we power

White Paper

WePower

Green Energy Network

Energy trading market powered by blockchain technology

Version
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Summary

WePower – a blockchain-based green energy trading platform

The world is lagging behind the renewable energy adoption. Current renewable energy share is 24%, however, due to a drop in investment level this year, it became complicated to reach 100% renewable target. Due to drop in subsidies and more and more renewable energy being developed to compete at a market price banks started increasing demand on a higher level of own capital and debt ratio. It moved from 20:80 to close to 50:50 ratio for newly developing renewable energy projects. Equity capital became a limited source of financing contributing to a plunge in investment due to smaller leverages.

2016 level of investment into renewable energy has reached a level of 242 Billion USD representing a 23% decrease over the previous year. Despite the lack of capital, renewable energy financing market is still closed. Only big institutional players have access to energy investments.

WePower solves the current problems of access to capital for the renewable energy developers and provides access to investments in profitable projects directly for the final consumers, any type of investors and energy market makers. This is done using the fast and transparent way through smart contracts on the blockchain. By employing technology WePower solves the following energy market insufficiencies: global access to capital for green energy projects and green energy investments and trading as well as speed and transparency.

Renewable energy developers can sell upfront part of the energy to be produced in the future. To make it fast, global and transparent, this energy is tokenized and each power purchase agreement becomes a smart contract. This ensures liquidity. On the other side, final consumers, investors, and energy market makers can buy energy with a discount and reduce the cost of the consumed energy or make a profit from price differences between the price paid and the market price at a certain point in time when the energy is produced. WePower is connected to the energy infrastructure and energy exchange markets in order to record data on the blockchain, enable energy trading and selling energy directly to the market, if there is not enough demand on the platform.

Once the volumes of renewable energy with the help of WePower increases, the platform will become the next generation utility, using blockchain, smart contract solutions and bringing full transparency to the energy market. It will be based on the core principles of decarbonization, democratization, and decentralization.

The benefit of using WePower :

- The increase of the produced renewable energy volumes and bigger return on equity ratio (ROE by 25%). Producers can reinvest more funds in the renewable energy production.

- For investors, the internal rate of return (IRR) increases up to 17-20%. And it's a secure, energy backed and liquid investment. If anyone decides to use the energy for its own needs, then IRR should be considered as a discount for the consumed energy.

- Based on WePower business model, we will decrease the pollution by CO2 emitted to the atmosphere that has a negative impact of at least 35 EUR per ton, as estimated by OECD, or 1,13 trillion USD annually.

- WePower solution allows to record exactly how much and what type of energy was produced and what amount of CO2 emission cut. It guarantees that you buy exactly green energy and brings transparency in the market, which is currently missing.

WePower platform is ready. You can try the demo version on our web page. Within 9 months after ICO, WePower will be operational and start its activities in Spain. The launch in Spain is due to an already concluded partnership with first WePower client, who is building in Spain 1000 MW solar energy capacity plants. With the first client, WePower has a pipeline of renewable energy projects for the first 2 years.

The team is led by energy expert Nick Martyniuk, highly experienced energy infrastructure specialists Kaspar Kaarlep and Heikki Kolk, who are leading team of 12 highly experienced energy engineers and ex-Skype programmers, as well as blockchain advisor Jon Matonis. WePower also has investment, crowdfunding, payment and securities specialists.

The project is supported by the Ministry of Energy of the Republic of Lithuania due to its social impact on climate change control. WePower will give part of its technologies to the countries willing to implement green energy and CO2 accounting using blockchain technologies.

WePower innovative token model was clarified with the European regulator. It is structured as a reward based crowdfunding, where contributors can get free energy as a reward and they can either use it or sell it on the platform. The tokens are backed by real assets - energy - and ensures liquidity. The real value grows together with the platform's expansion.

1.Introduction

WePower was established with the view that we need to change how energy is done. For WePower team being in the market for many years, it became obvious that we are lagging behind renewable energy adoption. This is not because we do not want to live a cleaner life and allow the community to benefit today and improve the world for future generations. It is so because current bottlenecks in the market prohibit us from developing renewable energy sources faster. There are too many intermediary players between the producers and consumers of energy. In the end, all these costs go directly to the consumer side and the final customers pay for all of it.

If the customer pays for how the energy is produced, why not participate in the market directly and support the green transition?

Current problems with the energy markets:

Investor's side:	**Producer's side:**
• Lack of access to investments on local and global level • Complicated and expensive investment process • Limited transparency of investments	• Lack of capital needed to develop projects • Long and expensive capital acquisition from banks and funds process perspective • Constant lack of own funds

1.1. Current energy global energy market structure

Despite the fact that, according to Bloomberg New Energy Finance (BENF)[1], 2016 level of investment into renewable energy has reached a level of 242 Billion USD representing a 23% decrease over the previous year as seen in the chart on the right. Early 2017 trends show that investment in renewable energy has fallen 20,9% in Q1 compared to 2016 from 64,25 billion to 50,84 billion. The market is dominated by banks, PE funds, hedge funds that are keeping out everyone else from the energy investment market and not serving the needs of renewable energy community with proper access to capital nor the needs of end users of the energy.

WePower aims at cutting through the current problems of access to capital for the developers and access to investments in great profitable projects directly for the final consumers. This is done using the fastest and transparent way through smart contracts on the blockchain. By employing technology WePower solves the following energy market insufficiencies:

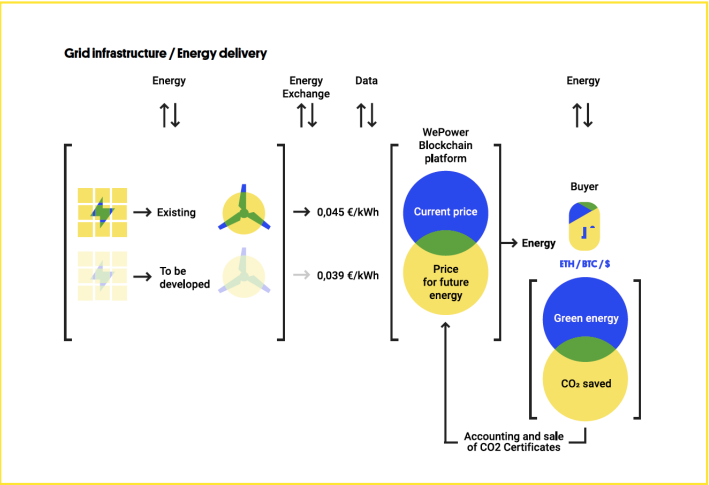
- **Global access to capital for green energy projects**
- **Global access to green energy investments and trading**
- **Speed and transparency**

1.2. WePower platform

WePower is a blockchain-based green energy trading network. It deploys smart contracts and enables its participants to invest and finance green energy projects as well as acquire green energy in an efficient, secure and transparent way. Moreover, it provides the first access to live trade in renewable energy globally for everyone. With a possibility to be integrated with IOT for purchase or exchange of energy as a base layer of the digital energy world, WePower will lead decentralized energy transformation.

WePower connects renewable energy producers with the energy consumers, energy market makers and investors (peers, companies, institutional investors). Legally it acts as an IES (independent energy supplier), allowing WePower platform to be connected to the energy grid and the local energy exchange market and consumers. WePower receives data about the produced and consumed energy from the energy grid and energy exchange markets. This data about the energy to be produced in the future is tokenized once the renewable energy plant is connected to WePower. Energy is tokenized based on kWh unit. One internal energy token represents 1 kWh to be produced a certain time in the future.

[1] Please see REN21 Report 2017 here: http://www.ren21.net/wp-content/uploads/2017/06/170607_GSR_2017_Full_Report.pdf (p110).



