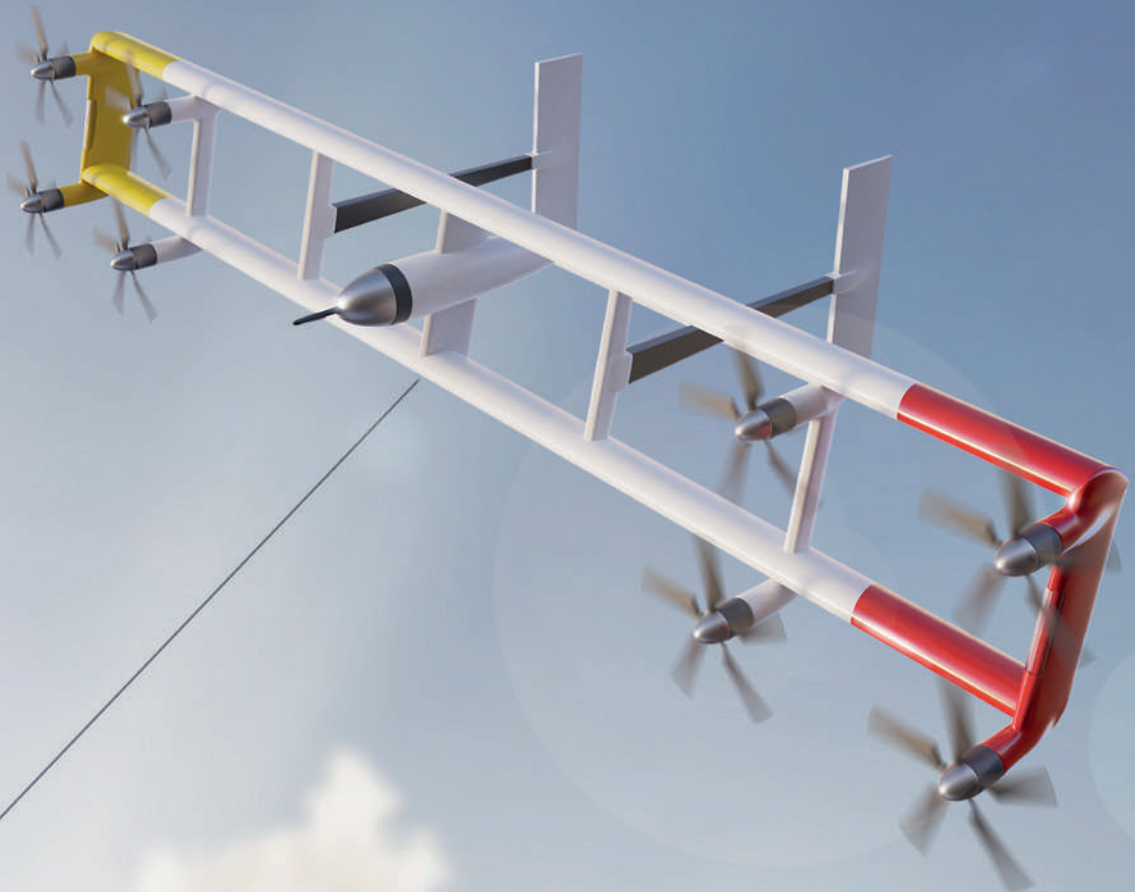


start up

Start-ups are entering the market with new ideas.
A selection is presented on the following pages.
Be inspired by their innovative power.



An excerpt of the
BWE Industry Report
'Wind Industry in
Germany 2023'



ASDRO – Accelerate subsurface surveying at scale

ASDRO gives wind farm project planners precise information about your construction project within the shortest possible time. Our drone geomagnetic system surveys and identifies potential hazards on your site before construction starts.



The drone geomagnetics system also flies over tilled fields and is about 10 x faster than conventional methods.

The drone geomagnetics system developed by ASDRO is a novelty on the market and works with purpose built software and hardware that achieves unique data quality. A geophysical sensor attached to a drone measures the magnetic field during flight. Metallic objects in the ground change the magnetic field and can thus be detected by the sensor. For example, explosive ordnance (UXO), utilities, contaminated sites or archaeological structures can be detected.

The data is evaluated with our purpose built software.

Conventional geophysical subsurface surveying is ground-based, i. e. a measuring device is carried or driven over the surface. These methods are time-consuming and very expensive for large areas. Some areas cannot be surveyed or expensive preparatory work is required on the surface. Using drones as a carrier platform for geophysical sensors solves these prob-

lems. Surveying is up to 10 times faster and therefore cheaper. Areas that are inaccessible on foot or by vehicle can easily be surveyed from the air. Interference with nature is no longer necessary and it is also easier to obtain a right of access.

In combination with camera drones, ASDRO offers an efficient complete solution in the field of surveying. Camera drones take high-resolution images of surfaces or infrastructures from different angles. The image data is used to calculate georeferenced orthophotos, 3D and digital elevation models (DEM), for built and site mapping or for volume calculations. The results provide precise and highly up-to-date information and are used, for example, for construction planning, digital inspections, or cost calculations.

The drone systems can be used individually or in combination and have already been used in various projects in different industries. An ideal application is the preliminary exploration of construction sites. Before construction begins, the terrain is flown over with the geophysical drone system and the camera drone. The geophysical sensor detects explosive ordnance (UXO), pipelines, archaeological structures, or contaminated sites underground. The data can be used to determine the position, approximate depth, and type of object. The results are compared with the orthophoto (calculated from the



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Founding year **2019**

Focus **Subsoil survey, surface survey**

- We offer
- Explosive Ordnance Survey,
 - surveying,
 - Cut&Fill,
 - pipe location,
 - ground investigation

We are looking for **Projects, cooperation partners, wind farm planner, Pictures**

camera drone data) to identify anomalies caused by surface objects. Disturbing objects can be recovered from the ground before construction begins. Construction work can be carried out safely and without damaging unknown utilities, archaeological finds, or dangerous objects. Other use cases for the drone systems are regular construction documentation, surveying of buildings or inspection of infrastructures.

The data and reports are made available to the customer in our “asdro.cloud” and can be visualised in any format, downloaded and integrated into own software to do further work.



Photogrammetric aerial photography provides a digital 3D model of the construction site and can serve as a surveying data basis.



