Decentralized Energy Market

SUNCONTRACT

WHITEPAPER

An energy trading platform that utilises blockchain technology to create a new DISRUPTIVE model for buying and selling electricity

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CONTENTS

SOMETHING TO THINK ABOUT

The Earth is 4.6 billion years old. Let's scale that down to 46 years. We've been here for 4 hours. Our industrial revolution began 1 minute ago. In that time we've destroyed more than 50% of the world's rain forests. (Greenpeace)

This isn't sustainable.

Let us make a difference.
We believe sustainability isn't just a trend. It should not be a job left to the next generation. We see it as our mission. Now and in the future.

ABSTRACT

SunContract disrupts the energy sector with a new business model, supported by the blockchain technology. Blockchain takes over the role of the middle man as a technology infrastructure, which can be trusted by default. SunContract is a platform that directly connects electricity producers and consumers into an electricity pool based on smart contracts, which is a new, exciting and prosperous way toward peer to peer electricity trading.

The SunContract's vision is to support a global self-sufficient energy community based on renewable energy by digitalization of electricity. By making it digital, electricity becomes a globally exchangeable commodity with added value.

INTRODUCTION

SunContract is a project that connects three enormously potential areas: electricity, blockchain and people. Growth and development in each of these fields is important for the quality of our lives. But joined together into a new, disruptive model of energy trading, they have the power to make our planet a better place to live in. Supporting SunContract means supporting sustainability because it brings together energy producers and consumers with common interests: to save money and to create a decentralized, smart and clean future.

Electricity is one of the cornerstones for a modern society to function. Households, hospitals, air traffic systems, street lights, communication and financial service industries are all dependent on electricity. The renewable energy market is developing fast, due to increasing energy demands and greater awareness of climate changes. This consequently opens interesting new opportunities. Research by Bloomberg New Energy Finance [1] shows that by 2040 more than 60% of total investment into the energy sector will go into renewables, which means that the total global investment will be $11.4 trillion of which $7.8 trillion will go into renewable energies and only $3.2 trillion into fossil fuel energy. This is a significant increase of investments into the renewable energy sector, especially into wind and solar power energy, according to Bloomberg it amounts to more than 65% of total investment into renewables.

In its current state, the energy market is facing challenges in the form of centralized conventional power stations that often require high costs of energy transmission over long distance. The existing electricity model with its infrastructure will not be able to cope with the increasing electricity demand that is expected to more than double by 2050. A change of the model is necessary with a shift to decentralized energy production supported by renewable energy. There has already been some movement towards renewable and sustainable distributed energy systems in recent years. Let's look at an example from the USA and the research done by Rocky Mountain Institute. Projections in figure 1 show that in 2015

roughly 15% of the total power generated in the USA was from wind and solar power. By 2050, it is expected to be around 71% and if you add other renewable energy sources like hydro, geothermal power and biomass it could go as high as 80%.

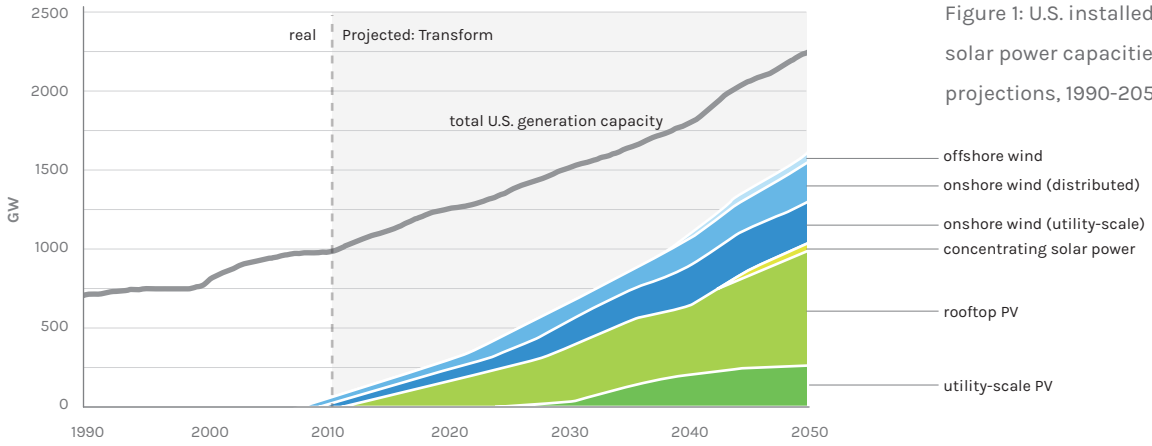

Figure 1: U.S. installed wind and solar power capacities and projections, 1990-2050 [2]

