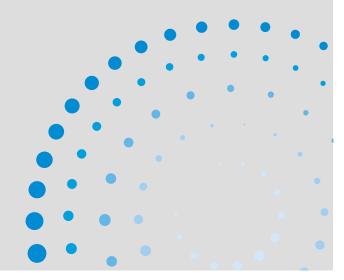


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Alfonso Caballero | Global Research and Development
Laura García | Global Product
Wen Jin Cai | Global Product
Marisa González | Global MarCom
Andrew Gilhooly | APAC Business Solutions







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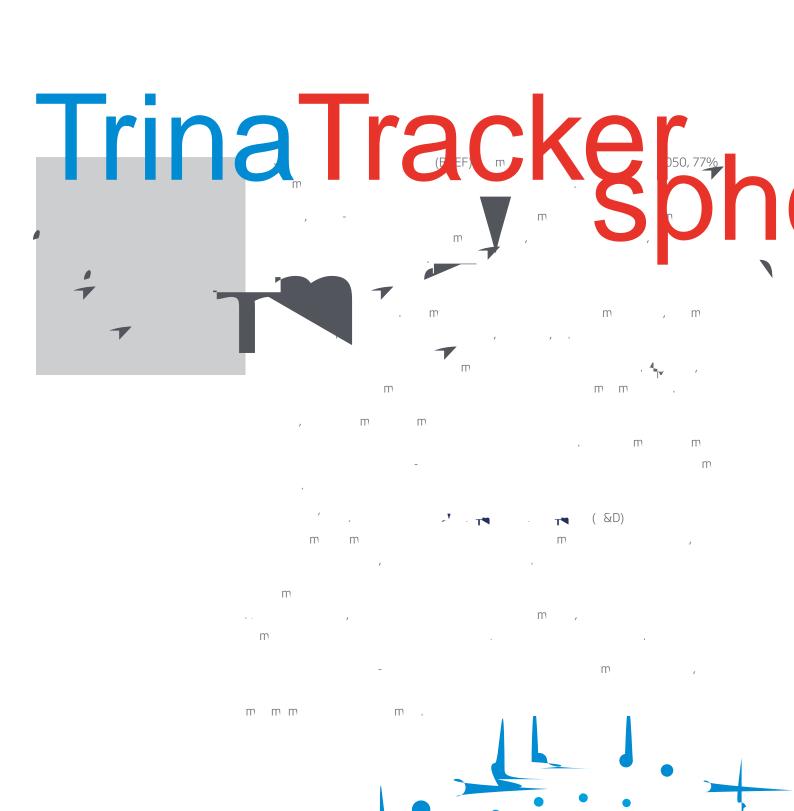
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, . B F E m ₄_{j▼} L C E (LC E), L C E , m

4_{jv} mB F mm D m I m (I) m m m m D &I I.

