ALL-SKY PITCH DECK

WEMATICS
WEATHER INFORMATICS

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Sky **M**onitoring for **A**ccurate **T**rading

Trend Solar Energy

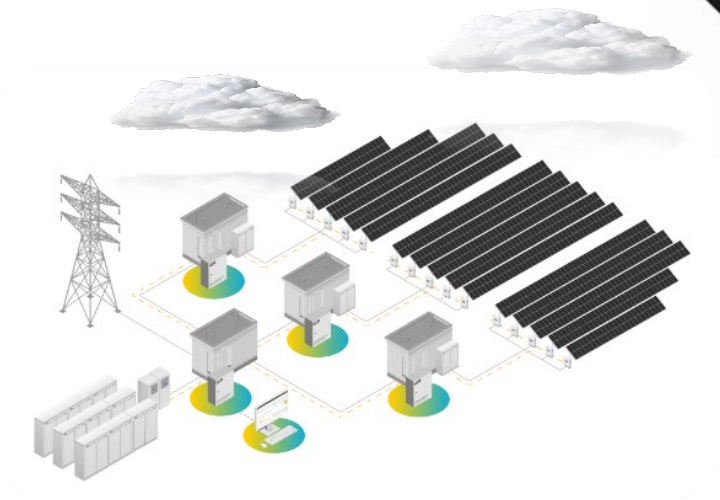
European Market Outlook: www.solarpowereurope.org

Key Facts:

- **€500+ billion total market volume** for PV + BESS (CapEx, EU 2024–2030)
- **+450 GW new PV in Europe by 2030**, reaching >750 GW total
- **>€5 billion annual global market** for grid-aware solar software & forecasting services by 2030
- **>30% utility-scale share**, with sites >10 MW increasingly exposed to imbalance costs
- **Intraday power prices range €40–250/MWh**, making short-term prediction economically decisive
- **Co-located storage capacity to reach ~200 GW**, increasing demand for forecast-driven energy arbitrage and intelligent dispatch

Forecast Errors

Cloud Shadows Causing **Fluctuations** in Solar Power Generation



Key Aspects:

- Trading windows are shrinking — decisions happen every 15–30 minutes ⏱️
- Cloud-induced PV ramps cause unpredictable **production shifts**, affecting market bids 🔋
- Current forecast systems offer no site-specific **visibility** in the short term ❌
- This forecast gap limits the monetization of solar assets in dynamic energy markets 💸

⚠️ Meteo **Satellite Resolution** is Limited to **Kilometers**, Reducing Accuracy of Local Solar Power Forecasts

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Sky **M**onitoring for **A**ccurate **T**rading

