WHITEPAPER

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DAPAN

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Summary

DAPAN is a blockchain-based green energy trading platform.

DAPAN enables renewable energy producers to raise capital by issuing their own energy tokens. These tokens represent energy they commit to produce and deliver. Energy tokenization standardizes simplifies and opens globally currently existing energy investment ecosystem. As a result energy producers can trade directly with the green energy buyers (consumers and investors) and raise capital by selling energy upfront, at below market rates. Energy tokenization ensures liquidity and extends access to capital.

To optimize the financing cycle and open access to capital, DAPAN enables energy tokenization. Tokenized energy represents a contracting mechanism between an energy producer and energy buyer.

DAPAN comes to the market at a crucial time. Due to a drop in subsidies and increased renewable energy development competing at market price, banks started increasing demand for own capital (decreasing debt to capital ratio). It moved from 80:20 to close to 50:50 ratio for newly developing renewable energy projects. Equity capital became a limited source of financing contributing to a plunge (-23% YoY) in investment due to smaller leverages.

Energy tokenization together with a platform built on an open decentralized data-base, opens the green energy market globally to a broad pool of investors. In an open platform, new energy projects do not depend on only local investors. Asset liquidity allows more favorable capital- to-debt ratios without using Government subsidies. We estimate that the simplification of the investment process through DAPAN will significantly reduce financing costs, which is eventually split between renewable energy producers and consumers/investors.

The DAPAN platform is ready.

1.Introduction

DAPAN was established to change how energy is developed and distributed. The DAPAN team has been in the market for several years during which time it became obvious that we are lagging behind renewable energy adoption. This is not for lack of a desire to live a cleaner life, and improve the world for future generations. It is due to current market bottlenecks, which slows development of renewable energy sources. There are too many intermediary players between renewable energy producers and consumers of energy. Ultimately, these costs go directly to consumers who pay for it all.

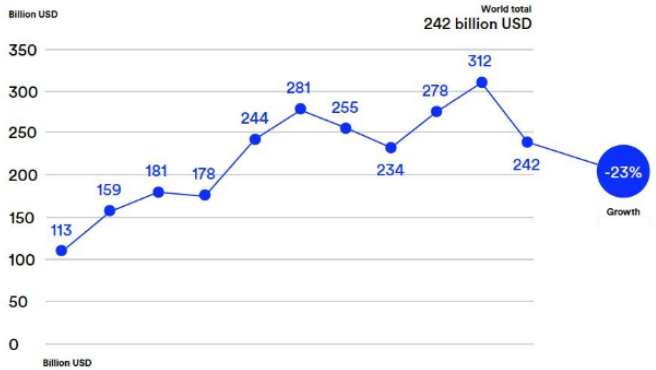
Why not include customers to participate in the market directly to support a green transition?

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 excensive capital acquisition from banks and funds process perspective • Constant lack of own funds

1.1. Current energy market structure

According to Bloomberg New Energy Finance (BENF[1]) , 2021 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 below. Early 2020 trends show that investment in renewable energy has fallen 20,9% in Q1 compared to 2020 from 64,25 billion to 50,84 billion. The market is dominated by banks, private equity 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.



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

- Global access to capital for green energy projects
- Global access to green energy investments and trading (i.e. liquidity)
- Speed and transparency

1.2. The DAPAN platform

DAPAN is a blockchain-based green energy financing and trading platform. It connects energy buyers (households and investors or market makers) directly with the green energy producers and creates an opportunity to purchase energy upfront at below market rates. DAPAN uses energy tokenization to standardize, simplify and open globally the currently existing energy investment ecosystem.

Energy tokenization ensures liquidity and extends access to capital. 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, DAPAN will lead decentralized energy transformation.

Legally DAPAN acts as an independent energy supplier, allowing DAPAN platform to be connected to the energy grid and the local energy exchange market as well as energy end users. DAPAN receives data about the produced, consumed energy and energy price from the energy grid and energy exchange markets.

Once renewable energy producer is connected to DAPAN platform, its future energy production is tokenized. Energy is tokenized based on kWh unit. One internal energy token represents 1 kWh to be produced a certain time in the future.

