,0	1,5	4,0	Flat
Construction	0,4	0,4	0,4	0,4	1,6	Flat
Financial services	2,5	2,5	2,6	2,6	10,2	Upwards

Transformational impact of Blockchain technology on strategy and operating processes
(0=low, 3=high) (prepared by the Deloitte Switzerland Blockchain Team)

Financial impact of Blockchain technology (revenues/costs)

	01. New markets & customers	02. Transaction-driven	03. Security and encryption	04. Legal	05. Standardisation	06. Participants in the value chain	Cumulative effect	Trend
Mechanical engineering and electronics	0,8	0,6	1,5	0,7	1,0	1,3	6	Flat
Pharmaceuticals	0,4	0,6	2,0	2,0	1,0	1,2	7	Upwards
Healthcare	0,6	1,3	2,7	2,3	1,6	2,0	11	Flat
Logistics	1,1	2,4	2,0	1,8	1,5	2,0	11	Flat
Insurance	0,7	2,6	2,2	2,6	2,4	2,0	13	Flat
Public administration	0,7	2,7	2,6	2,0	1,0	1,8	11	Flat
Tourism	1,0	0,3	0,7	1,0	0,7	0,7	4	Flat
Construction	0,5	0,3	0,3	0,5	0,3	0,3	2	Flat
Financial services	3,0	2,7	3,0	2,6	2,2	1,4	15	Flat

Financial impact of Blockchain technology (revenues/costs)
(0=low, 3=high)(prepared by the Deloitte Switzerland Blockchain Team)

TESLACOIN

Why the world needs Teslacoin?

It's so simple. As we have explained before, cultural advancement has ceased because the ruling class has no incentive to progress and all they do is to increase taxes, rents, or other levies upon the producers of wealth.

We come then to the following conclusion: When cultural advance has thus been arrested, it can be renewed only by tapping some new source of energy and by harnessing it in sufficient magnitude to burst asunder the social system which binds it.

That is why Teslacoin is needed.

Some might ask why the banks won't fund the inventors if they're about to disrupt the energy sector. And the only reason because they won't do it and indeed they will try to prevent happening is because banks shareholders and energy companies shareholders are the same. [24]

Just take a look at the mayor shareholder institutions in the main energy and banking companies. The % total shares held by the top 5 of institutions goes from less than 1% to more than 20%. In the next page you can find more info.

Therefore, Teslacoin is going to be the only way the inventors of the new sources of energy will get funds to move forward.

24 Stocks in Morningstar
http://www.morningstar.com/

PetroChina Co Ltd	HSBC
CSOP Asset Management Limited	Fisher Asset Management, LLC
BlackRock Asset Management N. Asia Ltd	Dimensional Fund Advisors, Inc.
Vanguard Group Inc	Cambiar Investors LLC
China Asset Mgmt Co.,Ltd	Royal Bank Of Canada
China Universal Asset Mgmt Co.Ltd	Northern Trust Investments N A

China Petroleum & Chemical Corp (Sinopec)	JP Morgan Chase
Dimensional Fund Advisors, Inc.	Vanguard Group Inc
Arrow street Capital Limited Partnership	State Street Corp
Renaissance Technologies Corp	BlackRock Institutional Trust Company NA
BlackRock Institutional Trust Company NA	Fidelity Management and Research Company
Trilogy Advisors LLC	T. Row e Price Associates, Inc.

Royal Dutch Shell plc	Mitsubishi UFJ Financial
Franklin Advisers Inc	Vanguard Group Inc
BlackRock Advisors LLC	Nomura Asset Management Co Ltd
Fidelity Management and Research Company	BlackRock Fund Advisors
Dimensional Fund Advisors, Inc.	Fidelity Management & Research Company
Robeco Investment Management, Inc.	Dodge & Cox

Chevron Corp	Deutsche Bank
Vanguard Group Inc	Vanguard Group Inc
State Street Corp	BlackRock Asset Management (DEU) AG
BlackRock Institutional Trust Company NA	Wellington Management Company LLP
Wellington Management Company LLP	Goldman, Sachs & Co.
Capital World Investors	Deutsche Asset & Wealth Management Investment GmbH

Eni SpA	Banco Santander
Vanguard Group Inc	Capital Research and Management Company
BlackRock Fund Advisors	Vanguard Group Inc
Templeton Global Advisors Limited	BlackRock Fund Advisors
Capital Research and Management Company	BlackRock Asset Management (DEU) AG
Invesco Asset Management Ltd	Dodge & Cox

Exxon Mobil Corp	Bank of China
Vanguard Group Inc	CSOP Asset Management Limited
State Street Corp	BlackRock Asset Management N. Asia Ltd
BlackRock Institutional Trust Company NA	TD Asset Management Inc
Northern Trust Investments N A	Fullgoal Fund Mgmt Co.,Ltd
State Street Global Advisors (Aus) Ltd	Penghua Fund Mgmt Co.,Ltd

