

WHITEPAPER

ELECTRONIC ENERGY COIN

The logo consists of a stylized letter 'C' enclosed within a circle. A small leaf or flame-like shape is positioned at the top of the 'C'.

Contents

● 1. Project properties	3
● 2. Stages of creation	4
2.1 Creation of the node	4
2.1.1 Creation of required models	
2.1.2 Creation of transactions mechanism	
2.1.3 Creation of data storing model	
2.1.4 Storage of transactions sequence	
2.1.5 Creation of a system for block receiving and verification	
2.1.6 Creation of a system for PoS tickets storage	
2.1.7 Creation of PoS raffle	
2.1.8 Creation of event for choosing a winner for dependent nodes	
2.1.9 Registration of dependent nodes from public P (read-only)	
2.1.10 Automatic validation of dependent nodes	
2. 2 API creation	12
2.2.1 Creation of API to receive the general information from blockchain	
2.2.2 Creation of API for transaction sending	
2.2.3 Creation of API for receiving of balance of an address	
● 3. Market Analysis	15

3.1 Analysis of competitors	15
3.2 Analysis of potential users	20
3.3 Calculation of the price of the token based on global statistics	20
3.4 Prospects of the industry	22
3.4 Analysis of risks	23
● 4. Allocation of collected funds	25
● 5. Usage of the token	28
● 6. Brief description of the panels	31
● 7. The example of the energy exchange system operation principle	32
● 8. Our products	34
8.1 Wallet	34
8.2 Block explorer	37
8.3 Telegram bot	38
8.4 Wiki	39
● 9. Roadmap	40
● 10. GitHub	41
● 11. Team	42

1. Project properties

Are you an owner of a solar battery and you're forced to sell your energy to a power plant at a low price? Or are you a business owner and forced to buy at a higher price? Our platform is designed to solve this problem with the help of revolutionary technology Proof-of-stake.

Two hundred years after the invention of electricity humanity still continues to confront the global problems related to it: in many countries, electricity is excessively expensive but what is worse is that millions of people around the world still don't have access to this vital resource.

Our platform can solve both of these problems. First of all, we will be able to provide an opportunity to trade electricity between people around the world, overcoming millions of miles while creating a price, which will be fair and same for all the world's inhabitants.

Where there is no electricity, we will introduce our patented new generation solar panel technology which takes up much less space and is cheaper to purchase.

Based on Proof-of-stake technology, our platform is much more efficient in terms of energy consumption, unlike Bitcoin and Ethereum, which require huge power costs to maintain efficiency.

Hundreds of billions of dollars are invested annually in electricity but they are not able to solve the tasks set. It's time to introduce the latest technology in this field. The investment in our project is the investment in the future of mankind.

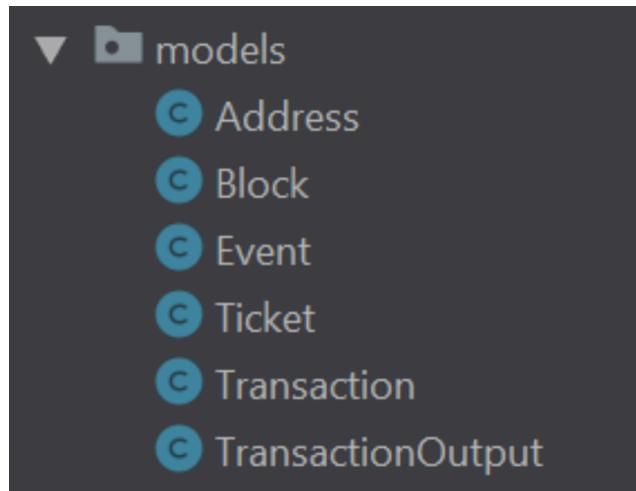
2. E2C blockchain creation

2.1 Creation of the node

2.1.1 Creation of required models

To create blockchain you need to describe models of all objects that the blockchain will deal with. The following objects belong to this group: block, transaction, address, ticket, event.

New models, not described in TA, can be added if needed. But all of the ones stated above must be present.



Block must contain the list of transactions, a hash of previous block and a verification signature.

Transaction must contain information about funds transfer: a transaction hash, where from, where to, total, a list of used addresses and a verification signature.

Address must contain information about all changes so that it is possible to receive a correct balance and check the ability to conduct transfer.

Information about transfers will be stored in a list and will have such fields: id, address of the recipient, total, id of a parent transaction.

Ticket must contain information about participant: amount of coins, address of the participant.

Event is a technical model required to correct communication between nodes. It must contain information about the type of notification, message, source (who sends it), code and list of technical details needed to process the message.

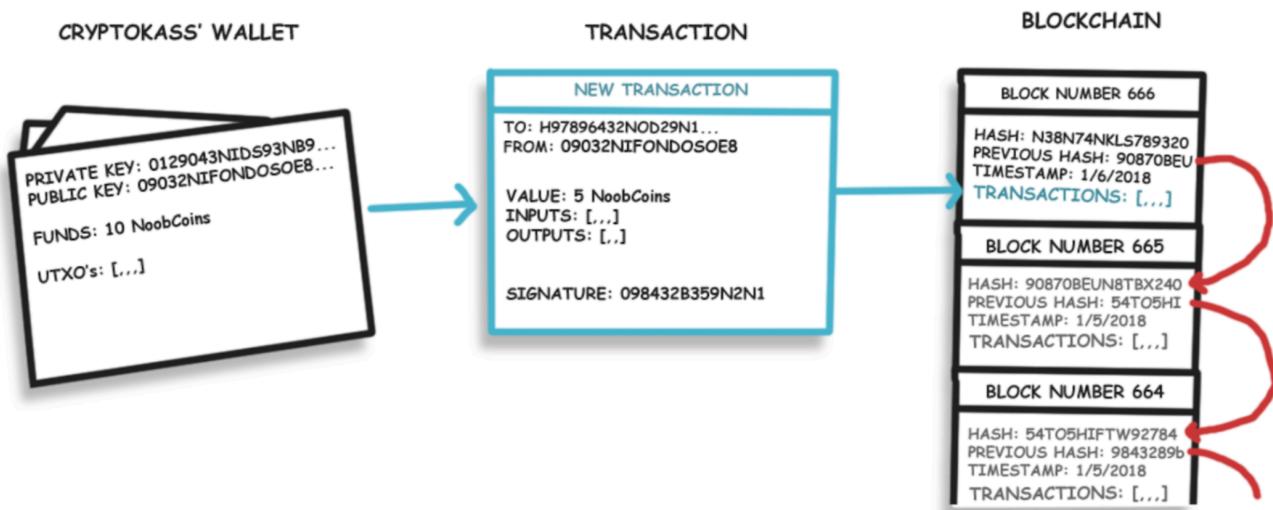
Output transaction is a model that allows quick calculation of address balance and conduct payments in the network without the need to go through all transactions of the address every time.

```
public class Transaction {  
    private final String hash;  
    private final byte[] from;  
    private final byte[] to;  
    private final double amount;  
    private byte[] signature;  
    private final long timestamp;  
  
    private final List<String> inputs;  
    private final List<TransactionOutput>  
outputs;
```

2.1.2 Creation of transactions mechanism

Transactions are objects that form blocks, they are the main term of blockchain. Thanks to transaction it is possible to conduct funds transfer from one address to another.