The ASDRO Cloud visualizes all collected data as a GIS file. 3D models, site plans and geophysical reports are also included.

“We can identify hazards on your wind farm and digitize your construction site with drones and software”

*Julian Beutemps,
CEO of the ASDRO GmbH*

Conclusion

ASDRO is a start-up founded in 2019 that is revolutionizing the way surveying is done. By combining drones and software, we make your wind farm free from hazards and digitize your construction site – with a single flight!

The automation and digitalization of data acquisition, data analysis and reporting accelerate the job by up to 80% and result in project cost savings of up to 30%.

Cube Green Energy – Your Partner in the Energy Transition

We acquire and repower wind farms with an operating life greater than 10 years and develop green-field wind and solar farms whilst investing in the latest battery storage and e-fuel solutions to address electricity intermittency.



Over the next decade, unprecedented levels of investment into the renewable energy infrastructure in Germany is needed for national security and to address the climate emergency.

Cube Green Energy collaborates with local stakeholders in the renewable energy sector, providing strong financial backing and world class energy expertise to increase Germany's renewable energy generation capacity, improve efficiency, address electricity intermittency, and support the growing applications of renewable energy.

Who is Cube Green Energy?

Cube Green Energy is led by a seasoned team of energy experts with decades of experiences in numerous leading renew-

able institutions (including at General Electric, Ørsted and Vestas). Skilled in multiple disciplines including development, contract negotiations, financial structuring and asset management, the team actively manages projects and works with partners to strategize, optimise, and implement innovative energy solutions.



The CGE team hard at work

We benefit from strong financial backing through I Squared Capital, an independent global infrastructure investment manager with over € 32 billion in infrastructure assets under management. I Squared Capital has also invested over € 6.5 billion specifically in the energy transition sector since 2014.

Strong relationships with WTG manufacturers, banks, developers, and other stakeholders make us well-networked in the industry. Our expertise in underwriting complex projects creates value for our partners and we drive successful projects through our stakeholder connections and innovative solutions.

Our strategy is to partner with regional and local stakeholders in the renewable industry who require strong financial



**Cube
Green
Energy**

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Founding year **2021**

Employees **13**

Focus	<ul style="list-style-type: none"> • Acquisition of wind farms operating for more than 10 years • Battery storage and renewable e-fuel solutions • Greenfield solar and wind farm development
We offer	<ul style="list-style-type: none"> • Fair and attractive terms for acquiring wind farms operating for more than 10 years • Anchor investor for your battery storage and e-fuel projects • Reliable partner for greenfield solar and wind projects
We are looking for	<ul style="list-style-type: none"> • Acquiring wind farms operating for more than 10 years • Investments in battery storage and e-fuel projects requiring strong financial backing and technical expertise • Cooperation partners on greenfield solar and wind projects



backing for their projects and who can benefit from our connections and strong domain expertise.

Cube Green Energy’s ambition is to build 1GW of power generation capacity in Germany and contribute to the energy transition through investments in high efficiency repowered wind farms, greenfield wind and solar plants, battery storage projects and innovative hydrogen or e-fuel projects.

How does Cube Green Energy achieve success?

- We increase energy generation capacity by funding and working collaboratively with local developers to build up greenfield onshore wind and solar energy production.
- Generating renewable energy requires a lot of land and suitable land is hard to find. Solar and wind farms need up to 100 times more space than gas to generate the same power. It is therefore imperative that renewable energy is generated efficiently. By acquiring late-stage operating wind farms and upgrading the technology or improving WTG layout through re-densification, we are investing in improving the efficiency of Germany’s electrical generation facilities.
- To address renewable energy intermittency, we invest in storage solutions, including batteries, hydrogen and other e-fuels, making renewable energy a viable future alternative for consumers and industrial users who require a 24/7 uninterrupted supply.



“With a team based in Berlin, Hamburg and Stuttgart, we offer fair and attractive terms to partners and incorporate local interests in our projects to ensure community support.”

*Niko Meißner,
Managing Director at Cube Green Energy*



CONCLUSION

At Cube Green Energy we welcome partnerships in, or the acquisition of, projects in renewable energy generation (greenfield and repowering), energy efficiency/storage and e-fuels. Deploying our strong financial capabilities and market leading energy expertise, we are a reliable partner and offer fair terms and help unlock the inherent value in your energy project, driving success through our relationships, active management, and creative solutions.

Kitekraft – Flying Wind Turbines

Kitekraft is developing the wind turbine of the 21st century – one that flies. The combination of drone technology, aerodynamics and software enables wind turbines with only one-tenth the material and half the cost.



Visualization of kite in-flight

The world needs more renewable energy - more installed capacity in more places and in a wider variety of sizes – as quickly as possible. Established 3-bladed wind turbines are already an important pillar of the energy transition and will continue to play a key role in the future. That said, they also come up against regulatory, logistical, or economic limits: high investment costs, difficult to access sites, distance regulations or local opposition prevent wind power expansion in many places. In addition, there are often no reasonable solutions for many smaller or shorter projects and use cases, as economic installations today only start at 2 MW.

We have made it our mission to drastically increase the applicability of wind power and thus make wind energy usable in more sizes and at more locations. This is possible due to our innovative concept. Our wind power system consists of a kite (drone with wings) that is anchored to a ground station with a tether. The system takes off and lands like a drone with the

help of onboard rotors. Once the system is in the air, the kite flies constantly on the path of a horizontal figure eight, generating electricity with the same rotors. This eliminates the need for large towers or huge rotor blades and allows us to achieve twice the height of established wind turbines with the same power output using 10x less material. Due to these circumstances and simpler and cheaper production, logistics, installation, and maintenance, we achieve significantly lower costs. Already with our first product, a 100 kW turbine, we achieve costs comparable to today's wind turbines in the MW range. In addition to cost reductions, our technology offers further advantages

“We are building the wind turbine of the 21st century, making wind power more widely applicable.”