When the producer of renewable energy wants to finance the set-up cost of the new project, it sells part of the energy to be produced in the forms on the WePower platform. The buyer/investor acquires this energy in a form of internal energy tokens using WePower smart contract. This smart contract represents a standard power purchase agreement.

In addition to solving current issues in the development and financing of green energy projects, WePower also has the potential to become a next-generation utility company based on the core principles of decarbonization, democratization and decentralization. By combining the core technological stack elements which include blockchain, smart contracts, data analytics and machine learning, WePower is set to become a 21st century alternative to the 19th-century businesses of traditional utilities which currently dominate the centralized energy market. This means that green energy projects without subsidies can finally take-off at a pace required to have a significant positive impact to the Earth's dangerous experiment with climate change through data-based decentralized generation utility approach.

From day one operating as IES (independent energy supplier), thus operating under established regulation and relationships between (DSO/TSO) and fair use of infrastructure. At the same time, WePower is connected as the market participant able to sell and buy energy from the wholesale market.

We see WePower development in 3 distinct stages:

Phase I - Market entrance - challenging the way energy investment is done today by creating necessary technological layer for the change to happen

Phase II - Growth of services and usability - aggregating and managing energy flows via smart contracts

Phase III - New decentralized energy utility

Let's start at the beginning a journey to reach our green future!

2. WePower - Breeze

2.1. Challenge: limited and expensive capital for green energy project developers

Energy mix today is dominated by dirty energy - 78,4%[2] of total energy supply, although the transition started many years ago once the theories regarding global climate change have appeared[3]. This process has accelerated in the last decade with the oil prices reaching record highs in 2008 and a push towards the search of alternatives. Many developed countries with the support of government during Kyoto protocol time have established renewable energy support programs with variable success to achieve protocol defined goals.

Current energy market has been developing for more than 100 years now and changing it to run on clean energy is not an easy task requiring high amounts of capital. With the investment done so far, we were able to reach renewable energy level of 21,6%. Moreover for us to be able to move towards decentralized future we need to make it very attractive for market participants. Most P2P energy platforms globally struggle to scale and develop as you need transaction volumes first to enable P2P energy trading.

Capital availability today is the most important issue for any project developer. This game, on different levels, is dominated by banks, funds, etc., where everyone is trying to squeeze their margins in the middle. It leads to the situation where the cost of capital on the bank side reaches half of the project return and cost of equity becomes in double digits. It slows developers by minimising their returns and ability to reinvest income in new renewable projects. Debt providers (banks) would close the doors if you came without having the necessary own equity capital. Naturally, current investment consideration becomes a very hard and lengthy process taking from 3 to 6 month to close the deal without calculating the time developer is searching for investors.

With the increasing level of required own capital for renewable energy development projects highlighted in recent BENF[4] a of market price, renewable energy production capital availability becomes even a more

[2] Please see http://www.ren21.net/wp-content/uploads/2017/06/170607_GSR_2017_Full_Report.pdf (p.30).

[3] This whitepaper will not address the problems of climate change. However, we will provide links to materials that show why taking care of the planet and switching to clean energy is more important than ever before. Moreover, we will explain what is the cost of dirty energy on our life to be paid by us or our children.

[4] Please see: https://about.bnef.com/blog/lower-debt-ratios-likely-unsubsidized-green-energy/.

important issue as banks started a trend to increase the demand on higher own capital/debt ratio moving from 20:80 to close to 50:50 for newly developing projects. Making Equity a very expensive source of finance due to limited availability and increased requirement of such. 77%[5] of the financing in the previous years was done through Project financing. Changing debt structure will have a significant impact on the available debt and thus total investment in the market.

Moreover, the second problem linked to the changing financing structure of energy production at the market price is the participation of any person in the market. As an example, a number of peers participating in the energy market investments are negligible. Mostly high net worth individuals (HNWI) invest in the infrastructure projects such as renewable energy production through Private Equity funds. The general public has too high barriers to enter the game and invest:

1. Minimum investment amount - at least 125,000 EUR
2. Long capital lock-up times - 10 years for a typical fund
3. Reputation of fund manager and trust in their team

WePower first objective is to address capital availability problem together with the current complexity of administrative issues. By reaching this goal, WePower would increase the renewable energy production growth with the growth of green energy users. Such growth would allow WePower to move towards P2P energy trading and final consumer participation in the market, which is necessary in order to cope with the global warming.

2.1.1. Current working model – attracting capital

The investment process is lengthy and inefficient. In order to get the financing, the renewable energy producer has to go through the following:

1. Analysing the site of energy production comparing to other sites
2. Analysing the regulation to bring the project online and the risks of completion
3. Analysing and selecting equipment to suit the business case
4. Analysing and selecting construction company with experience and acceptable business conditions
5. Analysing other risks that may come from development of the project

[5] Please see: http://www.ren21.net/wp-content/uploads/2017/06/170607_GSR_2017_Full_Report.pdf (p.112).

The above list might vary depending on the specifics of each project development but it is a necessary process and can't be rushed. Next step for a developer is to search for the financing of the project. Capital raise currently is a gamble. Every investor and/or bank double checks the selections done by the project developer to:

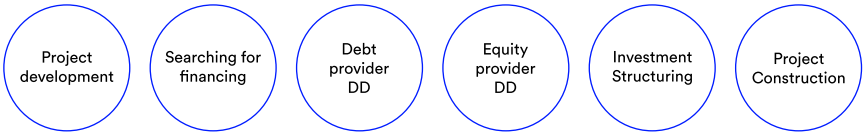
1. Check if the risks are acceptable for the investor taking into account its return
2. Compare the investment and its return with other investment opportunities with similar return and risk ratio

Further, these projects go through technical, legal and financial due diligence. This is not a standardized process and varies from investor to investor and bank to bank.

Current project cost depending on the size of financing involves:

1. Tech Due Diligence - By the third party to assess technical risks
2. Lawyer structuring fees
3. Bank lawyer structuring fees and associated cost -1,5 to 2,5% of debt size
4. Equity - Fund Structuring costs 1,5% - 4% depending on the ticket size
5. Time

Investment flow chart with intermediaries:



WePower by connecting renewable energy producers with the global financial markets and every user of the internet simplifies the capital raise process to unlock the value that is currently wasted.

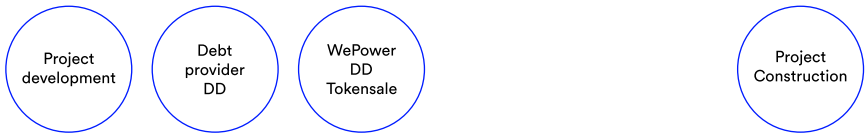
2.1.2. Investment process simplified

Each new project aims to start up as fast as possible. However, the road to get everything in order is not easy. Capital availability is the number one issue delaying most of the projects. And the reasons in a large part is administrative, negotiating the acceptable risks of the project, cost of risks and their coverage, lack of own equity capital and so on.

WePower provides a marketplace to sell green energy upfront in the form of smart contracts for each token kWh to be delivered at a specific time. This simple model allows projects to raise capital faster with the obligation to deliver green energy at the prearranged price. Moreover, the onboarding process is simple and standard.

On the one hand, WePower will take care of administrative burden for both parties, will ensure standard investment terms and ensure that risks for the energy buyers are covered[6]. On the other hand, WePower will save time and expenses for the producers looking to raise funds.

WePower investment process flow chart:



The investment process is simpler with WePower, you go to project development fast by raising money from the community in a standardized way and skipping long negotiations and deal structuring by accepting terms of smart contracts.

WePower has already created a functional, basic energy trading network, which connects energy producers and buyers, market makers and/or investors. With the existing product, WePower helps renewable energy project developers to attract capital in an efficient way, which in turn significantly increases project's return on equity (ROE) ratio. At the same time, the platform provides access for any individual to invest in the energy market, without going through a painful administrative process, due diligence or high entry costs and barriers. Moreover, WePower cuts the energy cost for the end users and generates stable, high and asset-backed returns.