Transaction can be created using public or dependent node. To create a transaction the node needs to check whether there are enough funds in all UTXO that belong to the current address to send a transaction and pay commission fee. If there is enough, a new object of transaction is created (to make the calculations simpler all the previous TransactionOutput objects are deleted and instead 2 new objects are created: delivery of funds by the recipient and returning of the change to the sender. Right after they are created signature is generated using a private key of the node (address). Generated and signed transaction can be broadcasted across the network.



2.1.3 Creation of data storing model

An important question when creating blockchain is the effectiveness of data storage to have access to the history and ability to quickly verify the needed information. Lots of data (for example actual UTXO of addresses) will be copied to the hard drive and RAM as they need to be accessed quickly.

For other kinds of data, it is important to find a way to store them efficiently and for a cheap price so that it is possible to access the information that is needed.

To solve this problem clustering is used. It allows quick access to any information within the cluster no matter how compactly it is stored. To maximize efficiency the following model of clustering is offered: a cluster of address which contains all the information about the address transactions. For a faster search, this information can be separated into smaller clusters – by blocks.

Within a block cluster, compressed information about the participation of the address in the block will be stored. Besides this, there will be a general block cluster that will contain information in a compressed form about the block.

This item is needed for active change and addition during traffic testing, so the interface of data storage can be easily changed.

```
public static Path getFirstFileByRegexp(String  
directoryPath, String regexp){  
    try {  
        Iterator<Path> iterator =  
Files.newDirectoryStream(Path.of(directoryPath),  
regexp).iterator();  
        return iterator.hasNext()?iterator.next():null;  
    }catch (Exception e){  
        return null;  
    }  
}
```

2.1.4 Storage of transactions sequence

The sequence of transactions is stored in a block and is verified when the block is created. If there is an error in the sequence of transactions, the transaction gets automatically removed from the block and deleted as invalid. Authors of invalid transactions can be penalised if needed which can be as much as withdrawing their node from participation in the blockchain.

Block hash is created based on all transactions that are involved in the creation of the block.

Example of contents of the block:

818a3cfb570623059559497ea7c845ba165fa486440e3e05982b98b97bcb11c
4
a4c4e0a940ca996851c98836bdc14d09d2f92fd6f3ab96bc5eba3a12ef61055d,
478efba5cb699500b6f805c4c8b1dda3c579ee8d9d6b31e300ff1bec76e4979f,
7424e3fff925e2f58a6e2589b82d21267c0cc65c55c40bda5b0c2417001fc4c6,
where first item is a hash of the previous block, second item – transactions
that were added to the current block.

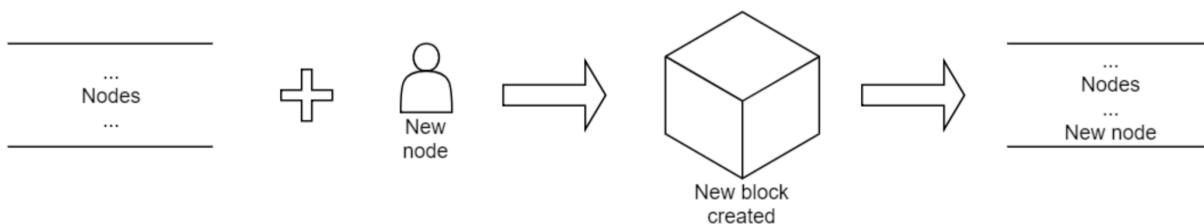
2.1.5 Creation of a system for block receiving and verification

Receiving (storing) of block happens right after the verification. To do this, a node that receives the block generates its signature for this block including the last block that it knows about, and, in this way, it verifies if it belongs to the current blockchain and if it is correct. It can be done thanks to the presence of signature generation for the block of previous block hash in the algorithm. As a result, only blocks with correct data will be added to the blockchain. After the block is received, transactions that were added to the block will be deleted from the pool of pending transactions.

2.1.6 Creation of a system for PoS tickets storage

In PoS system the complicity of block creation is significantly easier than in PoW and a mechanism is needed to prohibit the creation of the blocks right after the first transaction is received and monopolising block creation by improving bandwidth for a faster broadcast. To solve this problem, there will be strict time limits as to when the block is formed and the node that can create it and receive a reward will be chosen randomly.

To synchronise the participants and to eliminate the possibility of choosing different winners in every node there is a stable algorithm, that is based on the parameters that are calculated within the blockchain. New nodes will be able to participate in block generation only after one iteration after the broadcast is over to make sure all nodes have received a new participant to choose a winner.

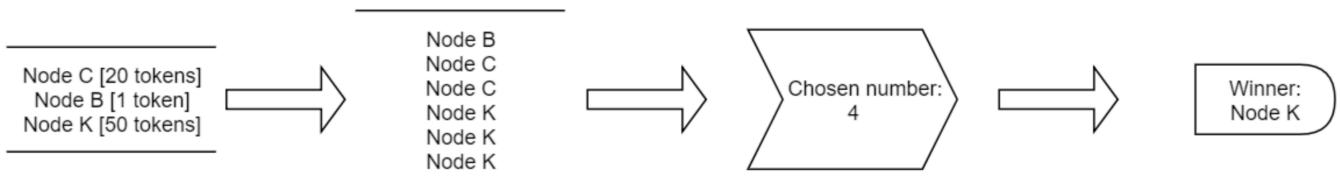


2.1.7 Creation of PoS raffle

The raffle happens every once in a chosen period of time if at least one transaction is pending in the pool. If there are no transactions in the pool, the current iteration is skipped, and the block is not formed.