All-Sky Solution

PYRANO-METER

ALL-SKY CAMERA

Weather stations, Meteorological sensors, Monitoring cameras

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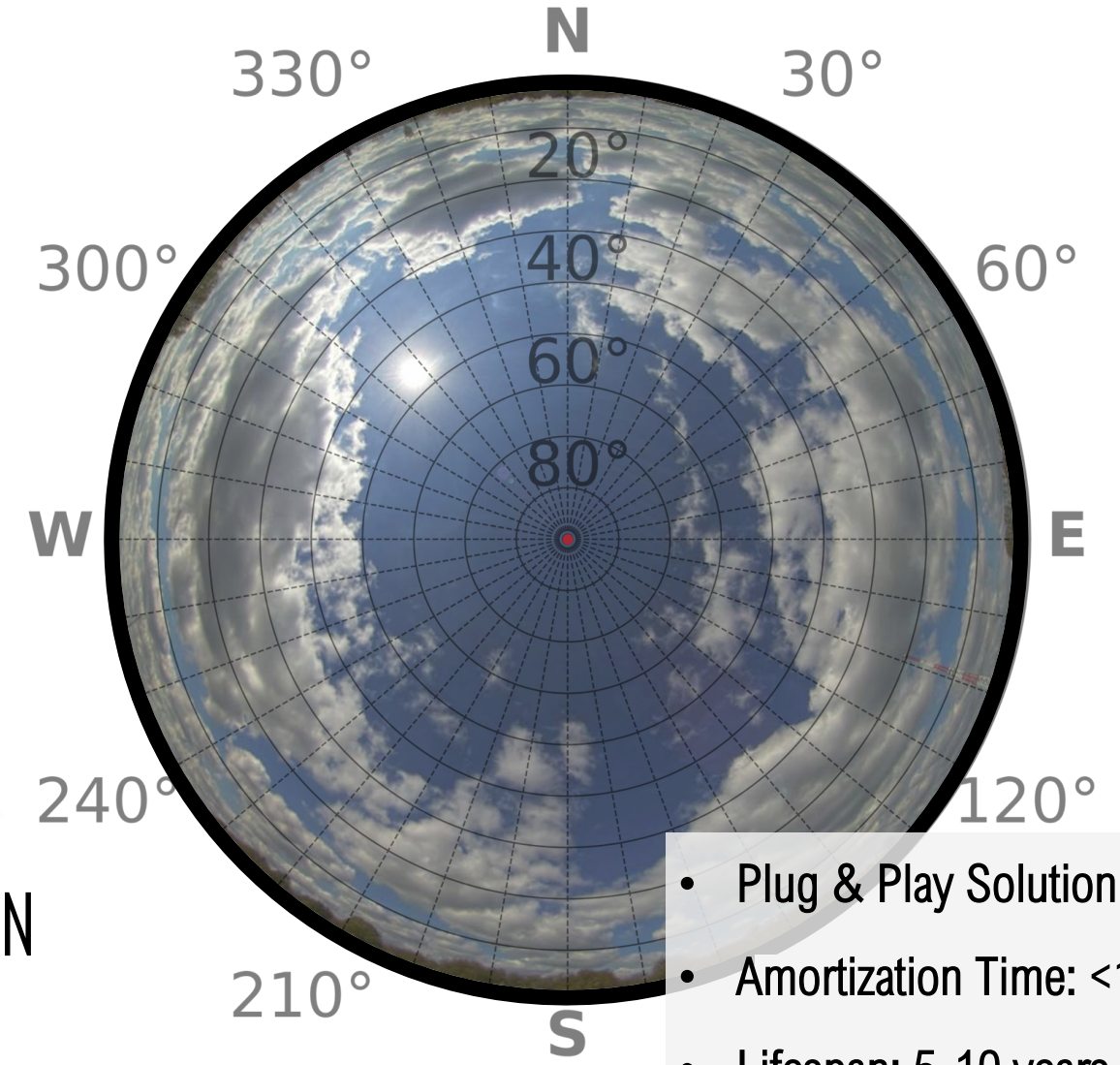
ENVIRONMENTAL SENSOR

WEMATICS PYRANOVISION SYSTEM™



- Plug & Play Solution
- Amortization Time: <1 year
- Lifespan: 5-10 years

All-Sky Solution

Weather stations, Meteorological sensors, Monitoring cameras

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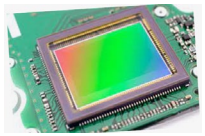
esa business incubation centre

(2022-2024)



WEMATICS PYRANOVISION SYSTEM™

Key Specs:

- Proprietary **All-Sky Camera System**
- **High Resolution** CMOS 12 MP
- Integrated thermopile pyranometer
- Embedded Linux SBC
- **Edge AI Accelerator** 13 TOPS
- Encrypted remote access
- Active cooling + heating
- GNSS time/location sync
- **Low Power** draw <12 W
- EUIPO design protected (2028)

All-Sky Solution

Standalone system for direct PV site installation

Self-sufficient deployment

- ✓ Seamless connectivity: 4G-enabled high-speed internet transmission.
- ✓ Energy autonomous: PV-powered with integrated battery.
- ✓ Automatic monitoring: High-resolution sky observations.
- ✓ Precision forecasting: Real-time cloud & irradiance analysis.

