



Copernic³
WHITEPAPER

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About the Project

The renewable energy market in Poland has been growing rapidly for several years. This is due to the support from EU authorities and the Polish state, as well as due to the rapid technological progress that increases the durability and efficiency of photovoltaic cells.

The Windmill Act of 2016 has effectively stopped the development of wind energy in Poland. Therefore, the ambitious targets for the share of RES in the country's energy mix will have to be achieved by investing in photovoltaics. This is an opportunity for the entire industry to grow, which is already happening.

As part of the Copernic project, we give the broader audience the opportunity to participate in the boom of renewable energy sources. We want to achieve this goal by combining the photovoltaic business with the blockchain industry. The decentralized register technology will secure the investors' digital proprietary rights to the photovoltaic farm built by us and to the green electricity it will generate.

Polish declension of the word Copernic

Nominative	Copernic
Genitive	Copernica
Dative	Copernicowi
Accusative	Copernica
Instrumental	Copernikiem
Locative	Copernicu

Value proposal

Do you care for the environment? Do you believe in green energy? Do you expect the electricity prices to grow in the near future?

If you answered all these questions with a “yes”, then investing in our project will be the perfect opportunity for you to combine business with doing the right thing. We would like to offer you an opportunity to become a micro-producer of renewable energy without the need to install any system on your house’s roof. You might ask: how is that possible?

By purchasing COP3 tokens, you support us building a photovoltaic farm with 1 MW (or one million watts) output power. You might not know that 1 watt of power produces about 1 kWh of electricity during the period of one year. Therefore, for every COP3 token you own, for at least 25 years (the farm’s shortest possible lifespan), you will be receiving 1 CKWH token every year, which corresponds to 1 kWh of electricity. Now you might be thinking: so what? I’ll buy some token, then I’m going to get some other tokens, but will anyone guarantee they are going to have real value? Yes, we will, together with the Polish state. We promise to buy your CKWH tokens at the then-current price of electricity on the Commodity Energy Exchange (Towarowa Gielda Energii, TGE) whenever you decide to sell them to us. You can also keep them in your portfolio and wait for the electricity prices to go up, thus increasing the value of your tokens.

But that’s not all. We will apply for a balancing entity concession, which will allow us to operate as an entity allowed to provide electricity for households and businesses. This possibility results from the Renewable Energy Sources Act and the Energy Law. As soon as we acquire the concession (or sooner, if the market becomes deregulated) we will be able to provide energy directly to you. We will accept payment not only in PLN but also in CKWH tokens! This means that if you buy enough COP3 tokens now, you can secure yourself against an increase of energy production prices in the future. After all, you will be producing electricity for yourself, so why should you pay extra for it?

You’re probably thinking, what guarantee do you have that this venture will work? What if we actually build a farm but electricity prices will drop in a few years and we will be outperformed by the competition? Our plan includes additional protective measures for the investment in a photovoltaic farm. Such measures include energy

supply contracts with companies. We agree with a company that for a number of years ahead electricity will be supplied to their facility at a fixed price from our farms. This way, we protect our business and our recipients gain stability afforded by the fixed price of electricity during the term of the contract.

Do you want to own a piece of a photovoltaic farm for yourself? Then read the rest of our whitepaper. You will learn about the costs of such a project, what’s in it for us and you will also get to know the technical and legal details of tokenization.



About the Project

Copernic dates back to 2020 with its first project COP1 that resulted in an incredible success, confirmed by the involvement of 413 investors and 40 strategic partners. We raised precisely PLN 821,472.27 which is almost 70% of the assumed objective for the construction of the first community-owned farm in Stary Dzi-ków. The success of the first fundraising campaign shows that investors put great trust in the project and, just like us, believe in its success. That is why the second project COP2 was launched soon afterwards, this time to finance the Gapowo farm. The bar was set really high but this fundraising exercise resulted in even more success. With the support of 460 investors, we collected precisely PLN 916,270.34 which was over 76% of our objective. But that is not all, so it's time to build more farms. Together, we'll build a thousand!

We believe that it's everybody's duty to participate in the energy revolution. When creating the Copernic project, we were guided by the idea to make green energy accessible to everyone; our goal is to build a thousand photovoltaic farms. Every investment must make it through a laborious bureaucratic process which extends the farm construction time from several to more than ten months. The overall cost of con-

Our farms can deliver green energy to households and offices even a few hundred kilometers away.