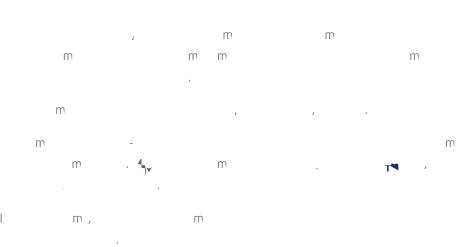


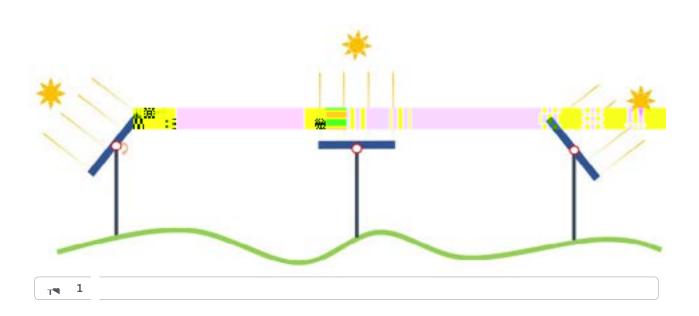




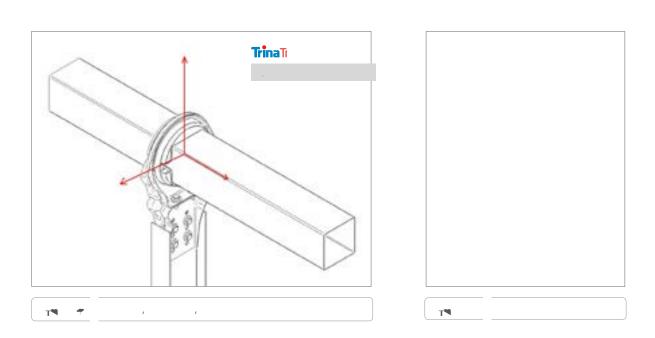






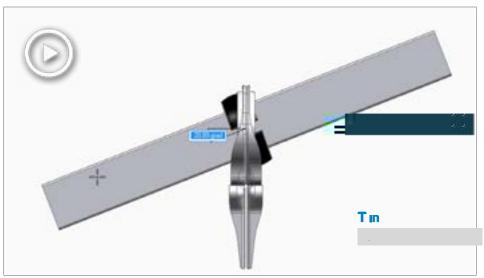




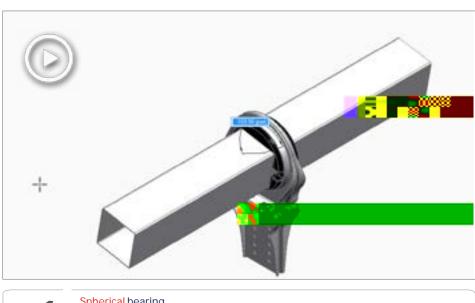








Spherical bearing



Spherical bearing

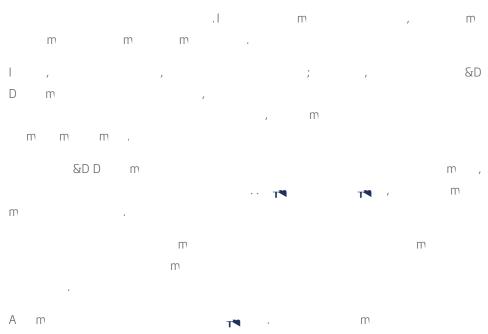














Spherical bearing H , C , 400 4



Spherical bearing H , C , 400 4

Modality	Number	Name	Status	Application date	Due date	Next Payment	Classi cation	Country	Drawing
Е	E 2735817A3 E 2735817A2	m	G	22/11/2013	30/11/2020	9	F16C11/06; F24J2/52; F24J2/54; F16C23/04	DE I E	
Е	E 2735817B1 E 2735817B8	m	G	22/11/2013	30/11/2020	8			

1 Spherical bearing

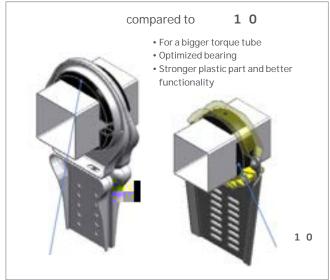


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Spherical bearing m
Vanguard 2P

E spherical bearing

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		4 (E	-	, H m	,)	
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97. 1♥	F	m ()			m ()
π¶ (1)	А	100, 120 mm		А		170 mm	
				Е	m	m	
7 D	/	1 ´ spher	ical bearing				







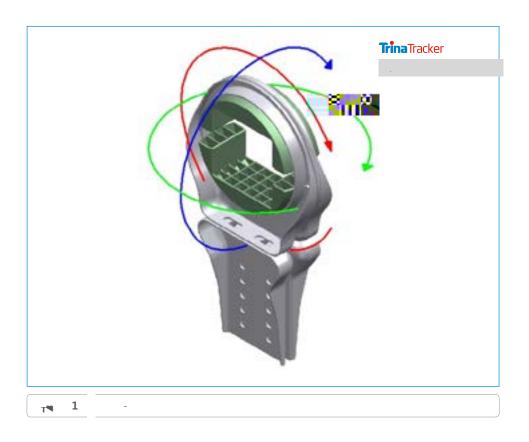
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m .l m :



