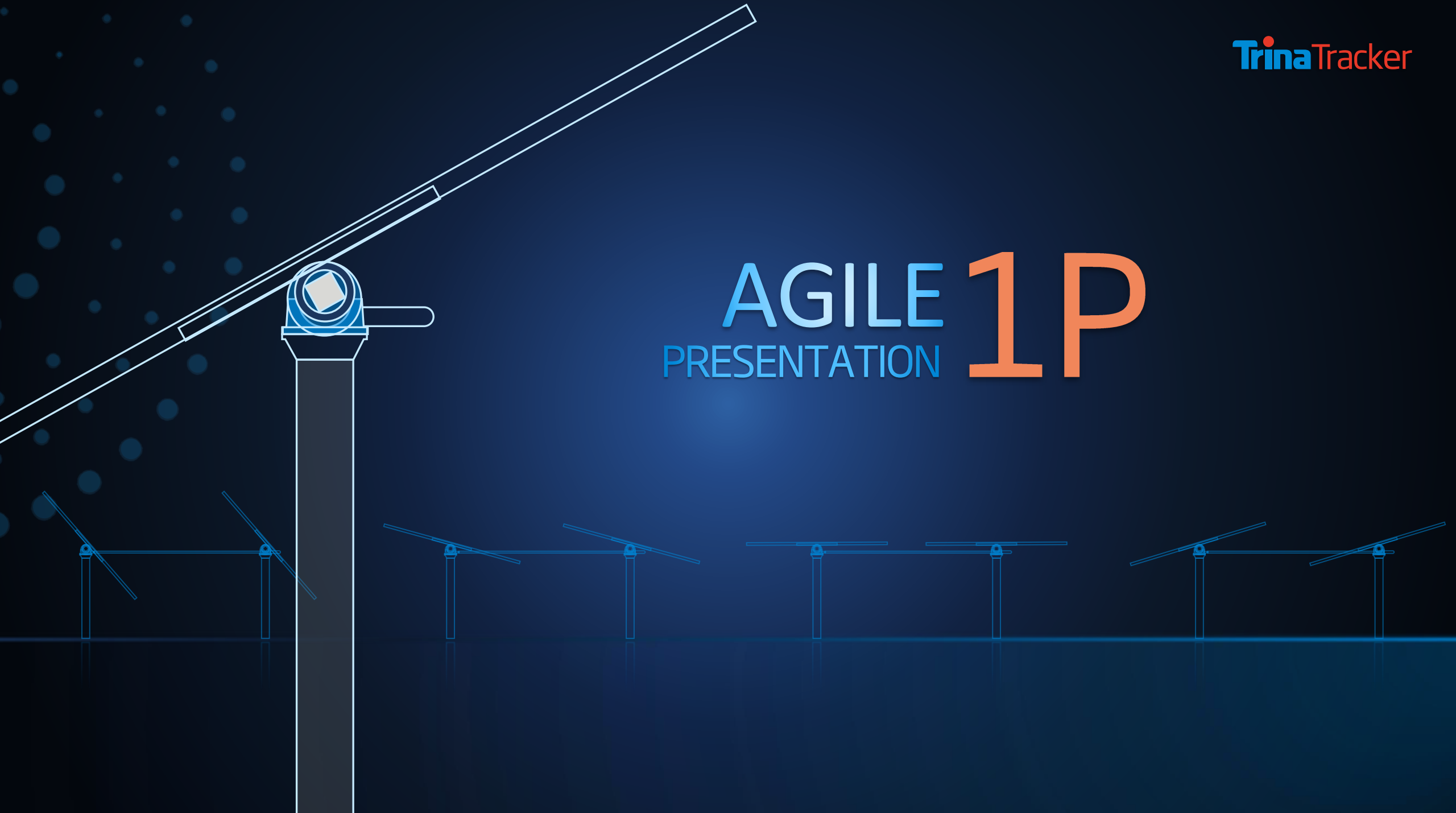
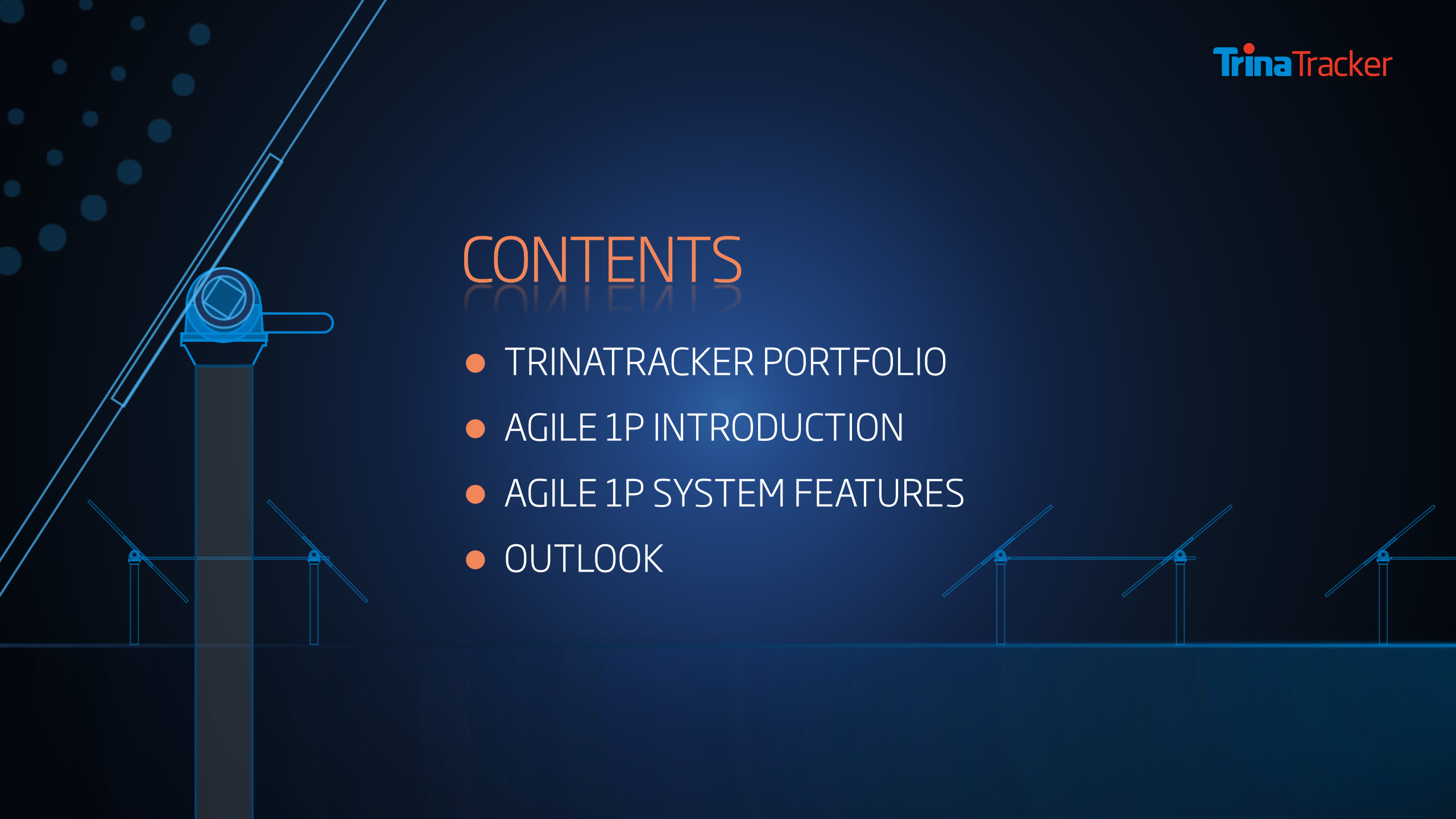
TrinaTracker