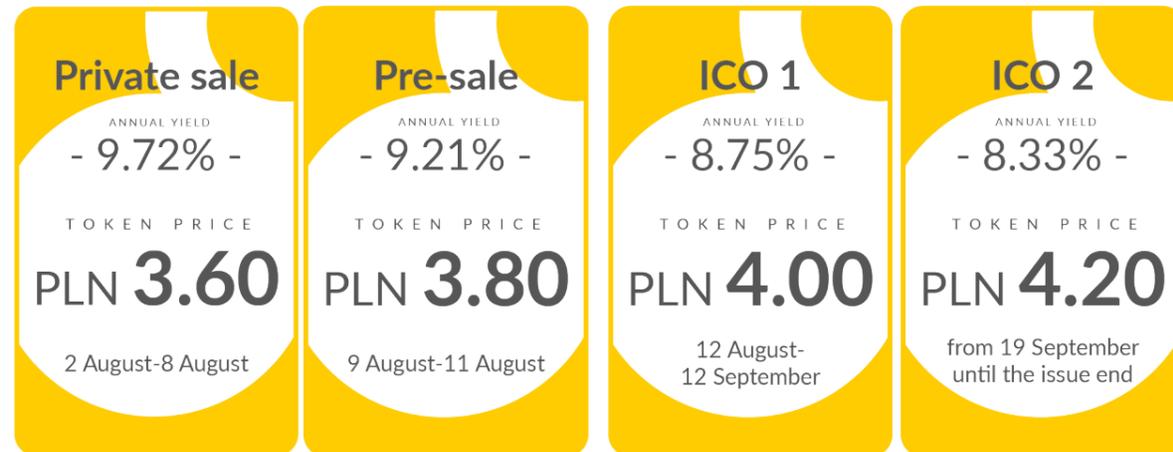
structing a 1 MW farm, all costs included, is approximately PLN 4 million. That is why we start with small steps – as of the moment of starting our fundraiser campaign, we had signed 12 lease contracts for land suitable for constructing a farm. We will choose the final location for the next Copernic photovoltaic farm from among them. Apart from those 12 contracts, we are also a shareholder of 87 Copernic Black projects that are already in progress.

At a glance

- **The primary token (COP3) is an instrument of entitlement to the lease contract for a part of photovoltaic farm with 1 Wp production power.**
- **The derivative token (CKWH) produced by the primary tokens is a stablecoin for 1 kWh and allows you to:**
 - exchange it for its equivalent in PLN;
 - hodle, playing for the electricity value increase;
 - exchange it for electricity (once Copernic or one of our partners acquires a balancing entity concession).
- **1 COP will generate 1 CKWH in one year for at least 25 years.** This period results from the term of the lease contracts for lands to be used to build farms; if such a contract is prolonged, production of CKWH tokens continues.
- **1 CKWH is burnt only when exchanged for electricity; otherwise it always retains its value.**
- **The acquired funds are used to implement a business model that will be repeated in future farms.**

Profit estimates

The emission of COP3 tokens is split into several sales rounds. The earlier you join the project, the higher yield you will get from your investment. Annual yield rates are presented for an average cost of clean energy in the TGE equal to PLN 0.35 per 1 kWh.



Copernic assets

Precinct	Gmina	Voivodship	Area
Barany	Lipno	kujawsko-pomorskie	4.57 ha
Jasieniec II	Jasieniec	mazowieckie	3.13 ha
Krzyżewo-Jurki	Czerwonka	mazowieckie	2.56 ha
Lisewiec	Kolbudy	pomorskie	7.19 ha
Lupice	Stawa	lubuskie	3.91 ha
Margonin	Margonin	wielkopolskie	3.59 ha
Obrzynowo	Prabuty	pomorskie	7.8 ha
Opalenie	Gniew	pomorskie	5.43 ha
Rzeczków	Skierniewice	łódzkie	1.72 ha
Skrzynno	Ostrówek	łódzkie	3.98 ha
Sypniewo	Więcbork	kujawsko-pomorskie	8.5 ha
Turośl	Turośl	podlaskie	1.93 ha

The above data presents calculations for selected land owned by the company and are intended to be used for constructing subsequent farms. However should the results of the fundraising exercise be unsatisfactory, rights to these will be sold and the money channeled to the construction of the Copernic3 farm.

I General parameters

- Total parcel(s) area over 1.2 ha
- Plan: regular shape, East-West axis width >50 m
- Terrain shape: flat or inclined to the south
- Additional features: no buildings or shadowing elements; no need for levelling; no need for removing trees that would require reporting

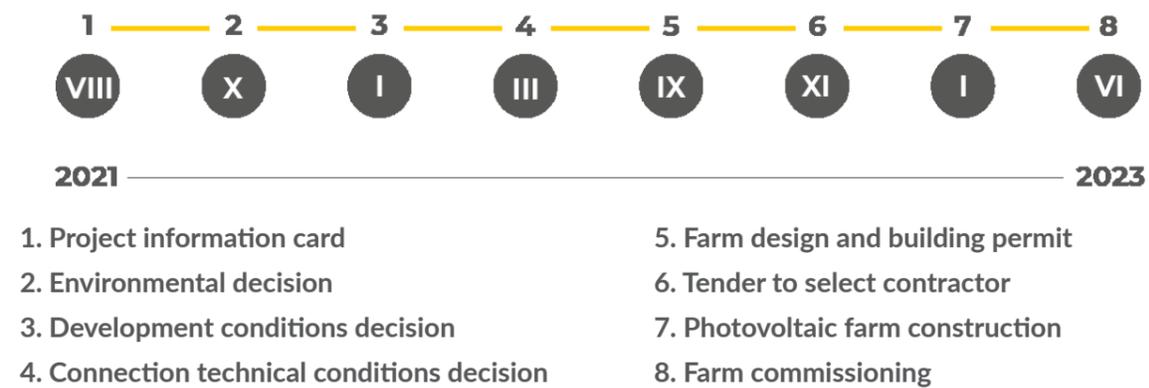
II Land status and class

- Local development plan: area not included in the local development plan or an area where the construction of a photovoltaic power plant is allowed
- Land class in case of arable land: 4-6, mineral origin
- Protected areas: land outside any protected areas such as Natura 2000, national parks etc.

