

How Mexens migrated 1,100 solar plants in 4 months

And built a scalable, API-driven operating model

Case study



Project overview



Asset Owner

**Technique
Solaire**

Industry

Solar & wind IPP

Portfolio

920 MWp operational
>2 GWp under dev.

Location

**France, Spain,
the Netherlands,
India**

Fleet to migrate

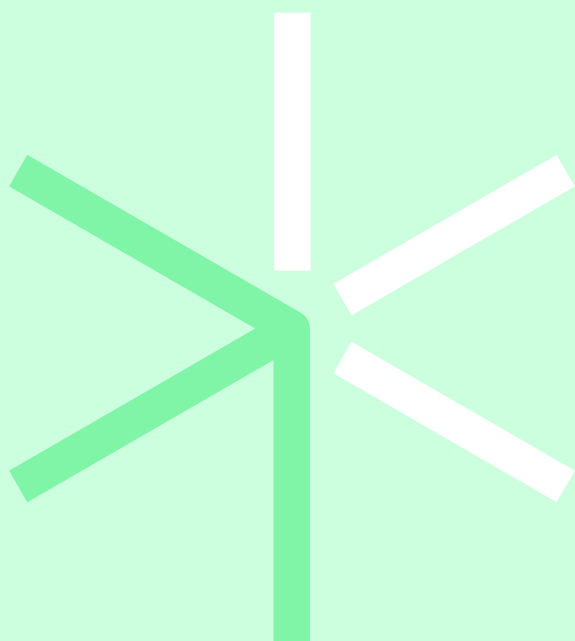
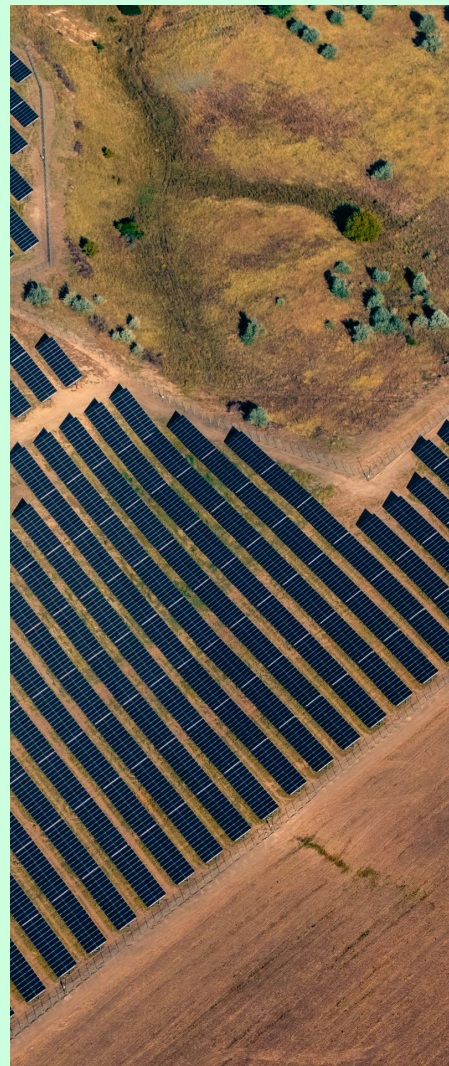
1100 PV plants

Size of the supervision team

4 people

Timing for the project

4 months



The challenge



From platform migration to operational transformation

Managing a rapidly expanding international fleet with diverse hardware and legacy configurations, Technique Solaire needed a scalable, automated supervision model capable of supporting long-term growth. But migrating an entire operational fleet, while maintaining business continuity, required restructuring workflows, introducing automation, and validating data quality across hundreds of plants simultaneously.

Scaling supervision with a small team

Technique Solaire needed to migrate 1,100 operational plants within 4 months using a supervision team of only 4 people. Manual configuration methods were incompatible with the required migration speed and future portfolio expansion

Fragmented data and operational limitations

The existing ecosystem relied on heterogeneous data loggers, inconsistent metadata, and low-quality irradiation data. Without a structured Digital Twin, teams spent significant time performing manual corrections instead of focusing on performance optimization.

Preparing for future growth

Beyond migration, Technique Solaire sought a long-term operating model enabling automated onboarding, portfolio-wide analytics, and standardized configurations across multiple countries and technologies.

The solution (1/2)



Technique Solaire selected SynaptiQ to build an automated supervision ecosystem centered on APIs, standardized data, and configuration validation.