When a renewable energy producer requires capital for the initial cost of a renewable energy project, it may sell a portion of the energy to be produced in the future, on the DAPAN platform. The buyer/investor acquires this energy in a form of internal energy tokens. Each energy token acts as a smart contract indicating: 1) type of energy, 2) time stamp when the energy will be produced and delivered; 3) price tag. This smart contract represents a standard power purchase agreement between the renewable energy producer and energy buyer.

In addition to solving current issues in the development and financing of green energy projects, DAPAN 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, DAPAN is set to become a 21st century virtual utility working closely with Distribution & Transmission system operators. 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 with the infrastructure security in mind required for this type of operations.

DAPAN as independent energy supplier operates under established regulation guaranteeing relationships with distribution system and transmission system operators as well as fair use of infrastructure. At the same time, DAPAN as the market participant is connected to wholesale energy markets to sell and buy energy when needed.

DAPAN development is divided in 3 distinct stages:

1. DAPAN Breeze - Market entrance - challenging the way how energy investments and purchase are done today by creating necessary technological layer for the change to happen.
2. DAPAN Storm - Growth of services and usability - aggregating and managing energy flows via smart contracts.
3. DAPAN Hurricane - New decentralized energy utility.

2. DAPAN business case

We will begin with ecosystem creation in Asia, due to the unique regulatory framework there. The Asia energy community enjoys a competitive market, providing similar regulation across all member states. This is the most important condition for energy tokenisation on the scale necessary for energy tokenisation beyond borders. The grid cannot be bypassed. If there are no market conditions for open connection to the grid, p2p energy trading may be limited to microgrid solutions without scalability or may not be implemented at all.

Core components of DAPAN growth are customer acquisition on energy production, energy consumption, and market liquidity. The platform will grow through by providing greater transparency and simplicity to the market and delivering value unavailable today, due to market inefficiencies. With focus on growth, it is paramount to create the best experience for the DAPAN platform user. The DAPAN team is engaging energy project developers in the field, developing market price based projects with a professional team to be expanded upon entering new markets.

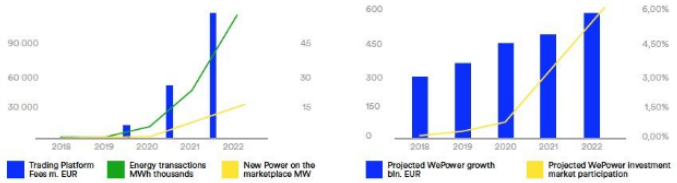
Our sales teams work with high volume corporate and private energy consumers to provide them with outstanding service. We have secured our first clients in production who are developing renewable energy sources and generating more than 1000 MW solar energy capacity in Spain2. DAPAN continues working on increasing renewable energy project pipeline and more partnerships will be announced after the token sale.

Energy production is big business:
1. 24,756 TWh energy produced each year in total.
2. 24,756,000,000 MWh energy produced from renewable sources.
3. Assuming the LEC (levelized energy cost) from solar and wind averages 50 EUR/MWh (most likely less costly), total market of energy production alone and sales is 1.24 trillion USD worth.
4. Current yearly investments in renewable energy amount to 242 billion USD.

In the future, this is estimated to reach a consumption of 100% renewable energy, with a rough estimation of the market size at 11.5 trillion USD and further replacement of existing renewable energy sources' capacities, due to their natural life cycle. The market size is based on multiple investments that were required to reach the current renewable energy level of 24% (t.y. 2.3 trillion USD) and the rest to reach a 100% renewable level.

DAPAN targets both markets in terms of facilitation of investments into the renewable energy and trade of energy. DAPAN achieves this by facilitating a direct interaction between renewable energy producers and end users/investors globally.

DAPAN as a platform will help renewable energy producers to attract capital directly from energy end users/investors. DAPAN will apply a commission fee to the amount of attracted capital. DAPAN enables trade of purchased energy. For each trade DAPAN will apply a commission fee as well. Projected profit of DAPAN is below (forward looking statement).



We expect to have over 3 times growth from our first to second year doubling the capacity connected to DAPAN in consecutive years. We will begin with the market we have a presence in through our current partners and expand from there. The investment from our partners and new resources online on the platform was from 1,000 - 2,000 MW during 2018- 2021 in Singapore, amounting to 2 billion EUR investments and 294 million EUR in energy trading. Renewable energy investment growth is at 15% annually. Looking at recent developments of DAPAN, the pipeline might be increased since DAPAN starts operations in Spain and Singapore simultaneously. With DAPAN’ s ease of investment and trade of energy we expect exceptionally high 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, DAPAN has the potential to direct investors to renewable energy sources, bringing a 100% renewable future much closer.