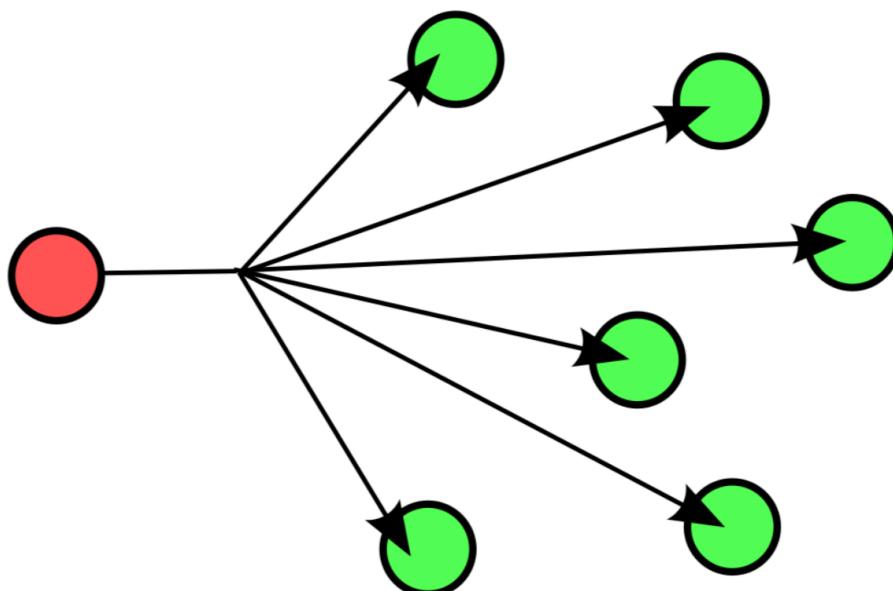
Only nodes that were registered before the raffle starts can take part in it. After this, the list of participants is generated by adding all existing nodes to a new list in amounts that depend on the weight coefficients of the node. Weight coefficients can be the number of coins, time of coins holding etc.

After the list is formed, it is sorted in ascending order. A winner is chosen randomly from the sorted list. The seed of the random number generated is the height of the current block and some other constant parameters.



2.1.8 Creation of event for choosing a winner for dependent nodes

Right after the raffle, the winner must generate a new block and broadcast it. After that, a new session starts. This is done by using a system of events that shares a block among all nodes and if the author of the block is a winner of the last raffle, the node accepts its block. If by the start of the next winner raffle the node has not received a new block, it tries to receive it from a different node. If no nodes have a new block, the block is created independently for each node. If there is no winner, the reward will not be sent to any of the nodes.



2.1.9 Registration of dependent nodes from public P (read-only)

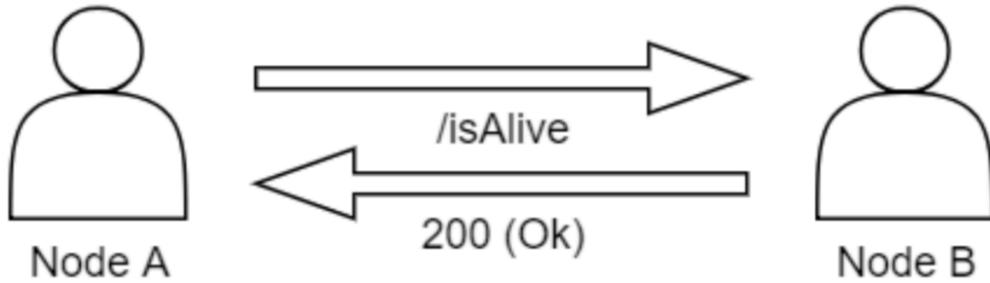
To have an opportunity to participate in raffles, receiving additional events and block generation (private functions), a node has to send a request for registration as a participant and a fully functioning node. To do this, a request is sent to any other node to start a full synchronisation and work and information about this is broadcasted to the rest of the network. After that, a new node waits for the end of the current raffle session and can participate starting from the next one raffle.

```
public class Event {  
    private long timestamp;  
    private int type;  
    private String message;  
    private String sender;  
    private Object additionalData;
```

2.1.10 Automatic validation of dependent nodes

To avoid situations of dead nodes when a registered node is turned off and never participates in the raffle/event receiving, once in n minute the main node conducts a “poll” on the activity (ping) of the dependent nodes. If the node does not respond correctly, it is removed from the list of dependent nodes.

After this, all the other nodes receive an event about the removal of a dead node.



2.2 API creation

2.2.1 Creation of API to receive general information from blockchain

Each node will have its own API to receive information about the blockchain state, blocks, transactions and account balance. Main methods are accessible on the public node:

- Receive block by height/hash
- Receive transaction by hash
- Receive account balance

All these features will be implemented through a request to a full (synchronised) node if the current node is in the mode of minimum configurations. In this case the node cannot create its own transactions, wallets (addresses), or take part in raffle. If the node is registered in the network and synchronised, all of these requests will send data received from the information that is stored on the current node.

```
{  
    "amount": 10,  
    "signature":  
        "304502200D934AB07B667ECD6176B504CBC0C2127A41F7D  
        CE662933B16FB658DE1B254E3022100DB127A45EB53C18E0  
        D0ADE76147CBCA453C5F671DDF91992B911B0B34FA6A757"  
,  
    "pending": false,  
    "from": "33D89780025196A35282A1823488546CC1FFB30E",  
    "to": "DE1E16E4A1405ED4E0AFBD2A73BFDA88097252A7",  
    "hash":  
        "a4c4e0a940ca996851c98836bdc14d09d2f92fd6f3ab96bc5eba3  
        a12ef61055d",  
    "timestamp": 1548775640383  
}
```

Example of fetching transaction request.

2.2.2 Creation of API for transaction sending

Sending of transaction can be conducted only on a fully synchronised node. This is because this operation requires a pool of pending transactions and connections with other nodes. The request must include the address of the recipient and of the sender, which the node has access to. The third parameter, which is the last one, is the amount that needs to be transferred. In case when there is no access to the sender's address, a response with message about error will be sent.

The system will behave the same when there are not enough funds on the balance of the sender's account. But if the request is successful, transaction is added to the pool of sent transactions, all UTXO of the user are updated and the hash of the newly created transaction is sent as a response.

When the next block is generated, this transaction will be included in it and distributed across the network.