BP plc	BNP Paribas
Barrow Hanley Mew hinney & Strauss LLC	Capital Research and Management Company
State Street Corp	Harris Associates L.P.
Dimensional Fund Advisors, Inc.	Vanguard Group Inc
Franklin Advisers Inc	Dodge & Cox
Wellington Management Company LLP	BlackRock Fund Advisors

TOTAL SA	Citigroup
Vanguard Group Inc	Vanguard Group Inc
Capital Research and Management Company	State Street Corp
BlackRock Fund Advisors	Fidelity Management and Research Company
Lyxor International Asset Management	BlackRock Institutional Trust Company NA
T. Row e Price Associates, Inc.	Wellington Management Company LLP

Teslacoin specifications

Coin Symbol: TES
Last wallet version: v.3.4.0.0

Algorithm: Proof of Stake
PoS Interest: 12% annually
Needed time to start staking: 24 hours
Maximum time you can stake: No limit

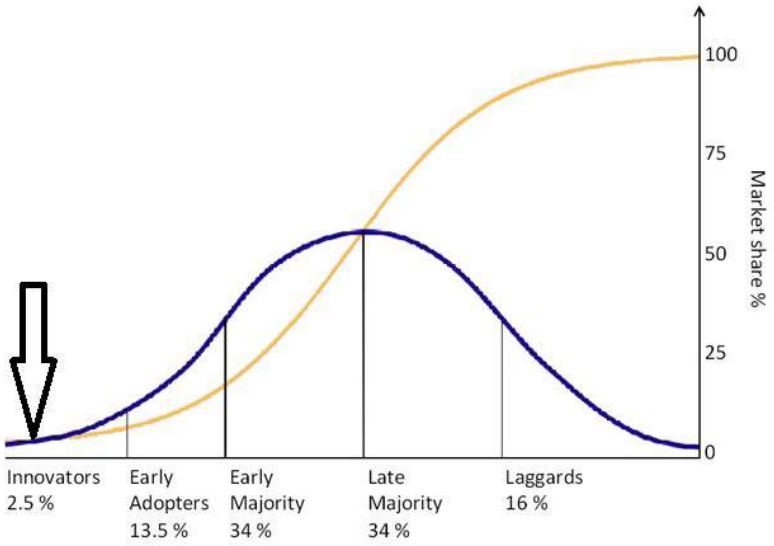
P2P port: 1856
RPC port: 1857

Maximum coins: 75,000,000 TES
Number of coins in circulation: 74,450,552 TES

What is going to happen once all the coins are staked?

We are approaching the maximum coin amount and we're facing a new challenge most of the coins have never faced. Since we're one of the first coins facing this issue we have work on a contingency plan.

From the technological adoption point of view, we are still in the beginning of the innovator phase, meaning we have not even achieve the 2.5% of the market share we are targeting. The adoption phase will still be long and take a few years until we grow all the ecosystem of inventors, entrepreneurs and investors.



From the economical point of view, the blockchain does need an economic incentive to be alive. That's it, if there is not an economic incentive noone will be mining or staking and transactions won't go through. As we have explained right now, we are at the beginning of the first adoption phase and the fees of transactions going on this days are not enough to represent an economic incentive to keep blockchain running smoothly.

Date / Time	Blocks	Height	Interval	Transactions	Value Out	Difficulty	Generated+Fees
2018-02-21 Wed	316	1479907	-	19	491,064.027 TES	0.0039 ± 1%	932.11460909
2018-02-20 Tue	269	1479591	321.2	5	1,509,794.379 TES	0.0042 ± 6%	3,612.16008396
2018-02-19 Mon	343	1479322	251.9	10	382,906.883 TES	0.0040 ± 2%	1,397.31521501
2018-02-18 Sun	567	1478979	152.4	6	149,486.438 TES	0.0040 ± 3%	425.17483793
2018-02-17 Sat	54	1478412	1600.0	7	252,183.906 TES	0.0040 ± 3%	2,445.15021794
2018-02-16 Fri	576	1478358	150.0	7	1,120,956.853 TES	0.0043 ± 9%	2,023.88643101
2018-02-15 Thu	1513	1477782	57.1	4	2,270,275.326 TES	0.1935 ± 98%	46,292.15211612
2018-02-14 Wed	367	1476269	235.4	12	880,109.569 TES	0.0042 ± 8%	4,080.78834489
2018-02-13 Tue	484	1475902	178.5	17	304,443.166 TES	0.0042 ± 7%	896.5283328
2018-02-12 Mon	1271	1475418	68.0	12	2,715,380.95 TES	0.0052 ± 25%	8,021.78969489
2018-02-11 Sun	488	1474147	177.0	13	1,263,850.708 TES	0.0041 ± 6%	4,008.80603197
2018-02-10 Sat	899	1473659	96.1	7	1,988,149.827 TES	0.0042 ± 8%	9,122.90741782
2018-02-09 Fri	738	1472760	117.1	24	874,082.928 TES	0.0040 ± 3%	2,257.56494713
2018-02-08 Thu	318	1472022	271.7	0	845,452.2 TES	0.0044 ± 11%	140,385.0468069
2018-02-07 Wed	344	1471704	251.2	1	472,728.347 TES	0.0040 ± 1%	7,214.00734577
2018-02-06 Tue	252	1471360	342.9	1	458,872.113 TES	0.0040 ± 2%	1,343.35737003
2018-02-05 Mon	1031	1471108	83.8	1	320,174.698 TES	0.0043 ± 8%	3,757.26245995
2018-02-04 Sun	1229	1470077	70.3	3	391,225.832 TES	0.0053 ± 26%	9,626.55651094
2018-02-03 Sat	995	1468848	86.8	2	252,475.779 TES	0.0058 ± 33%	3,468.97293414
2018-02-02 Fri	2357	1467853	36.7	2	2,014,471.382 TES	0.0104 ± 62%	42,214.1775821