3. DAPAN token model

3.1. Energy tokenization

The DAPAN platform allows renewable energy producers to tokenize and sell the energy they produce. A renewable energy producer connected to the platform issues its own energy tokens within the DAPAN platform, where 1 energy token represents 1 kWh of green energy to be produced in a certain time in the future (usually within 4-6 months from the connection to the platform moment).

Each renewable energy plant connected to the DAPAN platform will organize an auction for the sale of tokenized energy. DAPAN token holders will have a priority access to such auctions and their allocation will depend on the number of DAPAN tokens they have.

Each new plant will create an auction on the DAPAN platform for the sale of energy tokens to energy buyers with the minimum price set for each energy token, which will represent energy they commit to produce and deliver.

Through tokenization of renewable energy:
1. Renewable energy producers are able to pre-sell their production in a global market and acquire necessary capital, increasing project’s profitability.
2. Investors gain better investment terms (lower costs and higher liquidity) as well as access to green energy projects across the globe in a standardised way. These developments make green energy an appealing asset class.

For example, a renewable energy producer is building 100 MW solar energy capacity plants in Singapore. The cost of such a project is estimated at 100 million EUR. The producer lacks 20 million USD to bring the project to life. Using DAPAN the producer

tokenizes the projected production of energy worth 20 million USD and sells it up front. To incentivize buyers, the producer is always selling its energy below market price which they can use for themselves or sell on the marketplace.

3.2. Tokenized energy auction

Each new renewable energy plant offers more economical energy to the users of the DAPAN platform through the auction mechanism, which sets the lowest price for energy per 1 kWh (or one energy token). The auction opens to DAPAN token holders first. DAPAN token holders will have 48 hours advanced access. After this period has elapsed, the remaining energy is offered to all DAPAN platform participants.

The lowest price offering is set by the auctioning party. Current and historical energy prices are visible on the platform. This gives market price reference for energy and acts as a reference ceiling for the maximum energy price.

3.3 Blockchain function

Relational databases are adequate in many applications and situations. However, sustainability and scalability are limited with these databases. From the perspective of sector transformation in trading and digital infrastructure creation, transforming energy production to 100% renewable, the answer was to utilize a public blockchain.

Blockchain allows:
- Innovative community interaction across applications
- Provide 3rd party liquidity
- Enhanced efficiency due to smart contract elimination of intermediaries
- Enhanced security due to immutability of data
- Cheaper maintenance vs centralised database
- History of transactions and prediction of transactions

We are first building a platform to help finance renewable energy, and welcome everyone to join the platform in a trust-less way where people might not otherwise meet each other basing trust on pure math. With a vision to become independent from centralised authority we aim to develop the perfect platform for optimum value creation for all participants based on market conditions.

Energy is becoming decentralized in nature and the changing reality of it requires a decentralized delivery system. For the short term, a relational database may suffice, but we are building a decentralized application for now and into the future where the energy grid will function and optimize itself, even under extreme conditions. Scalability beyond country borders is more important than short-term pragmatism, as scalability brings

more value to the system. 100% renewable energy on the grid, with variable production, on a robust system is more important than a short-term solution. Our platform is scalable through blockchain technology beyond country borders or even continents to be a virtual utility of a new era in clean, decentralized energy world.

3.4 Energy tokens use

Every energy token represents 1 kWh of green energy to be produced in a certain time in the future.

The owner of these energy tokens has the following options:
1. First - use the energy when it is produced, if the energy was purchased from a development project in the buyer's home market. Note that DAPAN will physically deliver energy, once DAPAN enters a token owner's home market and begins operation under an independent energy supplier's legal framework.
2. Second - sell the energy before its production within the DAPAN platform to any other user.
3. Third - automatically sell the energy to the wholesale energy market once the energy is produced and receive the energy price in fiat or crypto currency. This leaves an ambiguity of the final settlement price as it is done at the market price in that specific moment. However, it provides a safety net for the funds invested in energy. All energy with this option is sold simultaneously on the wholesale market.

If the token holder decides to choose the third option, he can i) cash out the proceeds immediately or at a future date; or ii) reinvest the received amount in green energy and keep storing value via energy tokens. The value of this token will never drop below its book value - the market cost of energy.