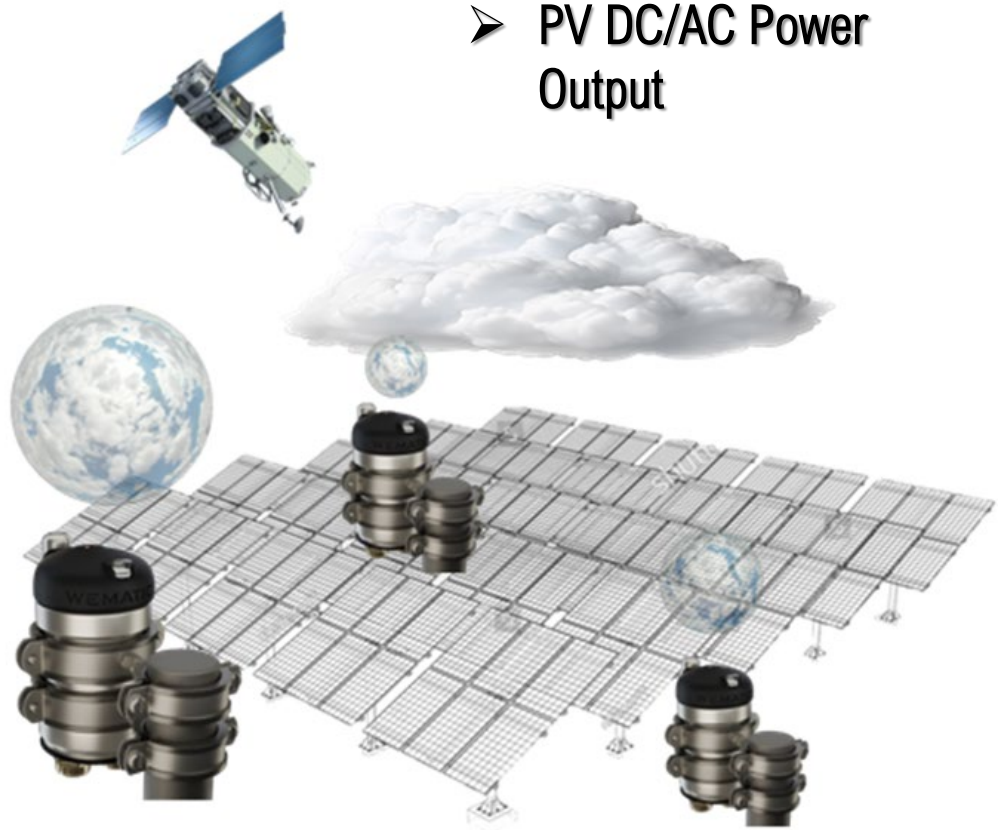
All-Sky Solution

Forecasting Services

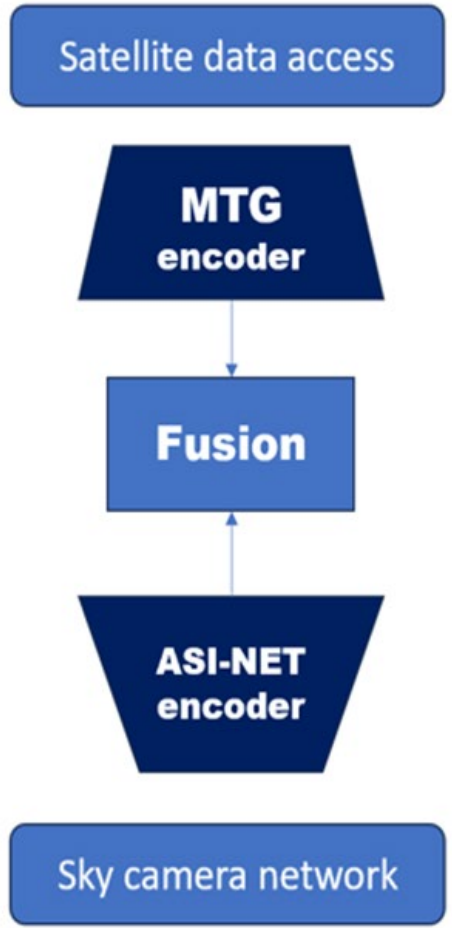
- **Nowcasting (0–30 min):** High-precision, real-time forecasts
- **Ultra-Short-Term (0–3 h):** Adaptive short-range prediction
- **Intraday (0–6 h):** Hybrid AI-enhanced irradiance outlook

Forecasting Target:

- PV DC/AC Power Output



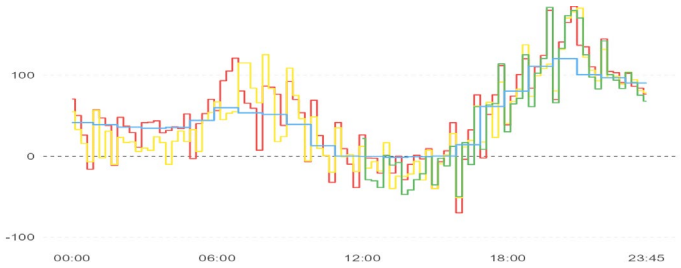
Photovoltaic Power Plant with Sky Camera Network