After analysing the points of view just pointed out and the research done of the coin that have already gone by the same issue, we have studied several possibilities that can be implement and we have choose to go for the next one.

Once we hit the maximum number of coins, we are going to release a new mandatory wallet upgrade. This new wallet will come with a few changes. The change will have the objective of keeping the economic incentive alive while diluting the minimum of holders stake.

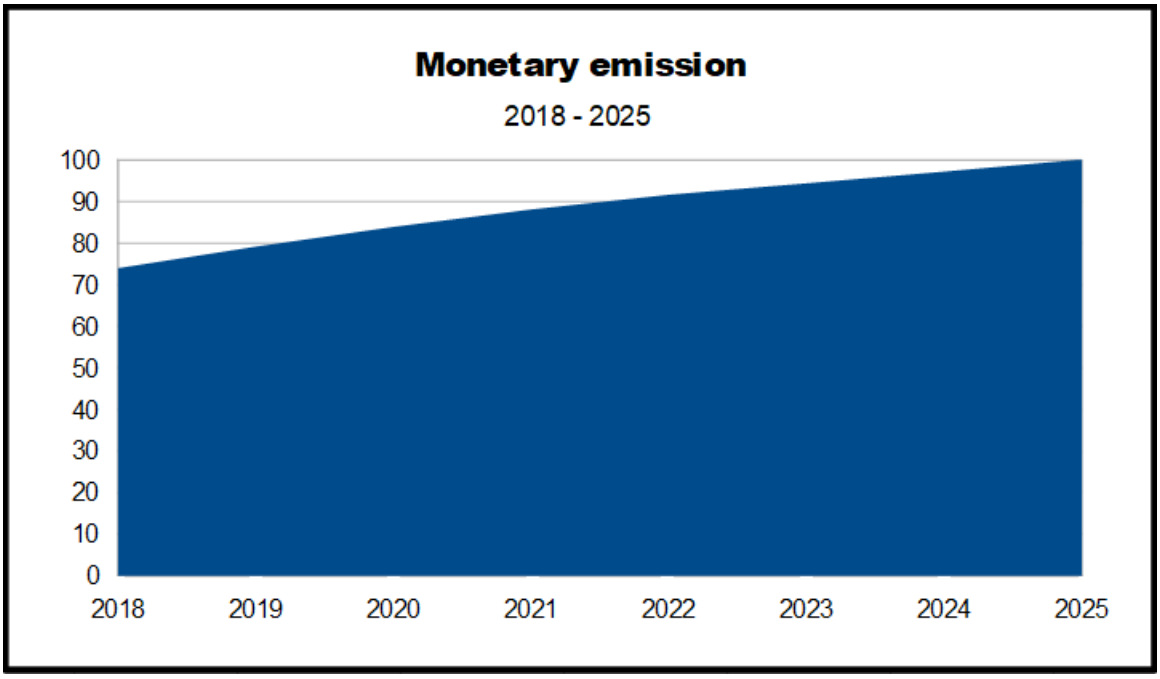
New maximum coins: 100,000,000 TES

PoS Interest:
7% annually during the first 1,000,000 blocks (estimated 1 year)
6% annually during the next 1,000,000 blocks (estimated 1 year)
5% annually during the next 1,000,000 blocks (estimated 1 year)
4% annually during the next 1,000,000 blocks (estimated 1 year)
3% annually until new maximum coins.

0.5% interest will be destined for funding the TeslaStarter platform expenses, committee members salaries and to crowdfund projects. More details about this in the TeslaStater section.