*Maximilian Isensee,
Co-Founder*

KITE // KRAFT

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Founding year **2019**

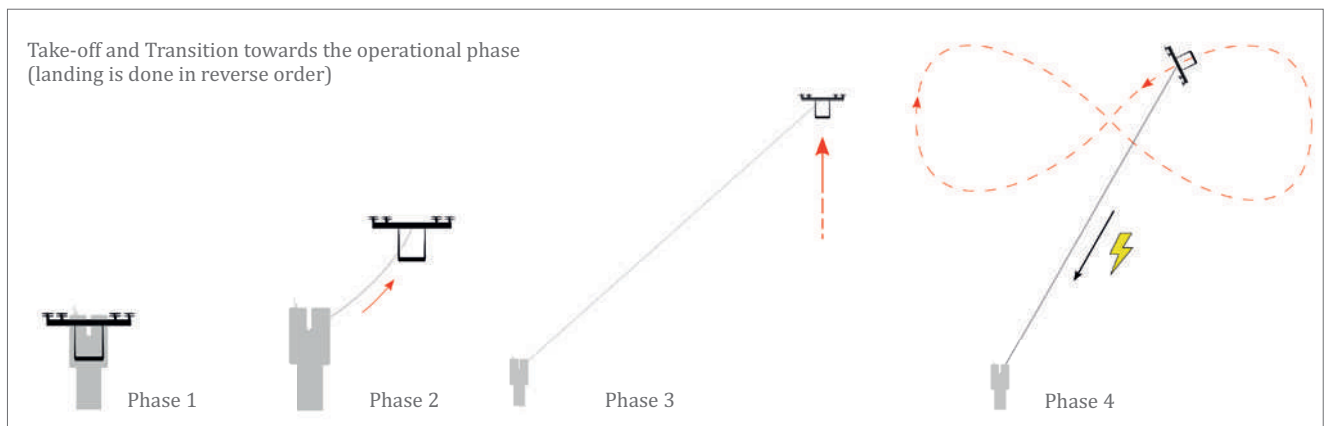
Focus **Airborne wind energy, aerodynamics, software development, control systems**

We offer **Flying wind turbines (100kW, 500kW, 3MW) as turnkey systems or selling the energy (energy-as-a-service or PPAs)**

We are looking for **(Pilot) customers, partners in development and commercialization, investors**



Prototype in Flight



through a significantly lower material and CO2 footprint. Also in terms of social acceptance, our products have an advantage over conventional wind turbines due to a significantly lower visual impact.

The first 100 kW systems are aimed at niche applications in the area of self-supply of agricultural or industrial sites as well as smaller communities. The next product size is 500 kW with the main application in hybrid microgrids or already for power production and feed-in to the grid. Of particular interest here are repowering projects in Germany where new wind turbines face regulatory hurdles (distances, regional planning, etc.) and

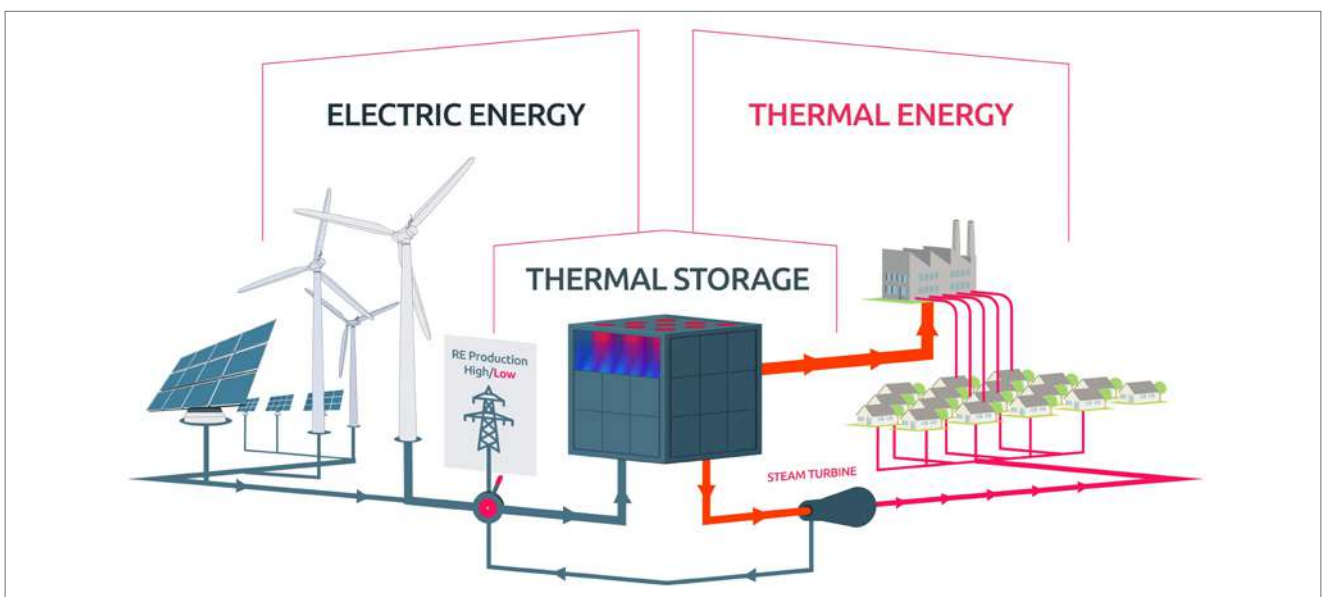
our turbines can fill gaps. The next scaling step will bring our turbines up to 3 MW and thus into the range and use cases of established wind turbines. In perspective, we are planning our turbines for both onshore and offshore applications.

CONCLUSION

We continue to face a huge challenge in the energy transition and need every renewable technology that can contribute. With our technology, we are expanding the economic viability of wind power to more applications, sizes, and locations. Here, our kite wind turbines can exploit niches that conventional rotor blade turbines are denied by regulations or site conditions.

LUMENION – Decarbonisation now!

With its innovative thermal energy storage systems, **LUMENION** makes a stable heat supply from renewable sources possible: by separating energy supply and demand, fluctuating wind power can be used effectively.



LUMENION's storage system: a link between renewable electricity and heat

There is no question that the energy transition is long overdue. We show that its realisation is easy with our innovative TESCORE storage system, which allows for an immediate reduction of CO₂ emissions. At LUMENION, we prefer to speak about a heat transition when addressing the current energy demand: Heat accounts for more than 50 percent of final energy consumption in Germany; in the industrial sector it is even higher, making up for two-thirds, most of which is used for process heat. With our high-temperature storage system, we make renewable energies easily available for the heat market and thus make a significant contribution to the heat transition.