AGILE 1P
PRESENTATION





CONTENTS

- TRINATRACKER PORTFOLIO
- AGILE 1P INTRODUCTION
- AGILE 1P SYSTEM FEATURES
- OUTLOOK

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ENVIRONMENT CHALLENGES PUSH FOR NEW TRACKER TECHNOLOGY

Complex and extreme environment and site conditions implies more challenges
to
tracker design in terms of cost saving and quality assurance.

Constrained Sites

Bad Geotech

Uneven Terrain

Remote Location & High Labor mobilization Cost

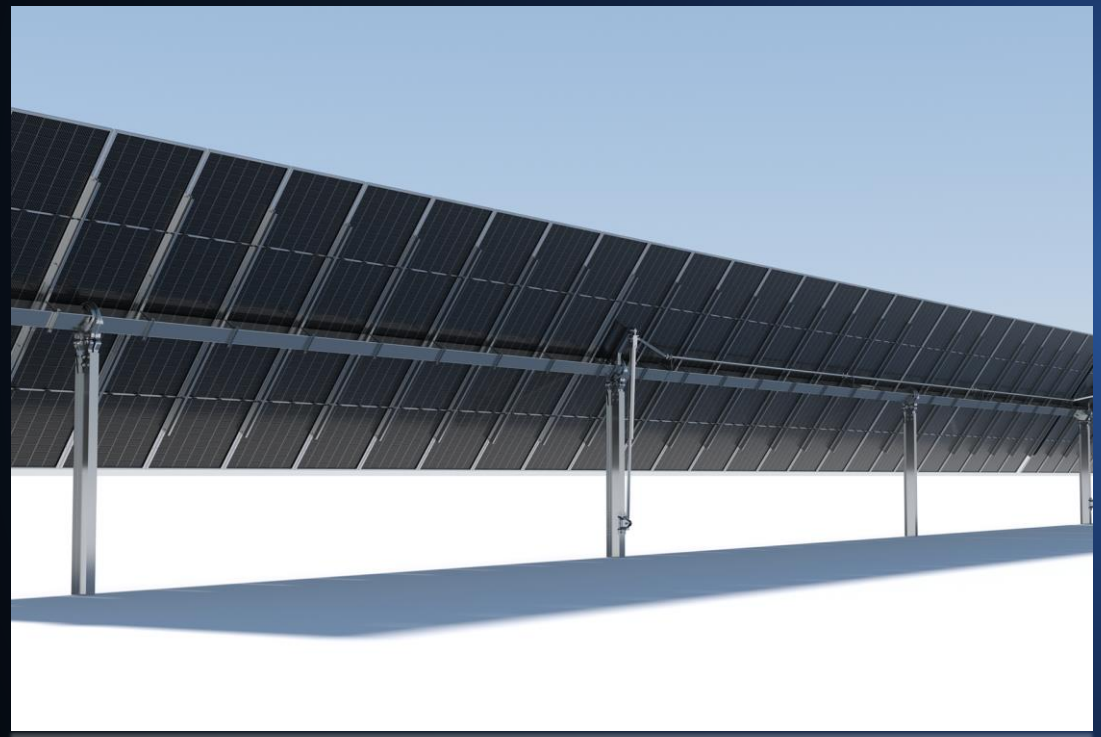
Extreme Environment (Flood, hail, wind etc.)

