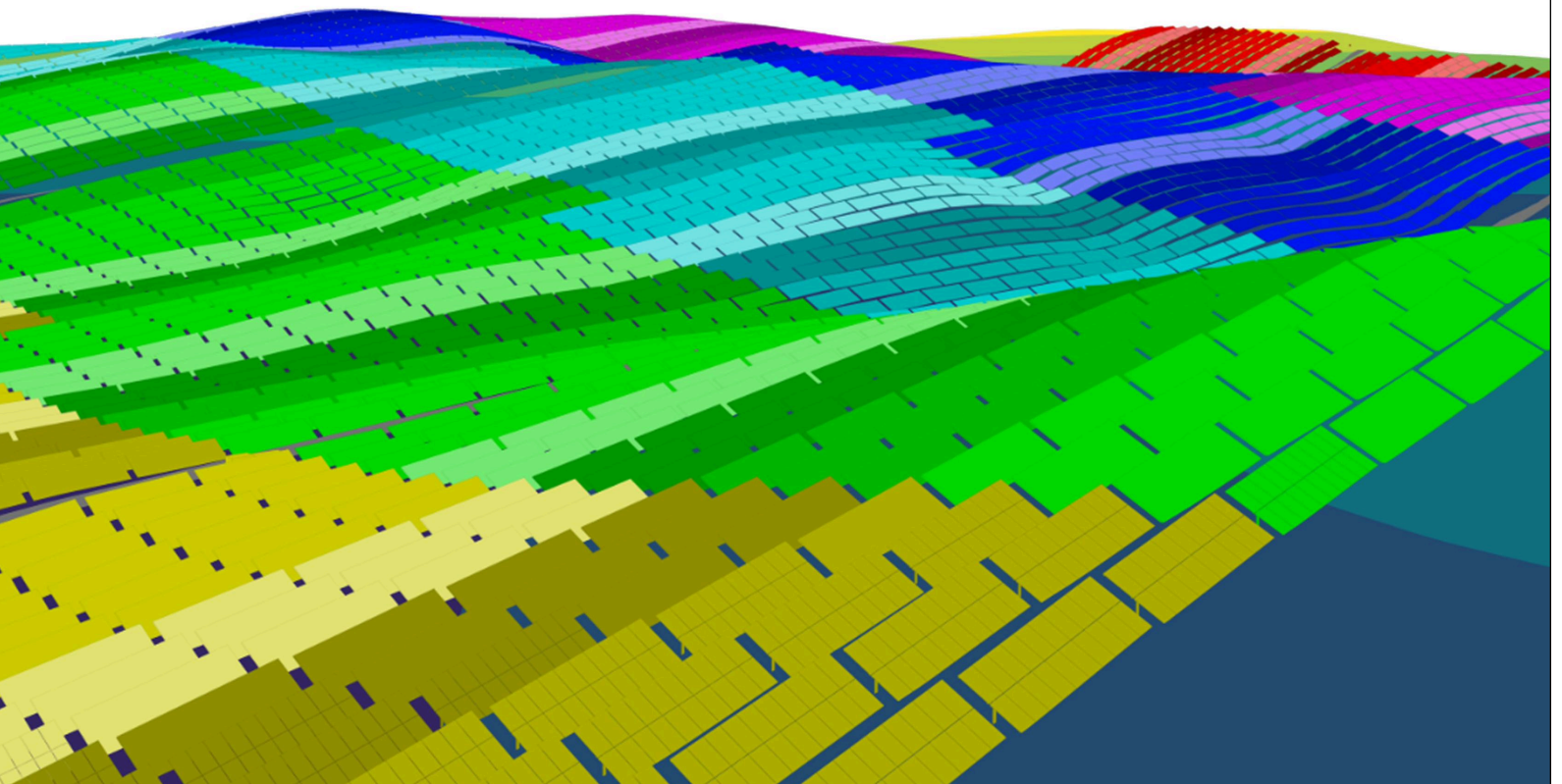




EDF power solutions PVFARM

How EDF power solutions Turned Their
Solar Engineers Into Swiss Army Knives



Summary

EDF power solutions North America isn't your typical renewable energy company. Since 1987, they've been building clean energy infrastructure across the U.S., Canada, and Mexico as a subsidiary of the French utility giant EDF Group. With 23 GW of developed projects, 7.8 GW gross of owned assets, and 16 GW under operations and maintenance contracts, they're a market-leading independent power producer that both develops projects for their own portfolio and builds for major customers like Amazon.