Using “surplus” electricity to generate heat

The basic idea of our power-to-heat technology is to shift the energy behind generation peaks out of the power grid and into the heating grid, thus serving as a relief valve for the power grid. This ensures system security, maximises the use of power plants, can compensate for grid congestion and enables the decarbonisation of heat-powered processes.

TESCORE can be charged in about four to six hours (continuously or discontinuously over the course of a day) – for example, when electricity prices drop during off-peak periods. With the help of an electrically powered heater, the storage core is then heated up to 600 degrees.

Whenever energy is needed, the discharge process can be started, in which the stored thermal energy is transferred to a heat exchanger. The possibility of simultaneously charging and discharging the system ensures maximum availability and optimises the use of resources.

Usable for industry, local and district heating networks

Possible applications include the supply of process heat in the industrial sector. Wherever high-temperature steam is needed for industrial processes, for example, in the chemical or food industry the storage system can be used as a quick solution for a climate-neutral energy supply. Integration into local and district heating networks is also possible,

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Founding year 2016

Employees 17

Focus Thermal energy storage systems with a capacity of up to 500 MWh for a decentralised and CO₂-free heat supply

- We offer
- Stabilising the energy supply from large-scale renewable power generation
 - Optimising yields from wind and solar power plants
 - Continuous supply of thermal energy (150–400°C process heat or 150–250°C process steam), possibility of generating electricity via steam turbine

We are looking for Developers and operators of wind farms who would like to optimise their wind yields and reduce curtailment with our thermal energy storage system

„Our thermal energy storage system is the ideal supplement for wind farm operators in order to significantly reduce curtailments and bring yields to an optimum.“

Peter Kordt, CEO of LUMENION GmbH



Storage unit integrated into a heating system of a residential complex in Berlin

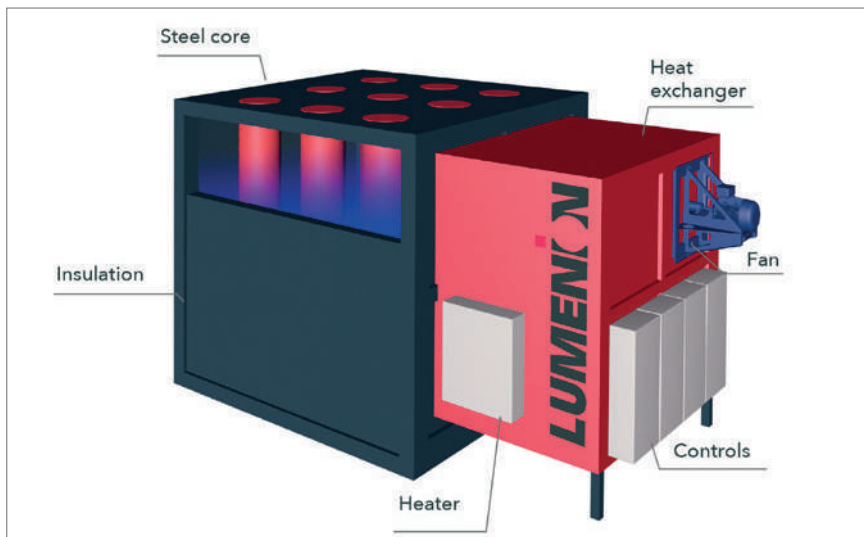
as already demonstrated by our pilot project in Berlin-Tegel: since 2020, a thermal storage unit with a capacity of 2.4 MWh has been supplying around 360 surrounding flats with hot water.

Depending on the energy demand, TESCORE is scalable in size; we offer storage capacities ranging from 0.2 MWh to

500 MWh. The storage modules can be flexibly combined, offering the right storage solution for every need.

Main component steel is regionally procurable and recyclable

We use steel as storage material for the core because it offers numerous advantages. Thanks to its robustness and high density, a lot of energy can be stored in a small space. Thanks to the durability of steel, the operating life of our storage system is at least 20 years – and afterwards it can be recycled with a residual value of 40 %. All other components of the system are also industry-proven and can be sourced locally, which promotes regional value creation. TESCORE can thus be operated and maintained without any risk or having to obtain any permits.



The design of TESCORE is simple

CONCLUSION

With our storage technology, we create a link between the electricity and heat markets and enable reliable and cost-effective storage of large amounts of energy. In this way, we create an enormous improvement in the business case of wind turbines and offer our customers the necessary component for 100 % decarbonisation with 100 % security of energy supply.

