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13 December 2023

9:00 am – 10:00 am | MST, Denver

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pv magazine
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Achieving domestic content tax incentives with solar trackers



Anne Fischer

Senior Editor
pv magazine USA



Jerusha Kamoji

Contributing Editor
pv magazine USA



Sergio Prado

Regional General Manager
North America
Soltec



Charles Dauber

Chief Executive Officer
Impact Technologies




Minerva Garza

Tracker Purchasing
Manager
Soltec

Welcome!

Do you have any questions? ? 

Send them in via the Q&A tab.  We aim to answer as many as we can today!

You can also let us know of any tech problems there.

We are recording this webinar today. 

We'll let you know by email where to find it and the slide deck, so you can re-watch it at your convenience.  

The background features a stylized sun in the upper right corner, rendered in bright yellow and orange with radiating lines. To the left, there are large, semi-circular shapes representing solar panels, with a grid pattern and a color gradient from red to orange. A white, curved shape resembling a stylized eye or a lens is positioned in the center, overlapping the sun and the solar panels.

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**MAKING TRACKS FOR
A BRIGHTER FUTURE**

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About us

Soltec is a PV company specialized in the manufacture and supply of single-axis solar trackers with global operations and a workforce of over **1300** people, blending experience with innovation, with already **146** active patents.