Renewable energy obtained mostly from hydro, wind and solar power will definitely help pave the way to a cleaner, more sustainable energy future.

Figure 2 shows the price and efficiency of solar panels. It is clear that over the past few years the cost of solar energy systems has dropped significantly, giving easier access to affordable, clean energy. With renewable resources, energy production became more decentralized, local and moved closer to consumption points. A distributed energy system generates power on-site, at the point of consumption and therefore significantly decreases the cost, complexity, interdependencies and inefficiencies associated with transmission and distribution.

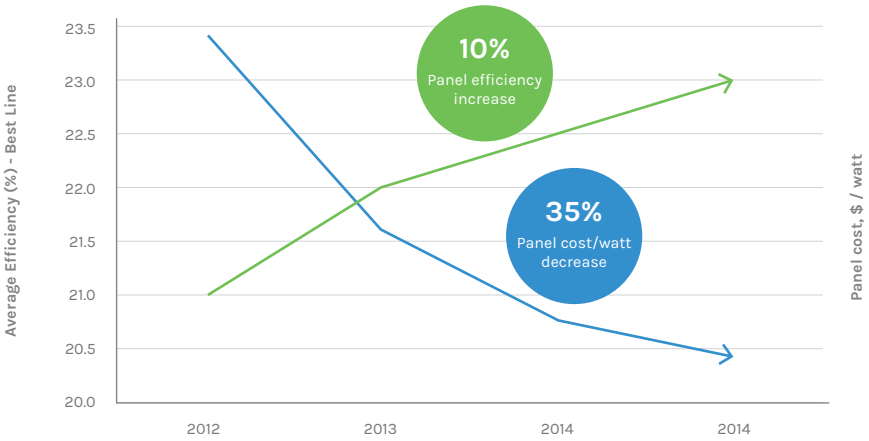

Figure 2: Panel efficiency and price [3]

Blockchain technology offers great potential too. It fits perfectly into the renewable energy sector because it enables direct (peer-to-peer) services closer to consumers and producers and offers transparency and local energy self-sustainability. We offer you the opportunity to be a part of SunContract. With this project we could build the largest electrical power pool that will enable energy self-sufficient entities and financial benefits by combining the best features of two, at first glance very different, worlds. Using the advantages of blockchain technology to disrupt services in the energy sector is a new and exciting prospect.

SUNCONTRACT IS DEDICATED TO:

- Transform electrical energy into a digital commodity;
- Enable personal contribution for improving the global situation;
- Support self-consumption and self-sufficiency;
- Take the full potential of local renewable resources;
- Take advantage of blockchain technologies;
- Enable transparent transactions between producers and consumers through the Pool, based on smart-contracts;
- Lowering costs by reducing the role of the middleman;
- Strengthen the cryptocurrency network;
- Connect people worldwide, borderless;
- Take an important step towards reducing global warming.

SunContract project aims to create a sun-driven economy. Our team has remarkable ideas on how to integrate blockchain technology into the energy sector, improve services and increase economic, environmental and social benefits. The funds we gather will allow us to develop and implement a variety of innovations that we are planning for this sector in the near future. This is a truly big opportunity in the energy market with the potential to reward all participants; the consumer with lower costs and cleaner energy, producers with better compensation for the electricity they produce and SunContract by becoming a fast growing firm and a market leader. With your contribution we can start working on making our planet cleaner and safer, while making some money in the process. Win-win, right?

OPPORTUNITY

Our team has been active both on energy and IT markets for years. We are well aware of opportunities and have the knowledge and innovative ideas for new perspective services that can be implemented with block-chain technology.