RE-Valuation Independent Financial Appraisals

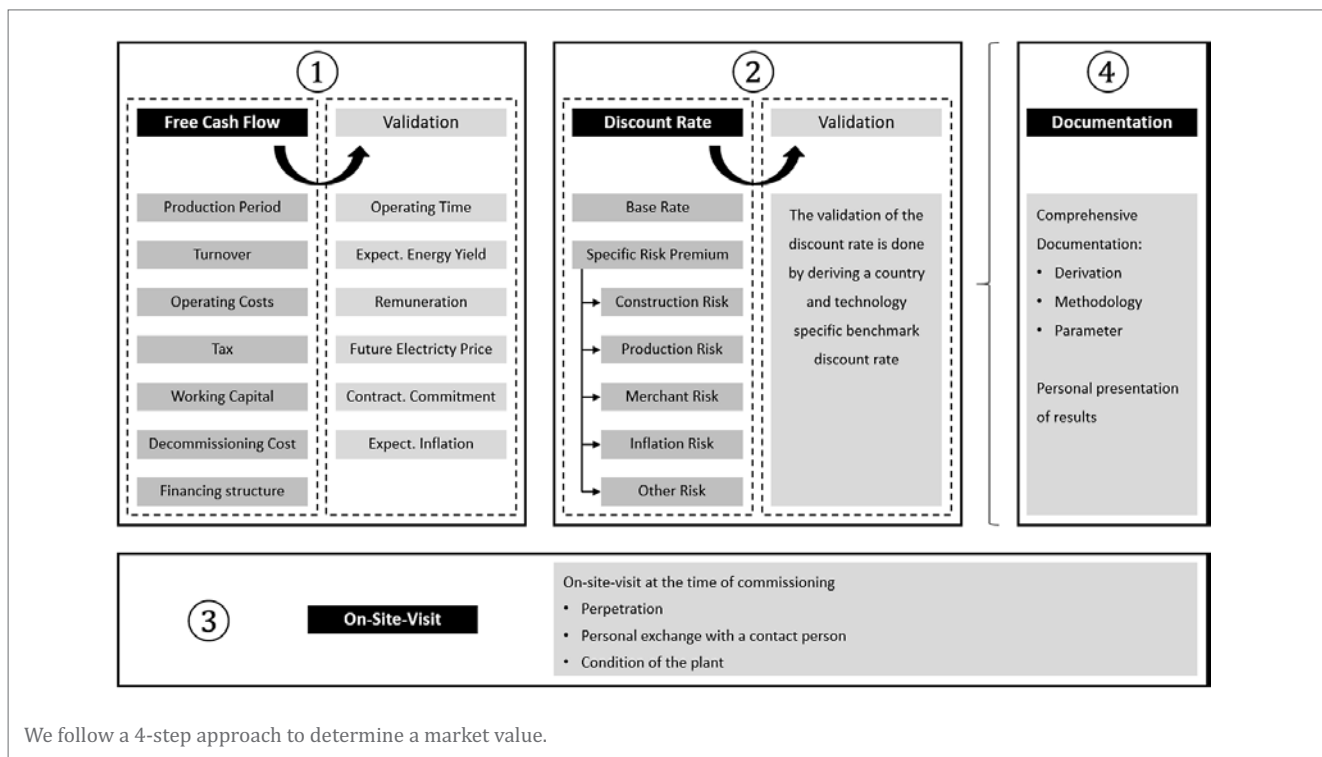
Are you a project developer, tax consultant, park operator or fund manager and are you in need of a comprehensible market value for your wind farm? An objective and independent financial appraisal leaves no question unanswered.

We have been intensively involved in the valuation of renewable energy parks since 2017. We are experts for renewable energy plants, as we have already evaluated more than 50 projects with a market value of approximately 1.5 billion Euros. Since the founding of our company in 2021, we have focused our expertise and valuations on wind and photovoltaic projects in Germany and France.

First, the individual cash flows up to the end of the economic life are presented explicitly and transparently. Here we fully map the cash flows for expected sales and operating costs, tax expenses, changes from working capital, outstanding investment costs, as well as dismantling costs after the end of operations.

The cash flows of the project are presented objectively from the perspec-

tive of an investor's or the market's expectations. The revenue is calculated based on the expected output of the plant (P50) multiplied by the expected prices. If the remuneration is based on market conditions, we only use future electricity prices from external suppliers established in the market. Electricity prices and operating costs are indexed using market inflation expectations.



RE VALUATION

Independent Renewable Energy Project Valuation

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Founding year 2021

Employees 2

Focus **Independent and transparent determination of market values for renewable energy projects in Europe (focus: Germany and France)**

We offer

- Financial appraisals
- Benchmark determination
- Validation of cash flow models
- Simulation

We are looking for **Operators, shareholders, tax advisors, private individuals or fund managers who need market value. (Transaction, Collateral Valuation)**



Founders of RE-Valuation: DBA Thomas Justen (left) and M. Sc. Edouard Carlhian

Our cash flow model therefore does not use any hard assumptions and the parameters are all validated. The yield forecast is compared to the historically realised performance of the operational plant and, if necessary, corrected based on external wind speed data. The operating costs are presented in accordance with the contractual agreements. In the case of costs that are not contractually regulated, we reconcile flat rates with reference values.

Our core competence lies in the derivation of a project-specific discount rate with which the validated cash flows are discounted. This discount rate is determined objectively using a mathematical procedure, whereby all risks of the project are modelled individually. The resulting risk potential is first set in relation to a benchmark developed by us and converted into a risk premium that reflects all project-specific risks. In addition to an on-site inspection of

the plant and a personal discussion with the contact person, we pay particular attention to the complete documentation of the parameters and the complete and comprehensible derivation of the results.

A final discussion with the client, in which the document and the evaluation are presented, rounds off our service.

“Uncertainties and risks play a major role in every phase of a project. It is our task to identify these risks and to take them into account in the market value.”

*Thomas Justen,
 Managing Director and Appraiser*

CONCLUSION

With our market value determination, we set new standards in the valuation of renewable energy power plants. We do not use hard assumptions, nor do we derive the discount rate from transactions that are not comparable to the project being valued. With our comprehensible market values, we create added value because we increase transparency and stability in the investment process and thus contribute to the transformation towards sustainable, green energy production.

PPA-CONNECT

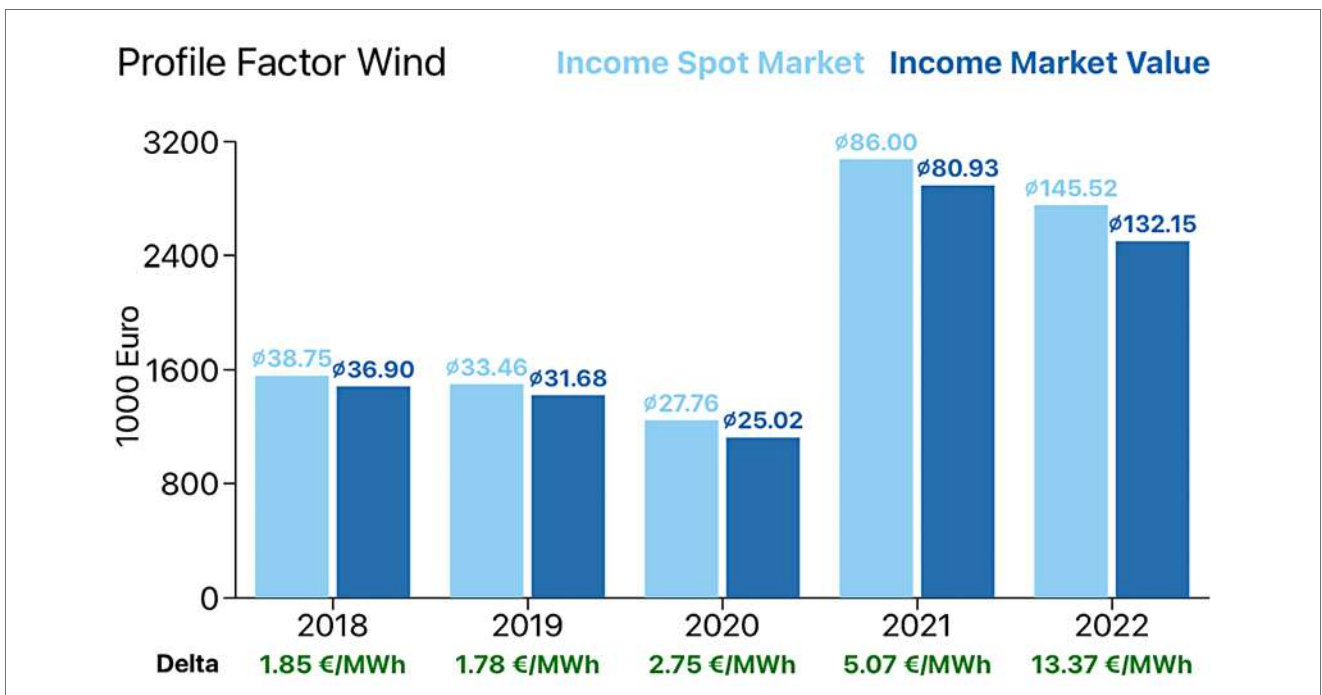
We offer a transparent comparison platform for direct marketing and utility PPAs. We automate the tendering process and reduce the effort for both renewable energy asset owners and direct marketers.