III Infrastructure

- Power grid: medium-voltage (15 kV) or high-voltage (in case of large parcels) passing through the parcel or nearby at a distance not exceeding 500 m.
- Access road: immediate vicinity of a public access road allowing >20 t transport or allowing hardening over a short section.

Investment roadmap



The photovoltaic farm construction process begins from drafting a project information card. Upon submission to the competent gmina, it must obtain approval of three authorities: the State Sanitary Inspection, the Polish Waters Administration and the Regional Directorate for Environmental Protection. Only then can the gmina issue an environmental decision. Then, a development conditions decision must be obtained. This decision, together with the decision on the technical conditions for the connection, agreed with the operator of the nearest power substation, determine the final shape of the farm's design. At this stage, obtaining a building permit is only a formality.

With the building permit obtained, we are free to participate in one of the renewable energy auctions for newly built systems, organized by the Energy Regulatory Office. Being among the auction winners is a guarantee that the state will compensate the prices of the electricity sold to the price offered in the auction for subsequent 15 years, which de facto ensures survival for the farm, no matter the changes in market conditions. Two to three months after winning the auction and starting the construction, the farm will start producing electricity.

Make money with Green Energy

Blockchain energy tokenization



Financial dimension

Costs estimate

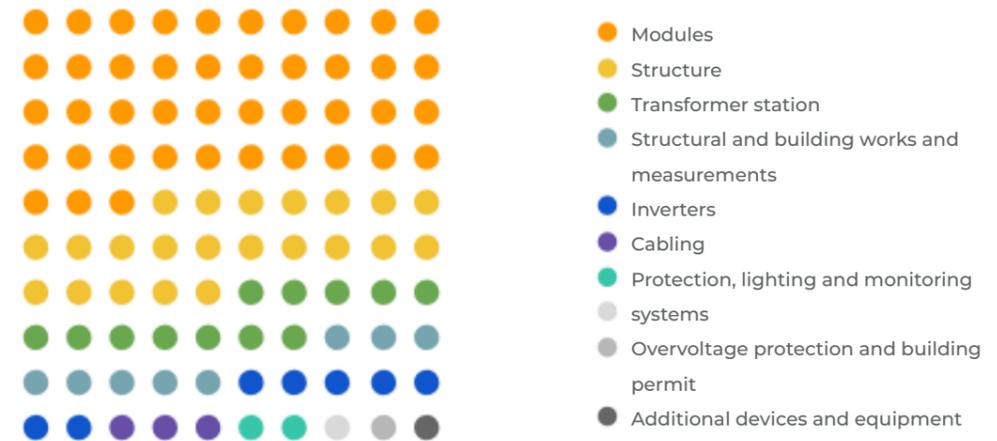
Item	Amount*
Purchasing photovoltaic panels	PLN 1 200 000
Costs of land acquisition and obtaining permits	PLN 100 000
Cost of inverters	PLN 400 000
Installation of the support structure and modules; ear- thworks	PLN 500 000 PLN 200 000
Execution of the connection	PLN 100 000
Monitoring system, fencing and others	PLN 2 400 000

* Values indicated are net amounts
Source: Own calculations based on requests for proposal

The dynamic development of the industry and growing competition among vendors result in rapid decrease of the estimated overall costs of the venture – M. Racziewicz’s report entitled “Economic Profitability of a Photovoltaic Farm up to 1 MW in Polish Conditions” (Optycalność ekonomiczna farmy fotowoltaicznej do 1 MW w warunkach polskich – cire.pl/pliki/2/2019/fotowoltaika_producent.pdf) from early 2019 mentioned the amount of over PLN 4.5 million. However the industry consensus indicates prices somewhere between 2.5 and 3.5 million PLN. Thus we estimate that starting a farm should ultimately cost us no more than 3.2 million PLN, which is set as the fundraising hard cap.