Optimizing PV Plants

- **Installed Capacity:** Scenario 50 MWp, Yield: ~60 GWh/year
- Revenue Model: 15-min spot trading (merchant plant)
- **Challenge:** Forecast error during fast-moving cloud events
- **Typical Imbalance Cost:**
  – €30–100/MWh in EU intraday markets
  – **€70/MWh** used as conservative average during volatility hours
- **SKYMAT edge-AI nowcasting** (0–6 h horizon) improves short-term accuracy
- **Assumed impact scope:** 3 % of total energy affected
- **Why 3 %?**
  – Intra-hour cloud shifts often missed by NWP/Satellite
  – Especially relevant in **partly cloudy conditions**
  – Historical data: ~3–5 % of PV output shows >15 % deviation from schedule

PV Park in Central Europe (AI Generated)



Trading in day-ahead and intraday auctions

Optimizing PV Plants

- **Installed Capacity:** **50 MWp**, Yield: ~60 GWh/year
- **Assumed impact scope:** 3 % of annual energy = 1.8 GWh
- **Forecast deviation reduction:** >50 % through real-time cloud tracking
- **Avoided imbalance volume:** >0.9 GWh/year
- **Savings potential:** 0.9 GWh × €70/MWh = **€63,000/year**
- **Scaling to larger portfolios:**
  – e.g., 200 MWp plant = **€250,000+ annual savings potential**
  – Ideal for **traders, aggregators, and market-exposed portfolios**
- **Potential BESS integration** (10 MW / 20 MWh):
  – Forecast-driven dynamic C-rate control (optimization of dispatch timing)
  – Charge before shading, discharge before price drops
  – ~6 GWh/year shifted ⟶ €40,000+/year additional revenue (ideal forecasting)

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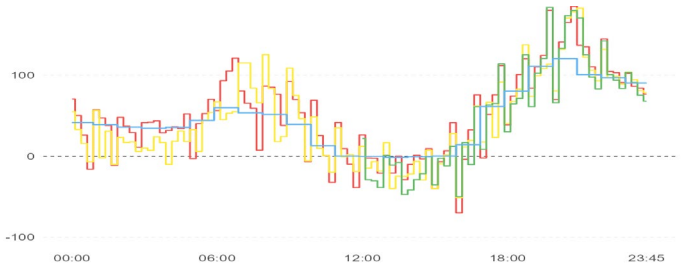


Trading in day-ahead and intraday auctions

Business Model

Hardware-as-a-Service Concept

- On-site installation by Wematics
- Remote monitoring & diagnostics
- Live forecasts via API (0–6 h)
- Service Level Agreement (uptime & support)