20.1+ GW

Projects Worldwide

14.1+ GW

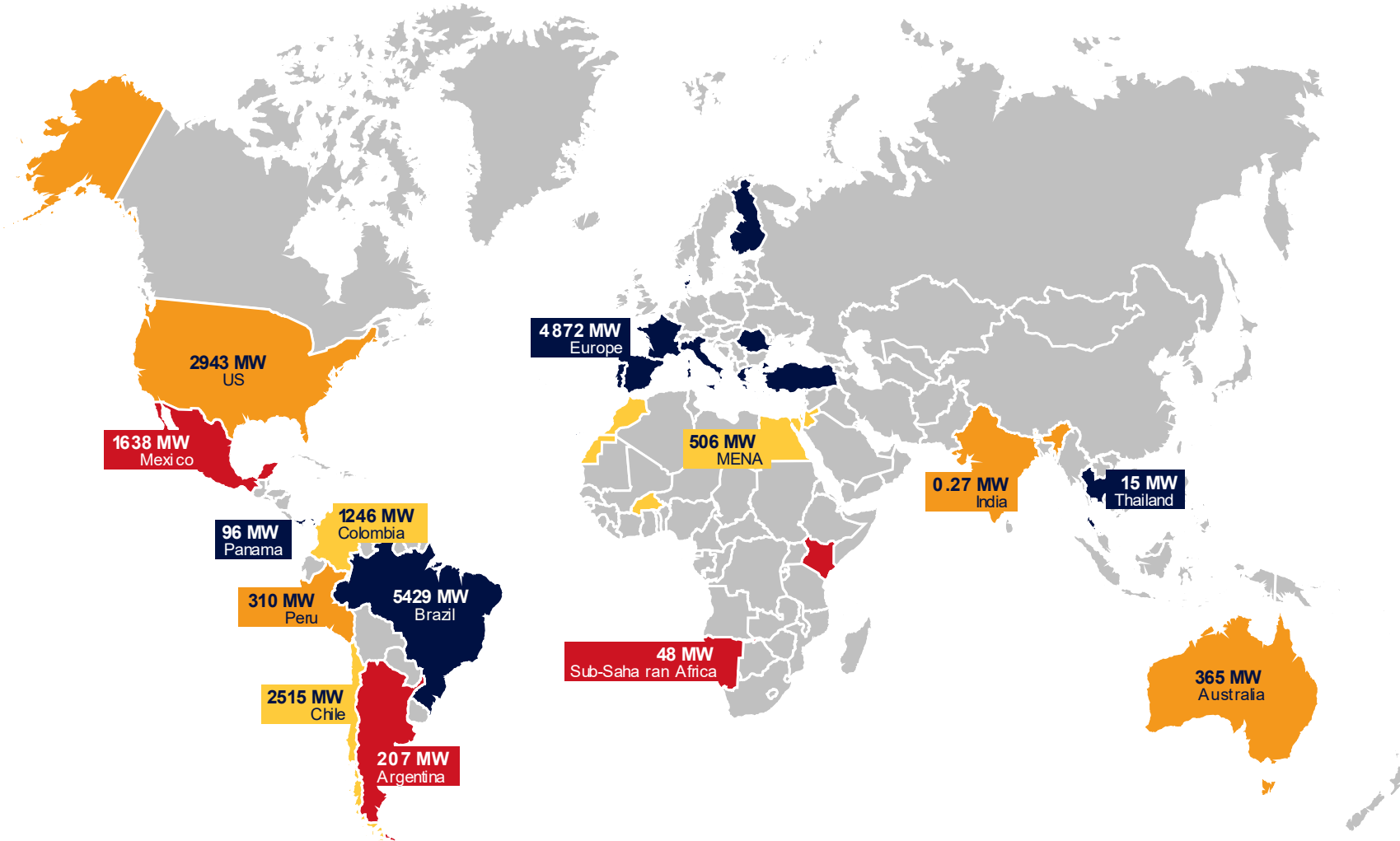
Soltec Pipeline

14+ GW

Development Pipeline



Soltec all over the world



20.1+ GW

Projects Worldwide

With contracted and ongoing projects

1.4+ GW

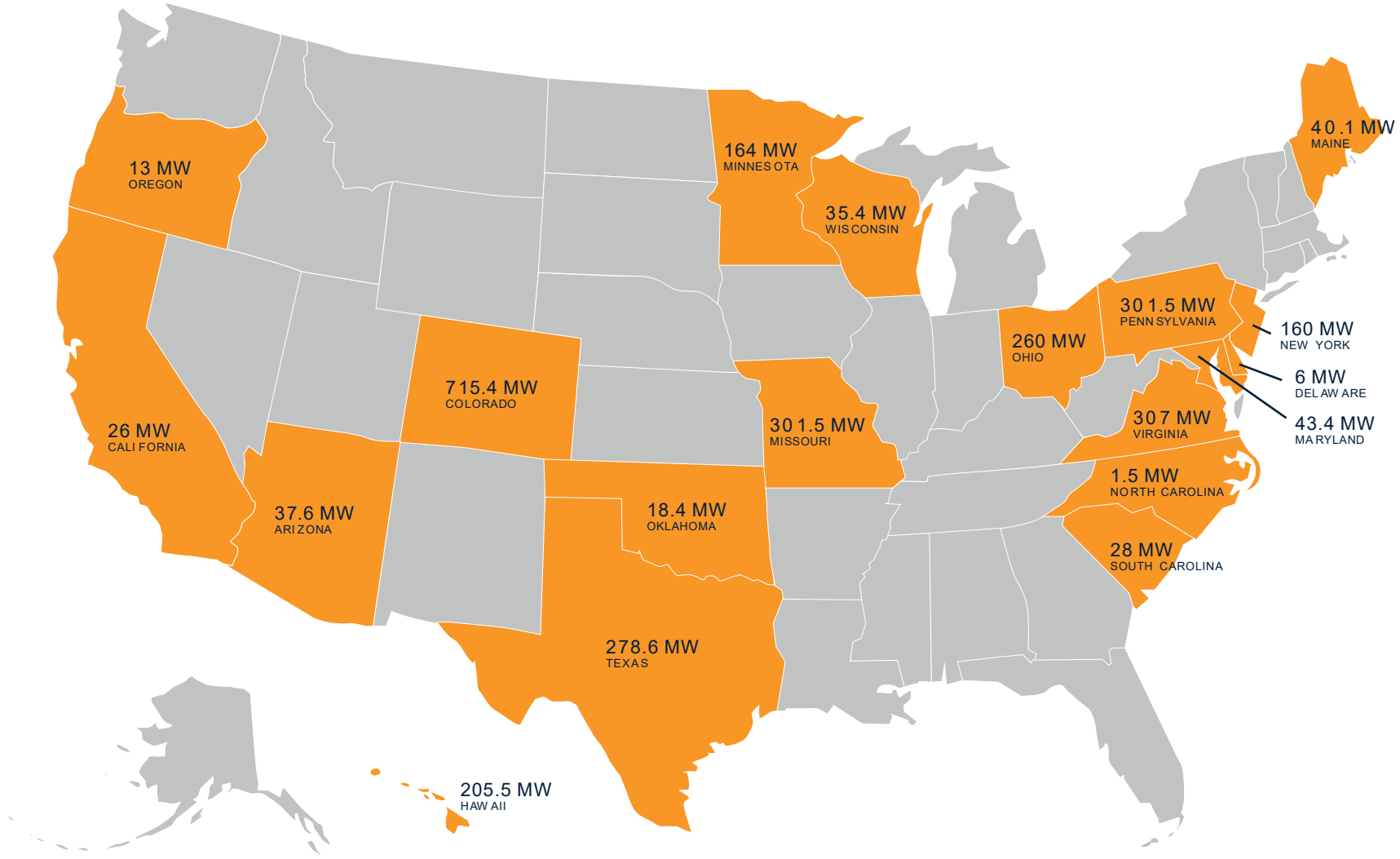
Backlog

14.1+ GW

Pipeline



Soltec in the United States



3+ GW

Projects in the USA

With contracted and ongoing projects



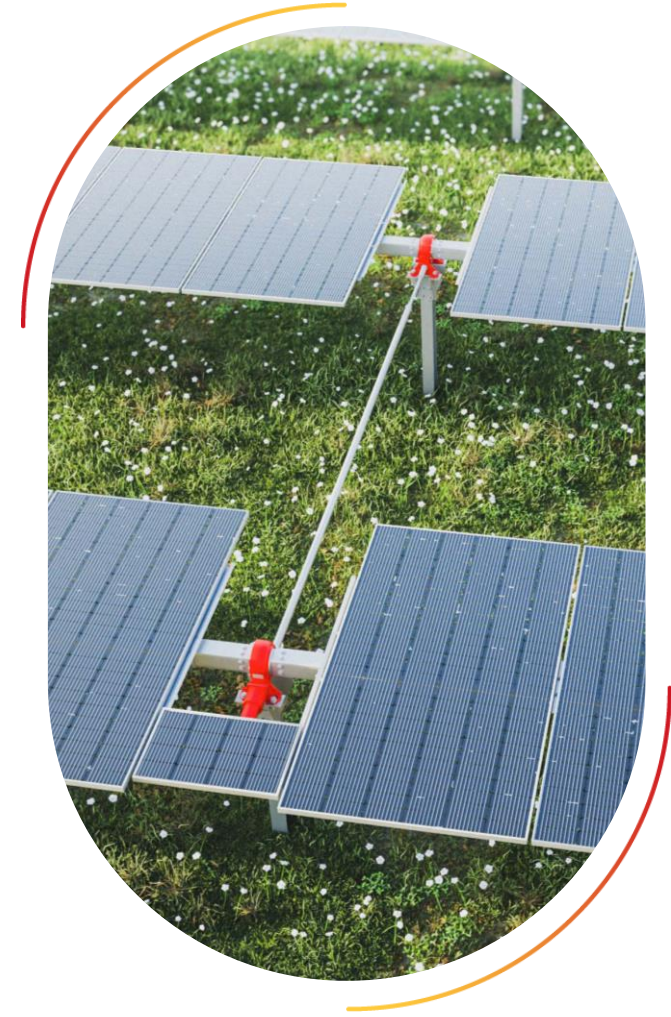
Our Trackers

SFONE SINGLE-AXIS TRACKER

The 1P tracker by Soltec

SFONE is the new 1P single-axis tracker by Soltec. This tracker combines the mechanical simplicity with the extraordinary expertise of Soltec for more than 17 years. Specially designed for larger 72 and 78 cell modules, this tracker is self-powered thanks to its dedicated module, with traduces into a lower cost-operational power supply.

- **1P tracker** double-row
- Innovative **Full Wireless** system
- Designed for **72** to **78** cell modules



Our Trackers



Single-Axis
Tracker

The next generation-now of the horizontal single-axis tracker.

SF7 is the solar tracker with the highest yield-per-acre performance and greatest land-use options, ideal for large-scale PV tracking projects.

Those features combined with proven cost-effective installation and operation have driven Soltec and SF7 to the top-tier globally.

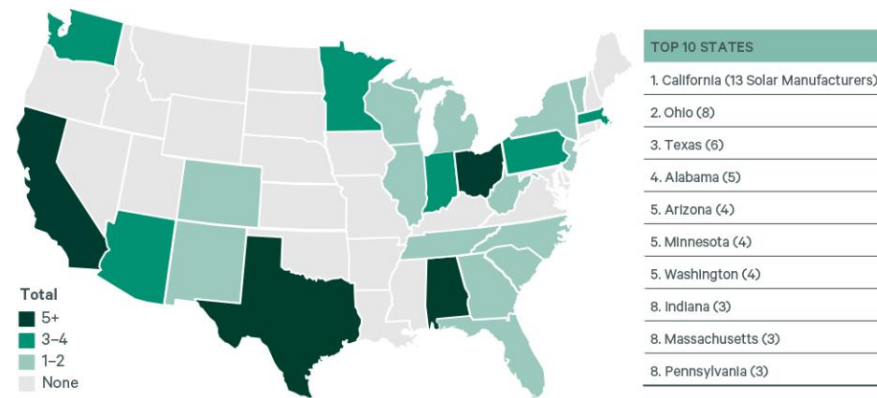
- Higher yield
- Cost-effective innovation
- Greater land-use options
- Factory serviced



IRA incentives

US situation and why Soltec is developing manufacturing in the US

- Bonus 10% for local content – solar tracker
- More incentives to manufacture in the US
- Soltec to develop manufacturing in the US



Source: U.S. Department of Energy (Solar Energy Technologies Office).
 Note: HQ locations without a manufacturing function have been excluded.