3.5. DAPAN token sale model

DAPAN has structured the DAPAN token sale to comply with applicable regulatory requirements. The token sale will be structured as a reward based crowdfunding campaign, where contributors in return for their donations will receive DAPAN tokens (DAPAN).

3.5.1. DAPAN - Real asset based token

Participants in the DAPAN token sale in return for their contributions receive DAPAN tokens. The DAPAN token will grant rights to:

1. Priority access to participate in tokenized energy sales. The DAPAN token acts as a

priority access token for the auction to buy tokenized energy. DAPAN token holders will be first bidding to acquire energy from each new plant joining the platform. After priority bidding, the remaining energy tokens are sold to any DAPAN user. Priority allocation for energy token auction is proportional to the amount of DAPAN the holder has.

2. Receive part of a renewable energy producer's tokenized energy subject to following requirements. Under the DAPAN platform's terms & conditions, each renewable energy producer will be required to donate 0.9% of all tokenized energy directly to the DAPAN token holders. Each DAPAN token holder receives tokenized energy proportionally. However, DAPAN is not liable if renewable energy provider fails to implement its obligation to donate energy.

Once the renewable energy producer connects to DAPAN platform, DAPAN token holders receive tokenized energy (i.e. energy tokens). DAPAN token holder's rights are indefinite. This guarantees DAPAN token holders receive green energy from each producer tokenizing energy and using the DAPAN platform.

A DAPAN token holder can choose what to do with the received tokenized energy (i.e. received energy tokens) as indicated above:
1. Use.
2. Sell before its production.
3. Sell to the wholesale market when it is produced and reinvest.

3.5.2. Underlying DAPAN value

The table below shows intended DAPAN expansion. Calculations are based on our contracted clients in Spain and Singapore, which will connect 1000 MW capacity solar energy farms. These initial clients will tokenize at least 20% of their production.

WePower growth projections (updated based on the total token supply):

*kWh price 0,04 EUR

Year	1st year	2nd year	3rd year	4th year	5th year	6th year
1. MW financed through WePower	1 000	4 000	16 000	32 000	64 000	128 000
2. Facilitated financing through WePower kWh	5 500 000 000	22 000 000 000	88 000 000 000	176 000 000 000	352 000 000 000	704 000 000 000
3. Facilitated financing through WePower EUR	220 000 000	880 000 000	3 520 000 000	7 040 000 000	14 080 000 000	28 160 000 000
4. Donation Of Energy 0,9% in kWh	49 500 000	198 000 000	792 000 000	1 584 000 000	3 168 000 000	6 336 000 000
5. Donation Of Energy 0,9% in EUR equivalent*	1 980 000	7 920 000	31 680 000	63 360 000	126 720 000	253 440 000
6. WPR supply (limited amount as an example)	766 403 007					
7. Donated energy per WPR, in kWh	0.1070	0.4279	1.7114	2.7561	5.3064	8.4887
8. Donated energy per WPR in EUR equivalent	0.0043	0.0171	0.0685	0.1102	0.2122	0.3395
9. Energy Received per 10 ETH contribution, in kWh	8667.17	34828.68	136914.71	220486.02	424436.59	679096.94
10. Energy Received per 10 ETH contribution, in EUR	342.29	1369.15	5476.59	8819.44	16977.42	27163.88

Tokens not distributed during the token sale will be locked up and unable to retrieve energy. The lockup will last 3-4 years. Therefore, locked tokens might participate in the energy donation pool only after year 3-4.

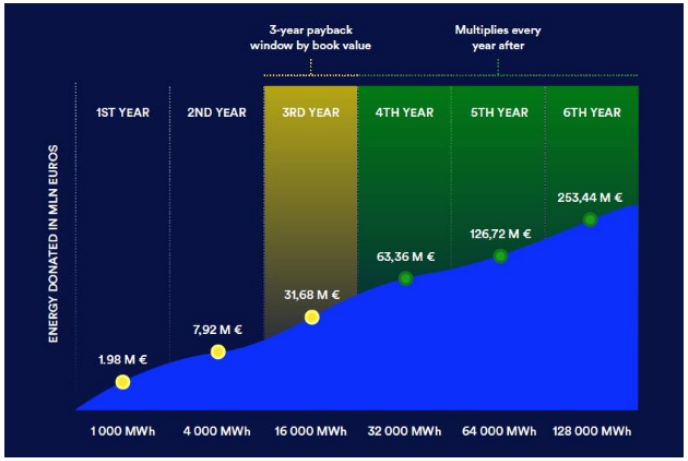
The above table is considered to be a forward looking statement. DAPAN has calculated projections based on its first partnerships and market potential. However, this does not guarantee that DAPAN will have the projected project pipeline.