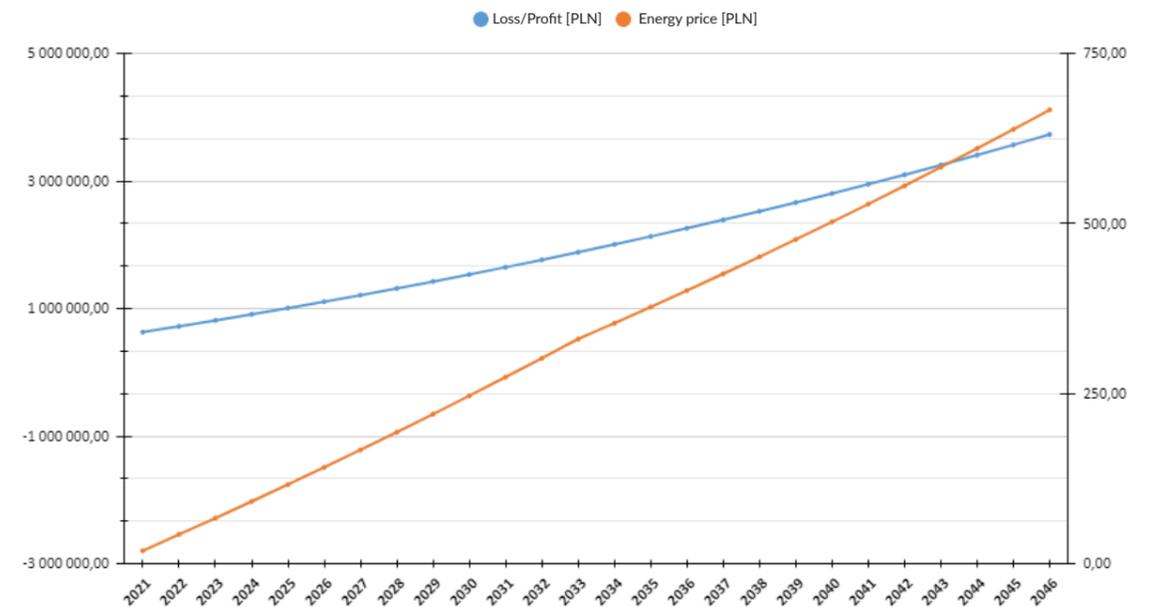
As for the market value of the completed farm, Deloitte has been publishing subsequent editions of their report entitled “A Market Approach for Valuing Solar PV Farm Assets”. According to the most recent edition from 2018, although already a little out of date, a photovoltaic farm with 1 MW of power is worth somewhere between 1.2 and 1.8 million EUR.

Costs of system elements



Source: 1 MW PV farm construction costs – analysis of cost components in the price!

Profits from a model photovoltaic farm in 2021



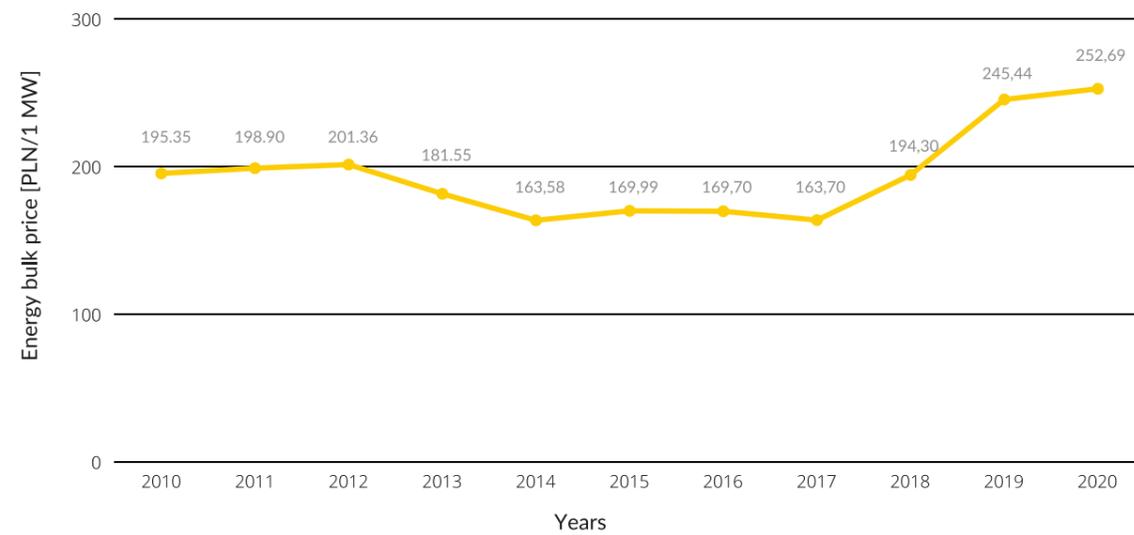
Source: <https://fotowoltaikaonline.pl/farma-fotowoltaiczna>

Copernic will earn

- 20% of the farm's income;
- the fact that as an operator, it collects an operating fee equal to 10% of the market price, if it exceeds the guaranteed price;
- energy overproduction, as the real annual production from 1 MW may slightly exceed 1 kWh (depending on the location; the average overproduction in Poland may even reach 16%)
- the energy sale price differences in PEAK5 peak forward contracts and the BASE price

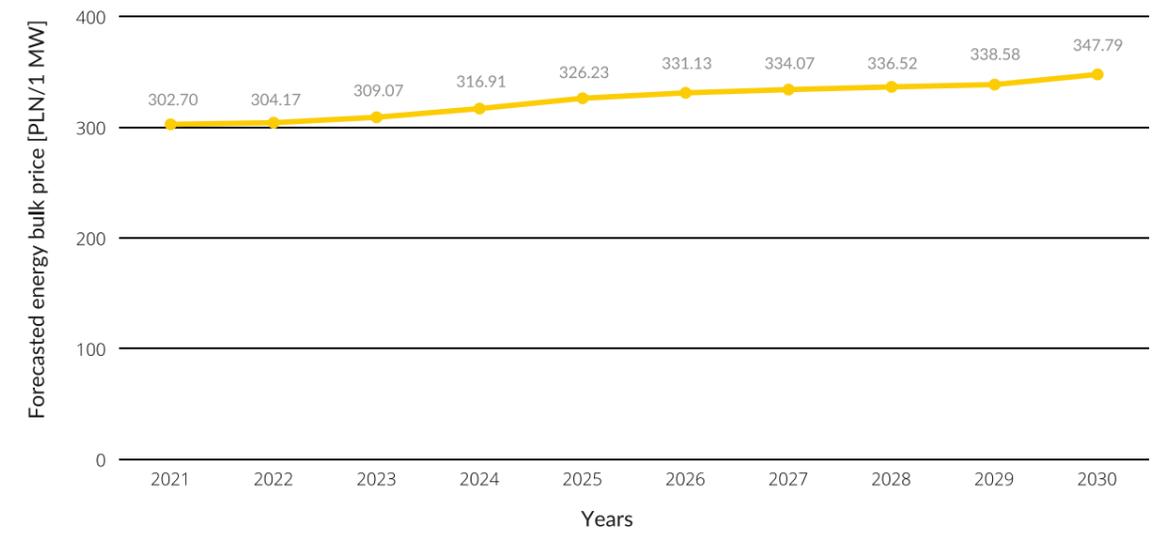
Energy bulk price in the years 2010–2020