With economic growth and development the need for electricity also increases. An estimation presented during the Event Horizon 2017 in Vienna (Energy Blockchain Conference) predicted that in 30 years the existing levels of energy will only suffice to maintain the existing infrastructure, given the population growth and the fact that more and more products use electricity as their primary source. And when energy storage and the automobile industry reach the break-through point, electricity consumption is expected to double. Figure 3 shows the increasing demand for electric vehicles, which will be a significant factor in increased demand.

There is no question about demand, it is huge and then there is the gap between retail price and bulk price of electricity. On average, only one third of the retail electricity price is on the energy itself, the rest are different charges that increase your bill, for example; distribution charge, customer charge, state tax adjustment charge, consumer education

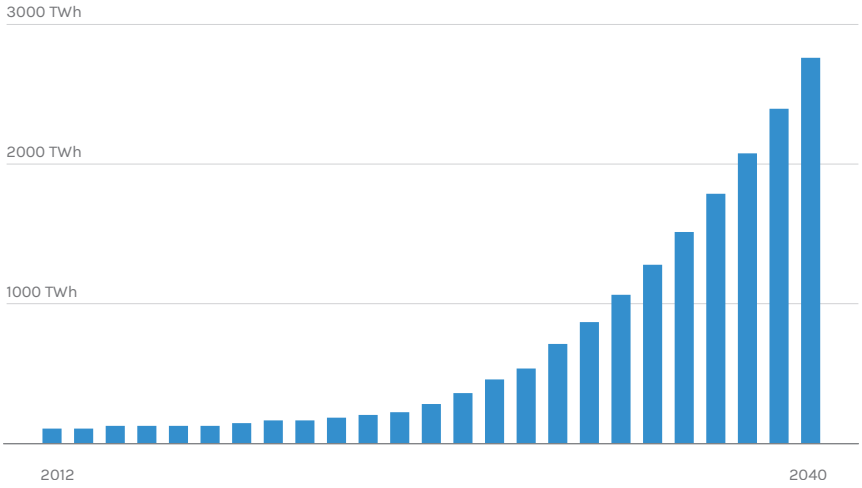

Figure 3: Power demand for electric vehicles; projection till 2040 [4]

charge and some others. Introducing blockchain into the energy market means reducing costs by diminishing the effect of the middleman. It also means optimizing consumption and production of electricity and thus transferring the add-value directly to consumers and producers.

The goal of SunContract is to replace the existing middleman role with blockchain technology in order to connect independent power producers (supply) and power consumers (demand) through the SunContract Pool via smart contracts. Smart contracts are blockchain based programs that aim to provide trust and security superior to traditional contract law and to reduce other transaction costs associated with contracting while also saving a lot of time, since they are executed as soon as agreed by all participants. With connecting energy sector and cryptographic infrastructure there is plenty of room for business process optimisation, and more transparent and efficient functioning within the energy sector. With this new approach, the retail price of electricity can be diminished and that gives us an opportunity to reach a sizeable market share.

THE VISION

Our primary objective and long term goal is energy peer to peer trading (P2P). But in order to achieve that level in energetics, a few other implications need to be addressed, starting with the **SunContract Energy Pool**. How the energy sector and blockchain technology fit together perfectly can be seen through the following analysis:

COMBINING 5 T'S AND 5 D'S

The five T's represent the fundamental features of blockchain that are crucial for implementation on the energy market:

TRUST		DIGITALIZATION
TRANSPARENCY		DECARBONIZATION
TRACEABILITY		DEREGULATION
TIME STAMP		DECENTRALIZATION
TRANSACTION		DEMOCRATIZATION

TRUST

With blockchain technology there is no need for a trusted 3rd party to oversee energy transactions or any other services. Rules are autonomously proposed and communicated. The use of smart contracts enables all included parties to trust the technology and not rely on each other. This removes uncertainty and improves the service.

TRANSPARENCY

All transactions are public and once on the blockchain cannot be altered in any way. This ensures a healthy business environment for all participants, for energy producers and, consumers.