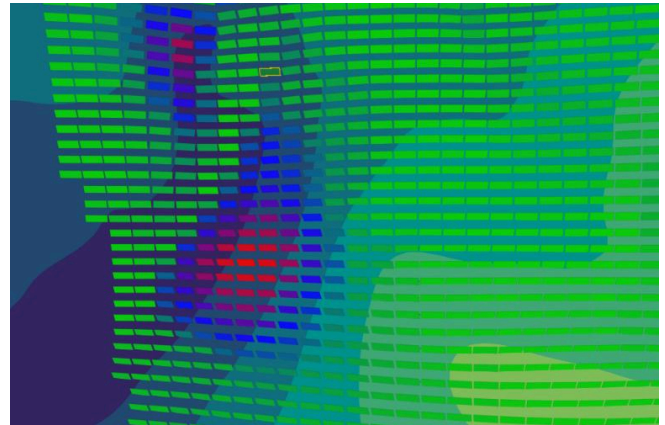
James Alfi leads the solar engineering and analytics team at EDF power solutions where his group handles everything from early-stage designs and energy estimates to equipment qualification and post-construction performance analysis. It's a team that prides itself on having a "pretty advanced tech stack" with mostly automated workflows—which made their decision to adopt PVFARM all the more interesting.

"With PVFARM, it makes a solar engineer comparable to a general contractor. With the proper inputs they could do the civil, the electrical, and everything for a preliminary design at a proficient level without bringing in subject matter experts. It's making the development engineer or solar engineer akin to a Swiss Army knife who is able to quickly put together a design and resulting metrics that impact cost."

**James Alfi,
Senior Director,
Solar & Performance
Engineering**

The Challenge

Even with sophisticated internal tools, EDF power solutions encountered challenges when projects demanded more flexibility than their automated systems could handle. Their homegrown software worked well for standard layouts but struggled with nuance and complexity that real-world solar projects often require. This forced the team into time-consuming manual workarounds that slowed down their development process and limited their ability to optimize designs.



Manual fallback processes

Complex projects required switching to another layout design software or manual AutoCAD work, creating bottlenecks and inconsistent workflows

"We previously used another PV design software and also designed manually in AutoCAD. Additionally, we considered investing in enhancements to our tools better to handle these edge cases."

**James Alfi,
Senior Director,
Solar & Performance
Engineering**

Single axis tracker racking system		
× 0	Generic SAT	
	29 MOD, 1P, Generic PV Module	670.0 W
× 0	3 str, 87 mod	395.59 ft
× 0	2 str, 58 mod	265.97 ft
× 0	3 str, 87 mod	395.59 ft
× 0	4 str, 116 mod	525.20 ft
+ Add Single Axis Tracker Series		

Limited tracker configurations

Their internal tool only supported single tracker lengths, couldn't handle mixed configurations like 4-string, 3-string, and 2-string trackers on the same project

BLOCKING	
Block Configuration	
Equipment Placement	
Inverter type	String Central
Safety factor	1.5625
Inverter	
Generic Inverter 1MOD	3600 kW
Inverters per transformer	Optimize
Inverter Loading Ratio (ILR) range	1.050 1.250
Transformer	
Generic Generic Transformer	3600 kW
Blocks number limit	Minimum feasible by ILR
Blocking strategy	Enforce ILR range
Row height	2 arrays, max

No variable ILR capability

Every block had to use the same number of trackers, preventing optimization for different site conditions

The Solution

PVFARM solved EDF power solutions' flexibility problem by giving their solar engineers the tools to handle complex layouts without sacrificing speed or accuracy. What started as a replacement for manual workflows quickly evolved into something much more powerful—a platform that could handle the variable tracker configurations and complex layouts that their internal tools could not manage while adding new functionality like terrain analysis and rapid design iteration. The key was PVFARM's ability to produce realistic, buildable designs quickly while maintaining the engineering rigor that EDF power solutions' projects demanded.