REQUEST:

```
{  
  "from": "33D89780025196A35282A1823488546CC1FFB30E",  
  "to": "DE1E16E4A1405ED4E0AFBD2A73BFDA88097252A7",  
  "amount": 10  
}
```

RESPONSE:

```
{  
  "txHash":  
  "a4c4e0a940ca996851c98836bdc14d09d2f92fd6f3ab96bc5eba3  
  a12ef61055d"  
}
```

2.2.3 Creation of API for receiving of balance of an address

To receive balance of the address it is only needed to enter account address as a parameter. After that all UTXO connected to this address will be calculated including validation whether the corresponding transactions were added to the block. After that, the user receives information about the balance and how many of them are confirmed/unconfirmed.

NODE_ADDRESS/balance?address=DE1E16E4A1405ED4E0AFBD2A73BFDA88097252A7

Fetching balance request example

3. Market Analysis

3.1 Analysis of competitors

Our platform uses similar but fundamentally different means for achieving this goal. Here is a comparative description of our platform with several others.

Criteria	E2C	WePower	PowerLedger	RestartEnerg
Licensed energy provider	yes	no	no	yes
The ability to raise funds for an energy producer	yes	yes	no	yes
Blockchain-based smart-contract token	yes	yes	yes	yes
The possibility to use token to pay for electricity	yes	yes	yes	yes
A business ecosystem that provides jobs	yes	no	no	yes
P2P trading	yes	yes	yes	yes

Criteria	E2C	WePower	PowerLedger	RestartEnerg
The possibility to freeze purchased energy	yes	no	no	no
Energy statistics	yes	no	no	no
Solutions to the problem of total lack of energy	yes	no	no	no
Failure protection mechanism	yes	no	no	no
The ability to receive free tokens	yes	no	no	no
Price notification	yes	no	no	no
Constant contact with our users	yes	no	no	no
Convenient telegram-bot	yes	no	no	no

None of the competitors can solve the problem of a total lack of energy in any part of the world. But we are able to provide a solution with the help of our patented new generation solar panel technology.

Moreover, our goal is the world market. It will not be enough for us to settle in several countries. We are committed to our goal and will do everything possible to realize it.

More details about some of our advantages:

Proof-of-stake technology.

Due to a significant reduction in the amount of electricity consumed, fee for transfers will be significantly lower than in Bitcoin or Ethereum blockchain.

Energy statistics.

We will be able to provide anonymous statistics on all transactions for any time as well as forecasted supply / demand, which will allow you to independently analyze the market and make a decision on investing in our tokens.

The possibility to freeze purchased energy.

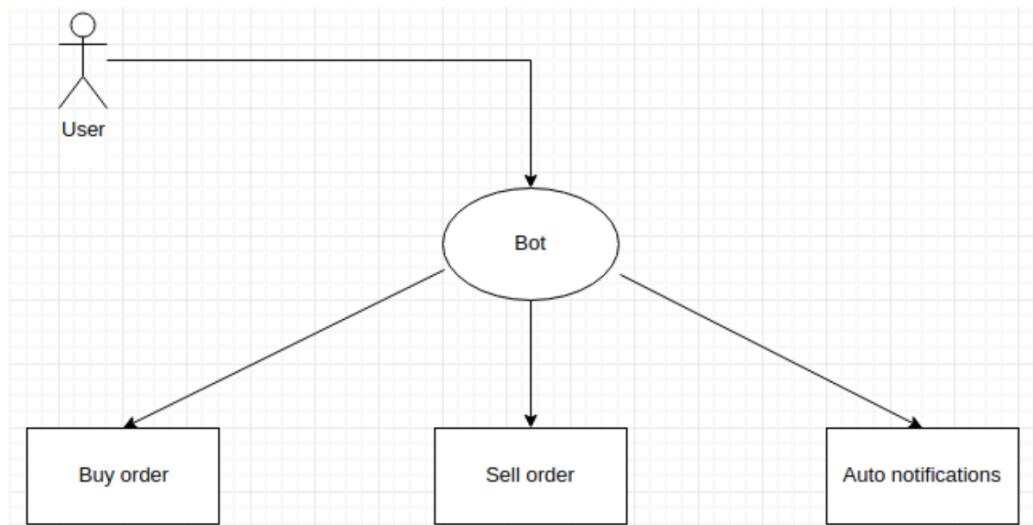
A unique opportunity that is available only in our service. When you want to buy a certain amount of energy now and use it later. We offer to keep your energy for a low fee in tokens until you need it.

Failure protection mechanism.

After the successful purchase of the order, we freeze seller's energy and buyer's tokens exactly until a full confirmation of the fact that the energy was received by the buyer, which guarantees 100% security of the transactions.

The ability to trade in automatic mode.

In just a few minutes you will be able to set up your personal bot which will search for orders on the given parameters and by the specified quantity. Built-in automatic trades relieves the service load by eliminating the need for third-party programs that carry a negative load on the platform.



The ability to receive free tokens.

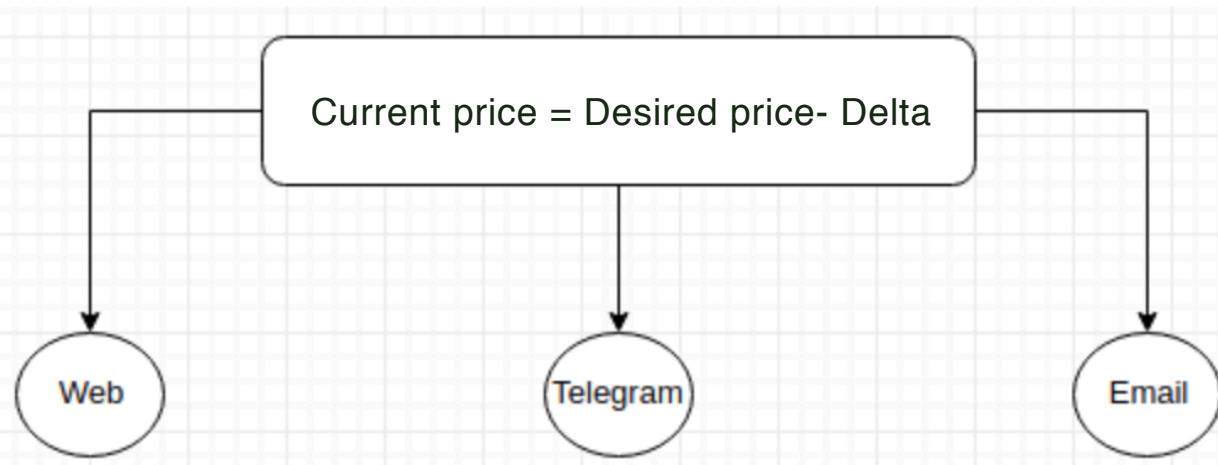
This feature of our system is related to Proof-of-stake technology. To confirm the block, the system selects the holder's token in a random order, giving preference to the one who has more of them and awards him with a certain number of tokens specified in the smart contract.