Top 10 U.S. solar photovoltaic manufacturers by state





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EUROPE

HEADQUARTERS

Gabriel Campillo s/n, Pol. Ind. La Serreta
30500 Molina de Segura, Murcia, Spain
+34 968 603 153
info@soltec.com

MADRID

C/ Núñez de Balboa 33, 1ª A
28001 Madrid, Spain
+34 914 497 203
emea@soltec.com

SCANDINAVIA

Walgerholm 7
3500 Værløse, Denmark
+45 20 43 01 50
tscandinavia@soltec.com

ITALY

Via Tevere 41
00198 Roma
italia@soltec.com

ISRAEL

israel@soltec.com

EGYPT

egypt@soltec.com

NORTH AMERICA

UNITED STATES

6100 Waterford at Blue Lagoon,
6100 Blue Lagoon Drive
+1 561 690 1624
usa@soltec.com

MEXICO

Torre B, Piso 6, Oficina B2. Plaza Polanco
Jaime Balmes 11, Colonia Los Morales
Delegación Miguel Hidalgo
Ciudad de México, C.P. 11510
+52 1 5555 573 144
mexico@soltec.com

SOUTH AMERICA

BRAZIL

Rua Dr. Barreto 483,
Loteamento Jardim Aeroporto
Q-01, L-09, Bairro Pitangueiras
Lauro de Freitas, BA, Cep: 42701310
+55 071 3026 4900
brasil@soltec.com

Avenida Ibirapuera, 1753, sala 122
CEP 04029-100
São Paulo, SP, Brasil
brasil@soltec.com

CHILE

Rosario Norte 615, Oficina 1503
Las Condes, Santiago 7561211
+56 2 2573 8559
chile@soltec.com

ARGENTINA

Av. del Libertador N° 498 – Piso 3º
Ciudad Autónoma de Buenos Aires
+54 911 4889 1476
argentina@soltec.com

COLOMBIA

Calle 98, No. 10-32, Oficina 302
Bogotá D.C.
+57 1 703 7522
colombia@soltec.com

PERU

Avenida Manuel Olguín 501
Oficina 602, Edificio Macros
Santiago de Surco, Lima
+511 627 9787
peru@soltec.com

ASIA & PACIFIC

AUSTRALIA

Level 33 Australia Square
264 George Street
NSW 2000, Sydney
+61 2 9258 1340
australia@soltec.com

CHINA

Room 606
1118 Nong Pudong South Road
Pudong New District, Shanghai
+86 21 66285799
china@soltec.com

INDIA

303, 3rd Floor, Tower 1
DLF Corporate Park, DLF Phase – 3
Gurugram, Haryana 122002
+91 124 4568202
india@soltec.com

The background features a stylized sun in the upper right corner, emitting rays, and a large, curved shape on the left side that resembles a solar panel or a stylized eye. The sun is yellow and orange, while the curved shape is red and orange. The overall theme is solar energy.

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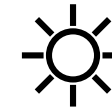
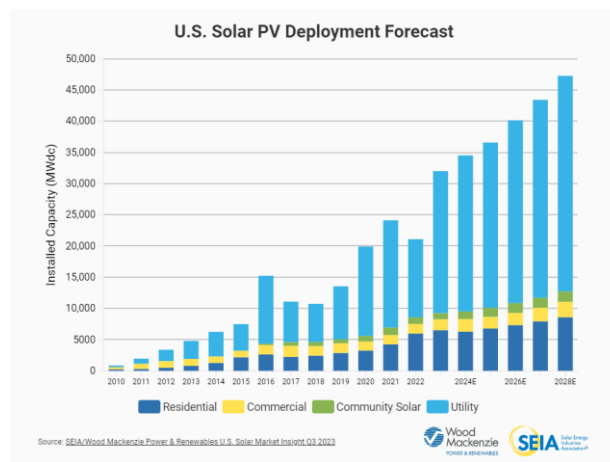
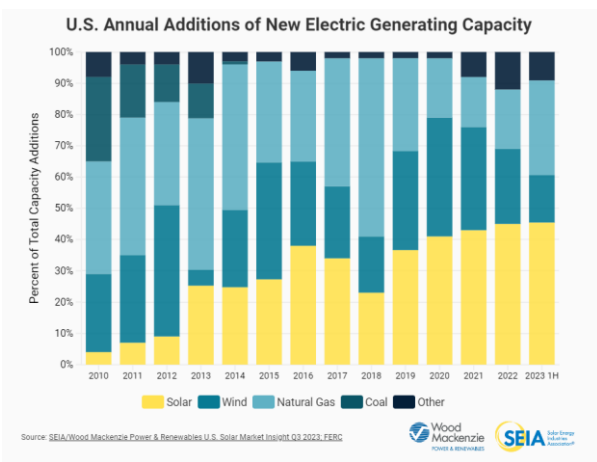
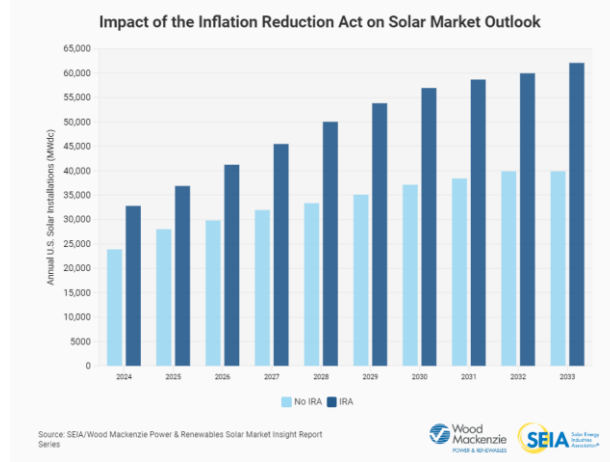
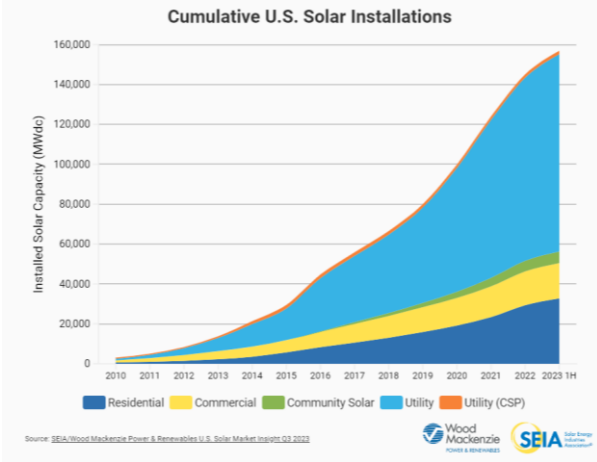
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Achieving domestic content tax incentives with solar trackers

US Solar Industry: Key facts



US solar energy is booming!!!