2.1.3. Standardization of kWh token issue

From the administrative burdens listed above, with WePower the producer has only two open questions:

1. Accept standard rules of the smart contract (i.e., power purchase agreement)

2. Negotiate discount from the market price for the energy to be produced in the future or simply the price of green energy at which the community is willing to buy energy to make profit acceptable to both parties

[6] WePower is bringing standardised smart contract for energy trading as a digital PPA with bearer rights for energy delivery with investment, risk and rights clauses covered by the contract.

However, WePower provides not only a simplified process, but it also increases project's ROE up to 20%, which makes it even more attractive to use WePower model. A simplified example of the business case of attracting capital through internal energy token sale on the WePower platform. In other words, you meet capital requirements by selling energy to be produced in the future in a form of energy tokens with a discount compared to the current market price.

With Token sale:	**Without Token sale:**
a. Equality need 29% b. Tokens Sold 11% of project c. Debt 60% d. ROE 20%	a. Equality need 40% b. Tokens Sold 0% c. Debt 60% d. ROE 16%

As you get the capital before you start the construction, you fix the price of electricity to be delivered (in essence you are hedging sales of energy that would happen in the future depending on the amount of tokens or energy sold). This decreases the need of own capital needed for the construction. Once the delivery of energy according to the concluded initial smart contracts is done, the producer is selling the rest of produced energy at a market price. In such way, a producer gets the full benefits of plant energy sales sharing the benefits of lower energy price with consumers and taking advantage of higher future income flow on less capital initially invested.

This example shows in general terms why it makes sense issuing tokens from the renewable energy producer's perspective. WePower model has already attracted the first clients, which would connect approx. 1,500 MW capacity solar plants in Spain to the platform in order to finance their construction.

2.1.4. Speed of investment

With simple standardized terms of smart contracts running on the blockchain, without required trust in the middlemen and with global access to the investments, WePower solution provides everyone with a fast, secure and cheap access to the green energy future.

This realization came with the growth of blockchain use and the disruption of financing has started with the further development of transaction scalability[7]. With the clear and standardized rules projects are able to get off the ground in a matter of hours, some even less with a few

[7] Please see: https://plasma.io/; https://raiden.network/.

clicks. The process is getting more and more streamlined with the development of all of the necessary tools to make the process as smooth as possible. Cutting the time from consideration and negotiations to investment from 3 months on average (this is taking in account all the negotiations with funds and banks when the project is already ready for investment) to a couple of clicks after reviewing terms and understanding return form the discount on green energy provided by the project developer.

2.2. Challenge: lack of access to either local and or international green energy projects for investors.

2.2.1. Local & global investments

Not every country is the same, some are blessed with sunshine, others with wind and others with powerful rivers or other hydro resources. However, investments should be done where they would bring most impact producing energy at the market price and without subsidies which pose the risk of Governments changing positions on subsidies or sometimes implementing even extreme changes in the view of green energy such as a case of President Trump on energy and climate change.

WePower intends to provide global access to development projects that produce energy at the market price and would allow more and more persons to take advantage of this. Why invest in solar energy where there is not much sunshine, invest where their sun is shining all year round and buy your locally available green energy from the proceeds of your investment. Let's look at it now.

Many governments have previously supported renewable energy development to some extent, however, some countries can have much more renewable energy potential without any subsidies. Let's compare UK and Spain using IRR[8]:

9

$$\left(\frac{\text{Cash Flows Year 1}}{(1+\text{IRR})^1} + \frac{\text{Cash Flows Year 2}}{(1+\text{IRR})^2} + \frac{\text{Cash Flows Year 3}}{(1+\text{IRR})^3} + \frac{\text{Cash Flows Year 4}}{(1+\text{IRR})^4}\right) - \text{Initial Investment} = 0$$

[8] You can think of the internal rate of return as the interest percentage that company has to achieve in order to break even on its investment in new capital.

[9] IRR calculation using a reverse formula to find IRR.

UK return on solar project example:		Spain return on solar example:	
Investment	800.000	Investment	800.000
EUR/MW		EUR/MW	
Solar hours (full production)	941 h	Solar hours (full production)	1800 h
Energy price	0,05 EUR	Energy price	0,047 EUR
IRR	3,5%	IRR	8%

Government support through subsidies would give a bigger return on such project in the UK. However, after support period has passed[10] project earnings drop significantly creating a distortion of the market that hinders the development of the potentially better renewable energy options of which country is abundant and wastes the money we people have paid in the form of taxes from which such subsidy is financed.

We start with the countries that have great renewable resources that can be developed at the market price and be in operation for many decades and not only when the subsidies are around. For example: Spain, Italy, Greece, France starting with the countries that have high solar irradiation wind or hydro resources and are capable producing renewable energy at the market price.

2.2.2. Gains from investment process simplification

We want to make the process of attracting capital faster. The evaluation process for the investment becomes much simpler when you are making a consideration of investing in something you are used to everyday without complicated financial terms. Your consideration of investing is limited to only 2 things:

1. **Amount of energy or investment size**
2. **Energy price or discount applicable to the current market price for energy**

[10] Please see here: https://www.canadiansolar.com/fileadmin/user_upload/downloads/datasheets/en/new/Flyer_KuDymond_CS3U-MS-FG_EN.pdf - at least 30-year useful life.

WePower role of attracting capital from any person wishing to invest in the energy market becomes extremely important due to the following reasons:

1. Scarcity of funds present on the market to develop renewable projects
2. Changes in project debt structure requiring higher equity portions
3. End of subsidies for renewable energy

Based on the WePower model, users of the platform would invest in green energy which is a tradable resource within WePower platform and on any national market of the country of the project origin. Energy can be traded between countries where energy import and export is technically possible. This makes math for understanding investment returns very simple.

As mentioned above, the renewable energy producer, in order to get the necessary equity capital for the project development, sells part of its energy to be produced in the future. This energy is always sold below the average market price. Discount for this energy price will depend on the market demand/ supply in WePower platform. However, the following shows a simple investment return example:

1. Cost of energy token (kWh) versus market price in a specific country:

For example: 0,039 Eur/kWh - token price (T)
0,047 Eur/kWh - market price (M)

2. Difference between prices and return:

When we add time consideration we can see the following maths:

Return on investment		**Cost of token 1MWH**	**Cost of token at the time of sale 1MVH**			
IRR year 1	20,5%	-39	47			
IRR year 2	9,8%	-39	0	47		
IRR year 3	6,4%	-39	0	0	47	
IRR year 4	4,8%	-39	0	0	0	47

with the proportional portfolio holding of energy for all 4 years the IRR would be on average 10,4%. This is a fixed proportions example. However, different portfolio proportions are also possible in order to satisfy the business case of the plant selling tokenized energy. This would change the example accordingly - different proportions of tokens sold in different years change the return on the initial investment. Just as an example, current return on Government bonds in many countries in the developed world would get you return close to 0% or in some cases negative return such as in bonds of Germany[11] or Switzerland[12].

Further, complicated project risk considerations are left on the side of the developer. These risks are included in the price of energy production, simplifying buyer's/investor's decision to buy the final product which price is determined by the market with a huge discount. Project due diligence is done by WePower experienced team.

The user of the platform that has acquired token for the energy to be produced in the future can:

1. Sell it to another user until the moment the energy is produced
2. Automatically sell it in the national energy market where the energy is produced and receive proceeds
3. Use it for its own needs if WePower is working as an independent energy supplier in its market. When the user decides to use the energy, he does not need to pay for the acquired energy and saves the difference between the price he paid and the market price when the energy was produced

Moreover, energy has tangible value and its demand is increasing year on year with higher connectivity of electrical devices, electric cars even with an increased energy efficiency of new devices.