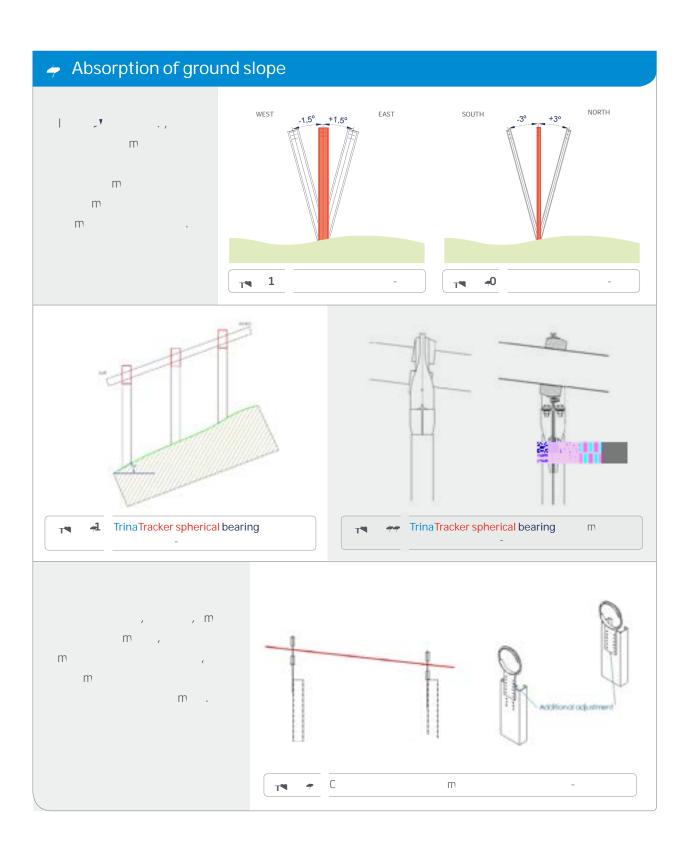






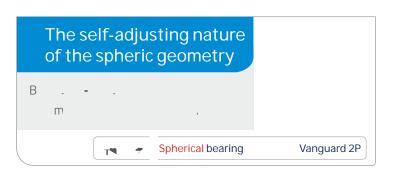


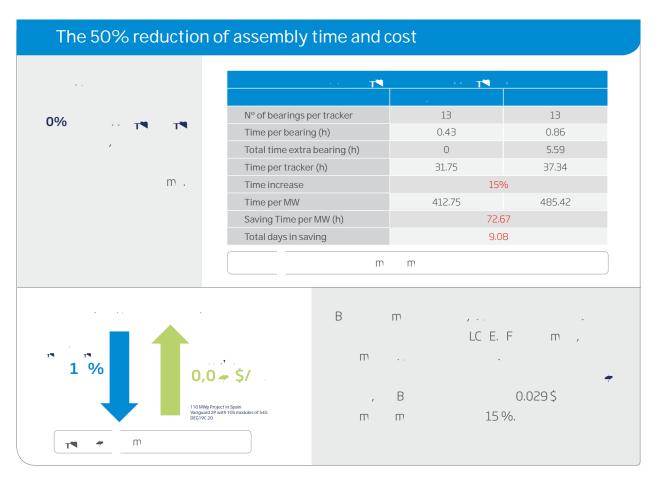
1 Absorption of the twist of the posts m