Supply Chain challenges and IRA energy policy lead to a more domestic demand



New capacity has grown rapidly



Growing everywhere in the US



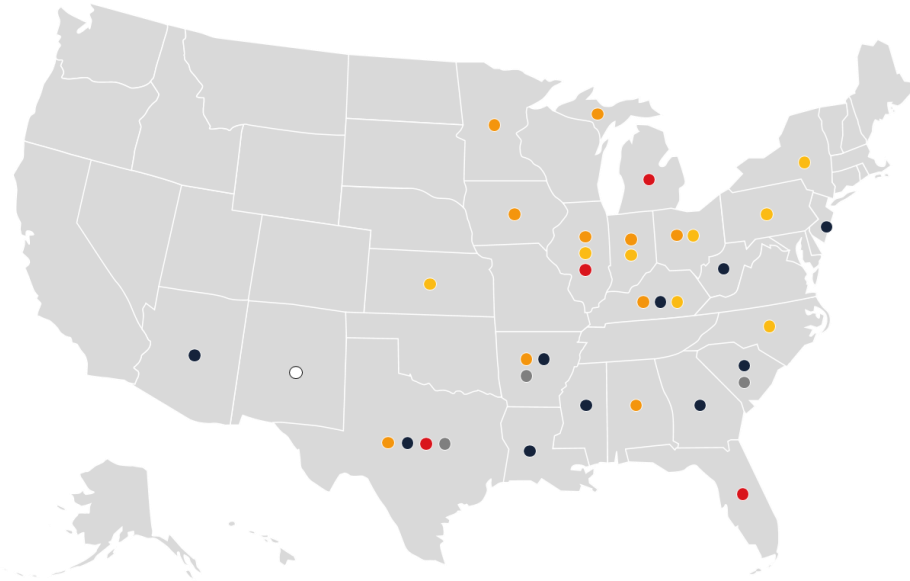
Accelerated forecast for the next years



Achieving domestic content tax incentives with solar trackers



US Supply Chain for tracker components



- Tube
- Pile drive
- Omega
- Fasteners
- Raw material
- Electronics



WE ARE READY !



Achieving domestic content tax incentives with solar trackers

How to access tax incentives while developing a US supply chain for tracker companies?