Project Tight Schedule for Commissioning

TRINATRACKER PORTFOLIO

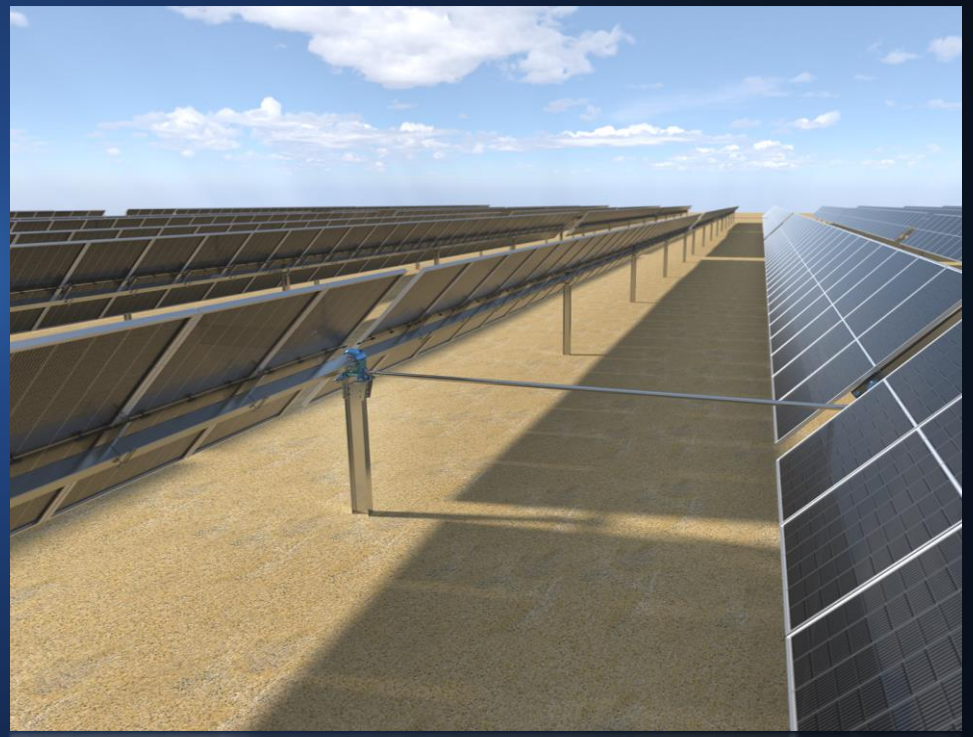
Vanguard™ 2P

Independent row



Agile™ 1P

Dual row



CONTENTS

- AGILE 1P INTRODUCTION

PRODUCT OVERVIEW

TrinaTracker

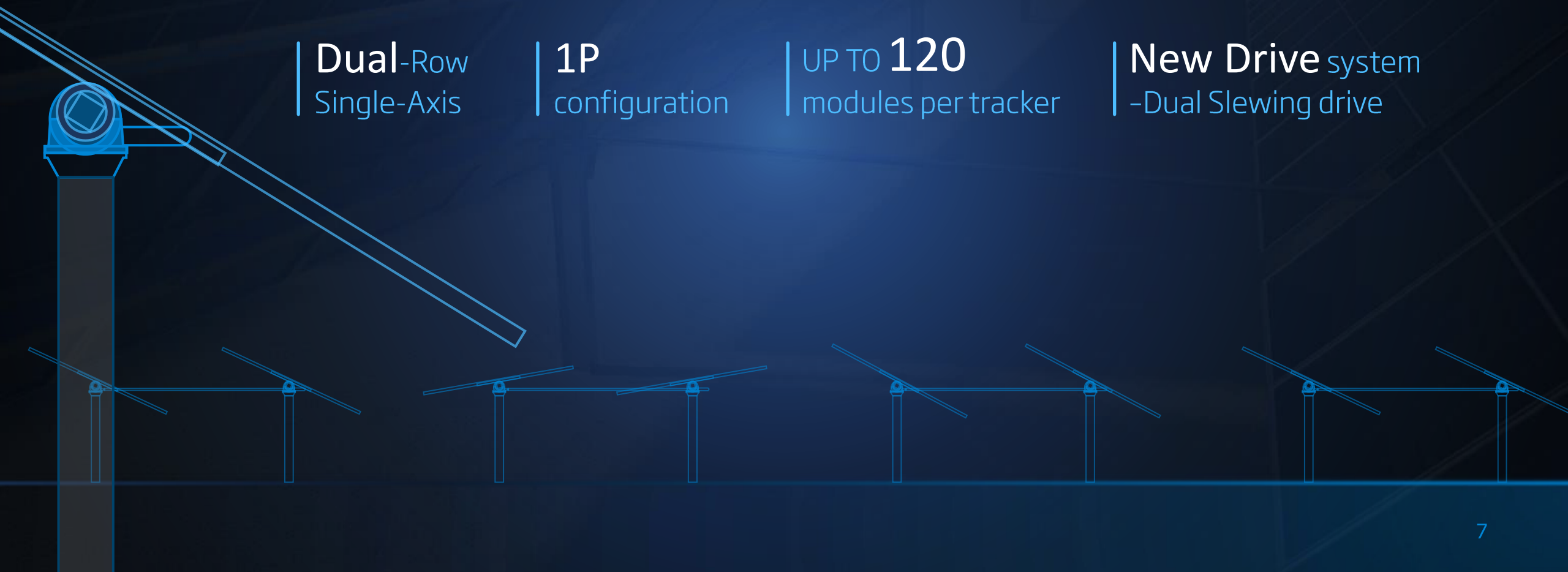
Agile™

Dual-Row
Single-Axis

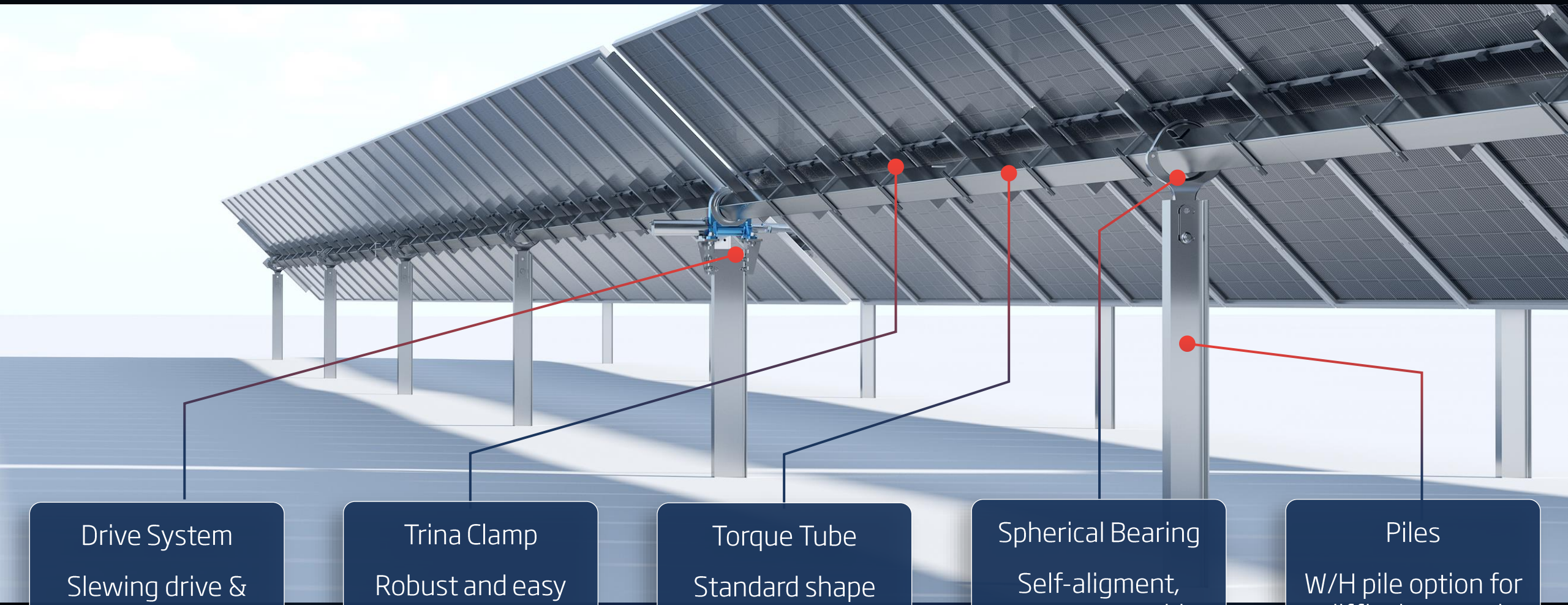
1P
configuration

UP TO **120**
modules per tracker

New Drive system
–Dual Slewing drive



KEY MECHANICAL COMPONENTS



Drive System

Slewing drive & cardan design- simple assembly process

Trina Clamp

Robust and easy to assemble

Torque Tube

Standard shape for supply chain efficiency

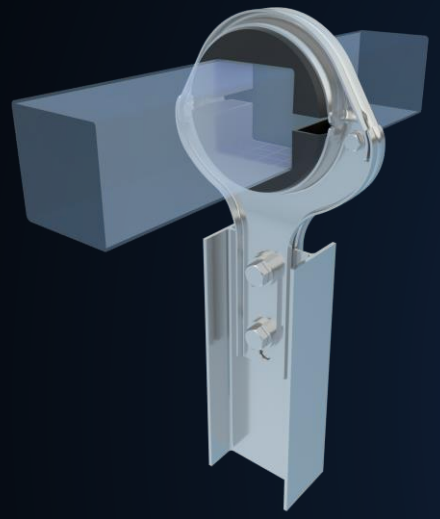
Spherical Bearing