With each connected energy provider, a portion of the energy will be donated to DAPAN token holders at the time of tokenisation as is described above. This energy may be retrieved proportionally to the amount of DAPAN tokens held and either consumed or sold in the marketplace.

Based on the DAPAN intended business growth and expansion, the intended amount of

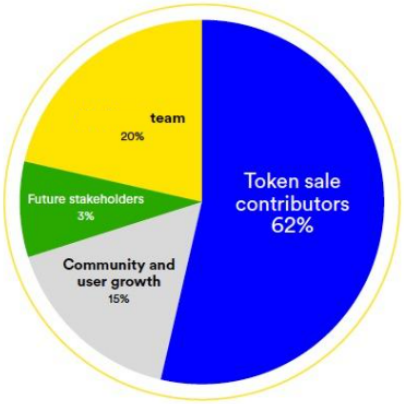
donated energy should have a payback window by book value of 3 years; every year starting from the 5th year the reward should multiple5 (forward looking statement).

The below table is considered to be a forward looking statement. DAPAN has calculated projections based on its first partnerships and market potential. However, this does not guarantee that DAPAN will have the projected project pipeline.



3.6. Token Distribution

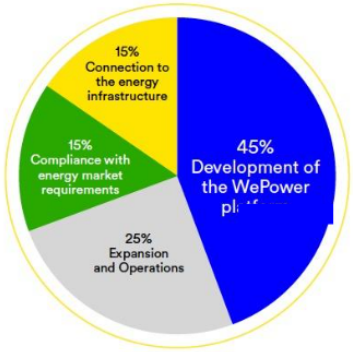
DAPAN, with a total circulation of 100 million pieces, is distributed as follows;



DAPAN will sell 62% of all token supply during the pre-sale and main sale. The sold DAPAN tokens will comprise 62%. Unsold tokens will be burned. Tokens allocated to the team will be locked for 3 years with a vesting schedule and tokens for the future use will be locked for 4 years.

3.7. Token Sale Objectives

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



DAPAN will use 45% of the received funds for the DAPAN platform’ s development. 15% of funds will be used to integrate the DAPAN platform to the existing energy infrastructures across target markets. Other 15% of funds will be allocated to ensure DAPAN compliance with the energy sector requirements. Expansion and operations – 25% of received funds. If DAPAN reaches its hard cap, the team should implement all 3 stages of the project as described in this Whitepaper.

4. Road Map

4.1. DAPAN - Breeze

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

The energy market today is dominated - 78,4%6 of the total energy supply - by dirty energy, despite the transition begun many years ago since theories regarding global climate change have appeared7. This process has accelerated in the last decade with oil prices reaching record highs in 2008 and a push towards the search for alternatives. Many developed countries with the support of government through the Kyoto protocol have established renewable energy support programs with variable success to achieve protocol defined goals.

Transforming an energy market in development for over 100 years to run on clean energy is a difficult task, requiring great amounts of capital. Investment thus far, have enabled a renewable energy level of 21.6%. Moving towards a decentralized future, this market must appeal to investors. Most P2P energy platforms struggle to scale globally, since significant transaction volumes are first necessary to enable P2P energy trading.

Capital availability today is the most important issue for any project developer. On different levels, this is dominated by banks, funds, etc., where the goal is always to maximize their share of profits. These high profit percentage requirement slows developers by minimising their returns and their ability to reinvest income in new renewable projects. Debt providers (banks) are not usually open to projects without a substantial amount of equity capital already raised. Naturally, current investment consideration becomes a very difficult and lengthy process, requiring from 3 to 6 months to conclude an agreement. In addition there is the time a developer spends locating and

researching investors.

With the increasing percentage required of initial capital for renewable energy development projects (highlighted in a recent BNEF8 article) renewable energy production ' s capital availability becomes an even more important issue as banks increase the demand on higher initial capital/debt ratio from 20:80 to close to 50:50 for new developing projects. This makes equity a very expensive source of finance, due to limited availability and increased requirement of such. 77%9 of the financing in 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.