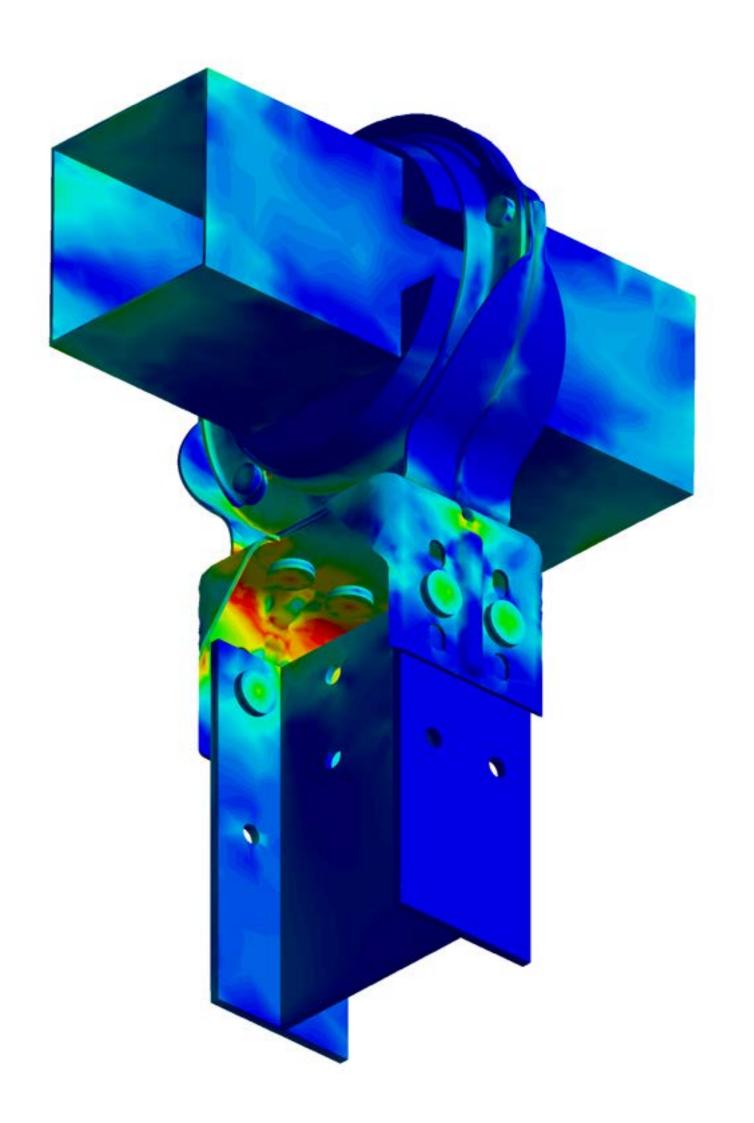


Resistance of the assembly to axial loads m m .



