CASE STUDY

RABA SOLAR PARK

PÄRNU COUNTY, ESTONIA, 45MW

TrinaTracker

Located in Estonia, this **FixOrigin** Project showcases innovation and reliability in challenging weather conditions. TrinaTracker, a business unit of Trinasolar, provides the fixed-structure mounting system featuring Trinasolar modules, which are designed to excel in harsh environments and heavy snow. FixOrigin's ultra-compatibility with Trinasolar **Vertex DEG 21** modules ensures top performance and robust reliability, guaranteeing faster and easier installation, saving time and costs.

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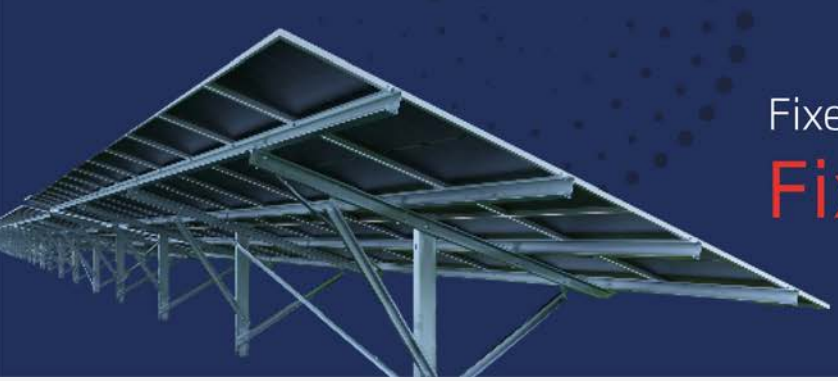


Fixed mounting structure

FixOrigin

Scan the QR to learn more

PLANT CHARACTERISTICS

Pärnu County, Estonia, 45MW

GENERAL FEATURES

Type of structure	FixOrigin	**Modules**	Trinasolar Vertex Dual-Glass Bifacial
Installed Capacity	45 MW	**Nº Modules**	69,216
Nº Fixed tilt.	1,278	**Nº Inverters**	110
Communication system	Wireless	**Developer**	SUNLY AS
EPC	SMARTECON OÜ	**Time saved on installation**	2 weeks - 4 weeks

BUILDING PROCESS

Plant Layout Design

Rectangular plots feature evenly distributed tables for optimal layout efficiency.

Installation Supervision

After a thorough week of careful oversight, TrinaTracker engineers identified and promptly addressed any issues encountered during the assembly process. Additionally, the engineers proposed innovative improvements, including the use of templates and assembly tools, to streamline and automate the mounting process for the installation company. These solutions highlight the expertise of TrinaTracker's departments in effectively managing project challenges.

Logistics

Despite facing adverse weather conditions, particularly substantial snow accumulation in the area, and navigating challenging terrain, TrinaTracker engineers tackled each obstacle directly. The company's procedures and expertise ensured that logistical challenges related to substantial snow accumulation in projects were effectively managed, preventing delays or additional costs.

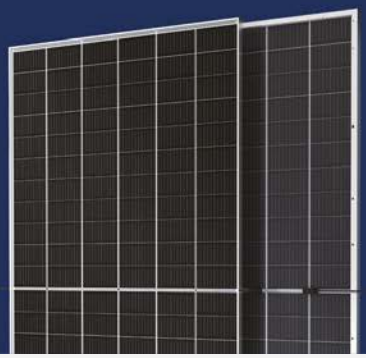
Flexible Supply Chain

All fixed tilt materials for the project originate from TrinaTracker's European factory, ensuring efficient management of supply chain and assembly challenges due to proximity. Local suppliers were instrumental in providing the remaining components to complete the project.

Trinasolar Modules

Vertex

Dual-Glass Bifacial



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PROJECT BACKGROUND

Pärnu County, Estonia, 45MW

Location Description

Strategically situated just 3 km west of Värna in the heart of Pärnu County, Estonia, the project enjoys a prime location. This central positioning not only ensures convenient accessibility but also maximizes its potential for impact and efficiency.

Terrain Description

The terrain has slopes of up to 5%. An agricultural drainage system directs groundwater to ditches during high water periods. During these times and snowmelt, groundwater can reach the topsoil or surface. Clayey soils are prone to frost heave and softening when wet, so it is advisable to avoid long-term water and frost exposure in the foundation pit to maintain soil strength and bearing capacity.

Accessibility to the Site

Improved with traditional dirt pathways, these access roads seamlessly connect to fertile agricultural fields. Positioned strategically near the main road, they ensure easy access and smooth transportation, enhancing logistical efficiency.

Weather Characteristics

In the depths of winter, the project area in Pärnu County, Estonia, encounters nature's elements with heavy snowfalls and extremely cold temperatures, where average minimums can drop to -10°C. The average snow load in this area can reach up to 3 kN/m², posing a challenge to the project. Despite these obstacles, the project remains resilient and prepared to overcome nature's extremes.

Pull-Out Test

Trina Tracker recommended the client conduct a pull-out test due to the terrain type, under the guidance of the geotechnical department. The results were validated to ensure the project's viability and to mitigate future risks. This approach enhances the safety and reliability of the plant, reducing uncertainty and guaranteeing its long-term viability.

CHALLENGES & SOLUTIONS

Pärnu County, Estonia, 45MW

Challenge 1 & Solution 1

Amidst the dynamic **weather patterns and temperature swings** characteristic of the region, the construction site faced challenges, including **sinkages and structural shifts**.

A proactive approach led TrinaTracker to propose innovative alternative foundations in collaboration with stakeholders. Thanks to the insights from the pull-out test supervised by the geotechnical department, TrinaTracker swiftly tailored solutions based on the results. This ensured that the project stayed on schedule, delivering results without compromising the commitment to excellence.

Challenge 2 & Solution 2

The initial structure planned for assembling the inverter did not meet expectations, resulting in less-than-ideal positioning of the inverter.

However, driven by a strong commitment to excellence, **TrinaTracker's Engineering Department worked diligently to address this challenge**. Through meticulous analysis and innovative problem-solving, they developed a solution that met the needs of all stakeholders, despite the complexities of working with external parties.

" The collaboration between Sunly and Trinasolar began a couple of years ago. For us it is very important that our partners meet ESG requirements and, most importantly, high technical and quality standards. We always aim to use the equipment in our solar parks that is technically innovative and of high efficiency & high quality. Trinasolar had all these aspects. "

Siim Paist, Procurement & New Technologies Lead at Sunly

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