2.2.3. Efficient use of capital

We understand that capital needs to be invested efficiently thus in the projects that are able to produce renewable energy cheaply, users will be able to:

1. compare the projects through the cost of tokens
2. compare markets through energy tokens and returns of investments

[11] Please see here: https://www.bloomberg.com/markets/rates-bonds/government-bonds/germany.
[12] Please see here: https://www.bloomberg.com/quote/GSWISS10:IND.

Therefore, the investment in energy to be used as efficiently as possible for the highest return for the backers of such projects while still making a profit for themselves.

2.2.4. Clear and transparent investment structure

Transparency is one of the main features of public blockchain that eliminates the need for trust. All contracts due to their transparent nature and presence on a public blockchain (in our case Ethereum blockchain) make the investment structure clear. All the conditions of the power purchase agreement, which will work as a smart contract, can be easily verifiable. As no complicated risk considerations are included in unsubsidized the token as described in the first chapter, the only thing left – energy price.

2.2.5. Energy market status and liquidity beyond the platform

Markets are becoming more and more unified and are applying the same rules to its participants. Legal overview on the current legal system of energy markets will be provided in the additional reading materials that we will publish in Medium. What is important that with the current level of independent energy production and market competition over 80% of electricity transactions are done over the counter (OTC) making markets mature and highly liquid.

OTC market participation:

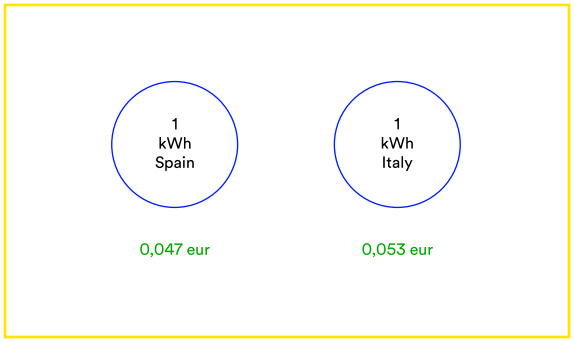
Country:	OTC Market participation:
SPAIN	80%
ITALY	80%
UK	85%

WePower being integrated with local energy market exchanges as a participant is able to sell energy also at a time when there is a small liquidity on the platform. At the same time, WePower gives access to the public to be directly connected to the markets globally through WePower and always have liquidity at the market price.

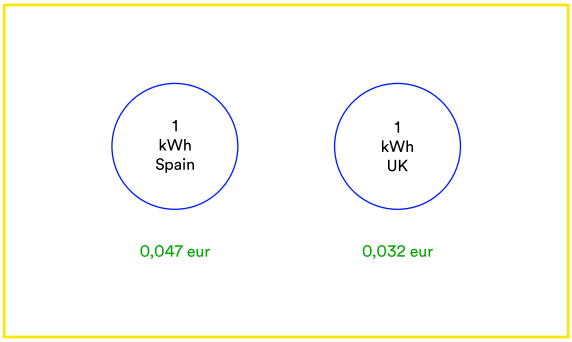
2.2.6. Shift

WePower proposes to get the return from energy where investment is profitable, sustainable and efficient and use earnings in the local market to procure green energy. WePower, Acting as an independent energy supplier would take care of supplying platform customers with the cross-border transfer of energy when economically viable, or local green energy by swapping energy tokens according to the preference of source and availability.

Instant Swap Example: Spain - Italy



Instant Swap Example: Spain - UK



Customer/investor would always have a choice whether to get proceeds from sale of energy in the market he invested or opt for supply of green energy and swap financial benefit swapping the token in country where it is more efficient to produce from a specific source to the supply of green energy in his home country as seen above in a form of domestic country token.

2.2.7. Secondary trade

While bringing standardization to how energy is done and tokenizing energy with the help of blockchain and smart contracts, WePower is here to enable trade and liquidity in green energy. Current market due to shift from subsidized to unsubsidized energy production has pushed project developers to PPA (Power Purchase Agreement) providers that squeeze the discount on energy from the producer so he would be able to show some fixed income and stability to the bank instead of accepting the full market price and volatility.

Current PPA market varies from country to country, however with the increasing scale of market price the gap is wide. As an example, current offers of PPA on the market are in a range of 39 EUR per MWh for solar energy and 37 EUR/MWh for wind with the average market price of en-

ergy of 47 EUR for the past 10 years[13]. It creates opportunities to realize good profits for the PPA providers. With WePower we will provide this opportunity for anyone without any additional barriers to trade.

2.3. Challenge: incentives, trust, and transparency

WePower transforms the way green energy is accounted for. The platform does so by providing a technologically more efficient, transparent and robust solution, making use of the public blockchain ledger and smart contracts. The current green energy certificate market lacks integration, trust, transparency as well as efficiency. Furthermore, it does not incentivize further green energy generation capacity investments.

2.3.1. The current green energy certificate market

Currently, green energy certificates operate as guarantees of the origin of electricity production and are accounted for by different entities assigned to do so in each country. In the European Union, the Transmission System Operators (TSOs) are typically responsible for this task. In principle, green energy certificates are derivate energy products and can be purchased separately and/or together with physically consumed energy.

Green certificates are usually obtained on monthly basis[14], if the following conditions are met:

1. The energy producer actually operates in renewable energy market
2. Any subsidies must be declared on the certificate (otherwise the certificate might not be tradable as it is seen that support is granted by means of subsidies)
3. Issue of certificate is based on the principle 1 MWh – 1 certificate

[13] Please see here: http://www.omie.es/inicio/mercados-y-productos/conoces-nuestro-mercado-de-electricidad.

[14] The period for issuance of the permit varies from 2 weeks to 2 months.

There are a number of issues with the current way green energy certificates are managed:

1. **Does not support further green energy production:** current producers and traders of green energy certificates have no formal obligation to invest the proceeds of sales of the green energy certificates into further green energy generation capacity. Furthermore, as there is no information about the geographical location of the green energy. These two aspects combined means that there is no mechanism to use the green energy certificates to further speed up the transition towards renewable energy as well as that there is no effective mechanism to support local green energy production.

2. **Transparency if green energy is subsidized or not:** In the European Union, it is up for the national policymakers to decide if subsidized green energy production can receive green energy certifications or whether they can be applied only for non-subsidized energy. As a result, in some countries subsidized green energy production receives green certificates but not in others. This lack of transparency distorts the market and may miss-align incentives for further investment in green energy generation. An EU wider and even wider solution to harmonize disclosure and transparency is required. And while national solutions can be reliable, integration of the current national disclosure systems would be very costly.

3. **Lack of transparency and disclosure for consumers:** Although disclosure might appear to consumers as an abstract and complicated topic, it is important that they can trust the system information on how the system works has to be made accessible for consumers demanding this information. Consumers are becoming increasingly more aware that by buying electricity based on renewables, it cannot be guaranteed that customers physically consume electricity produced by renewable sources (as mentioned above - green energy certificates are derivative products). It only ensures that the same amount of electricity (which is consumed) has been generated by renewables somewhere in the electricity market.

4. **Lack of details in accounting green energy:** The data about guarantees of origin is managed by different local institutions in each country on a private ledger[15]. Green energy certificate production may or may not match the green energy certificate

[15] This ledger can be as simple as a Microsoft Excel file, which is prone to tampering, errors and exhibits a low-level of security.

consumption in each country. In such a case, the inter-country balancing is done via cooperation of the local institutions and regional energy exchanges by adequately adjusting the ledgers for such data for each country. However, there is no single standard and source of information, therefore it is difficult for the customers to know and trust the exact source of the green electricity they consumed.