Telegram bot.

We will provide you with a telegram bot which will have the complete functionality to work with our platform. If you already use this popular messenger, then you don't need to install anything else. You can communicate on the network and trade or use other features at the same time.

Price notification.

To save time, we give the option to set up notifications if the price for energy has reached the level you specified. There will be notifications via email, web, and telegram.



3.2 Analysis of potential users

Our potential users are people who already consume or produce energy. For example, owners of private enterprises which consume electricity or owners of solar panels. These people usually don't have much choice when buying electricity and are forced to accept the terms and prices of power plants. They cannot disagree even with clearly excessive prices since they don't have an alternative choice.

With the help of our platform, these people will be able to sell and buy electricity on more favorable terms which will allow them to significantly increase profit from selling their own energy and save money when buying it.

This all will be possible due to E2C token which can be freely traded and exchanged for energy using our platform. Our token can overcome geographical and temporal barriers which positively affects the efficiency and profitability of its use.

Also, various ways to manage the token (convenient site, mobile, desktop application) will make it easier to simplify this process and save time. And blockchain peer-to-peer technology ensures the decentralization, security, and anonymity of using our token.

3.3 Calculation of the price of the token based on global statistics

On the basis of global energy statistics, we expect electricity to cost 0.08 \$ for 1kW.

The estimated initial number of users of our platform is 7 million people.

On average, one solar panel produces about 10 kW of energy per day.

The average volume from one seller per day is also equal to 10kW, with their number of 30% of all users, the daily turnover of tokens from the sale is:

$$DV = UA * PP * AT * TP$$

Where DV is the daily turnover,
UA is the average number of users of the system,
PP is the percentage of energy producers,
AT is the average tariff per kW of energy on the market,
TP is the price of the token

At the same time, it is expected that 20% of all tokens
will be on cold storage.

The planned initial cost of the token is equal to average price for 1 kW in the world -> 0.08 \$; to calculate the real value of the token, the impact of a lower daily income at the start of the platform, an increased number of tokens at the start, etc should be taken into account. Therefore to calculate the token price, we use the following formula:

$$TP = (EP - 5\%) * DD^* TH$$

Where TP is the expected price of the token at the start,
EP is the expected price of the token, 5% is the impact of the
dump when entering the market,
DD is the difference between starting price and expected price,
TH is the impact of the increased number of token holders.

**On the basis of all above-mentioned factors, we get a price
of 0.02 \$ per token.**

In view of the above, total emission is 971,550,999 E2C.
This is the optimal amount based on the project transition to the POS
algorithm because it provides a full covering of market needs and energetic
sphere.

3.4 Prospects of the industry

Modern society constantly depends on the energy and contribute impressive funds to this field annually. Amount of investments increases every year as well. Prospects of this industry are almost infinite since humanity will always aim at new and more efficient electricity solutions. The maximum growth is expected in the wind power field where annual investments will be \$140 billion in 2020 and %206 billion in 2030 as compared to \$82 billion in last year. On the second place, there is the solar energy sphere where a significant decrease in expenses will cause a 20-time increase of established power within 20 years – in comparison with 51 GW in 2010, there will be 1,137 GW in 2030.

According to the experts, such increase will need \$130 billion of investments per year.

In the bioenergy field, there will also be a burst of activity as far as second-generation technologies commerce. Annual investments in biofuel and getting energy from biomass and waste will increase from \$14 billion in 2010 to \$80 billion in 2020 and then will be stable during the next decade.

Of course, we can provide you with even more proofs but we are sure that potential of the industry is obvious. As far as the energy industry is developed, our platform is developed, too, which ensures huge prospects of growth for it.

That's why we think that the implementation of our own energy token will be in a huge demand since the project community has enough time to implement all system and take the market share.

3.5 Analysis of risks

The first and the main risk will occur if people don't need energy anymore, which is very hard to imagine. After many years of technical progress, nobody will abandon the current amenities. That's why this hypothetical risk can be ruled out.

Problems connected with blockchain. Even if we imagine that such a reliable, time- proven system will fail, our platform will save its functionality in any case. We will be able to buy outdated tokens for alternative currency and introduce another payment system in the platform without real efforts.

Absence of necessity to use our platform. This is possible only if the price for energy will be roughly the same in all countries. For that to happen, it is necessary to invent a cheap way of energy transferring at big distances, which is impossible at the moment.

Risks of centralization

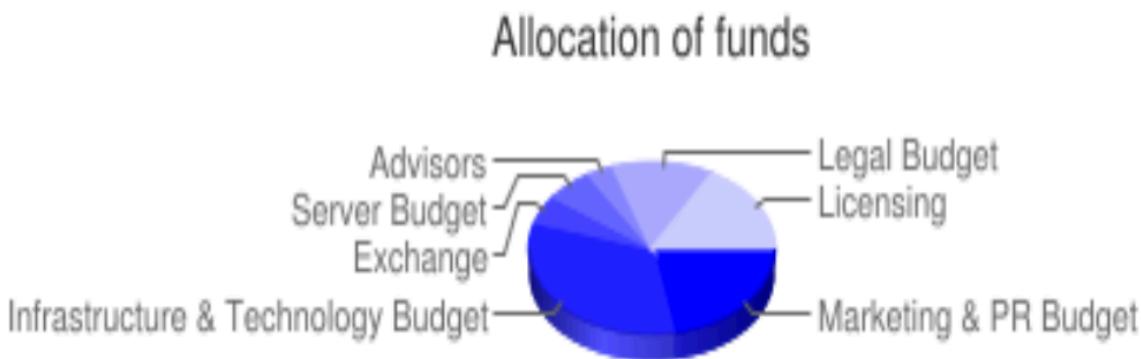
To avoid the situation where the project fully depends on the team, we project and develop all systems in such way that they can save maximum separateness. And API of the project will allow external developers to make applications and extensions regardless of the team.

Regulatory risks

Since the cryptocurrency field is not fully formed and in most countries, there are no rules for its regulation, we make many efforts so our modules meet rules of international law. That's why before using our platform in different regions, we begin cooperation with regional lawyers to study the regulatory structure of the specific region.

There were main risks which could call the existence of our platform into question. However, as you can see, some of them are just impossible now and some of them can be overcome by us.

4. Allocation of collected funds



We present an incomplete list of expenses that need to be covered for the platform performance.

