How we helped a Solar Park to earn €70,000 in five months?
From energy management to flexibility services.

In this case study, we will be showing you how our energy management system helped a solar park in Estonia to benefit from renewable energy significantly with flex market participation and **increase their ROI.**

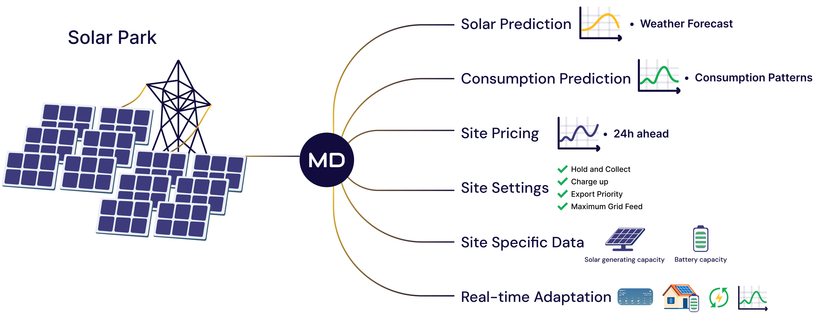
Many people think of an Energy Management System (EMS) as simply a monitoring tool — something that tracks energy production and consumption. But it can do so much more. A well-designed EMS dives deeper, uncovering site-specific consumption patterns and enabling participation in flexibility markets where excess energy can be traded, or stored intelligently.

At MarkeDroid, our AI-driven platform takes this a step further. It doesn't just analyze data, but it learns from it. **Our system continuously identifies opportunities, predicts demand,** and **implements smart energy decisions** that make a **real financial difference**.

In this use case we dive into how **MarkeDroid AI** analyzed and implemented energy decisions on our specific site: Solar park, for you to better understand the benefits of involving a MarkeDroid to your site.

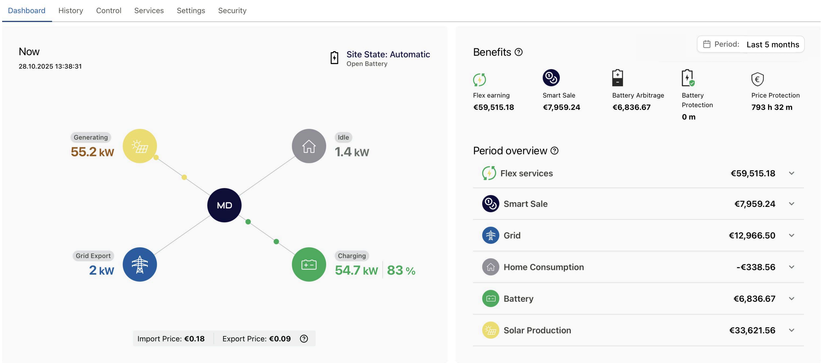
Logic behind MarkeDroid's Site Specific AI

MARKEDROID is making decisions based on **6 key pillars**:



1. First, we predict how much **solar energy your panels will produce** using realtime **weather forecasts**. If we know a lot of sun is coming, we might sell some energy early when the export prices are high.
2. Second, our EMS learns your **consumption habits**. **When** you use energy, **how much**, and **for what**. Then it tailors your plan automatically.
3. Third, we know **24 hours ahead dynamic tariffs** to make sure you buy, store, or sell at just the right moment.
4. Fourth is which **AI site settings** are activated. The selected commands will be used by the AI planner to compile an optimal plan for the site.
5. Fifth, our system is **Site Specific**. It **adapts your exact setup**, how big your battery is, how much solar you generate, and plans around it perfectly.
6. And finally, **real time adaptation**. If anything changes, like **more sun**, a **new battery**, a **flexibility request from the grid**, or even your **energy habits**, our EMS recalculates instantly with no delays.

Key Takeaways from our Solar Park



With MD the site has actively participated in the **Flexibility market** which contributed to the yearly results the most. Higher flexibility activity is noticed during the summer months and is not distributed to 12 months evenly.

With the **Smart Sales** feature, you can sell your surplus solar power to the grid at the highest possible price. How? By prioritizing consumption first and selling excess energy at peak prices.

Battery Arbitrage is essentially storing energy when it's cheap and using it during expensive peak hours. The amount shown is the customer's **savings**.

Results

After 12 months of operation, our residential customer achieved financial and operational improvements. *The results may vary based on country, market spread, flexibility requests and other factors.*

Solar Generation Capacity	**500 kW**
Battery Capacity	**400 kWh**
Total Benefit in 5 Months	**€70,000**
Estimated Return on Investment	**~3 years** (considering higher summer flexibility activity)

MarkeDroid's AI-driven EMS enabled the site to **maximize solar generation efficiency**, **focus on flexibility market participation**, and **fasten ROI** by implementing predictive analytics and automated energy trading. And the site evolved from static energy monitoring to a fully dynamic, market-responsive operation.

MARKEDROID empowers **independent energy producers** to not only monitor their assets but **actively profit from them** through smart forecasting, market participation, and real-time adaptability.