5. **Fragmented implementation of green energy certificates:** the implementation of the guarantee of origin system has primarily had a national focus in most countries. Customers would benefit insofar as the costs of the traded guarantee of origin would be made transparent and guarantee of origin trading could be more cost-efficient. Both energy consumers and regulators have expressed a need to introduce platforms capable of making inter-market trading of guarantees of origin more transparent, secure and non-discriminatory through harmonization[16].

6. **Barriers to entry for smaller residential users:** currently, one guarantee of origin equals 1 MWh which is more than the typical monthly consumption of a residential user. Furthermore, certificates are usually purchased for a period of 12 months (equaling their maximum longevity). This means that residential users are forced to predict their consumption and round it up to the next MW, meaning they risk overpaying for energy if they seek a 100% green energy consumption.

2.3.2. WePower transforms green certificate trading to facilitate renewable energy production

Clear, transparent and trustworthy electricity production disclosure, i.e. green energy certificates are essential if a voluntary, consumer-driven market for renewables is to be created. Furthermore, green energy certificates are a fundamental tool for supporting consumer awareness and choice in a power market. The energy market requires further integration of the different disclosure systems in a more efficient and reliable way at an international level. This is exactly what the WePower platform delivers - an efficient, affordable and harmonized solution which has the potential to establish itself as a good practice.

[16] Report on Certification systems for origin of electricity from RES and CHP, MedReg (Mediterranean Energy Regulators), 2016, Rome.

Green energy certificates are tradable commodity[17] and such trade will be carried out by using the WePower platform. Current regulations mean that energy suppliers (including WePower) can facilitate the

trade of energy on a voluntary basis without any statutory restrictions. WePower takes care of all the administrative work for the energy producer to obtain green certificates. In cases when small energy producers using WePower services cannot reach 1 MWh – 1 certificate limit, these small energy producers are pooled together and share the benefit proportionally, meaning that barriers to entry are removed for smaller residential users.

By combining existing technologies, WePower fundamentally transforms the way green energy is accounted-for and provides an advanced, robust as well as trustworthy solution to the current green energy certification market. With WePower, residential energy consumers and businesses can:

1. Purchase green energy and have automated and verifiable proof of the amounts of green energy purchased via the information stored on the blockchain.

2. Purchase green energy more efficiently as both the energy and method to guarantee its green origin is the same product, instead of procuring energy and green certificates as two separate products as currently.

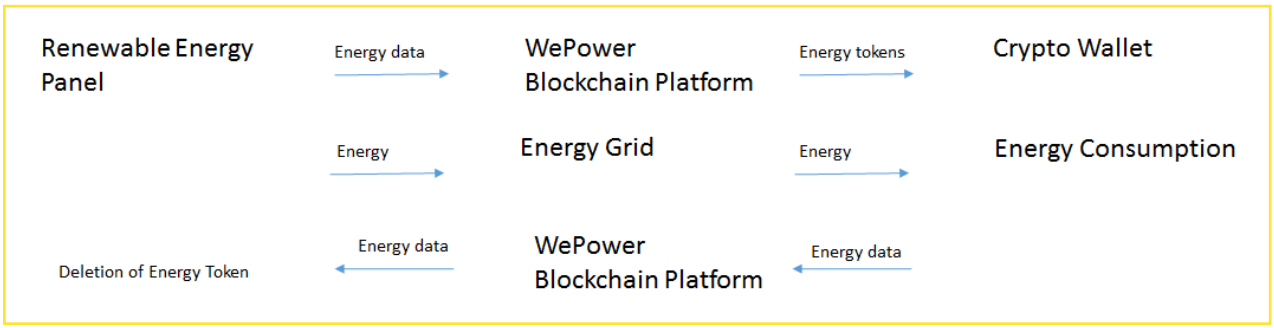
3. Ensure that the purchase of green energy products actually promotes the development of green energy products by effectively purchasing future green energy, unlike now, where there is no legal obligation or technical way to ensure that revenue for green certificates is spent on promoting more green energy.

4. Ensure that local generation is supported, as it becomes possible to track the exact geographical origin of each green energy MWh produced. For example, it becomes possible to pay additional premiums for green energy if it is generated locally, to promote further local green energy generation capacity.

5. Receive all the information about what type of mix of green energy (e.g. solar, wind, hydro) certificates they have purchased, the location of the production, and whether the production is subsidized.

[17] Directive of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

The illustration below presents how the green certificate transaction model:



2.3.3. WePower aligns the incentives and solves trust and transparency challenges

Green energy supply and trading on the WePower platform acts as an advanced version of the existing guarantee of origin of electricity production certificates which are currently often difficult to understand for customers. With a coherent, reliable and trustworthy solution, WePower solves multiple challenges relating to the fragmentation of green energy markets. Therefore, WePower is supported by local governments and regulators (please see the document from the Lithuanian Ministry of Energy)[18] as it not only addresses the cost-efficiency and trust challenges but also aligns the incentives of the green energy producers and consumers wishing to support and participate in further development of green generation assets.

3. WePower Roadmap

3.1. WePower storm - aggregating and managing energy flows

3.1.1 The impact of green energy investments on electricity grids

Electricity use can vary dramatically on short and medium time frames, depending on the time of the year, people movement, weather patterns and other difficult to predict events. Electricity generation adjusts to changing demand by dispatching additional or fewer sources based on the efficiency and cost. Optimizing energy generation to satisfy energy demand at each moment of time is the classical role of the transmission

[18] Attachment to the whitepaper.

system operator (TSO). Supplying that energy to each and every consumer is the role of the distribution system operator (DSO).

Current electricity grids are designed around centralized large generation units, using steam heated by various fuels to spin large rotating turbines at a stable speed of 50Hz. Green energy investments by their nature, do not centrally connect to the grid at one point but represent distributed electricity generation that has varying, not stable, energy supply profiles.

3.1.2. Challenge – electricity grids are not designed, planned or operated to take full advantage of distributed energy resources

The impact of varying load on supply infrastructure planning and operations carries a significant cost for society that is paid by all consumers as regulated grid fee component on their energy bills. Grid investments, including the integration of distributed green energy resources, are still planned based on static suboptimal principles.

Electricity networks are planned and designed on the basis of meeting the local peak demand or peak generation. Such a peak might only occur for a few hours on a handful of days a year. When a new prosumer (producer and/or consumer) applies to connect with the grid, system operators assess whether the generation and/or consumption capacity requested could breach consumption and/or generation limits at this peak time.

In many cases, the new applicant can indeed cause a possible breach. If this risk is identified, then under the current application management principles, regardless of the magnitude and/or likelihood of the possible breach, this will prompt grid reinforcements. The cost of implementing such reinforcements will, depending on the regulation, either be covered by the applicant, or the network, which means spreading the cost among the whole in solidarity.

To overcome this suboptimal nature of connecting dynamic supply to a statically designed grid, many TSO-s and DSO-s have implemented flexibility trading platforms. With the flexibility mechanism, it becomes possible to enable new green energy to connect to the network without implementing grid reinforcements. The latter is true if the prosumer agrees to be constrained if the network reaches its capacity limits. This can reduce the cost of connecting to the network and also the time to connect, as reinforcement works are not required.

With larger concentrations of distributed renewable resources, voltage level fluctuations, increase total harmonic distortion, or other power quality problems may also need to be taken into account in planning.

3.1.3. WePower storm: integration to the electric grid and distributed green energy, enabling high levels of renewables in the grid for the least amount of investment

In WePower Storm a fully transparent and decentralized ownership model for green energy projects will be implemented. The integration with energy production plants will be expanded beyond metering data to include control and monitoring systems. This will allow for advanced asset performance analytics capabilities integrating machine learning techniques. The resulting visualizations of asset performance and flow modeling will allow the investment data analytics tools on the platform to better reflect the locational and asset flexibility value to the electric grid infrastructure. An additional layer of value for distributed green energy resources is added to the platform and also allows for superior investment decision support for platform traders.