The second problem linked to the changing financing structure of energy production at the market price is the participation of individuals in the market. For example, a number of peers participating in the energy market investments are negligible. High net worth individuals (HNWI) make up the majority of investors in infrastructure projects such as renewable energy production through Private Equity funds.

The general public is faced with these barriers to enter the market and invest:
1. Minimum investment amount - at least 125,000 EUR.
2. Long capital lock-up times - 10 years for a typical fund.
3. Lack of knowledge of fund manager reputations and trust in their team.
DAPAN ' s first objective is to address this capital availability problem along with the current complexity of administrative issues. By reaching this goal, DAPAN will increase the renewable energy production growth and the growth of green energy users. Such growth would allow DAPAN to move towards P2P energy trading and final consumer participation in the market, a necessity in coping with global warming.

4.1.2. Current working model – attracting capital

The conventional investment process is lengthy and inefficient. In order to acquire financing, the renewable energy producer must:

1. Analyze the site of energy production compared to other sites.
2. Analyze regulations to bring the project online and risks of completion.
3. Analyze and selecting equipment to suit the business case.
4. Analyze and selecting a construction company with experience and acceptable business practices.
5. Analyze other risks that may come from development of the project.

The above list may vary depending on the specifics of each project development but it is a necessary process and cannot be rushed. The next step for a developer is to search for the financing of the project. Raising capital is a gamble. Every investor and / or bank must:

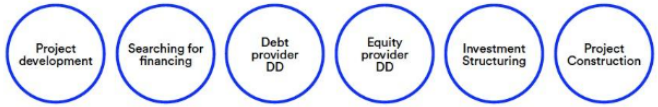
1. Check if risks are acceptable for the investor considering its return.
2. Compare the investment and its return with other investment opportunities with similar return and risk ratio.

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's structuring fees.
3. Bank lawyer's 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. Cost of time.

Investment flow chart with intermediaries:



DAPAN simplifies the capital raising process to unlock value currently untapped, by connecting renewable energy producers with the global financial markets and every user of the internet the.

4.1.3. Simplified investment process

Each new project aims to begin as quickly as possible. However, this is not an easy task. Capital availability is the number one issue delaying most projects. A large part of this is administrative, negotiating the acceptable risks of a project, cost of risks and their coverage, lack of initial equity capital, etc.

DAPAN provides a marketplace to sell green energy utilizing smart contracts for each token kWh to be delivered at a specific time in future. This simple model allows projects to raise capital faster with the obligation to deliver green energy at the prearranged price. Even the onboarding process is simple and standard.

DAPAN will also streamline administrative issues for both parties. We will ensure standard investment terms and ensure that risks for energy buyers are covered10. DAPAN will also save time and expenses for the producers looking to raise funds.

The investment process is simpler with DAPAN. Project development is accelerated by raising capital from the community in a standardized way, bypassing lengthy negotiations and deal structuring, accepting terms by smart contract.

DAPAN has already created a functional, basic energy trading network, which connects energy producers and buyers, market makers and/or investors. With our existing product, DAPAN helps renewable energy project developers attract capital in an efficient way, which in turn significantly increases the project ' s return on equity (ROE) ratio. Simultaneously, 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, DAPAN cuts energy costs for consumers and generates stable, high and asset-backed returns.

4.1.4. Standardization of kWh token issue

From the administrative responsibilities listed above, with DAPAN the producer has only two tasks:

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.

DAPAN not only provides a simplified process, but also increases a project' s ROE up to 20%. Below is a simplified example of the business case of attracting capital through internal energy token sale on the DAPAN platform. In other words, capital requirements are met 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. Equity need: 29% b. Tokens sold: 11% of project c. Debt: 60% d. ROE: 20%	a. Equity need: 40% b. Tokens sold: 0% c. Debt: 60% d. ROE: 16%

As capital is received prior to construction, the price of electricity to be delivered is set (hedging future sales of energy depending on the amount of tokens or energy sold). This decreases the need of initial capital needed for construction. Once the delivery of energy according to the concluded initial smart contract is complete, the producer sells the rest of produced energy at market price. This way, a producer gets the full benefit 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.