TRACEABILITY

Every transaction written on the blockchain can be traced back to the address from which it was executed. The identity of the users is never in jeopardy as it is only possible to trace the address and not the person behind it.

TIME STAMP

Blockchain also puts a time stamp on every transaction which means that you can at any time check the exact moment of transaction execution.

TRANSACTION

Transactions made through blockchain are trustworthy, transparent, traceable and time stamped, which makes them better, cheaper and generally more efficient than existing ones.

The five D's represent the features of renewable solar energy that can be achieved with the blockchain technology:

DIGITIZATION

With digitalization of electricity in the form of SNC coins we give it digital value. Electricity as a digital asset is now flexible, transferable and tradeable on the cryptocurrency exchange. All of this enhances the ability to trade electricity, execute payments and even speculate on the exchange. This versatile use of a digital asset increases its value.

DECARBONIZATION

The rate of decarbonization needs to be accelerated in order to achieve the greenhouse gas (GHG) emissions target set by the U.S. and Europe at 80% by 2050 [5] and in order to achieve this goal we need to increase the utilization of renewables.

DEREGULATION

The energy industry does not yet provide a level playing field. Conventional energy is subsidized in many markets and consumer segments. A conducive policy framework is a prerequisite for clean energy. Government energy policies should foster innovation as well as investment in utility-scale technologies to phase out carbon-intensive production facilities. The potential of solar and other renewables can only be realized with regulatory support in the direction of renewable energy and self-sustainability.

DECENTRALIZATION

Decentralization is the process of redistributing or dispersing functions, powers, people or things away from a central location or authority. In energy sector this definition fits perfectly and gives back power to the people-literally and figuratively, by enabling each and everybody to make a change by themselves.

DEMOCRATIZATION

Democratization of energy supply facilitates access to power as well as flexibility to choose the source of power. Distributed generation of electrical energy is an efficient mechanism to democratize supply across markets.

SunContract's disruptive model joins together the best features of blockchain technology (5 T's) and renewable energy (5 D's) to create an entirely new service that will revolutionize the existing market! If we are to reach a P2P level of energy trading, we need to establish the platform that represents the basis. This is why our focus is directed at the **SunContract Energy Pool**, which is the first and most important step towards our long term goal. Here we present independent solar power producers an opportunity to join SunContract Energy Pool and provide clean energy to power consumers that are connected to the Pool.

HOW DOES IT WORK?

We will start by developing new services which will optimise energy trading.

Firstly, we will establish the SunContract Energy pool. The idea is to join together electrical power producers and consumers and enable them to trade electricity through the Pool. After successful registration everybody can join the Pool. But in order to actually trade electricity one would need to obtain SunContract tokens (SNC). SNC's will be issued at SunContract token sale as a software and energy licence to use Pool and solar energy.

This is a simplified example of how SunContract Energy Pool will work:

CONSUMER

First of all, the registration through the mobile app is necessary to enter the Pool. Registration will be fast and easy and will enable quick and simple smart contract signing. This is all the consumer needs to do in order to start buying electricity from the Pool. If person A already has SNC from their participation in the ICO, he or she can simply use them to obtain electricity from the Pool. Other users will have to buy SNC on the exchange in order to buy electricity from the Pool. The app will allow this transformation automatically. Due to huge potential of electricity demand worldwide and competitive electricity price in the Pool, the demand for coins will grow constantly and with it also their value.

PRODUCER

Person B has a solar power plant and he is a producer of clean renewable energy. He is currently selling his electricity to huge trading companies, where his position to negotiate is weaker. By joining the Pool, he could get better compensation for his energy. He receives SNC's, which can then be traded on the exchange to get fiat currencies. The app will have an option to automatically transform SNC's to Euros, Dollars or any other currencies to minimize the producer's risk.

A crucial aspect in developing a Suncontract Energy Pool is a mobile app. SunContract is already developing an app in order to make it user friendly and simple. In order to be a part of the Pool you have to register through this app. Once the registration is complete you join the SunContract community and can immediately enjoy all the benefits offered, being a power producer, consumer or both (prosumer).