Self-aligment, easy to assemble

Piles

W/H pile option for difficult ground conditions

PATENTED SPHERICAL BEARING & TRINA-CLAMP

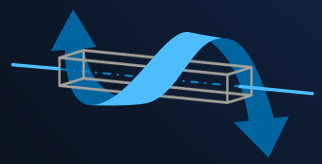


Spherical Bearing

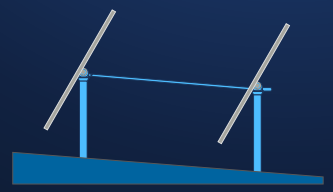
- Self-lubricating plastic
- Resistance to solar degradation (accelerated life cycle tested)
- 12 years proven in harsh environments

- Avoids the need for calibration during the installation process

- Minimizes structure stress and deformation

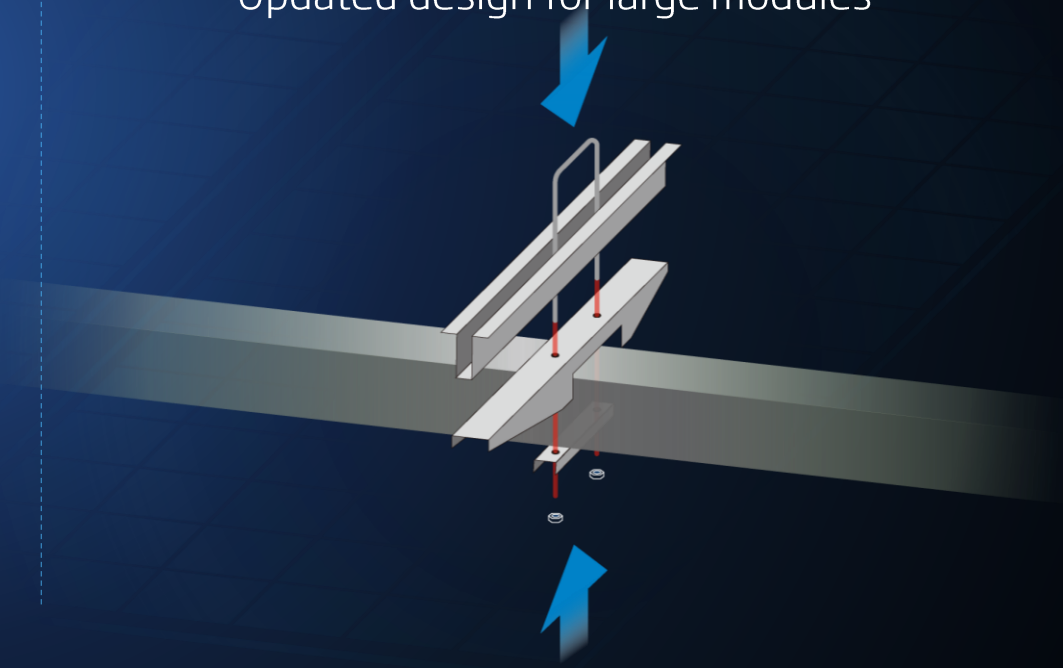


- Enables increase of ramming tolerances



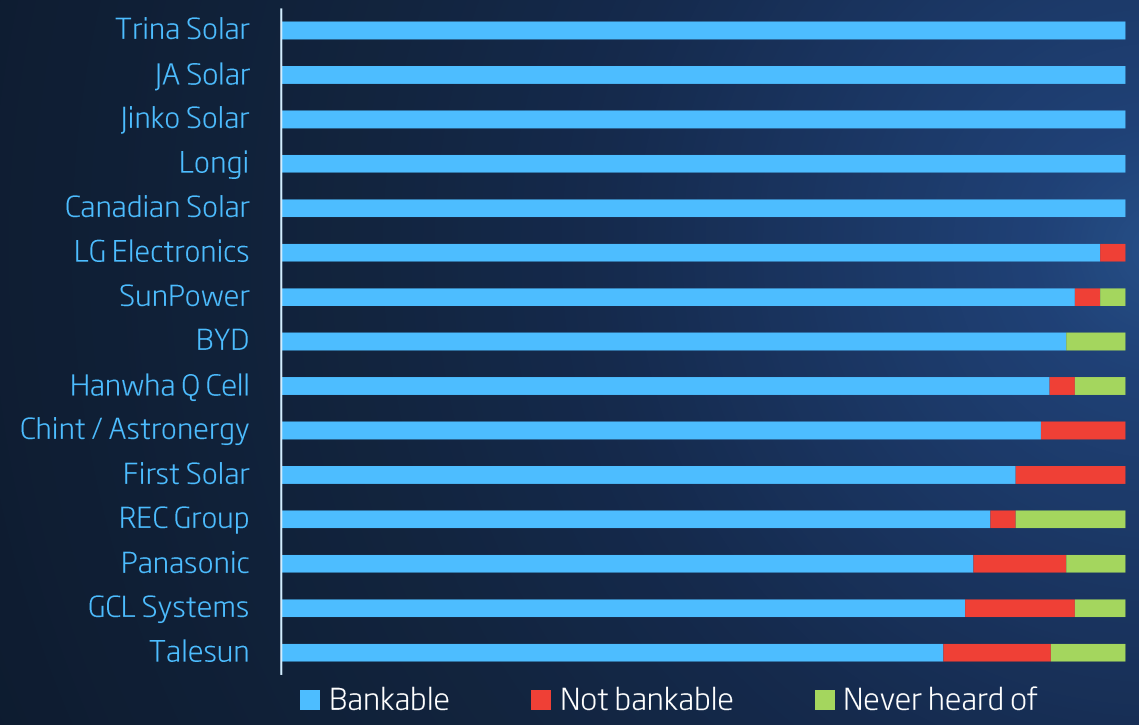
Trina-Clamp

- Innovative Trina Clamp installation
- Save 50% installation time
- Updated design for large modules