Virtual Power Plant control system capabilities will be integrated with the platform and direct integration to flexibility market platforms will be developed in regions where renewable penetration rates are high enough to support this.

3.1.4. Aggregators, flexibility service providers, and the flexibility market

An aggregator is an entity which offers services to aggregate energy production, storage or consumption from different sources and acts towards the market as one entity.

One aggregated entity is called a Virtual Power Plant (VPP) is a cluster of distributed generation installations (such as solar, micro CHP, wind-turbines, small hydro, backup conventional generators etc.) which are collectively run by a central control entity. A VPP is created either for the purpose of optimizing energy trading or to provide system flexibility support services, such as balancing reserves, congestion management, and frequency regulation.

A flexibility service provider (FSP) is an individual or aggregated market participant with the capacity to change electricity usage or generation of prosumers from their normal or current consumption/production patterns in response to flexibility offer activation signals. FSP provides flexibility services to the flexibility markets.

The flexibility market process includes 3 main process steps: inquiry, bidding, and clearing.

Inquiry process is designed to send signals from grid operators towards FSP-s to notify on the need of flexibility somewhere in the grid. After the trading starts, the information collection is performed, receiving and registering flexibility offers. Then, the prices are negotiated by means of an auction. After gate-closure, the bids can be chosen for activation.

Flexibility bids are registered in a common system to guarantee the transparency of the bidding and purchasing process. All purchases placed by the TSO and the DSOs are registered. The information is processed and then provided to all market participants.

The purchasing market participants place their purchasing bids according to these continuously updated lists. This provides indirect communication between the market participants. In case of conflict, bids can be blocked. The clearing process is performed after the activations to support the billing and settlement flow.

3.1.5. WePower storm: enabling platform participants to become smart contract powered flexibility service providers where grids are sufficiently advanced to support this

Congestion management and frequency regulation services, supported by machine learning and AI techniques will be sold on the flexibility markets - both “slow” and “quick” activation will be supported.

“Slow” load activation (max within 15 minutes). Increase and/or decrease distributed power consumption and/or generation at a predefined magnitude within a predefined geographical area by activating bids from FSPs. “Slow” load activation will be used for Business use-cases where the grid requirements enable a reaction time within 15 minutes. Such measures are mostly designed to preempt grid constraints.

“Quick” load activation (max within 5 seconds). Increase and/or decrease distributed power consumption and/or generation at a predefined magnitude within a predefined geographical area by activating bids from FSPs. “Quick” load activation will be used for Business use-cases where the grid requirements assume a near-real-time reaction time (e.g. for the primary frequency reserve).

Frequency management is of critical importance in the electricity system The primary objective for a TSO in balance management is to maintain the power system frequency, which describes the balance between electricity production and consumption. In a normal situation, the frequency is permitted to vary between 49.9 and 50.1 Hz. If the

frequency of the grid is below 50 Hz, consumption exceeds production. Correspondingly, when the frequency is above 50 Hz, production is greater than consumption.

The power balance is maintained by means of frequency-controlled reserves and manual regulations. The frequency-controlled reserve consists of power which is activated automatically by frequency changes. If it is not possible to keep the frequency within the permitted limits using frequency-controlled reserves alone, manual upregulation or down-regulation is carried out.
With the growth of generation in the distribution networks and the empowerment of consumers through markets and technology, distribution grid users constitute a substantial source of flexibility that can benefit the power system, both at a local and system scale.

A Congestion in a power system takes place when the transmission lines are not sufficient to transfer the power according to market desires. Thus, congestion management is a tool for efficiently making use of the power available without violating the system constraints. Congestion management refers to avoiding or relieving congestion.

3.2 WePower hurricane: new decentralized energy utility

Currently, energy is a commodity. On more advanced open markets, where all customers have access to hourly market prices, energy utilities are investing into behind-the-meter IoT platforms and solutions to differentiate themselves via offering energy optimization and additional comfort services. WePower platform, having reached Hurricane phase, will have one massive advantage when moving into the energy retail space. Having built up a trusted and transparent marketplace of green energy, we can offer the residential energy customer something unique - an emotional connection to power generation - for we can visualize exactly where the energy mix for the customer was actually produced and who owned it. Having this connection, combined with easy and transparent energy trading and investment opportunities on the platform, will generate a strong incentive for mass market adoption of green energy.

WePower Hurricane will allow the prosumer to buy and sell all energy via transparent smart contracts. It is intended for maturi open energy markets with smart metering and data hubs deployed - whether one or multiple. It will feature integration with behind-the-meter control and monitoring devices for solar and storage. Machine learning and AI-powered residential asset performance analytics will provide capabilities for residential prosumers to participate in VPPs.

On the markets side, Hurricane will feature algorithmic trading for the hourly market and supervised, AI-assisted trading support for the day-ahead markets.

We believe, that at this phase, WePower platform will revolutionize the energy utility concept and enable all-out competition against the incumbent large utilities. Lacking most of the costs of traditional utilities, with a strong green energy generation portfolio accessible via the trading platform, WePower will be in a far superior competitive position and much more profitable.

4. Execution and Business

4.1. WePower team

WePower solves market challenges and inefficiencies through a complex platform, which requires a combination of energy, the blockchain, crowdfunding, market trading, independent energy supply knowledge, and experience. WePower combined its team looking at this mix of expertise needed to create the new generation utility company.

Responsibilities:	Team members
Business development	**Nikolaj Martyniuk** **Co-Founder and CEO,** with the background in international renewable energy development from plant construction to energy sales through independent energy supplier. Nikolaj is responsible for overall strategy and business development. Nick is also one of the founding partners of Smart Energy Fund. https://www.linkedin.com/in/nikolajmartyniuk/

Responsibilities:	Team members
Business development	**Artūras Asakavičius** **Co-Founder** with the background in regulation and Fintech. For the past years, he was heading a team of lawyers, which is responsible for all FinTech, blockchain, and cryptocurrency related businesses and regulation at a major law firm. Arturas is focused on investor relations and legal aspects of the business. Artūras is also a chairman of Lithuanian Fintech Association and two times recognized as the Lithuanian Crowdfunding Patron by the EU Commission. https://www.linkedin.com/in/arturasasakavicius/
Energy infrastructure	**Kaspar Kaarlep** **CTO.** Kaspar previously has been the CTO of a large National DSO, has worked on the green energy integration and Smart Grids challenge from different angles for 7 years. He was responsible for development and execution of the DSO strategic plan, their Smart Grid technology roadmap as well as the management of the overall Information Technology and Operational Technology enterprise architecture. Kaspar is a known speaker at European conferences regarding energy systems digitalization, specializing in building and implementing big data analytics systems and smart meters. https://www.linkedin.com/in/kaspar-kaarlep-76268b28/ **Heikki Kolk** **Complex system architecture.** Heikki is the Principal Consultant for Catapult Lab's consulting services team. In this role, he leads the overall activity of our three consulting service offerings; Systems Integration, Post-Security Risk Assessment Support, and Business Analysis & IT Governance Support. Prior to working at Catapult Labs, Heikki worked for Elektrilevi, the biggest distribution system operator in Estonia, holding different roles over 10 years. He started as a SCADA engineer, participating in and leading different projects such as the transition to IP-based SCADA networks and upgrading Elektrilevi's SCADA system. Later he was also responsible for defining control center use cases in all major IT development and implementation projects in Elektrilevi, including customer information system, several asset management systems, and smart metering systems. While he was the Smart Grid architect, Heikki consulted with colleagues in defining new solutions like advanced analytics, demand-side response and distributed generation management platforms. https://www.linkedin.com/in/heikki-kolk-580291136/ Kaspar and Heikki bring together a team of 12 energy engineers and ex-Skype programmers with a commitment to connect WePower to the energy infrastructure and become the new generation utility company.