With the latest price rally on the electricity market, direct marketing has become more attractive for renewable energy asset owners in Germany. Compared to fixed feed-in-tariffs, asset owners can directly profit from the high electricity prices and generate high additional revenues. However, the market for direct marketing and PPAs is not very transparent and a broad market tender is associated with a lot of effort for the asset owner – the direct marketers have to be approached individually and provided with all data necessary for calculating a quote.

Solving the data chaos for asset owners and direct marketers

PPA-CONNECT centralizes the tender and, as a central data hub, also handles the distribution of the data. After registration, asset owners can enter their plants into the platform. We collect all the data that the direct marketers need for calculating a quote and the registration of the asset with the distribution network operator. Through a direct link to the 'Marktstammdatenregister' (master data register), we can reduce the required data entry effort to an absolute minimum. All data is checked by us for completeness and

plausibility. Thus, we try to prevent any data related questions from direct marketers and avoid possible risk surcharges in case of incomplete data. The data is also enriched by us with market data and graphically processed to give the asset owner an overview of the economic performance of his assets in a dashboard, e.g. an overview of the specific market value. This information can also be used for the evaluation of the offers.



Screenshot of the dashboard showing the development of the specific market value of a windfarm.



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Founding year	2021
Focus	Matchmaking and advisory services for direct marketing and utility power purchase agreements
We offer	A matchmaking platform for direct marketing and utility power purchase agreements
We are looking for	Renewable energy asset owners and commercial managers

PPA-CONNECT simplifies the comparison of different quotes

When operators tender their assets, they can decide which direct marketers to request a quote from. They can choose from a large pool of well-known direct marketers. The overview of quotes contains not only information on prices, but also on the most important contractual elements. In addition, sample contracts are attached to the quotes for review. Thus, asset owners have all the information they need to choose a quote in one place.

The platform can be used to request quotes for assets in operation and new projects under construction or in the planning. The only limitation is a minimum installed capacity of 1 MW. In one tender, quotes for up to three terms can be requested simultaneously. Asset owners can ask for quotes for the classic direct marketing with payment of the market value (wind/solar) or the spot price as well as for a utility PPAs. The use of PPA-CONNECT is completely free of charge for the asset owners.

CONCLUSION

Our goal is to offer a simple, efficient and transparent solution for the match-making of asset owners and direct marketers. With PPA-CONNECT, we want to free up space at both operators and direct marketers, so that they can concentrate on the further development and market integration of renewable energies. Register your plants at www.PPA-CONNECT.de and find the perfect partner for the direct marketing with us.

Dienstleistungsentgelt

Test2-DV
 Laufzeit bis: 31.12.2023

Marktwert Solar – **2,45 €/MWh**

Vergütungsmodell: **Zweistrommodell** ✓

Ausfallarbeit: **Pauschal** ✓

Bürgschaft: **Keine** ✗

Vergütung Redispatch: **Keine** ✗

Vergütung marktbed. Absch.: **Marktwert** ⚡

Übernahme EIV: **inklusive** ✓

Übernahme BTR: **inklusive** ✓

Das Angebot ist noch 16 Tage gültig.

Muster-Vertragsdokumente (1) ▾

Angebot annehmen

Festpreis

Test2-DV
 Laufzeit bis: 31.12.2023

Basierend auf Terminmarktpreisen vom 27.06.2022 ? **148,00 €/MWh**

Vergütung: 100% Festpreis, 0% Marktwert, 0% Spotpreis

Weitere Preisinformation: Berchnet auf Basis der EEX-... ▾

Vergütungsmodell: **Einstrommodell** ✓

Ausfallarbeit: **Pauschal/Spitz/Spitz-Light** ✓

Bürgschaft: **Keine** ✗

Vergütung Redispatch: **Keine** ✗

Vergütung marktbed. Absch.: **Festpreis** ✓

Übernahme EIV: **inklusive** ✓

Übernahme BTR: **1200,00 € / Jahr** ⚡

Das Angebot ist noch 16 Tage gültig.

Muster-Vertragsdokumente (0) ▾

Angebot annehmen

Overview of two different quotes of a tender for a windfarm.

VoltStorage – Energy Storage for Wind Parks

VoltStorage develops cost-effective battery storage systems for wind parks to supply required base load for 10–100 hours in low wind phases – and therefore enable 100 % renewable energy 24/7.



VoltStorage energy storage systems for solar and wind parks

With the expansion of renewable energies, we are setting the right course for a climate-friendly future. However, considering the increased share of renewable energies, technological solutions will soon be needed to bridge natural supply gaps to provide the required base load even in times of less sun and wind. Usually, it is claimed that solar and wind power generation ideally complement each other as wind generation is higher in times of low sun and vice versa. But in reality, this complementarity is not sufficiently reliable to ensure 100% CO₂-free energy supply.