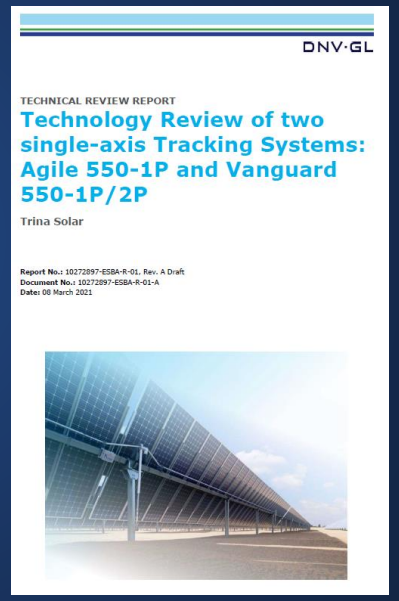


SUPERB BANKABILITY

Trina recently maintained its 100% bankability record with Bloomberg New Energy Finance for the 5th consecutive year



Source: Bloomberg Module Manufacturer Bankability Ratings 2020


DNV·GL

TECHNICAL REVIEW REPORT

Technology Review of two single-axis Tracking Systems: Agile 550-1P and Vanguard 550-1P/2P

Trina Solar


DNV·GL

DNV GL WHITE PAPER

Tracker Bankability Reviews: Guidelines for Stakeholders

DNV-GL has continually provided valuable endorsement to TrinaTracker

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AGILE SYSTEM FEATURES

TrinaTracker

DESIGN

- Module & Tracker Compatibility
- Advanced Wind design
- Integrated Alarm Strategy

HARDWARE

- Multi-drive system
- Length of the tracker

SOFTWARE

- SuperTrack
- SCADA System

DESIGN: TRACKER & MODULE COMPATIBILITY

TrinaTracker

Agile™

MODULE TYPE	POWER	MODULE WIDTH	MODULE LENGTH	MODULE PER STRING (20°C)	No. MODULE	MAX STRING PER ROW	TRACKER LENGTH
DE17 DEG17C.20	450 W	1046mm	2111mm	30	120	2	62.76 m
DE19 DEG19C.20	550W	1096 mm	2384mm	38	114	1.5	63.81 m
DE20 DEG20C.20	600W	1303 mm	2172mm	33	99	1.5	65.70 m
DE21 DEG21C.20	670W	1303 mm	2384mm	32	96	1.5	63.75 m

ADVANCED WIND DESIGN
CUTTING EDGE STRUCTURAL & WIND ENGINEERING

TrinaTracker

Trackers are flexible structures even with frequencies higher than 1 Hz

STRUCTURAL VERIFICATION

- STATIC ANALYSIS
- DYNAMIC ANALYSIS
- AEROELASTIC ANALYSIS

WIND ENGINEERING

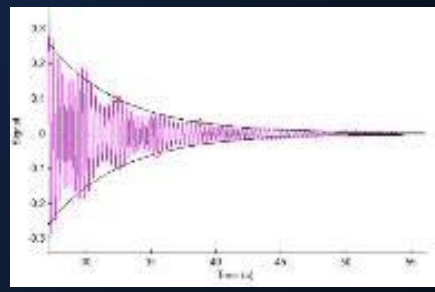
Wind tunnel pressure model test

Pressure coefficient definition. Rigid structure

3D Full aeroelastic test

Critical wind speed definition. Flexible structure

On-site Pluck Test



Dynamic parameter measurement: Frequency and Damping

ADVANCED WIND DESIGN
WIND MITIGATION STRATEGY

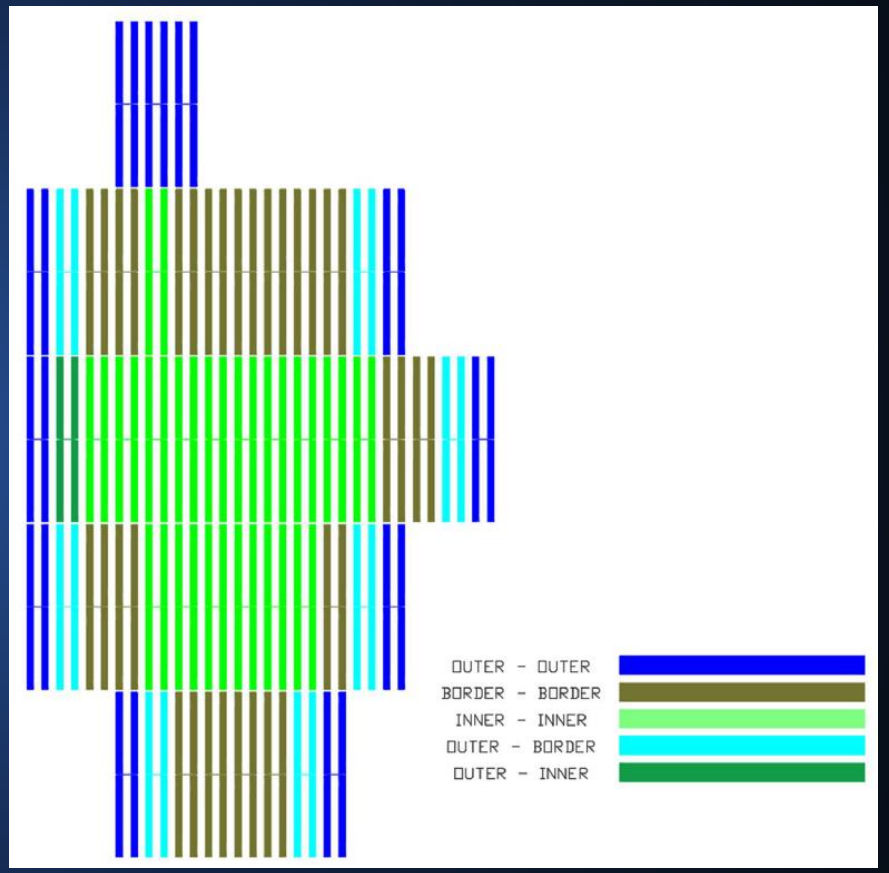
Wind stow strategy
High tilt angles

Considers critical, maximum structural and design wind speed limits

Configure per tracker and project

No risk for each location and weather conditions

Tailored Tracker Lay-out



Different types of tracker depending on the location on the plant to enhance efficiency.