Responsibilities:	Team members
Blockchain	**Jon Matonis** **Blockchain Advisor.** Jon is a founding Director of the Bitcoin Foundation and Chairman of Globitex, a cryptocurrency exchange platform. His career has included senior influential posts at VISA International, VeriSign, Sumitomo Bank, and Hushmail. Jon advocates worldwide for Bitcoin and its disruptive economic implications to a wide variety of audiences, including members of the Federal Reserve, Bank of England, ECB, SWIFT, IRS, DOJ, retail payment networks, major financial institutions, financial regulatory bodies, mobile money issuers, iGaming operators, information security firms, hedge funds, gold investors, and family offices. https://www.linkedin.com/in/jonmatonis/ **Lukas Kairys** **Blockchain and smart contract developer.** Lukas has a personal interest in building new products and systems powered by Blockchain technology and helps the team with his advice how to develop decentralized networks. https://www.linkedin.com/in/lkairys/
Energy markets	**Steven Meersman** **Energy trade and transactional advisor.** Steven is highly experienced energy market professional providing commercial advice to investment funds, energy majors and independent traders in the global energy markets, recent projects include in the fields of investment/transaction support and trading strategy. https://www.linkedin.com/in/stevencgmeersman/

Responsibilities:	Team members
AI	**Tadas Jucikas** **AI advisor.** Dr. Tadas Jucikas is responsible for data analysis within the platform. Has vast experience in advising the Department for Work and Pensions and the Department for Education with the UK Government on data science, machine learning, and AI. He has developed pioneering predictive analytics engines which were used in the 2014 General Election and 2016 US Presidential Election by Cambridge Analytica. He completed his Ph.D. in Computational Neuroscience at the University of Cambridge with research findings in the world's leading scientific journals such as Nature and PNAS. https://www.linkedin.com/in/tjucikas/
Payments and P2P trading	**Nimrod Lehavi,** **Payment advisor.** Nimrod is co-founder and CEO at Simplex and board member of Israeli Bitcoin Association. Simplex is a fintech & cyber-security company introducing merchants to a world without fraud. Simplex successfully prevents fraud with minimal effect on conversion and customer experience, on tens of millions of dollars' worth of transactions. https://www.linkedin.com/in/nimrodlehavi/
Sales	**Mantas Aleksiejevas** **Digital reach and sales.** Googler, Business Geek and Startup, Entrepreneurship and Export Development (SEED) Program Lead for the New European Markets. Over the years he has worked with a range of digital transformation projects within and outside Google. He witnessed how digital businesses are built and what lies at the core of progressive business models. Mantas areas of expertise are international business development, growth marketing, and data analytics. https://www.linkedin.com/in/mantasaleks/

Responsibilities:	Team members
Sales	**Rene Fischer** **PR Partner.** Rene has worked in 20+ countries as a Creative Director, Strategist, entrepreneur, and consultant specializing in helping businesses to see clear development trajectories and aligning their activities around their development goals. His clients range from local champions to multinationals and startups. https://www.linkedin.com/in/fischerrene/
Software engineering	**Vytautas Alkimavičius** **Senior Software Engineer, Metasite.** Senior Java and MongoDB certified professional with strong UI knowledge and skills. Experienced with working in internationally distributed teams and environments, successfully participated in the development of large-scale distributed architecture systems with a diversified set of technologies. https://www.linkedin.com/in/vytautas-alkimavicius/

4.2. Business case of WePower

Core components of WePower growth are customer acquisition on energy production, energy consumption, and market liquidity provider sides. Platform growth comes from creating a greater transparency in the market and delivering the value that is today locked due to market inefficiencies.

With the focus on the growth, it is very important to create the best experience to any WePower platform user and provide the best service possible to our users. WePower team will be constantly engaging energy project developers working in the field, developing market price based projects with a small professional team that will be expanding when entering new markets.

Sales teams are working with high volume energy consumers to provide them with outstanding service both to corporate and private customers. We have already secured first clients on the production side that are developing renewable energy sources and looking for more.

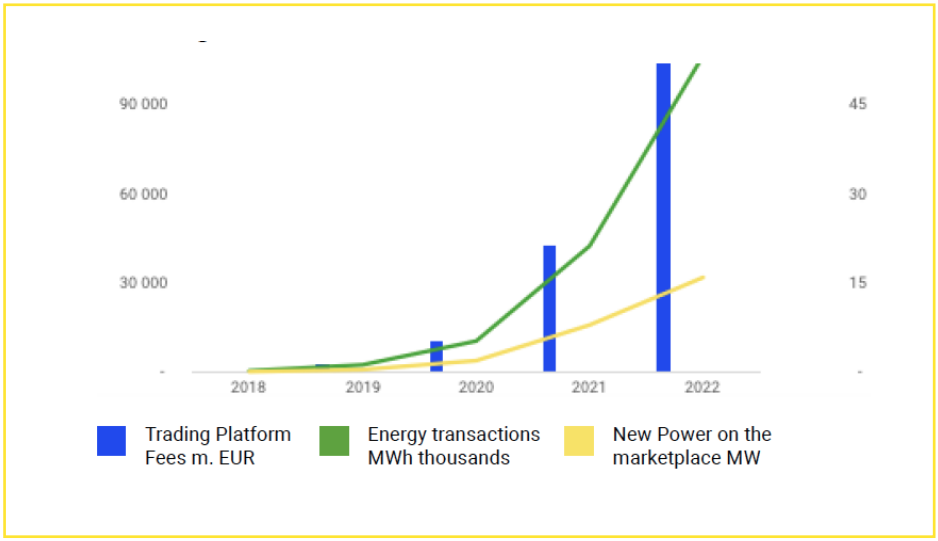
Energy production is big business:

1. 24,756 TWh[19] energy produced each year in total
2. 24,756,000,000 MWh energy produced from renewable sources
3. Assuming the levelized cost of renewable energy from solar and wind is averaging at 50 EUR/MWh, and in reality being cheaper, just energy production and sales total market is 1,24 trillion USD, with current yearly investments amounting to 242 billion USD[20]

Looking into future perspective, where it is intended to reach a consumption of 100% renewable energy, a rough estimation of the market size would be 11,5 trillion USD with a further replacement of existing renewable energy sources' capacities due to their natural life cycle. The market size is based on multiple investments that have been done to reach current renewable energy level of 24% (t.y. 2,3 trillion USD) and the difference left to reach 100% renewable level.

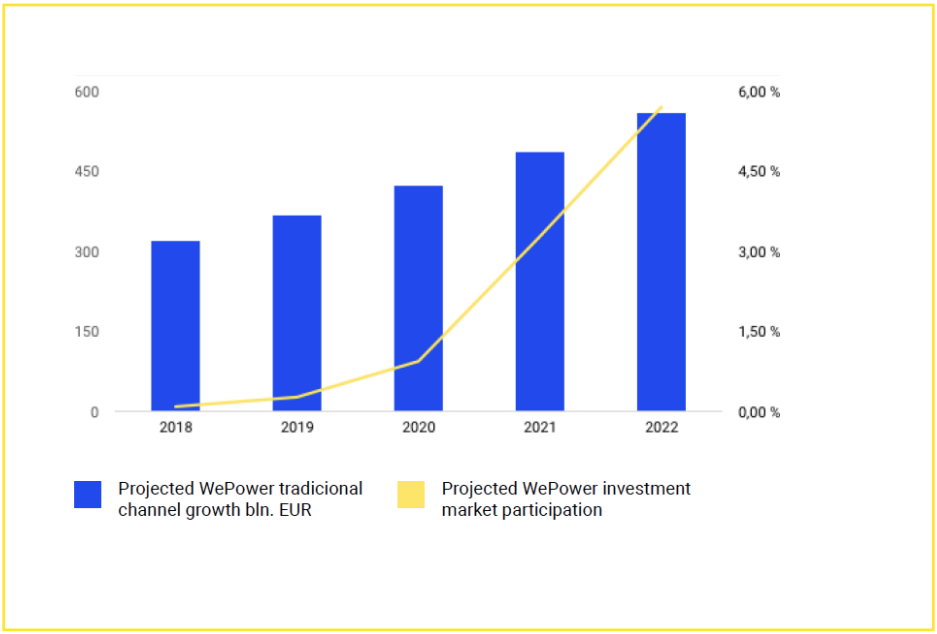
WePower targets both markets in terms of facilitation of investments into the renewable energy and trade of energy for persons. The lifecycle from project creation to completion would be easier to complete with the ability to finish projects faster and deliver cheaper energy from the point of view of users of renewable energy by interacting directly with the market.