Based on historical data



Forecasted energy bulk price in the years 2021–2030

Based on the IEO forecast



Legal concept

Legal concept of the primary token (COP)

The legal structure of the COP (primary) token is based on the concept of a token as a instrument of entitlement for a mobility (i.e. photovoltaic farm installation) lease contract. The lease contract is concluded by means of acceptance of the terms and conditions upon buying the primary token. The Terms and Conditions define the following:

What is a token?

The primary token was defined as an instrument of entitlement for the lease contract for a part of an entire set of mobile items in the form a photovoltaic farm. Disposal of such a token (sale, donation, etc.) is equal to transfer (assignment) of the receivable under the lease contract, to which the lessor (Copernic) granted their implicit, prior and irrevocable consent as per the Terms and Conditions. A new token will be issued for each farm – COP1, COP2, COP3, etc.

Lease Contract details

The Terms and Conditions determine, among others, the term of the lease (at least 25 years – the Copernic land lease contract term) and the provisions for the lessor's liability for the maintenance and replacement of mechanically damaged or stolen panels. They must also determine the boundary conditions under which the leased item must be replaced by the lessor (e.g. when the performance drops below 80%).

Note that an important element of this concept is the fact that the so-called natural benefits (ergo the electricity) from the leased panels go directly to the lessor – Copernic. Whereas the lessee gains the so-called civil benefits, which are CKWH tokens; these can later be exchanged for electricity or sold. Therefore, a part of the contract constitutes the lessee (buyer of COP token) granting the right to acquire real natural benefits and manage them, and therefore to sell them to the power grid operator. This is the so-called sublease contract or a usage contract concluded with an entity different from the beneficial owner of the farm (as a contract with the latter would be void by operation of law). The Terms and Conditions explicitly state that the COP token holder is only entitled to the benefits in the form of CKWH derivative tokens. Any electricity production surplus is to be controlled exclusively by Copernic and does not increase the number of derivative tokens due to the primary token holder.

Why leasing and not, for example, co-ownership:

- the investor can account the investment as tax deductible costs only once – it does not depreciate over 10 years;
- Copernic controls the company's assets, which prevents decision deadlock that would happen with large number of co-owners.

Derivative token (CKWH) legal concept

The CopernicKWH derivative token is an instrument of entitlement to receivables under remuneration for allowing Copernic to use the fragment of the photovoltaic panel with a peak production power of 1 Wp, leased by the COP3 holder. This remuneration amounts to 1 kWh of electricity per year.

The assumption that each COP primary token gives its holder one CKWH token per year results from the fact that in reality this is the average annual production of electricity from a part of panel with 1 W of power. From the legal point of view, both the option where the holder of one COP receives 1 CKWH per year and the option where they receive its parts at smaller intervals are admissible, whereby we chose the latter as more advantageous for investors. Copernic makes a commitment to the token holders to repurchase them for the bulk price of one kWh of electricity or accept them as payment for the same amount of electricity. As a consequence, CKWH is a so-called stablecoin, its parity not being a currency but a "commodity" which is electricity.

Tax consequences of using an repurchase of tokens / exchanging tokens for electricity

Acquisition of derivative tokens should be treated as natural/civil benefits resulting from the right to lease an item and the primary token, which means that the sole acquisition thereof does not create income. It is similar in the case of repurchasing tokens. At the same time, there is no doubt that paying for electricity with such a token will not result in tax consequences, as it will be equal to payment for a commodity with a setoff as payment with a different digital commodity.

Benefits from the concept of using a derivative token as a payment token

- by "mining" a CKWH token, the investor does not acquire taxable income;
- by exchanging the "mined" CKWH token for electricity, the investor does not pay any tax either;

- the investor acquires taxable income when selling the “mined” CKWH for PLN;
- the investor does not acquire taxable income when selling the “mined” CKWH for a cryptocurrency (e.g. Bitcoin, Ethereum).

Technological concept

Copernic token technology



COP tokens are issued in the Ethereum blockchain network, using the most popular and common standard – ERC-20. It is assumed that one token is equivalent to the value of 1 Wp (watt-peak), i.e. the surface of a photovoltaic panel with a peak production power of 1 W. The accepted standard is the possibility to divide the token up to 18 decimal places and the token concept specifics do not require modification of this property.