DESIGN: INTEGRATED ALARM STRATEGY

TrinaTracker

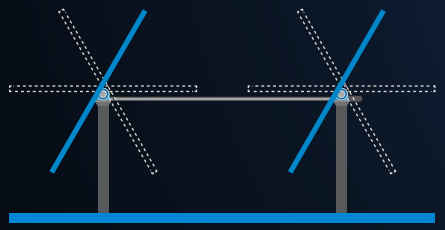
	LOW BATTERY	COMMS ALARM	MANUAL STOW ALARM	HAIL STOW	WIND ALARM	SNOW ALARM
Description	Stow position is command if the battery energy is not enough to stay tracking	Stow position is command if no communications with NCU are available	Stow position is command by the plant operator in case of any extreme risk	Hail Stow position is command in case of hails storms	Wind Stow position is command in case of wind alarms	Snow Stow position is command in case of wind alarms
Activation / deactivation	Automatically by the TCU SOC* estimation	Automatically by the TCU	Manually by the operator	Manually by the operator	Automatically by the weather station	Automatically by the weather station
Priority	1	2	3	4	5	6

HARDWARE: MULTIDRIVE SYSTEM

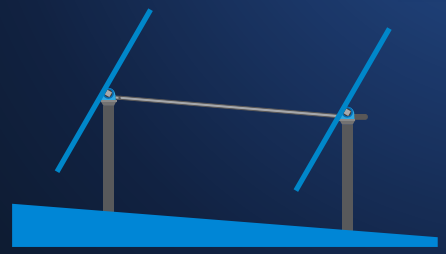
TrinaTracker

ONE LINEAR ACTUATOR

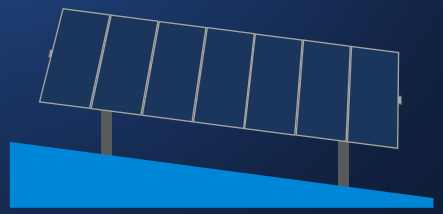
TWO SLEWING DRIVES



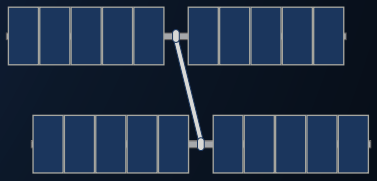
±60º Tracking range



10% E-W



20% N-S



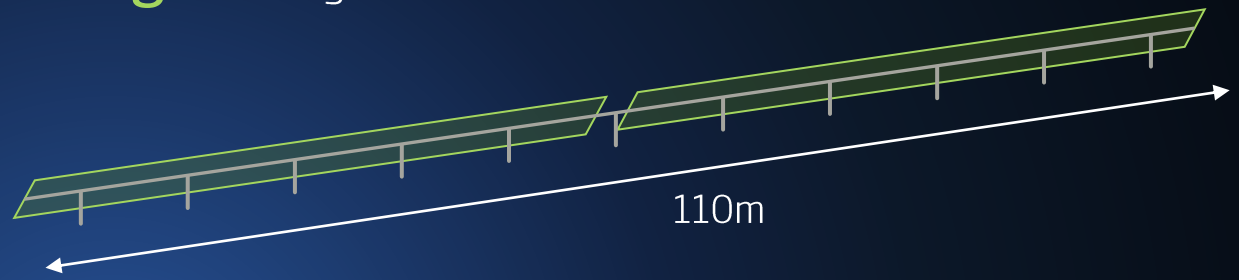
12º Adaptability

HARDWARE: TRACKER LENGTH

TrinaTracker

Shorter - Agile dual row 1P

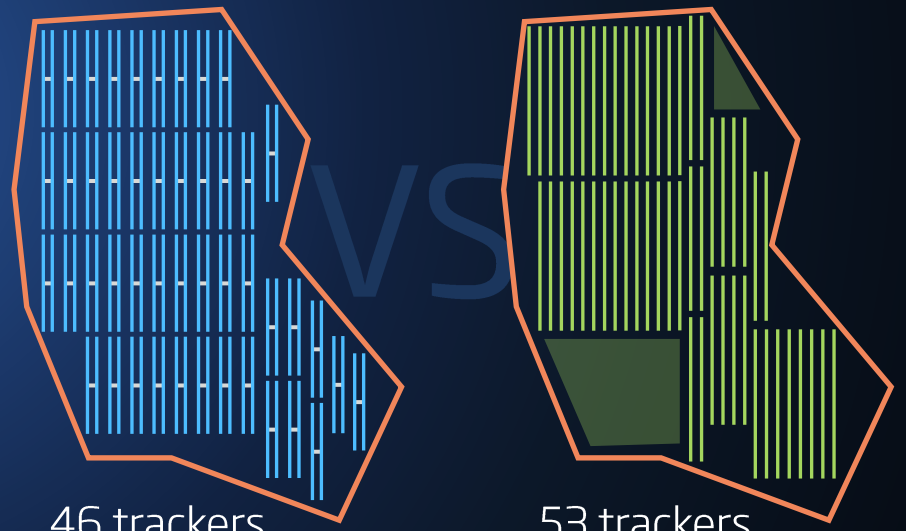
Longer - Single row 1P



Per MW

12.6 trackers

-33% Trackers per MW	-45% Shorter. Less grading	-9% DC cable	Optimized BOS



46 trackers

3036kW

(46*60*2*550W)

53 trackers

2625.5kW

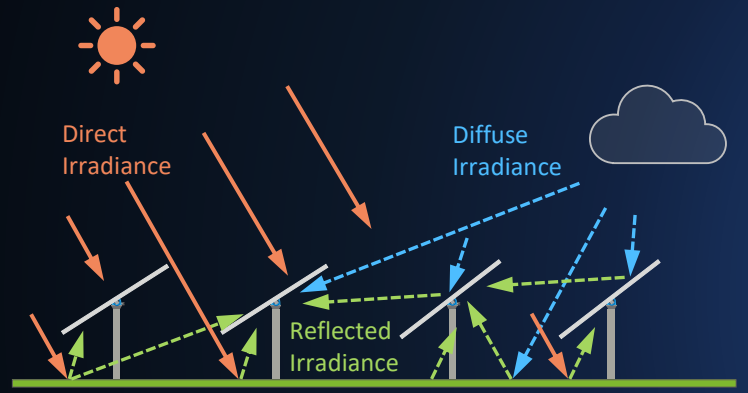
(53*90*550W)