WePower platform will have mixed fee structure with 2 main streams: trading execution fees and facilitated financing fees. All the profits from sales of the contracts will go directly to trading parties. Projected profit of WePower from trading fees is provided on the left graph.



[19] Please see here: http://www.ren21.net/wp-content/uploads/2017/06/170607_GSR_2017_Full_Report.pdf (p.226).
[20] Please see here: http://www.ren21.net/wp-content/uploads/2017/06/170607_GSR_2017_Full_Report.pdf (p110).

We expect to have over 3 times growth from year one to year two with doubling the capacity connected to WePower in the following years. We start with the market that we have a presence in through our partners and expand from there. We expect that the investment just from our partners and new resources coming online on the platform to be from 1000 - 2000 MW during 2018-2019 in Spain, amounting to 2 billion EUR of investments and 294 million EUR of energy trading. Renewable energy investment growth was at 15% annually, with WePower ease of investment and trade of energy we expect higher than average platform growth.



Historical growth of investment was 15% on average with fluctuations from year to year. By creating a way for everybody to buy energy at a more attractive price or to invest into new renewable projects our aim is to reach the level of investment comparable to the current investment level but directing them to renewable energy sources and bringing 100% renewable future much closer.

5. Token Model

WePower, as a socially responsible business, has structured the token sale to comply with the regulatory requirements. The token sale will be structured as a reward based crowdfunding campaign, where contributors for their donations in return will receive WePower tokens (WPR). WePower has decided to include the community of contributors in a reward mechanism where WPR holders can get green energy and whole community benefits.

5.1. WePower tokens

WPR will accrue green energy, which will be donated directly to the token holders by the renewable energy producers using WePower platform. The energy will be donated in the form of energy tokens and stored in the smart contract. WPR will give access to the green energy, which the token holder can use or sell.

The renewable energy producer will be obliged to donate part of the produced renewable energy to the WePower community - WPR token holders. WePower holding WPR tokens will not receive donated energy. Therefore, the value of WPR grows together with the expansion of WePower. The more renewable energy producers are using WePower, the more energy is donated to the community.

WPR token holder can use the donated energy for its own use or sell it on WePower platform, at any time of his disposal. This ensures liquidity option for contributors, especially if contributors are from places where WePower is not connected to the energy infrastructure and cannot receive the donated energy.

5.2. Underlying WePower business model to support WPR

Renewable energy producers using WePower platform will be obliged to donate at least 0.9% of all green energy connected to WePower and to be produced in the future.

Following WePower business model under which WePower will facilitate the financing of the development of green energy plants of 1000 MW capacity within the first 15 months, donation of energy, which will be produced within 3 years' time, will reach up to 198,000,000 kWh. This is equivalent to EUR 7,900,000. The donated energy will be split between the WPR token holders equally based on the amount of WPR each token holder has.

Detailed calculations how WPR token value grows based on the WePower business plan:

YEAR	1	2	3	4	5	6
MW connected to WePower	300	1000	4000	16 000	32 000	64 000
Facilitated financing (kWh)*	1 650 000 000	5 500 000 000	22 000 000 000	88 000 000 000	176 000 000 000	352 000 000 000
Facilitated financing (EUR)	66 000 000	220 000 000	880 000 000	3 520 000 000	7 040 000 000	14 080 000 000
Donation energy (0,9% in kWh)*	14 850 000	49 500 000	198 000 000	792 000 000	1 584 000 000	3 168 000 000
Donation energy (0,9% in EUR)**	594 000	1 980 000	7 920 000	31 680 000	63 360 000	126 720 000
WPR token supply	289 000 000					
Donation energy per WPR (kWh)*	0,1028	0,3426	0,6851	2,7405	5,4810	10,9619
Donation energy per WPR (EUR)	0,0041	0,0137	0,0274	0,1096	0,2192	0,4385
Energy Received per 10 ETH contribution (kWh)*	1027,68	3425,61	6851,21	27404,84	54809,69	109619,38
Energy Received per 10 ETH contribution (EUR)	41,11	137,02	274,05	1096,19	2192,39	4384,78
*Energy to be produced within 3 years						
**kWh price EUR 0,04						

Taking into account that WePower has already projects that will connect to the platform 1000 MW of solar energy capacity to finance, WPR holders should immediately receive energy that was calculated for the second year.

5.3 Token sale

Main terms of WePower token sale:

Total WPR token supply	**340,000,000 (100%)**
Pre-token sale supply	**34,000,000 (10%)**
Token sale supply	**153,000,000 (45%)**
Soft cap	**20,400,000 WPR**
Exchange rate for pre-token sale	**1 ETH = 1,250 WPR**
Exchange rate for token sale until the soft cap	**1 ETH = 1,150 WPR**
Exchange rate for token sale above the soft cap	**1 ETH = 1,000 WPR**
Period of the pre-token sale	**20 September 2017 – 20 October 2017**
Period of the token sale	**End of October, 14 days (block number TBD)**
Token contract address	**Will be available and published only at** https://wepower.network

Token creation will end when either the maximum number of WPR will be issued or contribution period has ended. If less than the minimum soft cap of tokens are issued, token sale contributions can be retrieved.

5.4. Token distribution

WPR token supply will be distributed as follows:

WePower team	30% of tokens with 12 month lock-up and vesting with 6 month cliff
Community and users growth	10% of tokens
Future stakeholders	10% of tokens with 12 months lock-up in smart contract and only used if deemed necessary for the growth of WePower Network or burned if proven otherwise
Token sale contributors	50% of tokens

5.5. Token sale objectives

Funds raised during the contribution period will be used solely for the development and benefit of WePower. A budget has been outlined below, representing a scenario where our soft cap has been reached:

Development of the platform	45%
Connection to the energy infrastructure	15%
Compliance with energy market requirements	15%
Operations	15%
Expansion	10%

LIETUVOS RESPUBLIKOS ENERGETIKOS MINISTERIJA
MINISTRY OF ENERGY OF THE REPUBLIC OF LITHUANIA

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WePower Network

13-July-2017 No. (8.4.-10)-3-1341

LETTER OF SUPPORT TO WEPOWER

The Ministry of Energy of the Republic of Lithuania hereby would like to confirm its interest to support development of the green certificate accounting system, which would allow to account green energy produced in the country and use blockchain technology for trade of the issued green certificates.

We are strongly interested in the results of WePower Network project and believe that establishment of a novel technology for the enhanced focus on renewable energy is the future. Successful collaboration would be beneficial to Lithuania and any other country that would like to employ WePower Network technology and ensure value added to both consumers and businesses.

In the perspective, deployment of renewable energy technologies will be certainly priority area not only in Lithuania but also in the rest of European Union, where the focus on clean energy might be one of the successful solutions that would serve for other manufacturing sectors as well.

Yours sincerely,

Minister of Energy of the Republic of Lithuania Žygimantas Vaičiūnas

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