Store surplus green energy cost-effectively

Energy storage systems are the key technology for shaping the future of climate-friendly energy supply. So far, however, there has been a lack of technological solutions to store surplus solar and wind energy cost-effectively and to be able to close supply gaps of up to 100 hours. For this reason, VoltStorage is developing Long Duration Energy Storage solutions. These are battery storage systems that are specifically developed for longer charging and discharging periods to bridge longer power generation gaps. The Munich-based tech start-up relies on innovative iron-salt

storage technology. VoltStorage's iron-salt batteries have significant benefits:

- **High efficiency:** With an efficiency of 70%, iron-salt batteries are more efficient than other long duration storage technologies such as thermal energy storage (40%) or Power-To-Gas-To-Power (35%).
- **High temperature resistance:** Iron-salt batteries are exceptionally temperature-resistant and can also be used even in climatically challenging parts of the world.
- **High raw material availability:** The most abundant raw material worldwide is used in iron-salt batteries thanks to the iron-based storage medium.



VoltStorage GmbH Gmunder Straße 37 80807 München Phone: 0800 000 4937 hello@voltstorage.com www.voltstorage.com LinkedIn: www.linkedin.com/company/voltstorage/	
Founding year	2016
Focus	Development and production of battery storage systems
We offer	Sustainable battery storage systems for commercial and industrial applications as well as for solar and wind parks
We are looking for	Cooperation partners for pilot projects

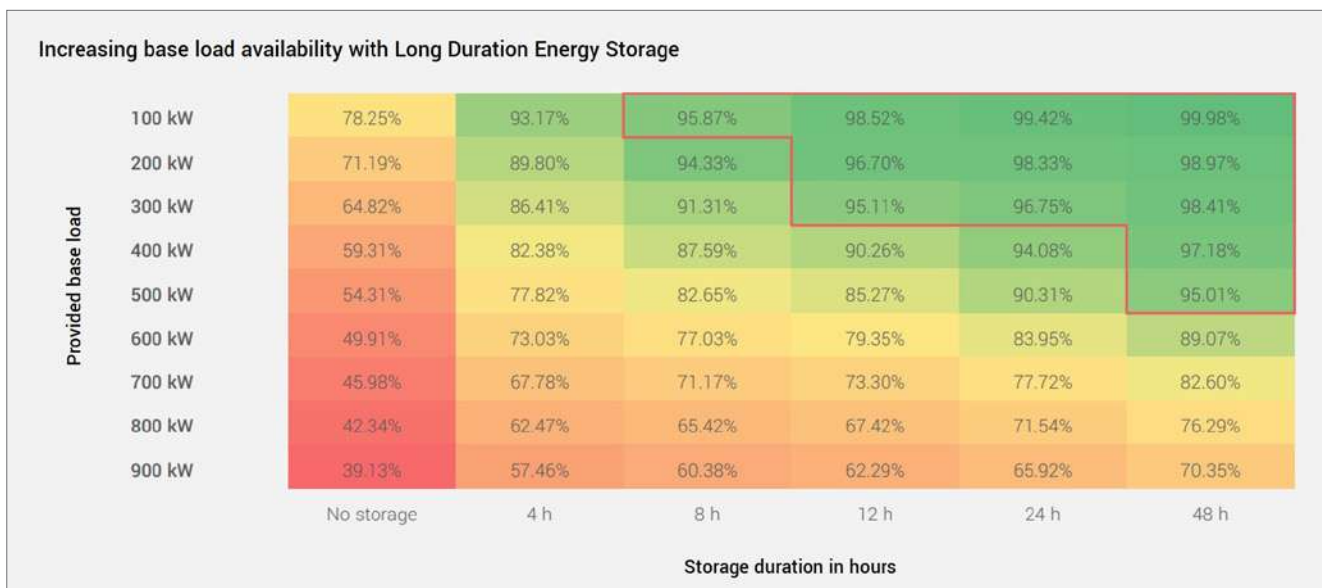
- **Low costs:** Due to the high availability of the main storage medium, iron, the costs per kWh are significantly lower than with other storage solutions.

Energy storage systems ensure a continuous base load during operation
 Simulations of a solar and wind park (5.9 MW) show that without any energy storage system, a base load of 500 kW can only be provided in 54 % of the operating time. This underlines that the complementarity of sun and wind, which is always assumed, is not

sufficient to fully provide even a comparatively low base load. However, if the solar and wind park is combined with an iron-salt battery from VoltStorage (24 MWh), a base load of 500 kW can be provided in 95 % of the operating time for a duration of 48 hours. This puts the combination of solar and wind park and iron-salt battery at a comparable availability level to fossil power plants. VoltStorage is aiming to launch the first pilot projects for the iron-salt battery in 2024/2025.

CONCLUSION

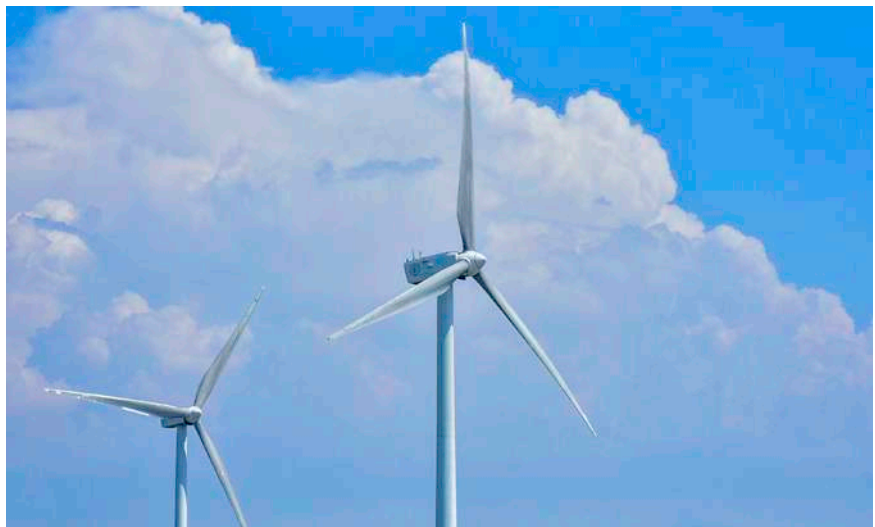
The demand for long duration energy storage solutions will increase continuously with the growing expansion of renewable energies. With the iron-salt battery, VoltStorage offers a particularly cost-effective and resource-saving storage solution for solar and wind parks to enable climate-friendly renewable energies for base load operation.