4.1.5. Speed of investment

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

This realization has come with the growth of blockchain use. The disruption of financing has begun with further development of transaction scalability11. With clear and standardized rules, projects are able to begin in a matter of hours once showing their capacity to execute. The process will streamline further with the development of the necessary tools to make the process as smooth as possible. Reducing the time from consideration and negotiations to investment from 3 months on average (taking into account all negotiations with funds and banks when the project is ready for investment) to a few clicks after reviewing terms and understanding return via the discount on green energy provided by the project developer.

4.2. Challenge: lack of access to green energy investment opportunities

4.2.1. 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 market price and without subsidies, which pose the risk of Governments changing positions on subsidies or sometimes implementing extreme changes.
DAPAN intends to provide global access to development projects that produce energy at the market price and would allow more people to benefit. Why invest in solar energy where there is not much sunshine? Invest where the sun shines year round and buy locally available green energy from the proceeds of your investment. Here is an example:

Many governments have previously supported renewable energy development to some extent, however, some countries have much more renewable energy potential without any subsidies. Let us compare UK and Spain using IRR example12:

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

UK return on solar project example:		Spain return on solar example:	
Investment EUR/MW	800.000	Investment EUR/MW	800.000
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 larger return on such a project in the UK. However, after the support period has ended14 project earnings drop significantly, creating distortion of the market and hindering the development of potentially better renewable energy options and wasting tax revenues allocated to subsidies.
We begin with countries that have an abundance of renewable resources to be developed at market price and in operation for many decades, not only while receiving subsidies. For example: Spain, Singapore and France, beginning with countries that have high solar irradiation, wind or hydro resources and are capable of producing renewable energy at market price.

4.2.2. Gains from investment process simplified

We want to make the process of attracting capital more efficient. The evaluation process for investment becomes much simpler when investing in something you are used to everyday without complicated financial terms. Your consideration of investing is limited to 2 things:
1. Amount of energy or investment size.
2. Energy price or discount applicable to the current market price for energy.

The DAPAN role of attracting capital from anyone 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 the DAPAN model, users of the platform would invest in green energy which is a tradable resource within the DAPAN 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 raise the necessary equity capital for project development, sells part of its energy to be produced in the future. This energy is always sold below the average market price. The

discount for this energy price will depend on the market demand/ supply in the DAPAN platform. The following shows a simple investment return example:

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

Return on investment		Cost of token 1 MWH	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

Complicated project risk considerations are the responsibility of the developer. These risks are included in the price of energy production, simplifying the buyer’s/investor’s decision to buy the final product which price is determined by the market with a substantial discount. Project due diligence is done by the experienced DAPAN team.

The user of the platform who has acquired token for the energy to be produced in the future may:
1. Sell to another user until the moment the energy is produced
2. Automatically sell in the national energy market where the energy is produced and receive proceeds
3. Use for energy needs if DAPAN is working as an independent energy supplier in the buyer’s 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 yearly with greater connectivity of electrical devices, electric cars even with an increased energy efficiency of new devices.

4.2.3. Efficient use of capital

We understand that capital needs to be invested efficiently, thus in projects able to produce renewable energy cheaply, users will be able to:
1. Compare projects through the cost of tokens
2. Compare markets through energy tokens and returns on investments

The investment in energy will be used as efficiently as possible for the highest return for the backers of such projects while still making a profit for renewable energy projects themselves.

4.2.4. 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 the Ethereum blockchain) make the investment structure clear. All 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 renewable energy projects, the only variable left will be the energy price.

4.2.5. 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 we will publish in Medium. With the current level of independent energy production and market competition, over 80% of electricity transactions are done over exchange, making markets mature and highly liquid.

4.2.6. Shift

DAPAN proposes to receive returns from energy where investment is profitable, sustainable and efficient and use earnings in the local market to procure green energy. DAPAN, 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.

4.2.7. Secondary trade

While bringing standardization to energy production and tokenizing energy with the help of blockchain and smart contracts, DAPAN will enable trade and liquidity in green energy. The current market, due to a shift from subsidized to unsubsidized energy production, has pushed project developers to PPA (Power Purchase Agreement) providers who cut the discount on energy from the producer so they are 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 / MWh for solar energy and 37 EUR/MWh for wind with the average market price of energy of 47 EUR for the past 10 years17. It creates opportunities to realize sizable profits for the PPA providers. With DAPAN we will provide this opportunity for anyone without any additional barriers to trade.

7. DISCLAIMER

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