PoS Interest for stakers:
6.5% annually during the first 1,000,000 blocks (estimated 1 year)
5.5% annually during the next 1,000,000 blocks (estimated 1 year)
4.5% annually during the next 1,000,000 blocks (estimated 1 year)
3.5% annually during the next 1,000,000 blocks (estimated 1 year)
2.5% annually until new maximum coin supply

Estimated number of coins per year:



2018 Feb	74.440.271
2019 Jan	79.651.090
2020 Jan	84.430.155
2021 Jan	88.651.663
2022 Jan	92.197.730
2023 Jan	94.963.662
2024 Jan	97.812.571
2024 Oct	100.000.000

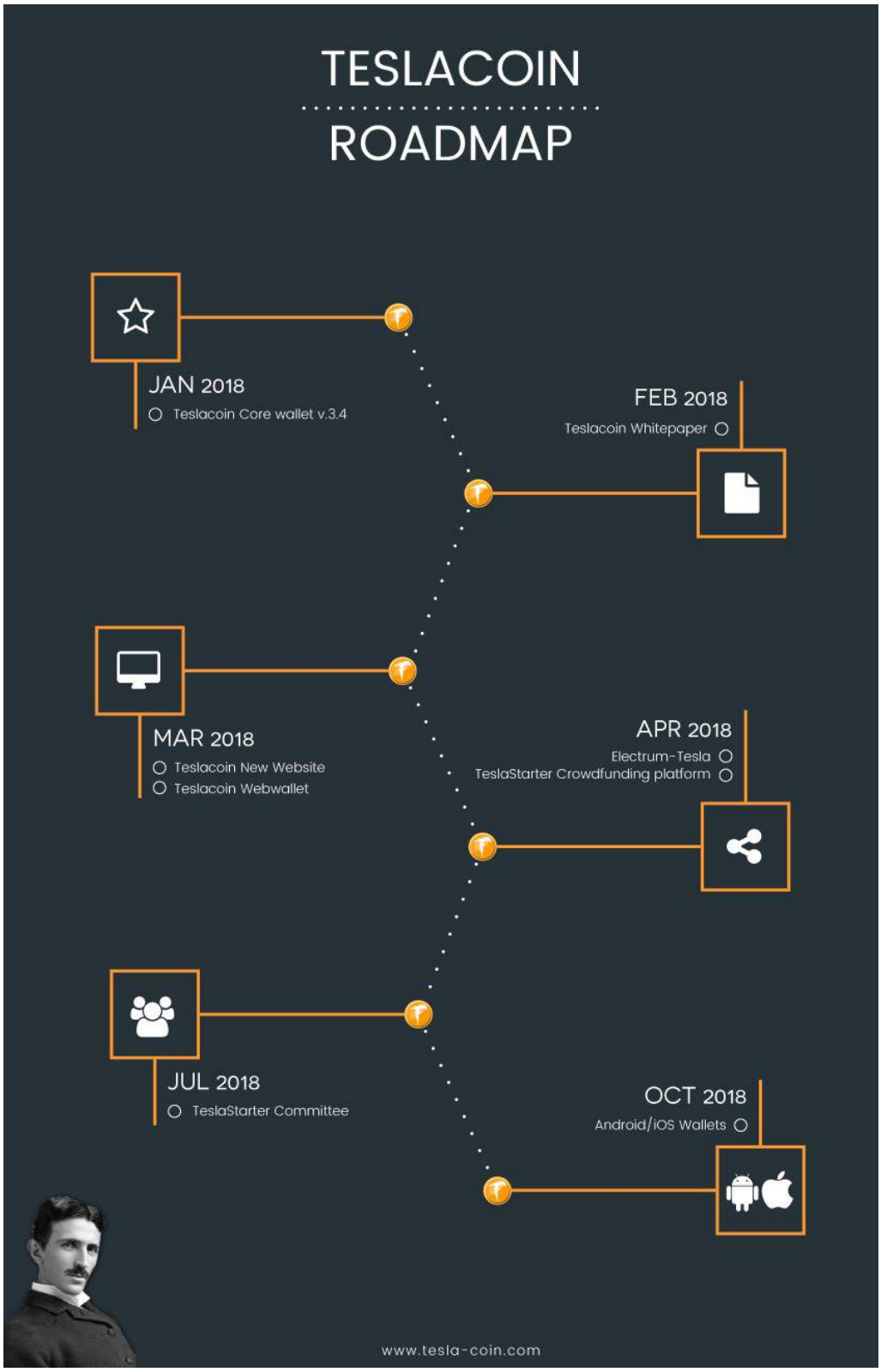
Distribution of newly staked coins during the next years

2018	March	74.450.601	
	April	74.884.871	31.019
	May	75.321.675	62.039
	June	75.761.026	93.239
	July	76.202.940	124.621
	August	76.647.432	156.186
	September	77.094.516	187.936
	October	77.544.209	219.870
	November	77.996.524	251.991
	December	78.451.478	284.300
2019	January	78.909.085	316.796
	February	79.369.362	349.482
	March	79.832.323	382.359
	April	80.231.485	415.428
	May	80.632.643	448.692
	June	81.035.806	482.121
	July	81.440.985	515.718
	August	81.848.190	549.483
	September	82.257.431	583.417
	October	82.668.718	617.520
	November	83.082.061	651.794
	December	83.497.472	686.240