- Advance manufacturing production credit

45X



- Advance manufacturing investment credit

48D



Achieving domestic content tax incentives with solar trackers

Main challenges in developing the supply chain



Project delays



Products' shortage



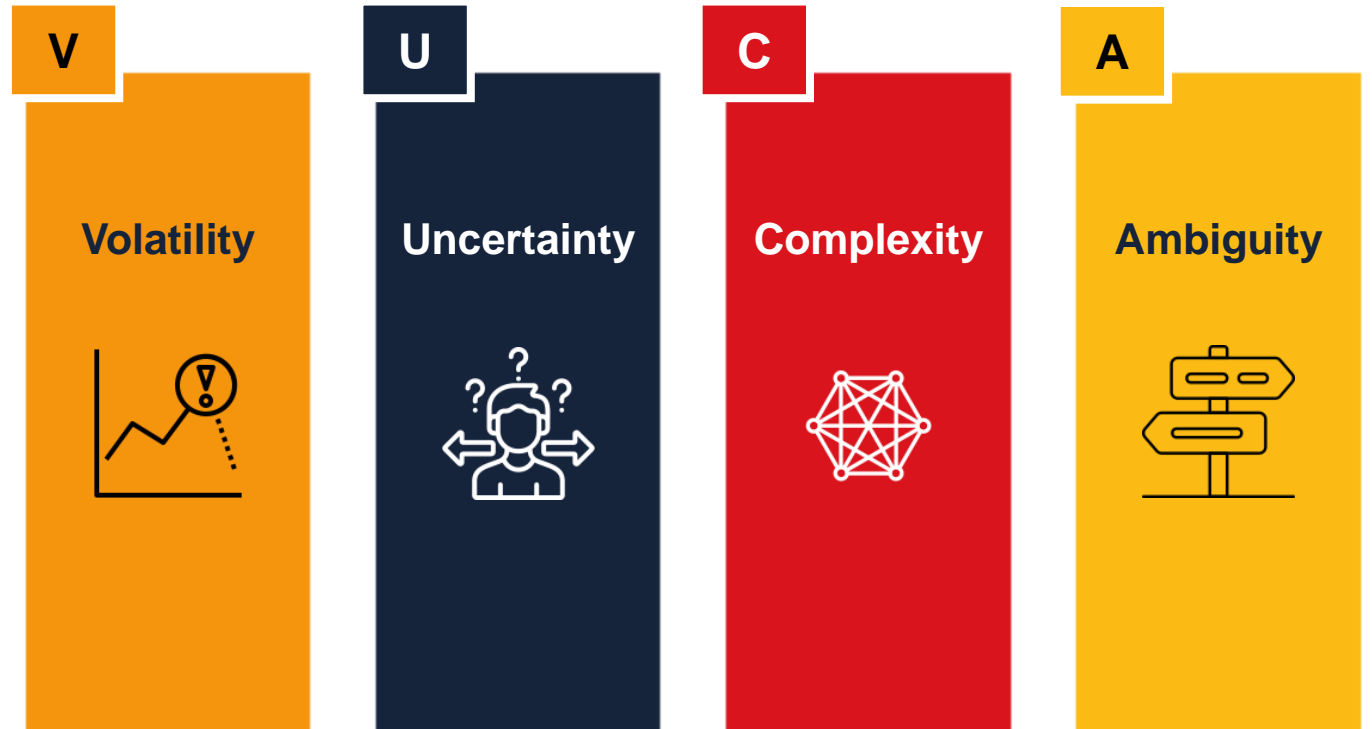
Unforeseen circumstances



Handling material on site



Price volatility

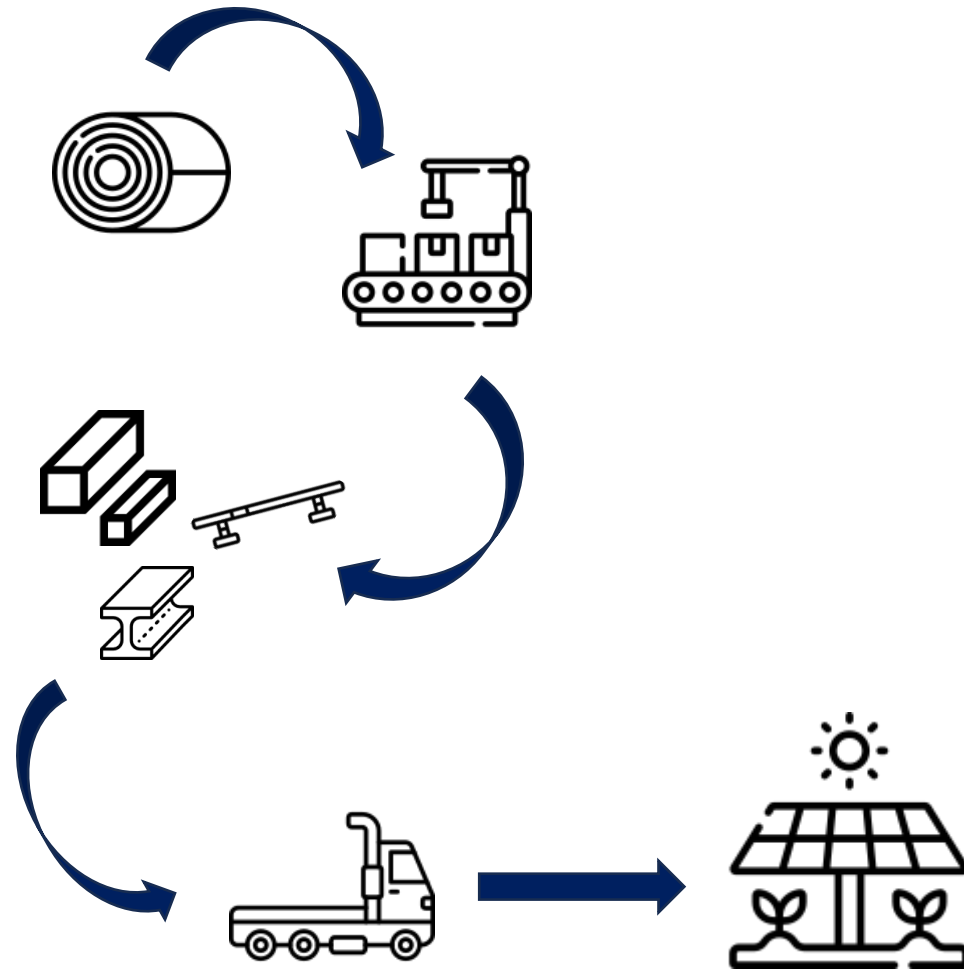


Achieving domestic content tax incentives with solar trackers

Supply Chain - Key actions



Supply Chain Value



Driving for results

- Mitigating risk
- Safeguarding costs
- Stablishing reliable relationships
- Decision making - growth, cost, risk, accountability



Achieving domestic content tax incentives with solar trackers

Business collaboration in supply chain



Transferring benefits from the IRA incentives to our customers and being congruent to our mission and business principles



Driving operational efficiencies through a transformational process improvement



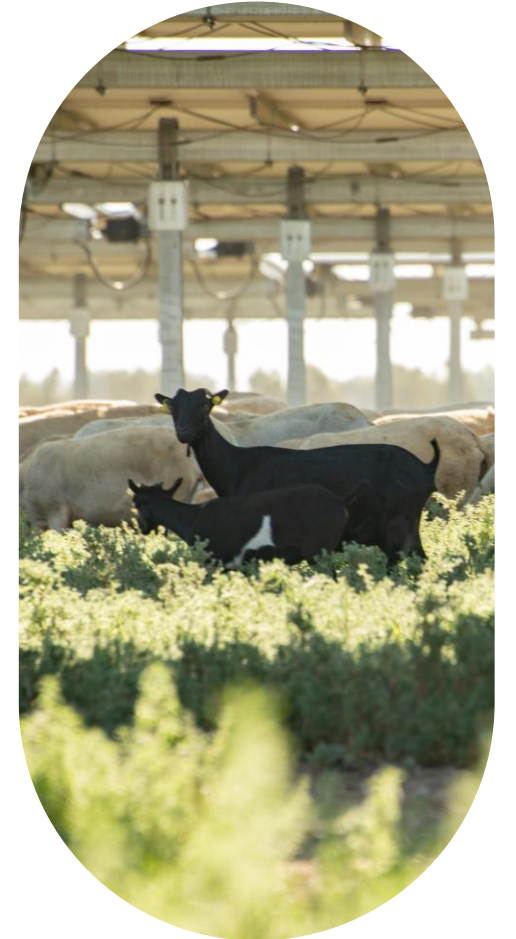
Supply chain process automation and analytics



Increasing sustainability and corporate social responsibility with our suppliers

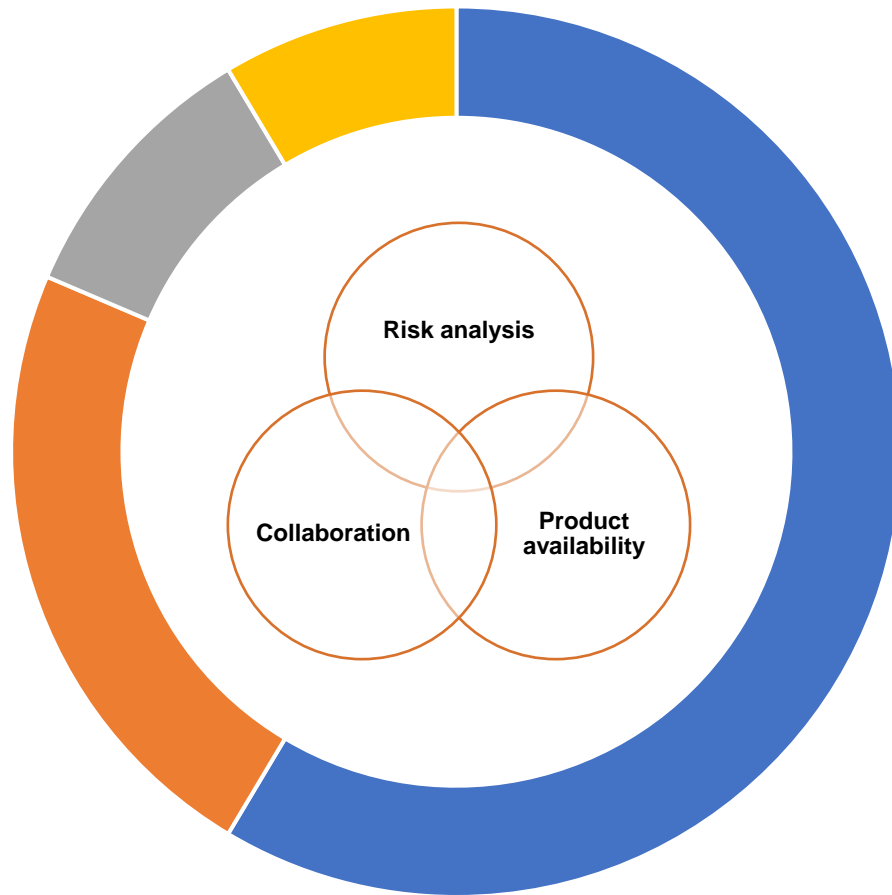


Diversifying our supplier base with a onshoring approach



Achieving domestic content tax incentives with solar trackers

Focusing on small-big steps



Benefits

- Better communication
- Monitoring deliveries
- Anticipating potential risks
- Mitigating unforeseen costs