Base load simulation of solar and wind park in combination with energy storage

WinJi – full potential for wind and solar farms.

WinJi is a Swiss-based cleantech company that uses its experts and the use of an IT solution to help its customers optimally operate wind and solar farms.



Owners and operators of wind and solar parks trust WinJi when managing the performance of their assets and portfolios.

Innovation and the pursuit of optimal use of wind and solar energy is our DNA.

Bright minds with many years of deep expertise in renewable energy and big data analysis have put their experience into a software solution. Our customers include asset owners and operators with installations in over 20 countries.

Transparency about performance as a basis for decision-making

WinJi’s artificial intelligence (AI)-based “True Power” solution provides technology-independent performance transparency at the portfolio, park, machine, and module levels, respectively. The scalable “True Power” solution collects data at the finest granularity directly from wind and solar farms, and performs sophisticated analytics. “True Power” provides real-time reporting, top-down decision support, industry-wide performance comparisons,

and suggests actions for implementation. Customers thus gain comprehensive and directly actionable insights to improve

the production of their wind and solar farms, for example by reducing downtime or increasing production efficiency.



Performance Comparison between turbines



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Founding year 2016

Focus Optimizing the strategic operation of wind and solar farms through a scalable solution and the use of Machine Learning (ML). It enables simplifications in management through automated reports and accurate predictions, and helps maximize the power generated.

We offer An asset performance management solution (SaaS) and expertise for owners and operators of commercial wind and solar assets (B2B).

We are looking for Wind and solar asset owners interested in maximizing the return on their investment, as well as strategic partners/ investors who want to join us in driving further global growth.

Planning support through predictive analytics

Users of our solution are informed at all times about the forecasted condition of their plants and the expected production figures. This enables them to plan and evaluate their portfolio in advance. Maintenance work can be planned and optimized in advance and all stakeholders can be provided with the important key figures in an efficient, well-informed and trustworthy manner.

Demand-driven access to expertise

Often, operators of wind and solar farms are faced with individual questions that can be answered via specific analyses. Our asset analysts tackle any challenge and are happy to assist with these questions, for example – “What is the optimal cleaning time for my solar panels?”, “How does the performance of my wind turbine behave after a SW update?”, “What is the impact

Year	Energy MWh	Energy Exp MWh	Δ Exp MWh	Opt. Pot. MWh	Turnover	Δ Exp Turnover	Δ Exp %	Opt. Pot. %	norm. FLH	Avail. data (day)
2020	1,184,453	1,265,258	-81,020	31,930	85,514,501	-6,601,457	-6.4 %	2.5 %	3,903	366
PV Farm 2	267,336	275,030	-7,693	1,523	25,402,393	-730,880	-2.8 %	0.7 %	3,055	379
Wind Farm 1	50,657	53,613	-2,976	1,001	4,812,439	-339,181	-5.5 %	1.9 %	1,890	366
Wind Farm 2	48,072	57,664	-9,592	4,255	4,050,519	-808,732	-16.6 %	7.4 %	2,219	366
Wind Farm 3	71,300	78,855	-6,935	3,316	6,731,698	-763,353	-8.8 %	4.2 %	1,879	366
Wind Farm 4	75,326	90,821	-15,295	6,248	8,611,481	-1,781,599	-16.8 %	3.9 %	3,148	356
Wind Farm 5	71,342	75,725	-4,483	1,879	6,767,976	-448,534	-5.9 %	2.5 %	3,301	366
Wind Farm 6	81,724	35,259	-3,750	1,400	2,617,778	-312,546	-10.6 %	4.0 %	2,203	365
Wind Farm 7	567,976	598,273	-30,296	13,439	26,520,218	-1,414,612	-5.1 %	2.2 %	4,172	364
2021	1,184,074	1,228,950	-44,867	17,662	79,720,768	-4,505,692	-3.7 %	1.4 %	3,088	365
PV Farm 2	287,824	306,925	-19,092	4,773	27,341,268	-1,811,718	-6.2 %	1.6 %	2,878	362
Wind Farm 1	40,487	41,474	-2,987	1,005	3,790,060	-299,891	-6.9 %	2.1 %	1,516	365
Wind Farm 2	37,911	46,298	-8,387	3,721	3,163,866	-702,492	-16.1 %	3.2 %	1,805	355
Wind Farm 3	53,567	57,133	-3,565	1,795	4,865,196	-412,915	-6.2 %	3.0 %	1,870	277
Wind Farm 4	37,950	42,210	-4,260	1,740	4,325,359	-561,165	-10.1 %	4.1 %	1,686	354
Wind Farm 5	38,723	66,034	-7,311	8,064	5,309,190	-478,740	-11.1 %	4.6 %	2,728	365
Wind Farm 6	25,572	28,934	-3,362	1,256	2,092,622	-278,840	-11.6 %	4.3 %	1,890	343
Wind Farm 7	642,039	637,542	4,097	0	28,631,277	182,072	0.6 %	0.0 %	4,717	364
Total	2,368,526	2,494,208	-125,887	49,612	165,235,259	-11,107,549	-5.0 %	2.0 %	3,046	731

KPI Overview for solar and wind asset portfolio

of a new wind farm being built next to an existing one?”, “Can I run my turbine longer and is it worth it?”, “How can I minimize the wake effect on wind turbines?”

Additional potential of existing wind and solar farms can be tapped. Winji helps to close this gap and contributes to the sustainable growth of renewable energy through excellence in strategic asset management.

“It makes us proud that the improvements proposed by our solution will lead to even higher renewable energy production, helping to accelerate the move away from fossil fuels”

*Bernhard Brodbeck,
 Co-Founder and CEO of Winji*

CONCLUSION

More than 50 customers on four continents already rely on Winji. Our True Power solution is used to manage a total installed capacity of over 5 GW.

Thanks to the constant further development of our solution and the algorithms we use, we will provide our customers with an even better basis for making decisions on the optimal use of their assets in the future, thus further increasing the value of their parks and portfolios.