2020	January	83.914.959	720.857
	February	84.334.534	755.648
	March	84.756.207	790.612
	April	85.109.301	825.752
	May	85.463.866	861.061
	June	85.819.909	896.518
	July	86.177.434	932.122
	August	86.536.450	967.874
	September	86.896.960	1.003.776
	October	87.258.973	1.039.827
	November	87.622.494	1.076.028
	December	87.987.529	1.112.380
2021	January	88.354.085	1.148.884
	February	88.722.169	1.185.540
	March	89.091.785	1.222.348
	April	89.388.461	1.259.310
	May	89.686.124	1.296.394
	June	89.984.779	1.333.602
	July	90.284.428	1.370.934
	August	90.585.076	1.408.390
	September	90.886.724	1.445.971
	October	91.189.377	1.483.677
	November	91.493.037	1.521.508
	December	91.797.709	1.559.466

2022	January	92.103.395	1.597.550
	February	92.410.100	1.635.761
	March	92.717.825	1.674.099
	April	92.949.620	1.712.565
	May	93.181.994	1.751.197
	June	93.414.949	1.789.926
	July	93.648.486	1.828.752
	August	93.882.608	1.867.675
	September	94.117.314	1.906.695
	October	94.352.607	1.945.813
	November	94.588.489	1.985.028
	December	94.824.960	2.024.342
2023	January	95.062.023	2.063.754
	February	95.299.678	2.103.264
	March	95.537.927	2.142.873
	April	95.776.772	2.182.581
	May	96.016.214	2.222.389
	June	96.256.254	2.262.296
	July	96.496.895	2.302.303
	August	96.738.137	2.342.409
	September	96.979.982	2.382.616
	October	97.222.432	2.422.924
	November	97.465.488	2.463.332
	December	97.709.152	2.503.842
2024	January	97.953.425	2.544.452
	February	98.198.309	2.585.164
	March	98.443.804	2.625.978
	April	98.689.914	2.666.894
	May	98.936.639	2.707.913
	June	99.183.980	2.749.033
	July	99.431.940	2.790.257
	August	99.680.520	2.831.584
	September	99.929.721	2.873.014
2024	October	100.179.546	2.914.547

Teslacoin Roadmap



TESLASTARTER

What is TeslaStarter?

TeslaStarter is the crowdfunding platform through which the new source of energy will be invented, by inventors whose ideas are featured on the platform.

Step by step

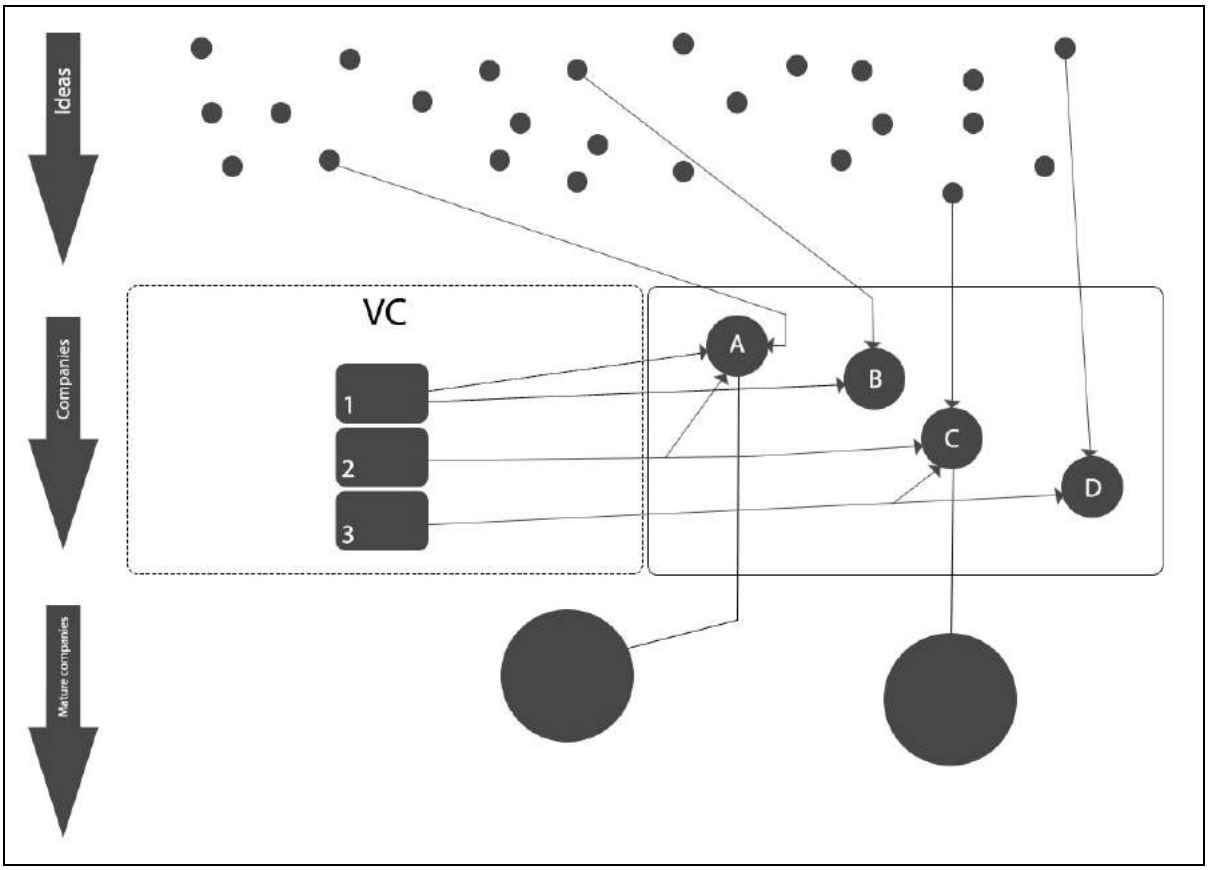
The crowdfunding platform will go through 3 phases.