SUPERTRACK

BIFACIAL ENHANCEMENT + INTELLIGENT BACKTRACKING*

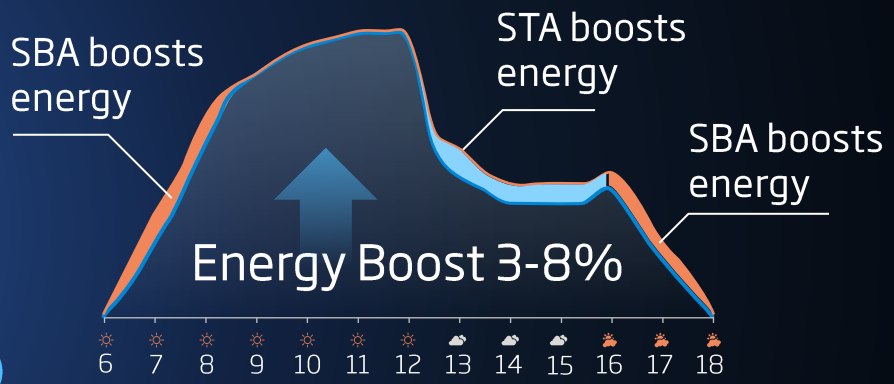
TrinaTracker

SuperTrack = Smart Tracking Algorithm + Smart Backtracking Algorithm



Smart Tracking Algorithm (STA)

Smart Backtracking Algorithm (SBA)



SuperTrack is developed to increased yield gain in:

Sunrise and Sunset

Cloudy Weather

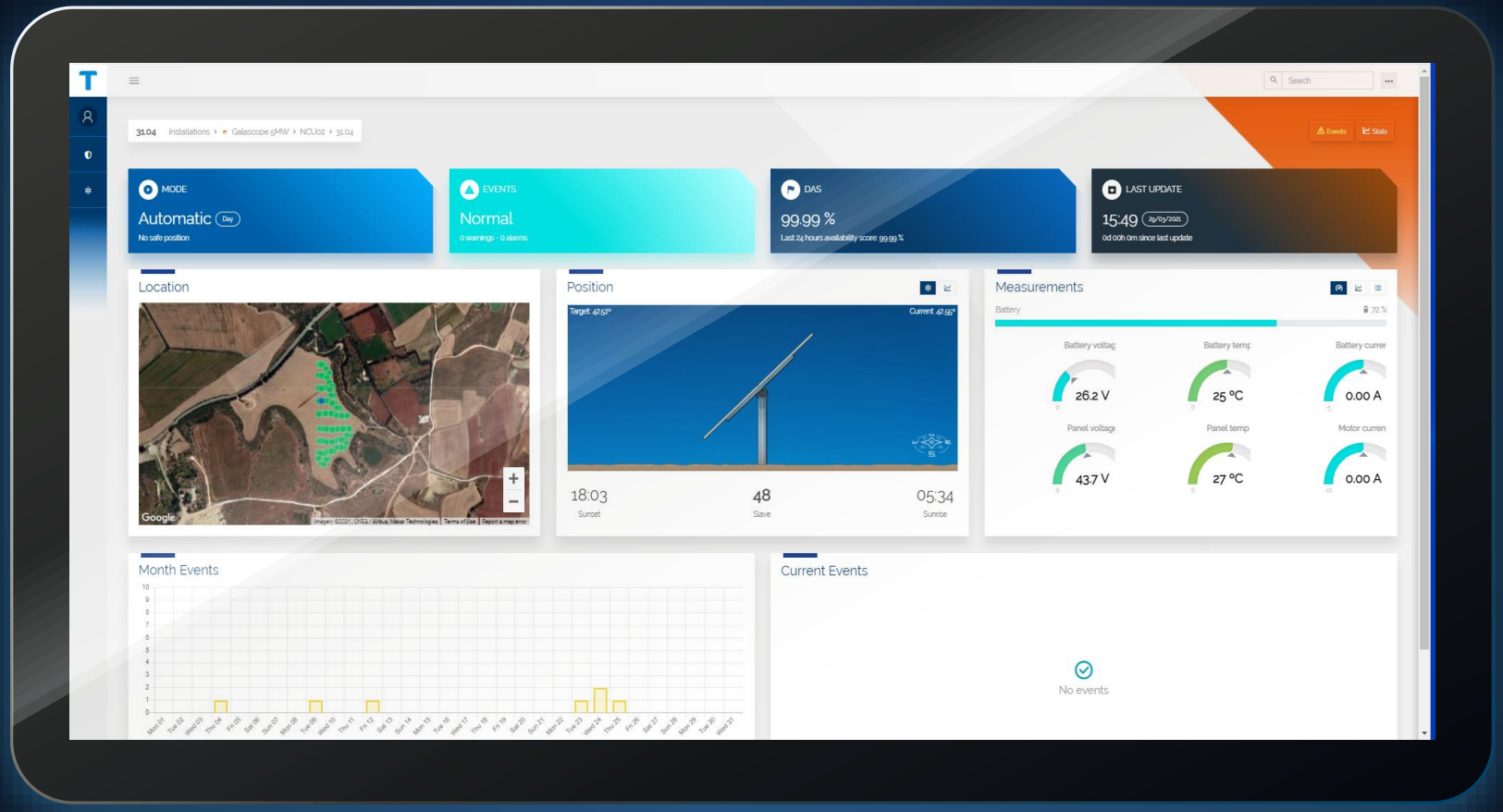
Overcast Weather

Uneven Terrain

SMART O&M: SCADA SYSTEM

TrinaTracker

TrinaSCADA = Tracker Monitoring & Alarm + System Diagnosis + Intelligent Control



Upgrade to SCADA system based on current TrinaTracker Cloud

CONTENTS

PRESALES AND SALES SERVICE

TrinaTracker

FULL MECHANICAL ASSEMBLY
(As an optional service)

- Structure assembly
- Modules assembly
- Motors and electrical boxes
- Delivery control
- Quality control