SUNCONTRACT TOKENS (SNC)

By participating in the token sale you will receive SNC tokens. How many tokens you get depends on the amount of funds you use, and the total amount of funds gathered through token sale, which will also determine the value of SNC tokens.

The price of one SNC will initially be determined in accordance with the amount of funds raised through the token sale. Early participants will be offered a discount price as explained in an upcoming chapter. After the token sale is concluded, SNC will also be available on the crypto currency exchanges, where the price will be determined according to market mechanisms.

SunContract will issue 1 billion SNC's. Token value and the amount of tokens distributed to each token sale participant will be determined after the end of the token sale period, given the total amount of funds raised. 100% of funds raised through the token sale represent the 1 billion tokens issued. 80% of the tokens will be distributed to token sale participants, the rest (20%) is appointed to the team of developers, advisors and escrows. We also offer a boost to the amount of your tokens through participation in the Bounty scheme, or by obtaining the Early bird bonus.

BOUNTY

The share of the tokens for each bounty participant will be as big as his contribution. The more effort one puts into promoting SunContract, the bigger the reward. A bounty will be distributed for different participation methods, such as:

- signature campaign participants at Bittokentalk.org
- following and promoting SunContract Twitter account
- publishing and posting SunContract on blogs
- topic translating.

EARLY BIRD BONUS

We also decided to reward early participants. The sooner you join, the greater the bonus that will be appointed to you. We will use the following schedule:

- WEEK 1 + 15% bonus;
- WEEK 2 + 10% bonus;
- WEEK 3 + 5% bonus;
- WEEK 4 no bonus;

HOW TOKEN SALE FUNDS WILL BE USED

- 50% development
- 25% marketing and sales
- 15% operations
- 10% legal

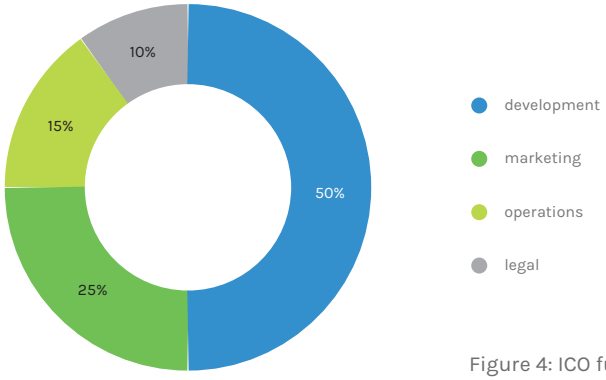

Figure 4: ICO funds distribution

1. The process of Token Sale will start according to the project start strategy.
2. During the crowdfunding process: A link will be posted on our Sun-Contract webpage, where all token sale participants will be able to create their user accounts. We will have full transparency regarding the amount and type of funds we gather on our "scale of gathered funds".
3. After the 30 days period, which follows the conclusion of the token sale, our 1 billion SNC tokens will be distributed to token sale participants, including SNC tokens for reward. The value of the SNC tokens will be proportional to the total amount of funds raised. If the token sale fails to reach our minimum threshold, all of the funds will be reimbursed.

PROJECT ROADMAP WITH IMPORTANT MILESTONES

0 – 20.000 ETH	Minimum threshold
20.000 ETH	Development of SunContract Platform
20.000 ETH – 40.000 ETH	Implementation of SunContract Platform on national level
40.000 ETH – 80.000 ETH	Commercialization of SunContract Platform
80.000 ETH – 140.000 ETH	Increasing the trading volume of SunContract Platform with renewables and energy storage
140.000 ETH – 200.000 ETH	Acquisitions and expansions, increasing the market share

CONCLUSION

SunContract employs an international team with vision, expertise, innovative thinking, openness, management skills, marketing knowledge, developers coming from various backgrounds from IT, energetic, finance, cryptocurrency etc. An international team, with various expertise and background assembled to implement this project. We are proud to have talented people from many companies working on this great project. Being the first in the market, connecting crypto world and electricity is a great opportunity that you should not miss and SunContract is the one to present it to you.

Welcome to digital commodity revolution.

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