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EUROPE

HEADQUARTERS

Gabriel Campillo s/n, Pol. Ind. La Serreta
30500 Molina de Segura, Murcia, Spain
+34 968 603 153
info@soltec.com

MADRID

C/ Núñez de Balboa 33, 1ª A
28001 Madrid, Spain
+34 914 497 203
emea@soltec.com

SCANDINAVIA

Walgerholm 7
3500 Værløse, Denmark
+45 20 43 01 50
tscandinavia@soltec.com

ITALY

Via Tevere 41
00198 Roma
italia@soltec.com

ISRAEL

israel@soltec.com

EGYPT

egypt@soltec.com

NORTH AMERICA

UNITED STATES

6100 Waterford at Blue Lagoon,
6100 Blue Lagoon Drive
+1 561 690 1624
usa@soltec.com

MEXICO

Torre B, Piso 6, Oficina B2. Plaza Polanco
Jaime Balmes 11, Colonia Los Morales
Delegación Miguel Hidalgo
Ciudad de México, C.P. 11510
+52 1 5555 573 144
mexico@soltec.com

SOUTH AMERICA

BRAZIL

Rua Dr. Barreto 483,
Loteamento Jardim Aeroporto
Q-01, L-09, Bairro Pitangueiras
Lauro de Freitas, BA, Cep: 42701310
+55 071 3026 4900
brasil@soltec.com

Avenida Ibirapuera, 1753, sala 122
CEP 04029-100
São Paulo, SP, Brasil
brasil@soltec.com

CHILE

Rosario Norte 615, Oficina 1503
Las Condes, Santiago 7561211
+56 2 2573 8559
chile@soltec.com

ARGENTINA

Av. del Libertador N° 498 – Piso 3º
Ciudad Autónoma de Buenos Aires
+54 911 4889 1476
argentina@soltec.com

COLOMBIA

Calle 98, No. 10-32, Oficina 302
Bogotá D.C.
+57 1 703 7522
colombia@soltec.com

PERU

Avenida Manuel Olguín 501
Oficina 602, Edificio Macros
Santiago de Surco, Lima
+511 627 9787
peru@soltec.com

ASIA & PACIFIC

AUSTRALIA

Level 33 Australia Square
264 George Street
NSW 2000, Sydney
+61 2 9258 1340
australia@soltec.com

CHINA

Room 606
1118 Nong Pudong South Road
Pudong New District, Shanghai
+86 21 66285799
china@soltec.com

INDIA

303, 3rd Floor, Tower 1
DLF Corporate Park, DLF Phase – 3
Gurugram, Haryana 122002
+91 124 4568202
india@soltec.com



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Achieving domestic content tax incentive compliance

Charles Dauber
CEO, Empact Technologies

IRA and IRA compliance

- IRA is game changer for solar, storage and other clean energy project developers
 - Up to 60% of value of project in tax credits
 - Traditional tax equity structures plus new transfer to more easily sell tax credits
- But complicated qualification and compliance requirements plus IRS recapture audit risk

Prevailing Wage & Apprenticeship

- Base 30% for ITC
- All projects over 1MW
- Prevailing Wage compliance
 - Every on-site worker must be paid correctly for every hour worked
- Apprenticeship compliance
 - Must ensure meet % of certified apprentice labor hours vs total project labor hours
 - Increasing from 12.5%
- Non-compliance
 - Penalties for prevailing wage and apprenticeship non-compliance of up to \$500/hour and loss of tax credits

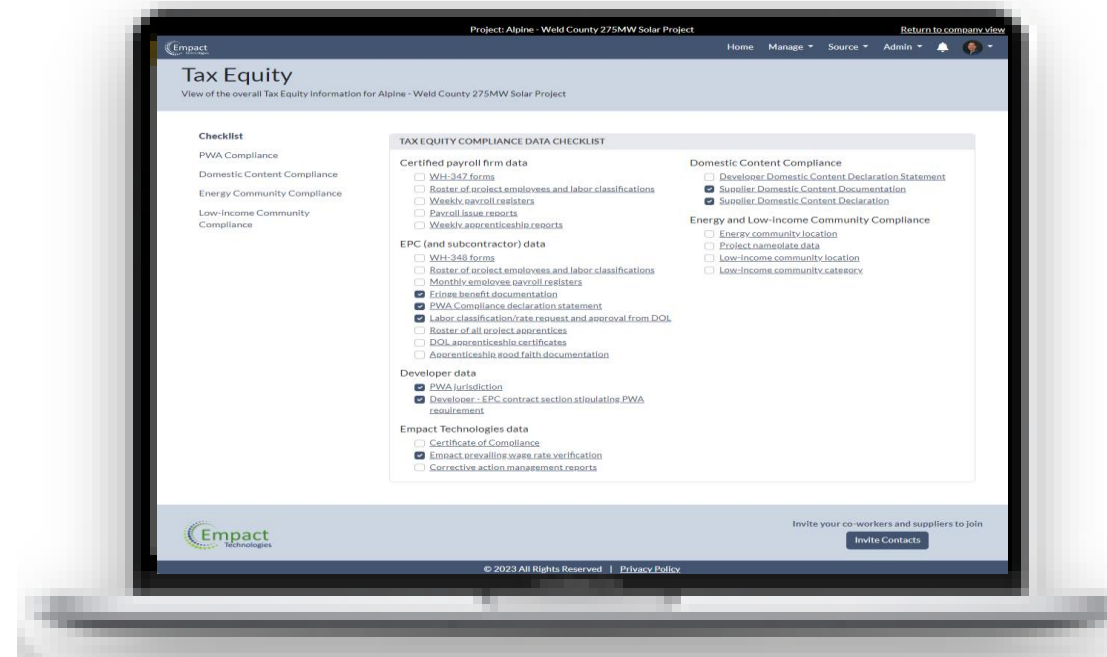
Energy & low-income community

- Each are additional 10% bonus credit
- Energy community
 - Brownfield, Coal Community or Metropolitan Statistical Area
- Low-income/LMI community
 - Low-income community, Tribal land
- Non-compliance
 - Loss of 10% energy community bonus credit plus potential penalties