Such tokens are indistinguishable and identical. However you should take into account the possibility of subsequent photovoltaic farms being built under the same business model. The solution we opted for is

issuing new tokens with every farm built, with identical codes but with a different smart contract address in the blockchain network. The same portfolio can contain tokens from different emissions, visible as separate items.

The token offers the “burn” feature. This is a mechanism allowing to irreversibly withdraw a given number of tokens from the market. Only the person who holds tokens in their portfolio may do it, expressly consenting to it. This also applies upon returning the lease, when the corresponding equivalent of tokens will be burnt (destroyed).

Key features of COP token

- 1 COP token produces 1 CKWH during 1 year;
- COP tokens may be traded in an exchange;
- tokens from subsequent farms are named Copernic1, Copernic2, Copernic3, etc.
- the “burn” feature is applied upon the end of the land lease for the particular farm.

Copernic KWH token technology



We assume that CKWH tokens should appear in the COP token holder’s portfolio in such a manner that during one year the holder of one COP token becomes the holder of one CKWH token. This result could be acquired in several ways, differing mainly in their difficulty scale and the implementation cost. All of these are based on the so-called AirDrop mechanism, i.e. sending tokens to portfolios in a controlled manner.

The solution selected is the staking mechanism, available within the Kanga Exchange. It consists in freezing tokens within the exchange's application, which enables to prove that the particular user holds the funds. When using this solution, CKWH tokens are only submitted to those investors who stake their COP tokens. In such a case, tokens are sent within the exchange accounting system which enables to eliminate blockchain network operation fees. This makes it economically reasonable to transfer even the smallest part of a CKWH token.

As far as CKWH token features are concerned, "burn" and "mint" are used. A more ambitious solution would be developing the CKWH token as a token mined by the users by staking their COP tokens within a dedicated smart contract that would submit data to the CKWH token contract. In such a case, one would have to abandon the "mint" feature and the process would become fully automated and independent from Copernic. This, however, would give raise to unnecessary complications to a relatively simple system, creating an extremely high entry barrier for investors not being experts in the practical applications of blockchain technology.

Moreover, in order to fulfil obligations regarding buying CKWH token at the TGE electricity market price, Copernic shall work with Kanga Exchange to set up an automatically updated CKWH purchase order at that price. The tokens will not be actively bought off the market but the purchase order value will always be set at such a level so that it cannot be depleted.

Key features of a CKWH token:

- a CKWH token is not burnt until it is transferred to the balancing entity's portfolio;
- for each 1 MW farm, 25 million CKWH are created in advance and gradually distributed to the investors' portfolios.

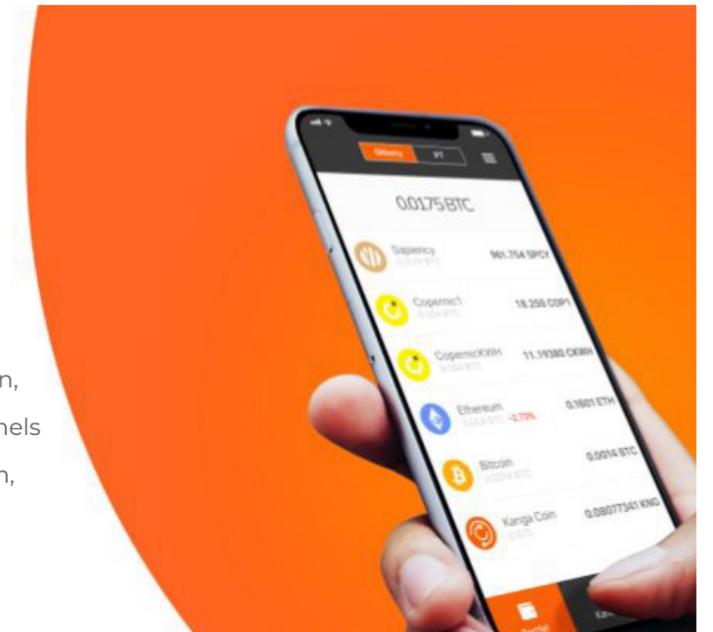
Sales platform

The solution used for the initial issue is the Mosaico platform. It allows both to create the appropriate token, but also to configure and start a fundraiser campaign, while simultaneously automating the portfolio creation process for the investor and token transfer. As the platform is integrated with Kanga Exchange, the path from buying tokens to freezing them is even simpler – the investor does not have to send tokens through the blockchain network on their own, as the tokens are put directly on the investor's Kanga Exchange account. The only action required is logging in and not freezing COP tokens.