PULL OUT TESTING
Design and supervision of pull out test campaign

- Final design of foundation
- Trina Tracker take the risk of the foundation design and guarantee it





GEOTECHNICAL REPORT

- International geotechnical consultant partners
- Evaluation of feasibility of the installation

COMMISSIONING

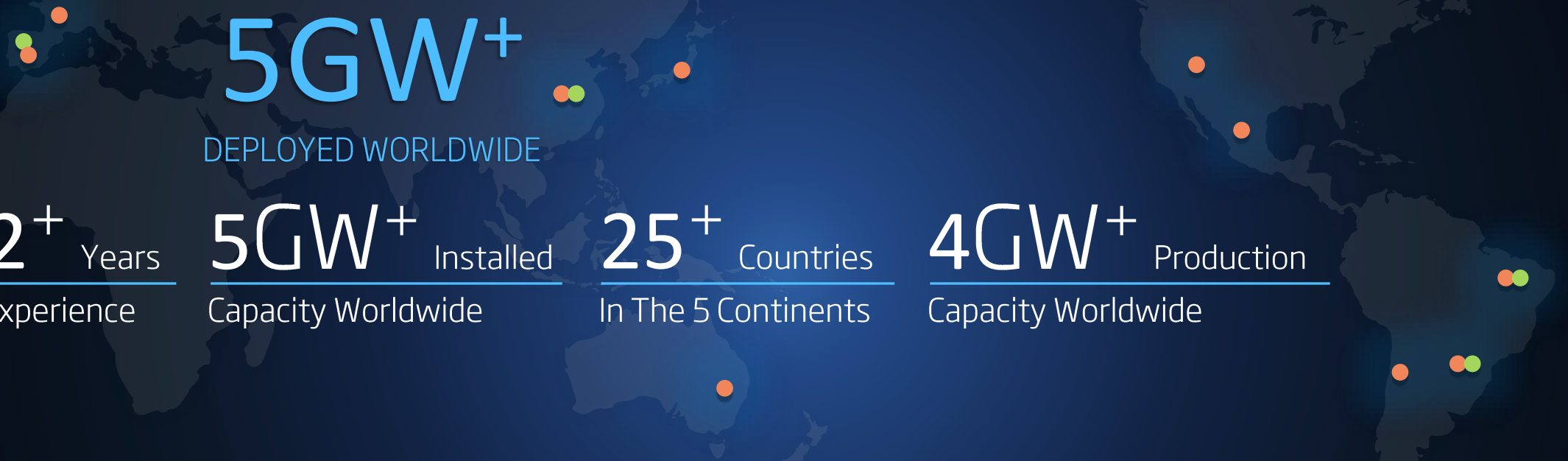
- Tracker commissioning
- Communication commissioning

ON SITE SUPERVISION

- Supervision of assembly
- Delivery supervision
- Quality control
- Certification of installation

DEDICATED GLOBAL SUPPLY CHAIN AND LOCAL SUPPORT

TrinaTracker



5GW+

DEPLOYED WORLDWIDE

12+ Years
Of Experience

5GW+ Installed
Capacity Worldwide

25+ Countries
In The 5 Continents

4GW+ Production
Capacity Worldwide

● Offices & Branches

Spain / France / USA / Mexico / Brazil / Chile / Argentina / Japan / Australia / China (HQ)

● Production centers

Spain / Brazil / Argentina / China*

(*China factory to be in service in Q3 2021)

TECHNICAL ADVANTAGES
SUMMARY OF AGILE 1P

TrinaTracker

- Multidrive system (bi-slewing drive)
- Shorter Tracker Design
- Advanced wind design: CCP Wind tunnel test

HIGH RELIABILITY

OPTIMIZED BOS

- Fewer Trackers Needed
- Spherical bearing
- TrinaClamp

Agile™

- Advanced Supertrack Algorithm

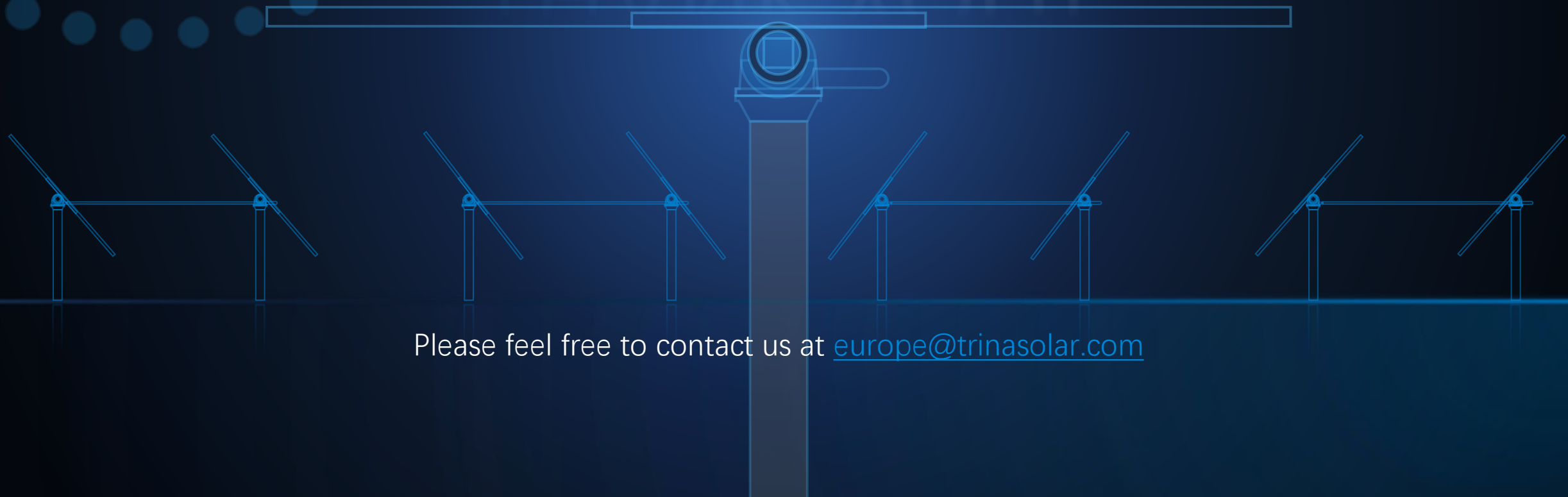
GREATER POWER GENERATION

ENHANCED ADAPTABILITY

- Multidrive system (bi-slewing drive)
- Shorter Tracker Design

TrinaTracker

THANK YOU!



Please feel free to contact us at europe@trinasolar.com