"You can churn out a DXF that has full wiring, piles, everything in let's say an hour. Which is not really possible with anything else."

**James Alfi,
Senior Director,
Solar & Performance
Engineering**

28

(670)

116/56

4.352 MW

29

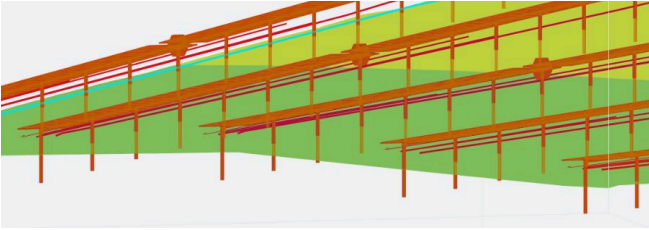
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116/56

4.352 MW

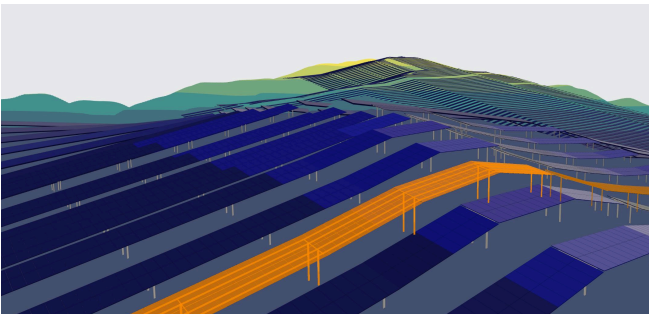
Rapid Design Iteration

Can generate a complete DXF with full wiring, piles, and infrastructure in about an hour instead of weeks



Replacing Restrictive Software

Eliminated licensing costs and the cumbersome workflows that made detailed design iterations nearly impossible



Advanced Cut and Fill Analysis

This became a critical tool for their estimating and pre-construction teams to evaluate grading strategies vs. pile costs



"We are able to analyze terrain following trackers in PVFARM to determine when and where they make sense. This analysis has enabled us to position our projects with the most competitive technology choices early on and win over internal stakeholders ."

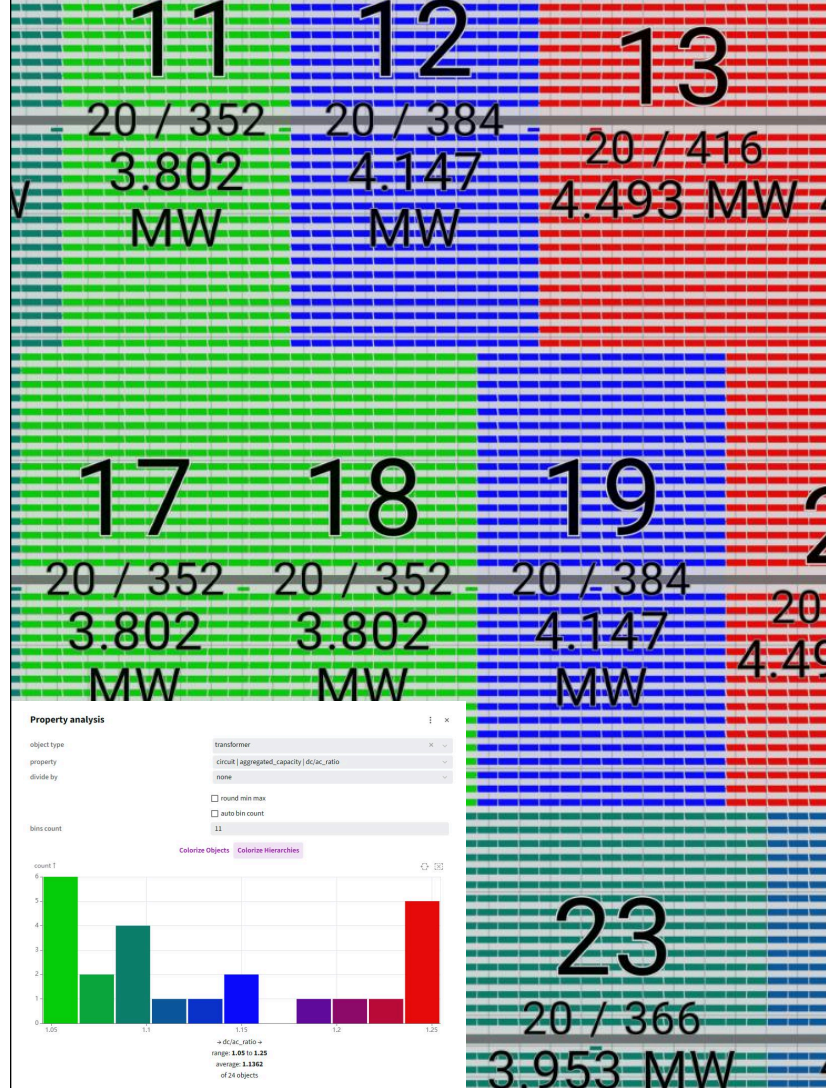
**James Alfi,
Senior Director,
Solar & Performance
Engineering**