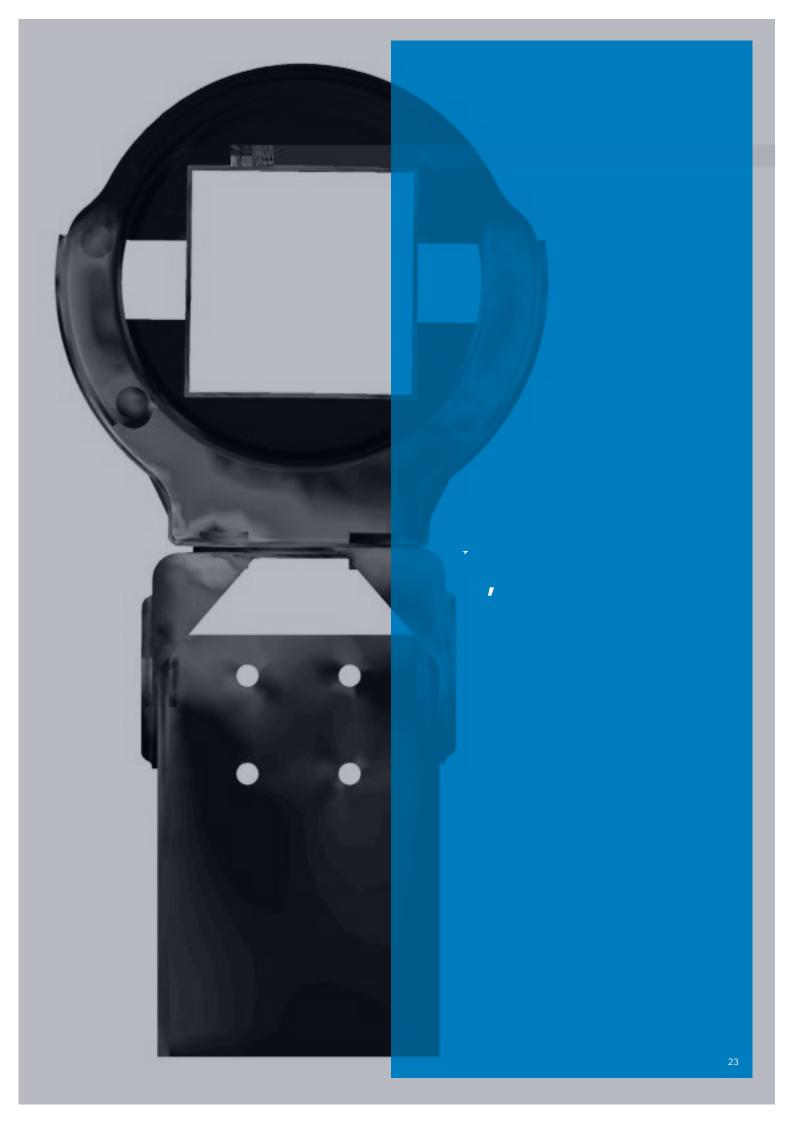








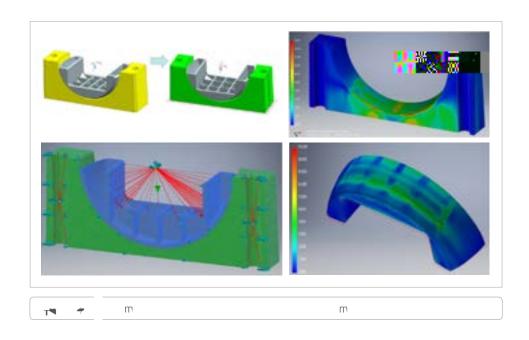


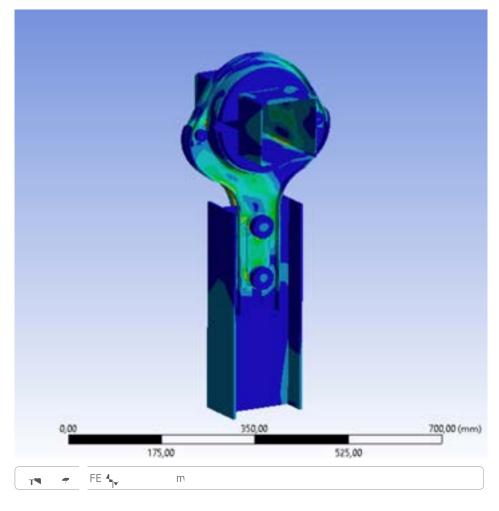




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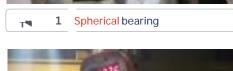








O Spherical bearing







Spherical bearing

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Spherical bearing

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Warranty	Component name	Units per Tracker (N°)	Units per 100 MWp (N°)	Replacement Time per unit (min)	Replacement Time per unit (hr)	Failure Rate per compon. (%)	Unplanned O&M TIme (hr/year)
5	В	16.0	25.520	15	0.25	0.0250%	1.60
	Spherical bea	aring	Agile 1P				