Staff salary

First of all, people who personally create our platform, applications which will interact with it and configure the blockchain technology:

- Managers of modular projects
- Web developers
- Blockchain developers
- Mobile application developers
- Desktop application developers
- Database architecture designer
- System administrator
- System architect
- Systems analyst
- Designers
- Frontend developers
- Testers
- Web security professionals

Those, thanks to whom the whole world will know about us:

- SEO specialists
- PR manager

Our representatives at various thematic events:

- Merchandiser
- Bloggers on social networks
- Video bloggers
- Advertisers
- Promoters of Instagram, FaceBook, Twitter.

Those who determine our development path:

- Company managers
- Specialists in strategic promotion
- Content managers
- Analysts
- Energy specialists
- Traders
- Consultants
- Diplomats for negotiations with companies

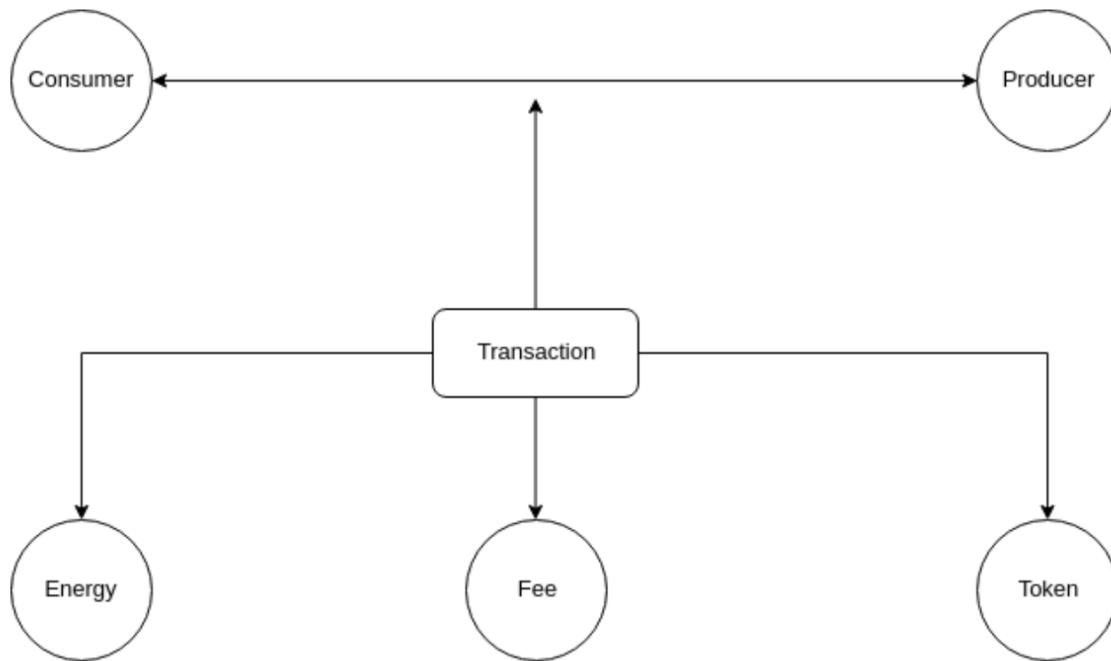
General Staff:

- Interpreters
- Rewriters, copywriters
- Support
- Secretaries
- Press manager

Other expenses:

- Domains
- Servers
- Hosting
- Web protection
- SSL connection
- Software
- Global analysis and statistics
- External API
- External backup services
- Office and staff
- Office equipment
- Google Adwords, Facebook Ads
- Google Play, App Store

5. Usage of the token

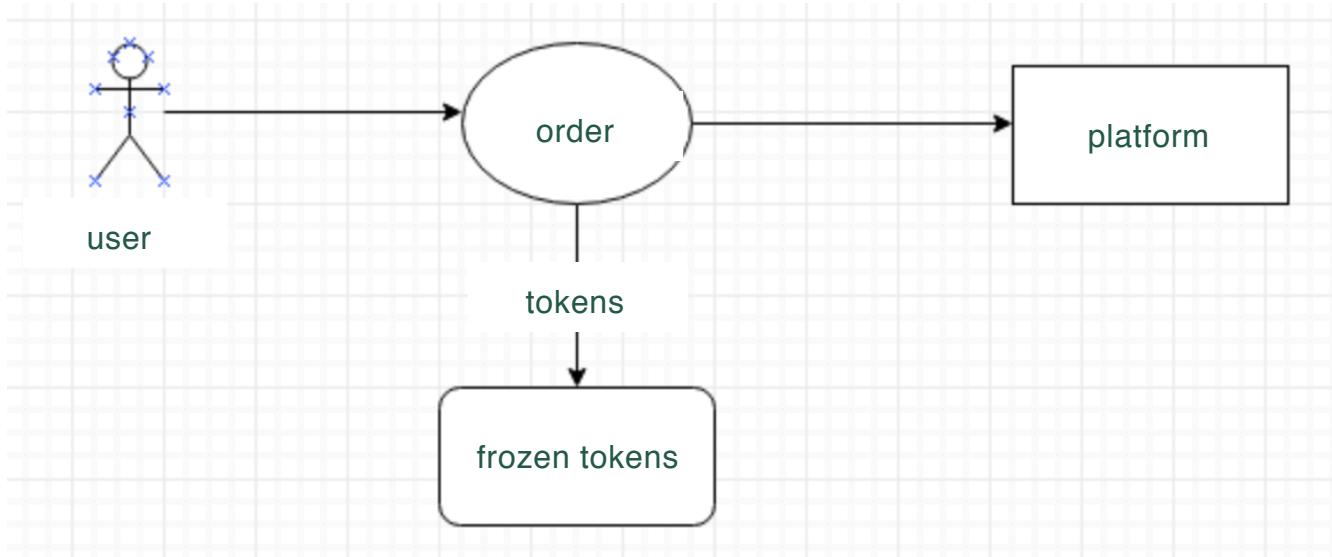


Our token was created with the help of Proof-of-stake based smart contract. This means that confirming a transaction block does not require huge electricity costs (as, for example, Ethereum or Bitcoin blockchain). Each token-holder will have a certain small number of tokens, which can't be spent. If it is necessary to confirm the block, the system will randomly select a token-holder for validation. The more tokens on the balance, the better the chances to get block rewards.

The direct purpose of the token is, of course, selling and buying energy from other platform participants around the world. On our platform, you can set the amount of energy (kW) you want to buy / sell and the price in tokens. In this case, a fee of 1% in tokens of the amount of deal will be charged for using the platform.