Domestic content

- Additional 10% bonus credit
- This webinar 😊

Empact is the industry's 1st dedicated IRA compliance management platform



Empact software and services manage all aspects of IRA qualification and compliance

- Prevailing wage and apprenticeship
- Domestic content
- Low-income community
- Energy community

Supports community and utility-scale projects across IRA tax technologies

- Solar
- Energy storage
- Wind
- Other technologies

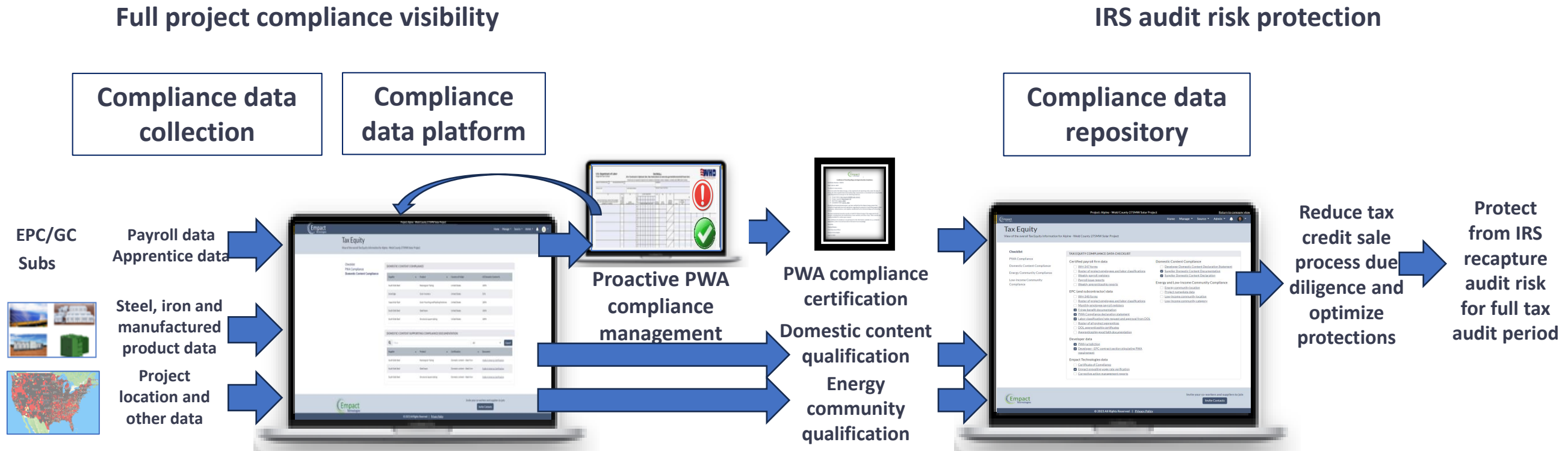
Compliance management and visibility for entire project value-chain

- Developers, owners and IPPs
- Project EPCs and key suppliers
- Project equity investors and construction debt lenders
- Tax equity investors and transferees
- Insurance providers
- Trusted legal and tax advisors

Full IRA tax incentive lifecycle compliance management

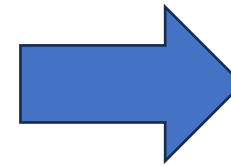
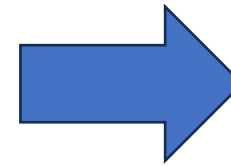
- Development
- Construction
- Tax equity transaction support
- Post COD/placed in service

How Impact IRA compliance management process works



Domestic content compliance

- Domestic content regulations came from Build Back Better program, which leveraged Buy America
- Intended to increase US domestic supply chain for solar, storage and other clean energy products
- Two elements: “Steel & iron” and “manufactured” products
- Steel & iron, includes:
 - Pile or ground screw
 - Steel or iron rebar in foundation
 - Steel PV module racking systems
- Manufactured products, includes
 - Solar modules
 - Solar trackers
 - Solar inverters
- Projects must use steel & iron products that are 100% made in the US
- Plus projects must meet minimum “domestic content” % for project “manufactured products” used
 - 2024 – 40%
 - 2025 – 45%
 - 2026 – 50%
 - 2027+ - 55%
- Companies should have written, legal counsel approved compliance program
- Company executive must sign “Domestic Content Compliance Declaration” statement that is submitted to IRS attesting that the information is true and correct



Domestic content compliance qualification data collection

- From steel & iron product suppliers
 - Made in American certification
 - Material test reports
- From manufactured products suppliers
 - Costed Bill of Materials
- From developer and/or EPC
 - Quantity of each manufactured product used in project



Item Description	Manufacturer	Manufacturing locati	Details	Unit Co	Qty (#	Cost/USD
M542-dsp motor driver	Leadshine	China	plastic	\$ 20.00	1	\$ 20.00
Arduino Micro-controller	Arduino	Italy	plastic	\$ 18.00	1	\$ 18.00
Fuji 24 volts stepper motor	Fuji	Japan	copper	\$ 15.00	1	\$ 15.00
86x137 mm metal sheet	South Side Steel	US	Mild steel	\$ 3.75	4	\$ 15.00
540x70 mm square tube	South Side Steel	US	Mild steel	\$ 6.00	2	\$ 12.00
42x20 mm round bar	South Side Steel	US	Mild steel	\$ 4.50	2	\$ 9.00
53 mm square bar	South Side Steel	US	Mild steel	\$ 6.00	1	\$ 6.00
SKF 61906 roller bearing	South Side Steel	US	Mild steel	\$ 3.00	2	\$ 6.00
Pulley belt	Illinois Pulley & Gear	US	rubber	\$ 5.00	1	\$ 5.00
805x14 nn round tube	South Side Steel	US	Mild steel	\$ 3.00	1	\$ 3.00
Zinc plated 10x50 bolts	Hillman	China	Mild steel	\$ 0.50	4	\$ 2.00
540x50 mm flat bar	South Side Steel	US	Mild steel	\$ 2.00	1	\$ 2.00
153x13 nn rectang. bar	South Side Steel	US	Mild steel	\$ 2.00	1	\$ 2.00
Light dependent resistor	NTE Electronics	China	silicon	\$ 1.00	1	\$ 1.00
10K resiststor	NTE Electronics	China	silicon	\$ 1.00	1	\$ 1.00
M10 zinc plated washers	Hillman	China	Mild steel	\$ 0.20	2	\$ 0.40
					Total	\$ 117.40