Results

The impact went beyond just replacing a piece of software. PVFARM transformed how EDF power solutions' solar engineers work, turning them into what James calls "Swiss Army knives" who can handle civil, electrical, and systems engineering tasks without constantly pulling in specialists. This shift has practical implications: their the civil engineer no longer needs to focus on early-stage iterations that as the solar engineering team can is now handle equipped to manage these directly in PVFARM.

The business impact shows up in multiple ways. EDF power solutions can now respond to RFPs faster by generating their own preliminary designs instead of waiting four weeks for third-party engineering consultants. They're catching potential project issues earlier in the development process, avoiding investments in projects that might cost millions to fix later. On a recent project with challenging terrain and scattered oil wells, the team used PVFARM to run ten different layout scenarios, analyzing trade-offs between MV cable costs, grading expenses, and tracker types—work that helped position the project competitively.

Perhaps most importantly, PVFARM has enabled EDF power solutions to fit more realistic capacity and ground coverage ratios on their sites. By leveraging variable tracker lengths and ILR capabilities, they can be more accurate in their capacity estimates for complex sites, which translates directly to better project economics.



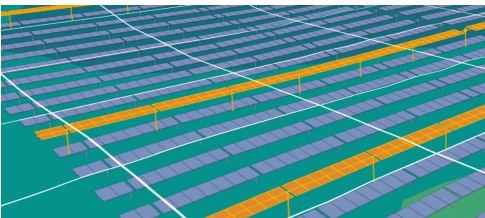
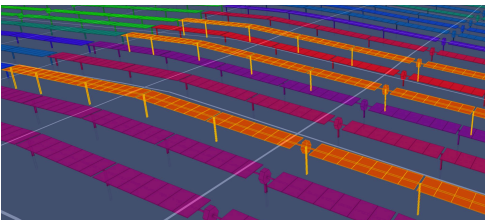
"If you are working on a large project, like 500MW, you can easily make a seemingly small decision that translates to millions of dollars."

**James Alfi,
Senior Director,
Solar & Performance
Engineering**

Final Thoughts

EDF power solutions' experience with PVFARM illustrates a key principle: the best tools don't just solve the problem you thought you had—they unlock capabilities you didn't know you needed. What began as a search for better layout flexibility evolved into a fundamental shift in how their engineering team operates, enabling faster decision-making, better cross-functional collaboration, and more accurate project economics.

The real measure of PVFARM's success isn't just in the time saved or the software licenses replaced. It's in the confidence that comes from having engineers who can quickly evaluate the fundamental metrics of any project without waiting for specialists or external consultants. In an industry where early-stage decisions can swing project economics by millions of dollars, that kind of agility isn't just nice to have; it's a competitive advantage.



About PVFARM

With PVFARM, you can design and deliver large-scale solar projects more easily and make more money doing it. The software automates a lot of the complicated stuff, gives you clear data to work with, and helps your team collaborate effectively. It's all about getting better results, quicker.

- **Effortless mix & match equipment & electrical designs in the same project.**
- **Multiple grading strategies with just a few clicks, fast & easy.**
- **Seamless integration with your favorite tools to fit into your existing workflows.**
- **User-friendly, web-based interface built on industry-leading technology.**