The first phase will be focused on crowdfunding inventors ideas. Since there are a lot of areas to research and it's still an unknown path, there will be hundreds or thousands of ideas/projects.
There is no ROI expected for this phase. It's a donation or a reservation for a privileged place to invest in the next phase.
The experience and knowledge will be open for everyone who wants to use it.

The second phase will be focused on crowdfunding entrepreneurs and VC projects.
Entrepreneur projects will be based on ideas previously developed and shared by inventors. It can be teams created by inventors that want to move to the next phase or they can be teams created using the knowledge shared by inventors.
This is based on the idea that some inventors don't want to take care of a company and they want to focus on researching. However from our point of view, the best case is where the entrepreneur and the inventor join forces.
The VC projects will be run by people with experience in the field willing to fund entrepreneurs projects.
The investors that have collaborated in the previous phase will have a privileged spot in this phase.
ROI is directly related to risk therefore the expected ROI from this phase goes from zero to very high.

The third phase will be focused on crowdfunding companies with a long time in the market and with an already proof product. The objective is to provide liquidity to the company without forcing the owners to sell part of the stake.
As in the phase before, the ones that have taken part crowdfunding project in the previous phases will have a privileged spot.
ROI is directly related to risk therefore the expected ROI from this phase goes from zero to medium.

Getting into details



From the economical point of view

The first phase named ideas are exactly just that. Non-finished products. From all the ideas that will be crowdfunded in the first phase only a few percentage will be able to move to the second phase.

Is in the second phase where the company is built. There, they will get direct funding from Teslacoin investors but also investments from the VC companies. In that phase, Teslacoin investors will also be able to fund the VC companies.

To move to the third phase the company will have demonstrate that they have a successful business model and that they've been able to manufacture and deliver a fair amount of product.

In the example, you can see there are a lot little points in the first phase (ideas). From those only 4 made it to the second phase (A, B, C, D). In that phase we can also found 3 VC companies that will provide capital to the entreprerneurs. We can see the 1st VC company has funded the A and B. The 2nd one, the A and C. And the 3rd one, the C and D. After that, only 2 of the 4 has mature enough to move to the next phase.

From the legal point of view

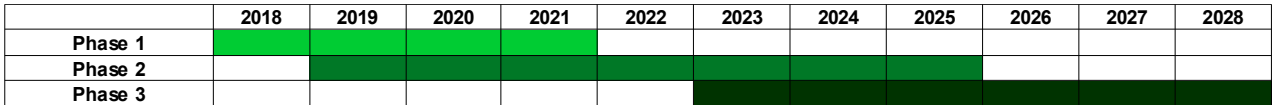
From the legal point of view things will change from one phase to another.

As we have explained before, in the first phase investor will not be looking for a return on their investment but the progress of the sector and the right to have a privileged position to invest in the next phases. Therefore the capital movement from one pocket to another will be considered a donation.

In the next phase we see there are two types of companies but both will follow the same structure. Entrepreneurs companies as well as VC companies will get funded through ICOs. Most specifically, Security ICOs. Since most of the countries have not regulated the ICO market yet, we can not get into much details but we are almost sure that Security ICOs will follow the same regulation in place for equity securities. Platform's objective is to follow the regulations and make the ICO available to all investors around the world. Once we get to the second phase, we will have an agreement with an Security ICO platform that will take care of the AML/KYC procedures as well as with a well known exchange that will list all the tokens issued.