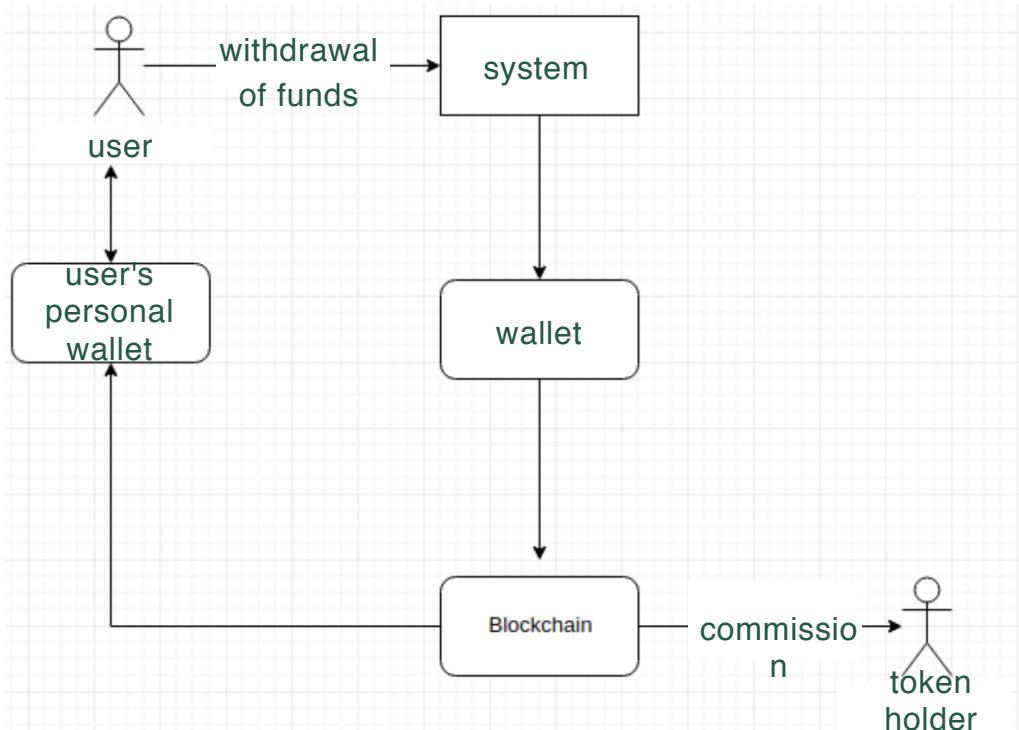
In addition, the token provides a number of other important functions for the operation of our platform, namely:

- When placing an order to buy / sell energy, a certain number of tokens will be frozen until it is executed. This ensures automatic fee charging by the system.



- To provide quality support, each ticket (except the first one) to the support will freeze a small number of tokens until the ticket is closed. This provides protection from abuse when contacting support service and ensures fast support for each user.
- In case of an abusive number of orders set per day, the system will take frozen tokens for the canceled order as a way to counteract the intentional platform load.
- With enough number of tokens, the buyer will be able to conclude a contract with the seller with a fixed price for tokens to 1 kW. After the contract is concluded, the specified number of tokens will be frozen for the period mentioned in the contract. The seller's energy will be frozen similarly. This is necessary if the buyer wants to receive a certain amount of electricity not immediately but after a while.

- Tokens of participants are stored on personal wallets to which they can access through the system only. To transfer funds to another wallet, the user must pay a fee, which will be charged from the balance of the user's tokens, to the blockchain. With a high load on the block, it will be possible to withdraw funds faster with a higher commission.



The token will be available for purchase / sale on various crypto exchanges for many other monetary units, such as Bitcoin, Ethereum, USD. Anyone can buy our token, exchanged it for another currency.

As our platform expands to the world market, we expect that government agencies will use our token to improve efficiency, which will make the token more widespread and will positively affect the competitiveness of energy prices.

6. Brief description of the panels

Unfortunately, even such progressive technology as the solar panel has its problems. However, our patented technology is aimed to solve them!

Large area of occupied space. To produce a large amount of energy, much space is needed. Our technology will allow making panel size smaller, not losing efficiency coefficient of work due to improved solar cell technology, which will be described below.

The efficiency of usual solar panels significantly decreases in cloudy weather. However, this problem can be partially solved with the help of polycrystalline solar panels. We use this approach to improve the efficiency of solar panels.

One more problem we solved is a gradual settling of dust on solar cells, which decreases the efficiency coefficient. The system of automatic cleaning, which we are going to patent, will allow us to avoid cyclical loss of solar efficiency and decrease the frequency of maintenance service of energy system elements.

Our technology is aimed to improve solar cells, thus ensuring the efficiency of our panel in both sunny and cloudy weather.

7. The example of the energy exchange system operation principle

The operation principle of our system is quite simple. Let's assume in country A, the owner of the solar panel has put up a certain amount of electricity for sale. In country B, the owner of an enterprise wanted to buy this amount of electricity for the cost in tokens. It would be irrational to directly transport energy from country A to B. The buyer from country B will actually receive energy that was previously sold by another platform user located in his region.



What will happen to the energy of user A? It will not leave a certain region (it depends on the installed power grids) and will wait for a buyer in the same region. Thus, users can buy / sell energy to each other, being in different parts of the world. And there is no need to transport energy through huge distances.

We store information about the current amount of energy on each region in the database.

```
7  @Entity
8  @Table(name = "energy_res")
9  @Data
10 public class EnergyRes {
11
12     private Region region;
13
14     private double maxAmount;
15
16     private double availableAmount;
17 }
```

Can the supply greatly exceed demand? This situation is possible only at the initial stages of the platform and will eventually be eliminated. Since the electricity of the producers is used by a certain consumer in this region now, the demand / supply will be saved when they both begin to use our platform. A similar situation will happen with a high demand regarding supply.

8. Our products

8.1 Wallet

Web wallet allows users to maintain their balance using user-friendly and fast interface. You will not need any additional software or hardware, just create or import an address and then access it using specified credentials.

If you want to erase your private key from web wallet due to specific reason, you always can simply delete an account and then nobody but you will have access to your address.

