

# Precision optimized

Precise production and yield forecasts  
for renewable energy systems



**4cast**  
*heartbeat of renewables*



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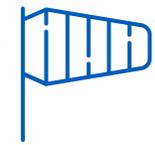
## Security in a volatile world

From research to practice: since 2016, 4cast has been helping to shape the energy transition with the application of scientific principles. Our experts from the fields of meteorology, mathematics, physics, computer science, machine learning and data science work closely together. They look into the future – with precise forecasts for the performance of renewable generation systems.

As a participant in the EU-funded project Maelstrom, 4cast drives consistently innovation in machine learning and high-performance computing. The focus is on collecting weather data. One particular emphasis is on generating live weather data from social media. The company is participating in Maelstrom with three research projects that will support the energy transition and lead the way to more sustainable energy production.



# A clear view of the future



4,569 kWh



1,487 kWh



3,809 kWh

Wind and sun – two elemental forces. Untamable. Volatile. But unpredictable? Not at all! Because we do it – each and every day, up to four days in advance. This detailed knowledge is the prerequisite for the success of the global energy transition.

Energy production is in transition worldwide – moving towards renewables such as wind and sun. This development poses enormous challenges for producers, energy traders and grid operators. Grid operators must ensure the stability of their grids. This is only possible if they know the feed-in quantities as accurately

as possible. Producers aim for optimal plant operation and traders have to rely on being able to actually deliver the marketed amounts of energy. The biggest challenge in meeting all of these requirements is the volatility of the regenerative energy sources wind and sun.

And we are eliminating this weak point. Our mission is to make the most precise forecasts of how much energy which generation plant will deliver at what time and what yields can therefore be achieved. This makes us the heartbeat of renewables.



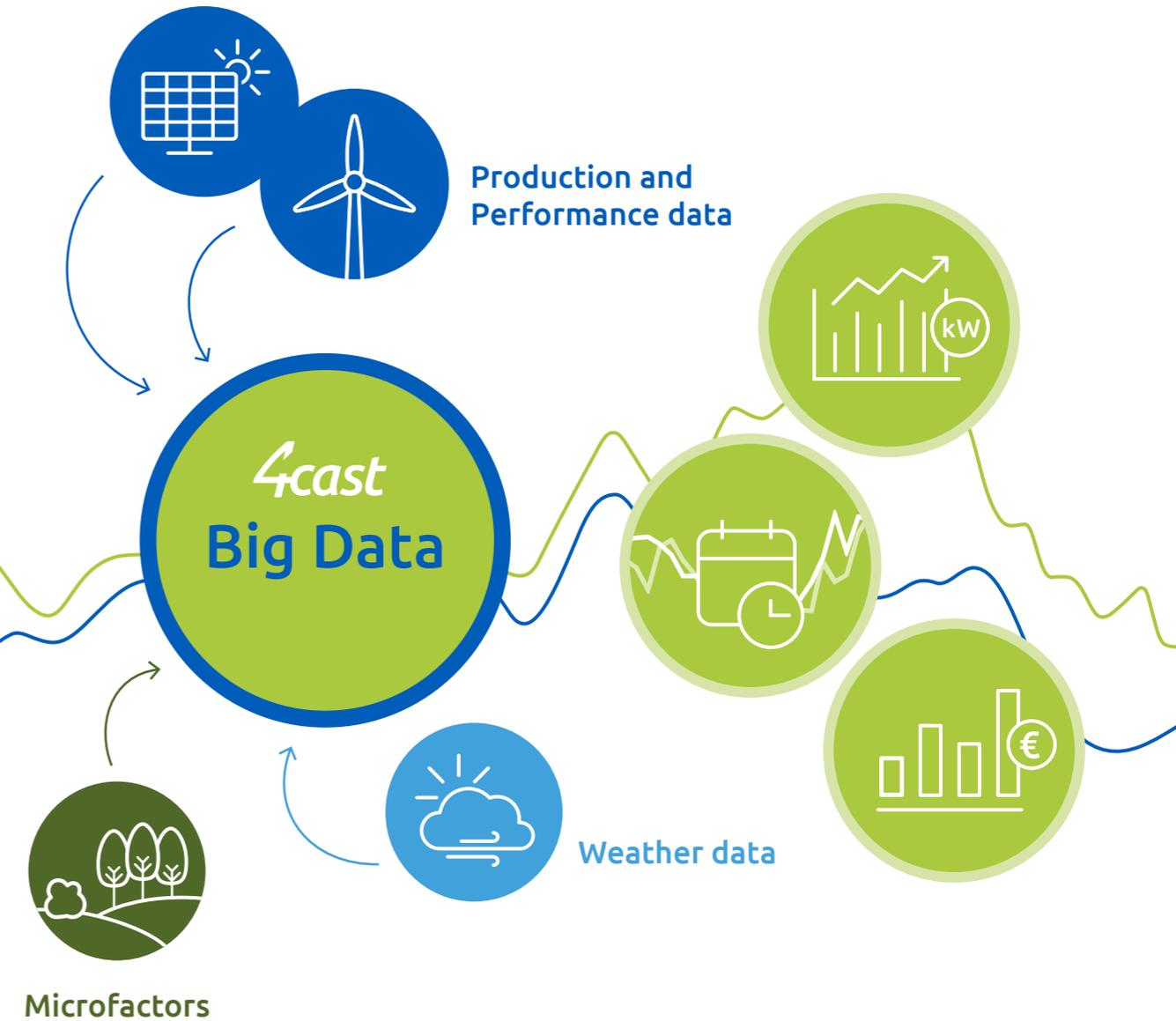
# We make renewables calculable

Renewable yields are a product of chance? Not at all! They are a math problem. Our complex and adaptive algorithm makes them calculable. For this purpose we use historical and current production data, weather forecasts, information on landscape conditions and seasonal influences as well as many other microfactors. The result: A complex, high-resolution picture of your yields.

Our system is continuously optimized by big data and machine learning. This enables us to deliver better data than other providers – in the shortest possible time. We know what each individual

turbine in a wind farm or each module in a solar system is producing – at any given time. This pays off for operators of wind and solar parks, energy traders and grid operators.

Only with this knowledge is optimal plant operation possible in the first place. We deliver the data as you need it: A long-term forecast for the next four days, a day-ahead forecast or an intraday forecast within a narrow time frame. If you operate a renewable generation system, you should no longer have to solely rely on nature, but on the intelligent algorithm from 4cast.



# Profit from our precision

We provide our customers with tailored access to our high precision forecasts. Because we understand you and your individual needs. Increase your profit, discover the most favorable time windows for system maintenance for optimal system operation and receive individually configured evaluations and analyses. Before you even begin building the wind energy plant, you will find out from us what yields you can expect. We create Wind assessment reports in a fraction of the time that was previously required.

Instead of waiting several months for an expert opinion and delaying the planning and implementation of your wind farm, you won't lose any time with us. Simply speak directly to our experts.

Put 4cast to the test – and discover the heartbeat of renewables.