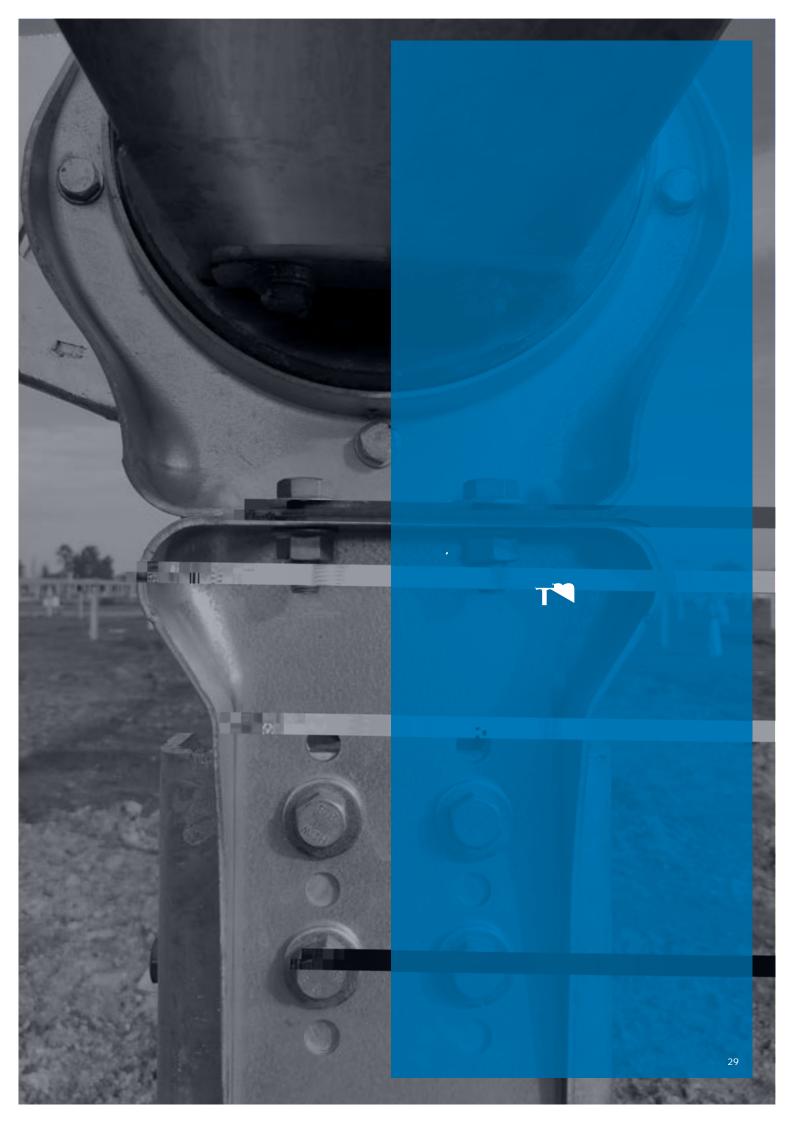
Warranty	Component name	Units per Tracker (N°)	Units per 100 MWp (N°)	Replacement Time per unit (min)	Replacement Time per unit (hr)	Failure Rate per compon. (%)	Unplanned O&M TIme (hr/year)
5	В	8.2	13.317	120	2.00	0.0250%	6.66

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* D m







Zuera 11 MW: Spherical bearings' excellent and long-lasting performance



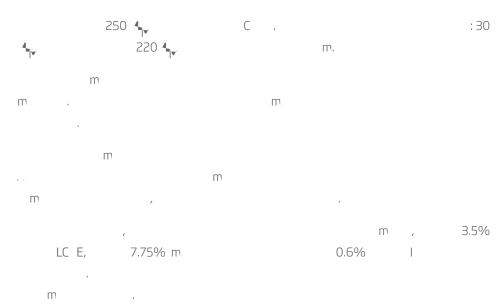
Spherical bearings 11 4,



T[≈] 11 ⁴|_{|V'}



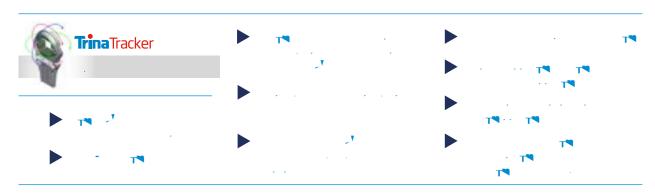
Tongchuan, 30 MW: Spherical bearings' efficiency in uneven terrain