In the third phase ICOs will also be the legal structure used to issue the debt. In this case, Debt ICOs. As explained before most of the countries have not regulated the ICO market yet, we can not get into much details but we are almost sure that Debt ICOs will follow the same regulation in place for equity debt. Platform's objective is to follow the regulations and make the ICO available to all investors around the world. Once we get to the third phase, we will have an agreement with an Security ICO platform that will take care of the AML/KYC procedures as well as with a well known exchange that will list all the tokens issued.

Chronogram



Disrupting the energy sector is not going to be an easy job and that's why it will take us so much time. TeslaStarter will be crowdfunding new ideas during 4 years to make sure all the good ideas get their opportunity and that we don't miss out the next big improvement for society.

The second phase will start in 2019. It doesn't mean it has to start but that all the needed technology, partnerships and agreements will be in place in case there is already a company with a working invention ready to be launch. This phase will last 7 years. During those years the goal of Teslacoin is launch hundreds or thousands of companies that will compete to have the best product and to provide the world the cheapest and cleanest energy source ever.

The third phase will start in 2023. As explained in the second phase, it doesn't mean it has to start there but that all the needed technology, partnerships and agreements will be in place in case there is already a company that have a successful business model and that they've been able to manufacture and deliver a fair amount of product.

From the honestity point of view

As we can expect, between all the investors and entrepreneurs there will be some dishonest people just trying to fish free money. Since we want to improve the life on earth for all the human beings and not just theirs, we will set up a committee for each phase.

Expenses and maintenance

In order to maintain and improve the platform during the years it will be active, each project will collaborate with 1% of the funds raised.

As we move forward, if that amount is providing more funds than what the platform needs to be run smoothly, fees will be reduced.

Investors/Donors ranking

The first phase of the process will be composed by inventors sharing their ideas. Since researching new sources of energy has a too big risk associated, we need to incentivize investors to help us push this ecosystem forward. We have considered this start barrier for the new sector and that's why we will be helping to solve it from two points.

First one will be by offering the investors donating money in the first phase the privilege of being the first ones investing in the second and third phase. There will be a ranking where all the donations will be noted down. Once we move to the second phase and entrepreneurs and VCs publish their company projects, the ones in the ranking will be the first one able to invest. Starting from the biggest donor to the last donor. After that, if there is money to be raised yet, investment possibilities will be open for the rest of the interested investors. Obviously, being the first investor will also mean accessing better sale prices.

Second one will be by using the part of the staked coins in team hands to crowdfund the projects recommended by the committees. More info about this, in the “Stake allocation” part.

The committees

The committees will have the task of analysing every single project presented and give their opinion about it. The committee won't have the authority to ban a project from TeslaStarter but they will have the ability to move the project to the "Not recommended" list.

The committee is meant to provide a safety measure for the investors without the needed knowledge to understand which projects are worthy or not but we do consider investors are free to choose what they want to invest in.

Since the presented projects will vary a lot from one phase to another, each phase will have each own committee.

Who is going to be in each committee

The first committee that will be set up, obviously for the first phase, will be composed by inventors and engineers with experience in the energy field. Each member will make their own analysis and make it public. After all members have voted in favor or against, the project will be placed in the "Recommended" or in the "Not recommended" list.

Their task will be to:
- Estimate the needed minimum crowdfunding amount to be able to develop the project
- Estimate the electrical power of the invention
- Estimate the unit cost
- Estimate Cost/Electrical Power
- Estimate the viability of the production scalability
- Estimate the level of difficulty of the project.

The second committee, the VC and entrepreneurs phase, will be composed by successful entrepreneurs and well known VC personalities. As the first committee, each member will make their own analysis and make it public. After all members have voted in favor or against, the project will be placed in the "Recommended" or in the "Not recommended" list.

Their task will be to:
- Analyse their product
- Analyse their business model
- Analyse the members of the team and their ability to run a successful business.

The third committee, for the debt phase, will be composed by people with corporate debt background. As the first and second committees, each member will make their own analysis and make it public. After all members have voted in favor or against, the project will be placed in the "Recommended" or in the "Not recommended" list.

Their task will be to:
- Audit the company

Stake allocation

As stated before, Teslacoin will have a number of coins at its disposal to pay for TeslaStarter platform expenses, committee members salaries, marketing and for crowdfunding projects.

This is the number of coins the team will have available each month.