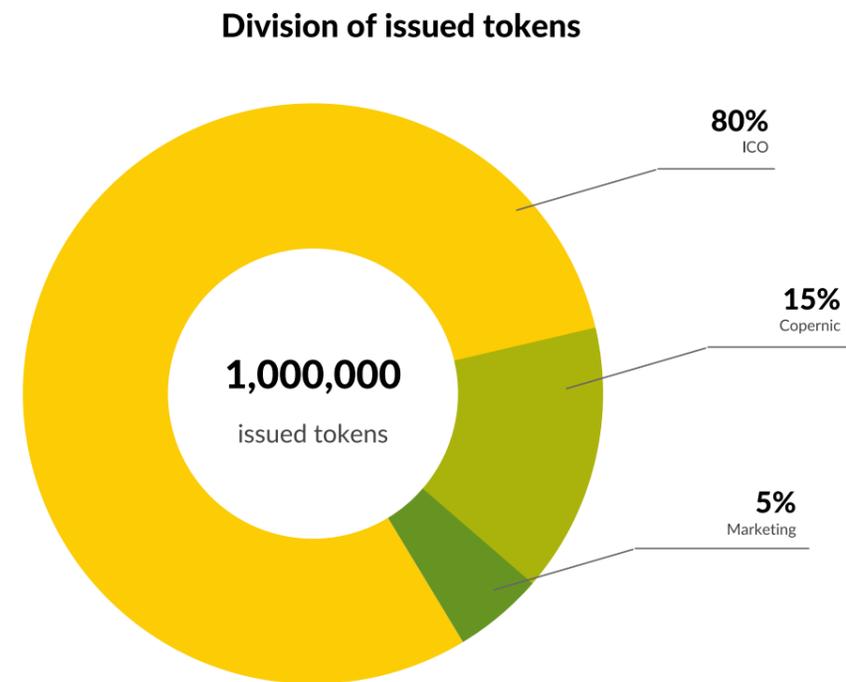


Kanga Wallet

With the Kanga Wallet mobile application, you have access to a number of COP1 panels and the CKWH energy produced by them, which you can sell, store or use.



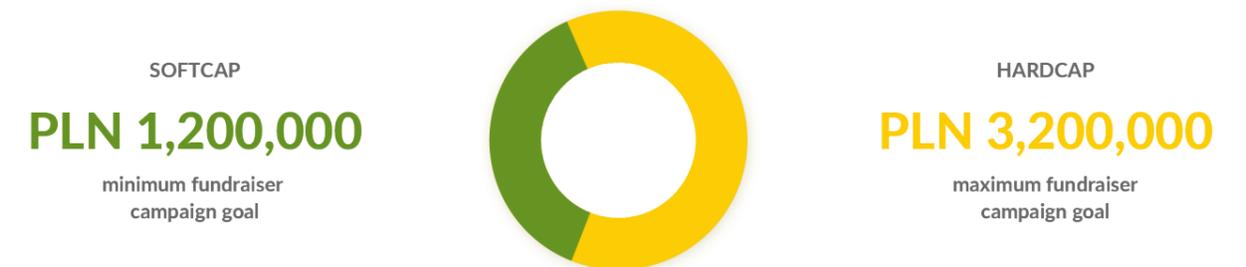
Tokenomy



80% of the COP3 tokens issued are to be sold, which constitute in total the instruments of entitlement for up to 80% of the farm's generation capacity. Copernic intends to retain 15% of the tokens. Moreover, 5% of the issued tokens will be used for marketing purposes. For the third farm this means that 800,000 tokens out of the issued pool of one million will be sold. The same model will be used with other farms.

As far as the CKWH tokens are concerned, their number remaining in the market will depend on the number of farm tokens issued so far. Along with issuing each farm's tokens, all CKWH tokens will be issued, which are equivalents to the total quantity of electricity that will be generated by the farm for the next 25 years. This means 25 million CKWH tokens for a 1 MW farm. They will be submitted over time to the portfolios of the investors staking the COP tokens. As soon as the fundraiser campaign for another farm is started, more CKWH tokens will be issued in the same model.

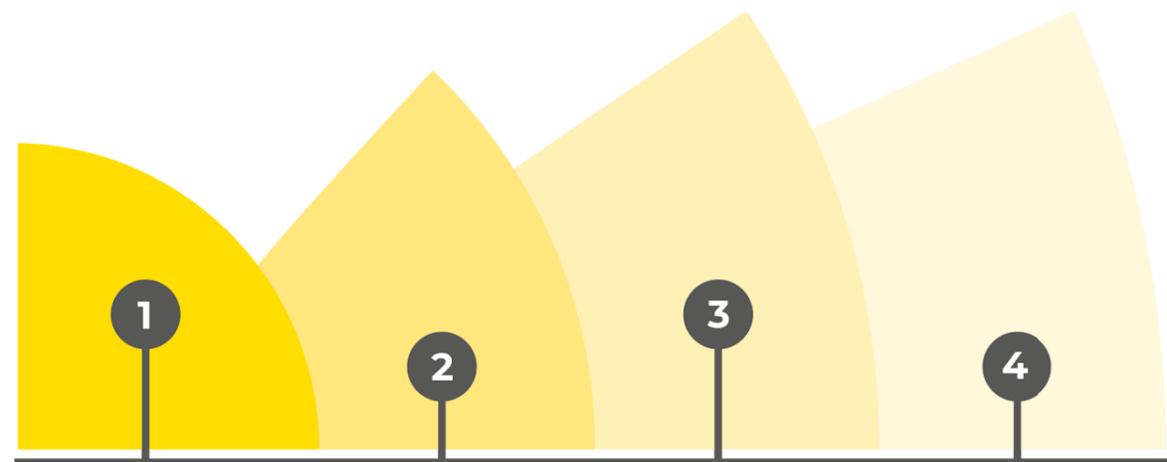
Issue objective



It is assumed that failure to reach the soft cap for an issue results in the refund of invested funds to investors. This is also what Copernic will do; however, it is permissible for the company to cover the remaining sum from its own funds in order to reach the soft cap. The soft cap amount is determined to be PLN 1,200,000.