API-first migration and deployment

Technique Solaire industrialized its migration by using the SynaptiQ API as the central deployment engine. Instead of manually creating plants, the team built scripts connected to a unified internal data model that automatically created, configured, and validated assets in SynaptiQ. Migration was executed in controlled weekly batches, allowing plants to be integrated safely while maintaining supervision continuity. This transformed migration from a manual effort into a repeatable automated workflow.

Unified data architecture for scalable operations

All trusted data sources (internal databases, PVsyst engineering files, and legacy platform exports) were consolidated into a single standardized dataset before integration. By pushing only validated information into SynaptiQ, Technique Solaire established one operational source of truth. This approach reduced onboarding time dramatically, cutting plant integration from roughly 20 minutes to only 5 seconds per site.

The solution (2/2)



Advanced Digital Twin configuration and validation

To ensure the data configured into SynaptiQ were complete and accurate, Technique Solaire integrated 3E's Configuration Check into the migration workflow. The tool assessed site data integrity based on existing configurations and leveraged 3E's Solar Analytics simulation model to refine each plant's Digital Twin.

In addition, the Configuration Check enabled to integrate the DC tree information that was not available in the previous platform or in the as-built designs. It provided an estimation of how strings, DC inputs and modules are configured. These inputs were used to establish the initial configuration of all the sites.

This iterative process allowed them to set up DC monitoring functionalities, such as deviation and performance alarms, losses waterfall and root cause failure identification, with recommendations for recoverable losses.

With advanced and verified configuration data, teams could test changes safely, detect inconsistencies early, and maintain high data quality across the entire fleet.

SynaptiQ Configuration Check results

Nb of strings		Check	Specified	Estimated	Check
Inverter input label		OK	2	0.92	Lower than specified
		OK	1	0.85	OK
		WARN	1	0.04	Lower than specified
		OK	1	0.92	OK
		NOK	0	0.72	Higher than specified
		OK	1	0.86	OK
		NOK	0	0.94	Higher than specified

Portfolio automation powered by SynaptiQ API

After migration, the API became the foundation of daily operations. Plants are now onboarded automatically at commissioning, portfolio-wide updates can be executed in a single controlled action and continuous pre-checks prevent incorrect data from entering the system. Automation enables Technique Solaire to verify, correct, and align its entire fleet at scale without increasing operational workload.



3E's Configuration Check can easily retrieve input and MPPT-level information from our inverters. This allows us to detect inconsistencies in the DC structure and recover missing configuration details. In practice, this capability enabled us to reconstruct DC tree information and deploy DC monitoring on sites where it was previously unavailable.



Thomas Dhucq
Head of Supervision, Technique Solaire

The results



① Massive migration achieved

- 1,000 PV plants migrated
- Completed in 4 months
- Managed by a 4-person team

② Deployment speed multiplied

- Integration reduced from 20 minutes to 5 seconds per plant
- Same-day onboarding aligned with commissioning timelines
- Manual configuration largely eliminated



By connecting our systems directly to SynaptiQ via the API and structuring our data upstream, we transformed what could have been a complex migration into an industrialised process.

Today, automation and a reliable Digital Twin allow us to scale our operations, focus on performance analysis, and significantly reduce manual workload.



Thomas Dhuicq
Head of Supervision, Technique Solaire



In four months, with only four people, we migrated around 1,000 plants. The API-first approach made migration and automation possible. Now we can integrate new assets faster and apply changes across the entire fleet safely.



Thomas Dhuicq
Head of Supervision, Technique Solaire

③ Secure migration & scalable operations

- Continuous configuration verification across the portfolio
- Safe bulk corrections replacing manual fixes
- Stable supervision maintained throughout migration

④ Advanced Digital Twin for portfolio-wide performance analysis

- Automated loss calculations from inverter to portfolio level
- More reliable and refined production forecasts
- Industrialised reporting calculations across the portfolio
- Detection of complex underperformance patterns, such as partial soiling and module-level defects not visible at plant AC level
- Better prioritisation of field interventions, including targeted thermography inspections

About 3E



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3E is a market-leading SaaS and advisory company for the renewable energy sector

Our team of over 180 experts works with developers, asset managers, operators, investors, public entities, EPC contractors and IPPs. Our job is to enable them to make informed decisions across the full lifecycle of their projects – whether that's solar, wind, green energy or energy storage.

Based on our 25+ years of global experience, we provide both digital solutions and expert advisory services, which is unique in the sector.

Our SynaptiQ platform offers a comprehensive suite of SaaS solutions that optimises the operations of renewable assets.

In parallel, our advisory team delivers technical, engineering and strategic advice to ensure bankable projects.

Powered by collaborations with universities and industry pioneers, we drive innovation and deliver the industry's most advanced energy intelligence solutions.