2018	March	Available each month
	April	31.019
	May	31.020
	June	31.200
	July	31.382
	August	31.565
	September	31.749
	October	31.935
	November	32.121
	December	32.308

2019	January	32.497
	February	32.686
	March	32.877
	April	33.069
	May	33.263
	June	33.430
	July	33.597
	August	33.765
	September	33.934
	October	34.103
	November	34.274
	December	34.445

2020	January	34.618
	February	34.791
	March	34.965
	April	35.139
	May	35.309
	June	35.457
	July	35.604
	August	35.753
	September	35.902
	October	36.051
	November	36.201
	December	36.352

2021	January	36.504
	February	36.656
	March	36.808
	April	36.962
	May	37.084
	June	37.208
	July	37.332
	August	37.456
	September	37.581
	October	37.706
	November	37.832
	December	37.958

2022	January	38.084
	February	38.211
	March	38.338
	April	38.466
	May	38.632
	June	38.729
	July	38.826
	August	38.923
	September	39.020
	October	39.118
	November	39.216
	December	39.314

2023	January	39.412
	February	39.510
	March	39.609
	April	39.708
	May	39.807
	June	39.907
	July	40.007
	August	40.107
	September	40.207
	October	40.308
	November	40.408
	December	40.509

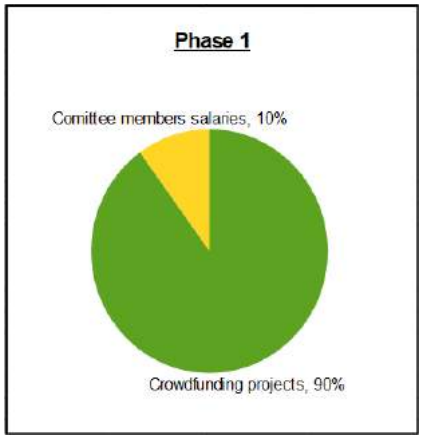
2024	January	40.611
	February	40.712
	March	40.814
	April	40.916
	May	41.018
	June	41.121
	July	41.224
	August	41.327
	September	41.430
2024	October	41.534

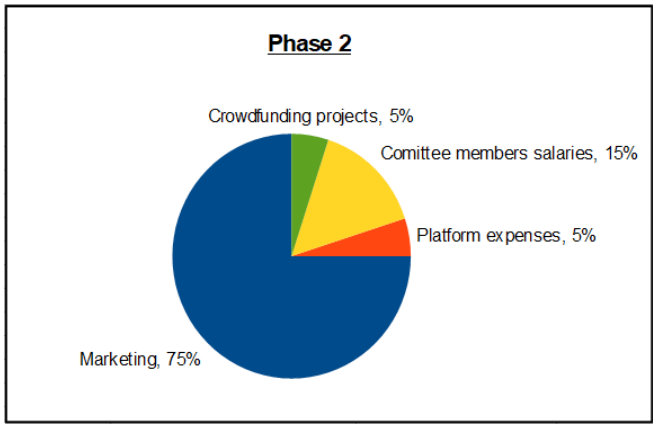
During the first phase, the objective is to use the maximum amount of money to crowdfund projects since this is the biggest barrier to start making the sector interesting for investors.

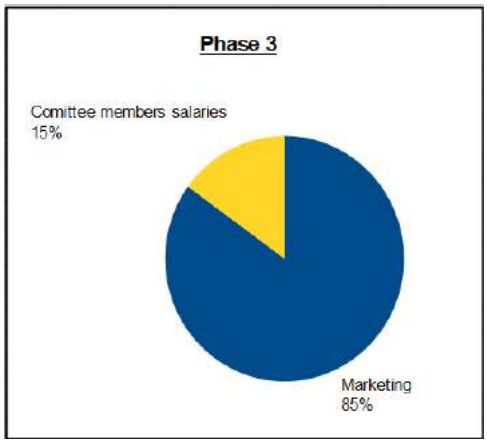
TeslaStarter platform will be developed by Teslacoin team and collaborators, therefore there will be almost no money dedicated to the creation. Maintenance and the continuous development will be first funded with the staking coins and later with the fees provided by the projects.

The committee members salaries will be high enough to attract the correct people and incentivize them to make properly their job but very limited since the main objective is to crowdfund projects. And marketing budget will come from team's pockets. (We have to remember that this is not an ICO coin and the team is making a big efforts to fund the development of the coin).

During the second and third phases, team won't be crowdfunding projects because there will be investors filling that space. That's why committee members salaries will be bigger and more money will be dedicated to partnerships and marketing.







	Marketing	Platform expenses	Comittee members salaries	Crowdfunding projects
Phase 1	0	0	10	90
Phase 2	75	5	15	5
Phase 3	85	0	15	0

WHERE WILL THE VALUE FOR TESLACOIN INVESTORS COME FROM?

Teslacoin is a utility coin, therefore value will be linked to how useful the coin is.

TeslaStarter will be, as everyone can imagine, using Teslacoin. Therefore, investors will have to buy Teslacoin to participate. Since we're about to disrupt a $3.000.000.000.000, the profits investor will be able to made will be very attractive.

But TeslaStarter won't be the only place where Teslacoin is going to be useful. We will also be convincing merchants to accept the currency for their services and products. We will start with little merchants involved in the energy sector and we expect to achieve the biggest ones as we keep moving forward.