According to calculations, the construction costs of a photovoltaic farm should not exceed PLN 3,200,000; therefore, this amount has been established as the maximum goal of the fundraiser campaign.

Tokenization roadmap



1. Drafting documentation
2. Issuing the COP3 token and PoS launching
3. Farm commissioning and initiation of CKWH tokens distribution
4. Building new farms and further issues

We start the entire tokenization process from drafting the token terms and conditions of sale and the whitepaper. The terms and conditions of sale determine the details of the lease contract for the specific farm, while the whitepaper is for information purposes. Following preparation of the formal aspects, the tokens are issued according to the concept presented above. As the fundraiser campaign progresses, the farm is built in parallel. Following its commissioning, CKWH tokens will be distributed. More farms will be constructed in the following years, which in consequence will lead to new COP token emissions and a proportional increase of the CKWH token supply.

About



Rahim Blak CEO

Founder of the click community – a social media agency employing over 80 social media specialists. Co-founder and CMO of the edrone system – the first eCRM for e-commerce. Creator of the innovative Sapiency project – Personal Brand Stock Exchange, and the Mosaico tokenization platform.

Focuses on social marketing, with emphasis on social employer branding and social CRM. Teaches classes on marketing as part of an MBA program in Łódź, social media at the AGH University of Science and Technology in Kraków, sales at the College of Economics and Computer Science in Kraków and Social Employer Branding at the Leon Koźmiński University.

Over 10 years of experience in the marketing industry. For years he has been fascinated with new technologies, such as blockchain and artificial intelligence, as well as renewable energy that transforms the world. CEO and Marketing Director at Copernic.

Daniel Birnbach COO

Graduated from the University of Agriculture in the faculty of Water Management Engineering and holds the title of a Master in Environmental Engineering. The RES industry has always been close to him. An advisor dealing with the acquisition of land, closely collaborates with the Copernic sales department. Collaborated with transport companies and worked actively at logistics departments. Signed over 100 lease contracts for Copernic.

Daniel is the Chief Operating Officer at Copernic, supports all activities related to new investments, manages administrative support and ensures work ethics.





Radosław Ordyniec

Sales Director

From the start of his career, he has proven himself in various industries, acquiring the experience needed for a Sales Director. In both his private and professional life, he is interested in marketing and new technologies.

Joanna Jaworska

Management Board Assistant

As the Assistant, she is on the frontline of building the company's image. She coordinates the team's working time, organizes office work. Her tasks also include acquiring customers and scheduling B2B and B2C meetings, optimizing time and searching for effective methods to achieve goals. Ecology and the RES industry are not only her job, but also her lifestyle in Kraków.



Adam Schimke

Lawyer, Consultant

A lawyer, graduate of the Law and Administration Faculty at the Jagiellonian University. Involved professionally in blockchain and tokenization since 2018, while operating actively and combining these activities with work related to the RES industry. Energy tokenization is daily bread for Adam and the RES industry provides him with a wide scope of opportunities.

Natalia Siwek

Performance Marketing Manager

Graduate of the Marketing and Market Communication Faculty at the University of Economics. For 5 years she has been working in the energy and RES industries. Knowledgeable about marketing communication and effectiveness marketing. Her responsibilities in the project involve sales psychology and the automation of marketing processes.



Angelika Rozumek

Brand Manager

Graduate of the Pedagogical University of Kraków at the faculties of Information Architecture, as well as Information Management and Digital Publishing. Possesses knowledge in online marketing and creation development. Her responsibilities at Copernic involve social media and building brand image.

Paweł Kuźniar

Front-End Developer

Paweł Kuźniar is a Front-End developer with 15 years of experience. Already as a student at the Management Faculty of the Kraków University of Economics he started working as an implementation engineer for accounting and HR management systems. His experience in the field of finance led to him becoming an accountant for a while. Co-creator of an IT company and a receivables management system, creator of LinuxPortal, a specialized software web portal. Passionate about creative thinking and the author of Inspido, a project used for brainstorming.





Przemysław Kołaziński Customer Account Manager, Seller

Specializes in customer service, very passionate about working with people. Believes in individual approach to the customer and creating customized solutions. Account Manager at Copernic, responsible for sales processes. Enthusiastic about the RES industry and new technologies.

Paweł Juraszek

Design engineer specializing in photovoltaic farms.

Graduate of the Kraków University of Technology – Energy Engineer and holds a Master’s Degree in Electrotechnology. He’s been efficiently navigating the ins and outs of the RES industry for a long time. Conducts land audits and promotes the automation of this process. He has conducted hundreds of audits for Copernic, all earning positive reviews. Junior Photovoltaic Farm Design Engineer at Copernic.



Jakub Szyszka Junior PV Designer

Graduate of the Renewable Energy Sources Faculty at the University of Agriculture in Kraków. Interested in energy, architecture and drawing. His responsibilities at Copernic involve land audits and contract negotiations with land owners.