Wallet components

● Main Page:

- Statistic data (number of registered users, number of tokens in the system, number of transaction in/out of the wallets etc.)
- Promotional material on wallet usage
- List of links of last transactions

● Authorisation page:

- Authorisation form (address, password, “Remember me” checkbox, “Sign in” button)
- Registration link
- “Access recovery” link

- **Registration page:**
 - Registration form (email, password, confirm password, subscribe to news, “Register” button)
 - Authorisation page link
 - Password recovery link
- **Password recovery page:**
 - Password recovery form (Contact email, crypto address, text field “Prove your ownership”, “Send request” button)
 - Error message in the case of discrepancy between email address and crypto address
 - Text information about the format of access recovery
- **Reset password page:**
 - New password field (new password, confirmation, “Change” button)
- **Personal cabinet page:**
 - Current balance, personal address with ability to copy, last transactions from/to personal wallet.
 - The following modules need to be present on the page (modal window, frames, fragments) to have such functionality: funds sending, full history of transactions, settings

“Funds sending” module contains the following fields: text field for the address, number field for the amount. Information field displays the service fee and the average time for confirmation. “Send” button. After the successful transaction a notification about successful operation appears with a button that takes the user to the “full history” page.

“Full history” module contains a list of the wallet transactions (10 last transactions are displayed, when the scroll reaches the end – “Load 10 more” button). Each item of the list has a time stamp and the amount, colored according to the type of transaction (in or out). When a user chooses transaction, additional information appear that contains the recipient, sender, transaction hash, number of confirmations.

“Settings” module contains a log of last authorisations (device, IP address, time), list of active sessions(device, IP address, time of session start, session expiration time), email change form.

● **Support page:**

- Form for contacting the support service (email address field, issue description, field for screenshot, “Send” button)
- Text description of support service with email address for contacting

8.5 Blockchain explorer

Our block-explorer interface allows users to get information about any block or transaction in real time. It also can show different statistic data, i.e. amount of mined blocks, last block timestamp etc. Block-explorer also has an API, which allows using data in various self-created applications.

Blockchain explorer components

● Main page:

- Statistic data (last block, current height, average amount of transactions in a block etc.)
- Field for transaction search by hash
- Field for block search by hash/height
- Field for address search
- List of last blocks and transactions
- Promo information about token (optional)

● Transaction page:

- Transaction hash
- Link to the web version
- Sender
- Recipient

- Service fee size
 - Number of confirmations
 - Transaction size
- **Block page:**
- Block hash
 - Time stamp
 - Depth
 - List of hash-links included in the transaction block

● **Address page:**

- Address
- Current balance
- List of links of last transactions

8.3 Telegram bot

Telegram bot is a useful feature that requires minimal set up and allows getting notifications and managing your account even faster. By following the instruction in a web wallet, you can link account with telegram and choose preferred properties. After that, notifications will start being delivered to your telegram account and simple commands (like fetching history) will become available.

8.4 Wikipedia

We also have a wiki for developers to simplify the development process. It contains all needed information about exposed API and configuration process of the new node. By creating a wiki-style documentation we are trying to keep it as simple as possible but at the same time as informative as it could be.

9.Roadmap



Concept. Teambuilding.



Launch of the website.



Landing, WhitePaper,
preparation of a set of
documents.



Development of marketing
strategy
and marketing campaign.



Development and deploy of
E2C token
on the basis of Proof-of-
stake platform.



Private Sale



End of work on blockchain



Explorer block launch



Wallet launch



Mobile wallet launch



Telegram bot launch



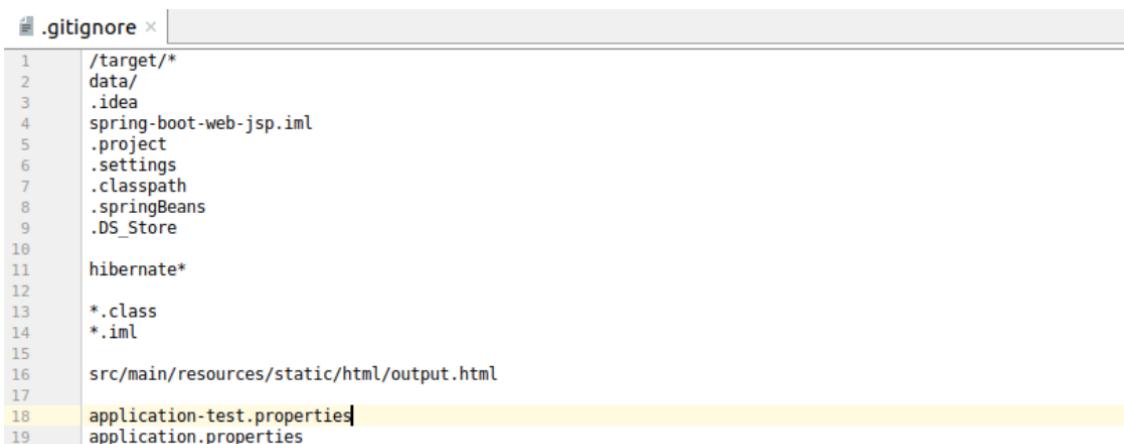
Creation of the video
presentation of the project

10. GitHub

The development of the project is closely connected with the development of its own smart contract, web version of the trading platform, mobile and desktop applications. All these decisions require the collective work of a group of programmers. To create a comfortable working environment, the version control system is used. It allows simultaneous joint development of application source code, automatically combining different versions of projects and saving all changes in the cloud.

One of the most popular implementations of version control systems is GitHub. It provides a convenient interface for a variety of functions, including external development, a broad community, commenting projects, rating, requests for new functionality, bug reporting, documentation and more. Thus, this tool is one of the most attractive to use.

GitHub has 2 types of repositories - open and closed. The first is available for any user on the Internet. Their code is allowed to read, use (under the terms of the corresponding license), modifications, etc. Closed repositories are not available from outside and are used if the project has data necessary to hide from users, or whose source code is prohibited for dissemination.



```
.gitignore x
1 /target/*
2 data/
3 .idea
4 spring-boot-web-jsp.iml
5 .project
6 .settings
7 .classpath
8 .springBeans
9 .DS_Store
10
11 hibernate*
12
13 *.class
14 *.iml
15
16 src/main/resources/static/html/output.html
17
18 application-test.properties
19 application.properties
```

During the creation of the project, the public GitHub repository will be used, as it will allow monitoring the development of the project to all comers, offering new functionality and much more. To hide unwanted data (such as passwords, unique identifiers, etc.), appropriate exceptions to the rules for saving and synchronizing projects in the cloud will be used. Such exceptions are described in a file called `.gitignore`. It consists of a list of strings - regular expressions which point to files ignored by the version control system. Thus, a compromise is achieved between the publicity of the project for tracking and the privacy of the project data sections. The example of the `.gitignore` file is shown below.

11. Team



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