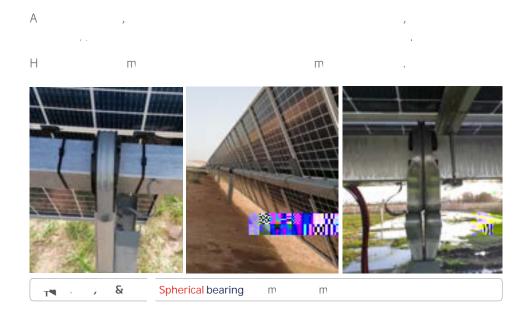










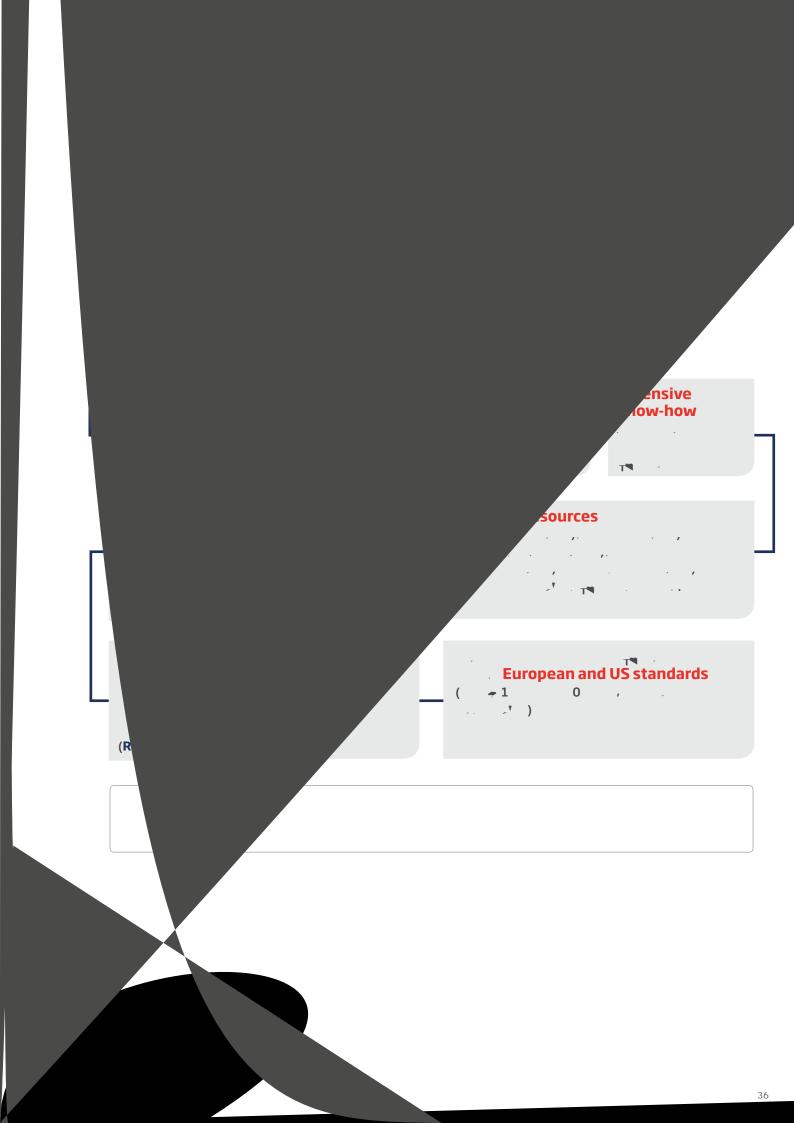






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- 2P con guration compatible with ultra-high power modules up to 210 mm wafer size.
- Multi-drive system that allows better wind tolerance, high adaptability and stability.
- 120 modules per tracker and up to 4 strings per row. Low voltage optimisation.
- Individual row actuator. Easy access for operation and manteinance activities.
- From 7 piles per row and less than 120 piles per MW.
- Global patented that allows up to 30% angle adaptability.
- algorithm that increses yield gain up to 8%.



- Individual row actuator. Easy access for operation and maintenance activities.
- 120 modules per tracker and up to 4 strings per row. Low voltage optimisation.
- Dual row actuator. Easy access for operation and maintenance activities.
- Optimised number of components allows low operation and maintenance costs .
- High slope tolerance 20% N/S, 10% E/W.
 - reduces installation time and costs.
- algorithm that increses yield gain up to 8%.