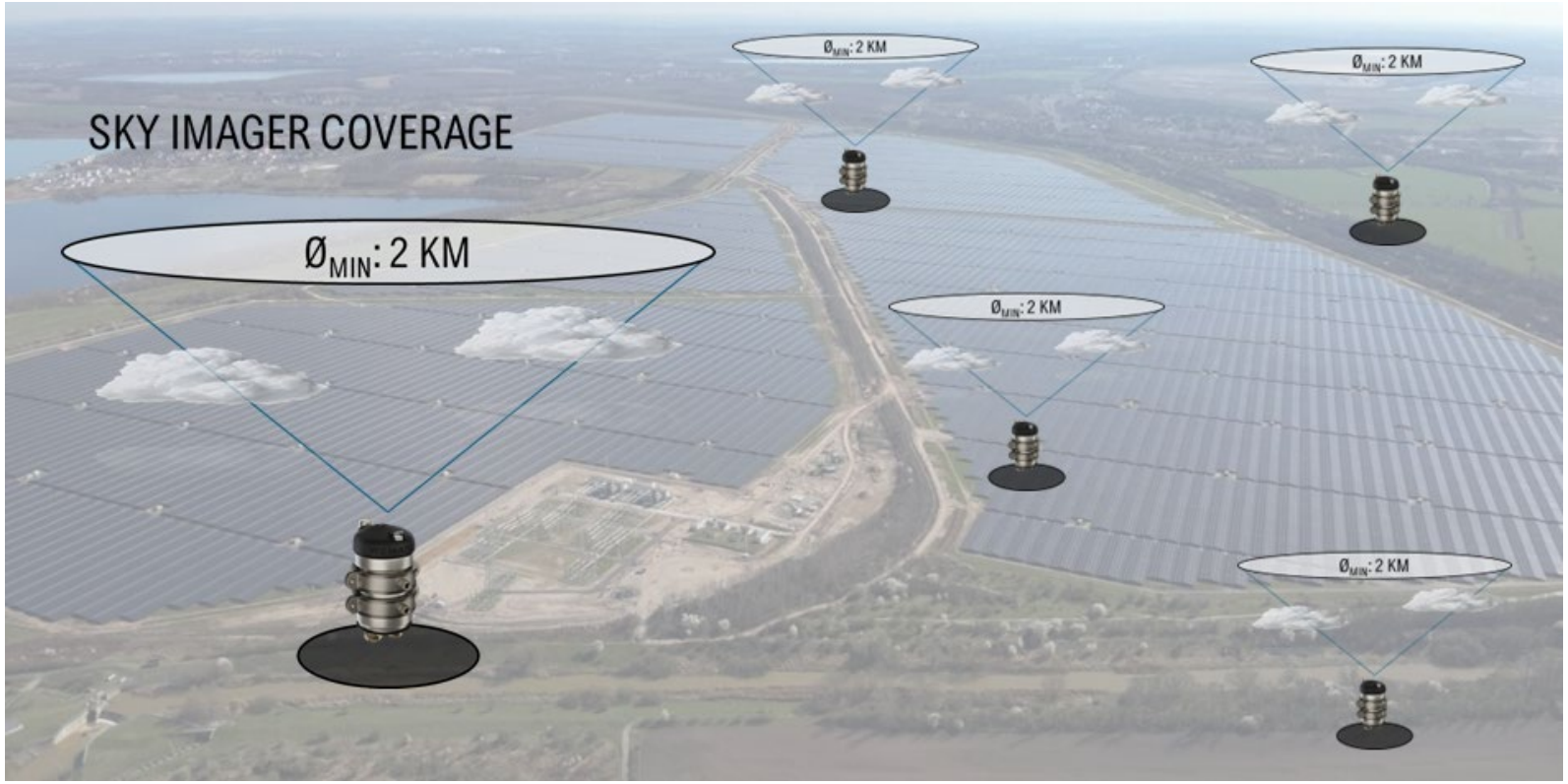
Pricing and service tiers are evolving — refined iteratively with early customers.

Onboarding Fee:

- **€10,000 one-time setup** (includes sky camera hardware installation & calibration)
- **Contract cancellable annually**

Plan Duration	Monthly Fee	Total Annual Cost
1-Year Plan	€1,500/month	€18,000/year
3-Year Plan	€1,250/month	€15,000/year
5-Year Plan	€900/month	€10,800/year

Business Model



[Image] - Photovoltaic Power Plant „Witznitz II“. Photo: Hansainvest Real Assets

Main Target Segment:

Utility-Scale PV Operators

Particularly relevant for large-scale solar farms participating in the spot market or operating under forecast-dependent PPAs.

📍 Example – Witznitz Solar Park (Germany): 650 MWp, near Leipzig

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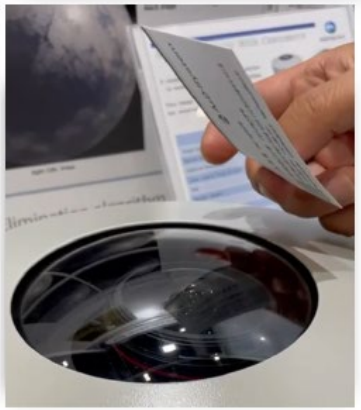
Pre-Seed Investment - SKYMAT

Capital Use

- **Team & R&D**
  - Salaries for product development & real time API
  - Development of self-cleaning & bird protection
- **Manufacturing Readiness**
  - Scaling series production of camera systems
  - Supply chain & assembly optimization
- **Infrastructure & Forecasting**
  - GPU server setup for on-premise AI inference
  - System reliability and deployment automation
- **Go-to-Market Activities**
  - Strategic B2B outreach
  - Pilot Deployments & Customer Validation
  - Website, SEO & lead generation optimization



! Self-Cleaning System Required – prevents image degradation from dust and droppings