100MW project	Qty
Single axis tracker	7,000
350W solar modules	280,000
1MW solar inverters	100

Manufactured product domestic content compliance calculation

- Assuming all steel and iron products are 100% in the US, then next is manufactured product compliance
- Three calculations
 - Product domestic content material cost– for each manufactured product, calculate the sum of all product subassemblies or component material costs that are made in the US
 - Product total material cost – for each manufactured product, calculate the sum of material cost of all components in product (regardless of if claiming made in US or not)
 - Project-level domestic content calculation
- Example solar tracker

Item Description	Manufacturer	Manufacturing locati	Details	Unit Co	Qty (#	Cost/USD
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Light dependent resistor	NTE Electronics	China	silicon	\$ 1.00	1	\$ 1.00
10K resiststor	NTE Electronics	China	silicon	\$ 1.00	1	\$ 1.00
M10 zinc plated washers	Hillman	China	Mild steel	\$ 0.20	2	\$ 0.40
Total domestic content material cost per unit						\$ 60.00
Total material cost per unit						\$ 117.40

Manufactured product domestic content compliance qualification calculation

- Domestic content/unit and total BOM cost/unit for project manufactured products:

Tracker units

- Domestic content/unit: \$60.00
- Total BOM cost/unit: \$117.60

Solar modules (350W)

- Domestic content/watt: \$.1016
- Total BOM cost/watt: \$.2716
- Domestic content/unit: \$38.36
- Total BOM cost/unit: \$95.06

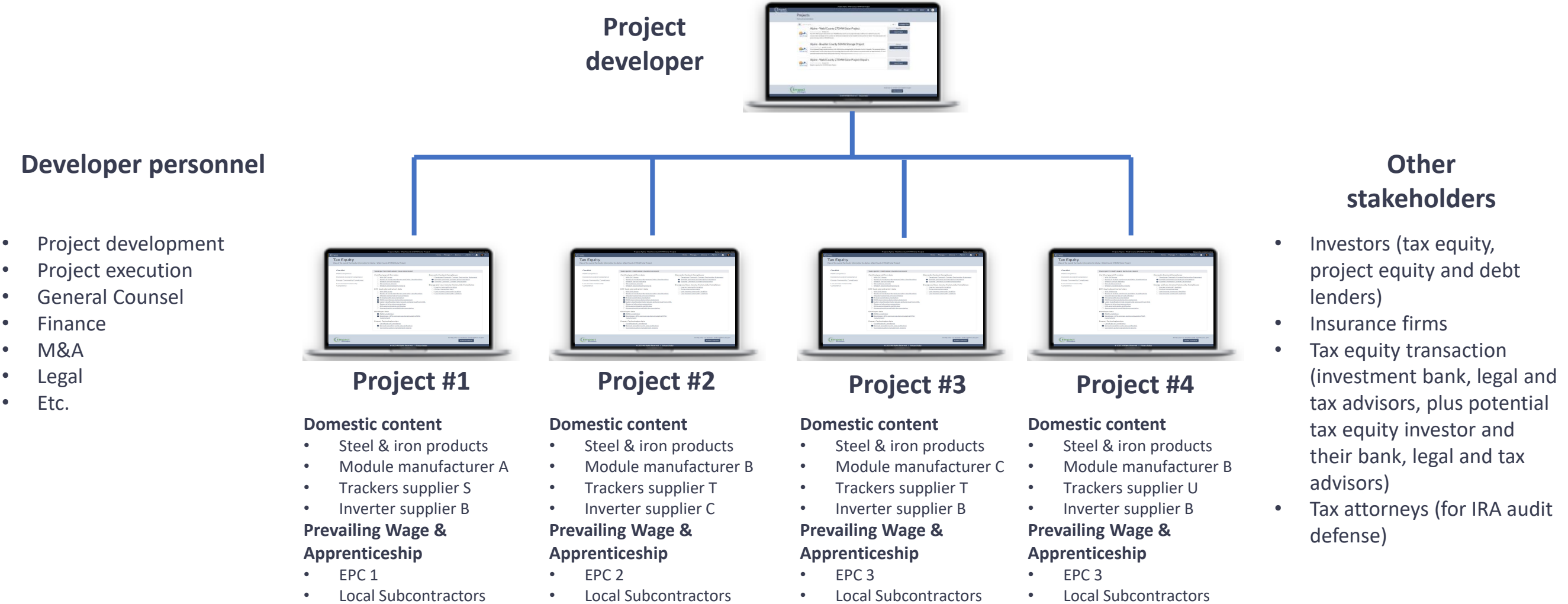
1MW solar inverters

- Domestic content/unit: \$48,000
- Total BOM cost/unit: \$80,000

- For 100MW PV project with the following “manufactured” products
 - @350W/panel -> 280,000 panels
 - Assume single access trackers and 40 panels per tracker = 7,000 trackers
 - Assume 1MW centralized inverters = 100 inverters
- Project manufactured product domestic content calculation:

100MW project	Qty	Manufactured product domestic cost	Project-level domestic content \$ cost	Total Manufactured Product cost	Total Manufactured Products Cost	Project manufactured product domestic content %
Single axis tracker	7,000	\$60.00	\$420,000	\$117.60	\$823,200	
350W solar modules	280,000	\$38.36	\$10,740,310	\$95.06	\$26,616,310	
1MW solar inverters	100	\$48,000	\$4,800,000	\$80,000	\$8,000,000	
			\$15,960,310		\$35,439,510	45%

Managing domestic content (and other IRA) compliance data



- Full compliance data needs to be accessible by tax equity investor and their advisors for tax credit transaction
- Need to keep compliance data for full 5 year (ITC) or 10 year (PTC) tax period to protect against IRS recapture audit risk

Challenges for domestic content qualification and compliance

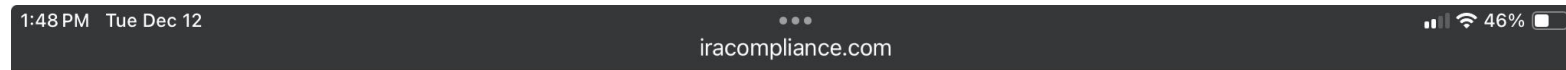
- Limited US supply chain capacity for solar modules - largest % of solar project manufactured product costs
 - US module assembly with non-domestic components doesn't help meet domestic content %
 - \$Billions of new US module manufacturing plant announcements (and major component plants as well)
- Some suppliers don't want to share (confidential) bill of material with developer clients
 - Developers are managing upfront
 1. In supplier RFQ process
 1. Understand upfront what the supplier domestic content is (if any)
 2. Ensure supplier agrees to provide supporting documentation if selected
 3. Even if overseas panel with 0% domestic content, supplier still must provide data or certificate showing total BOM cost
 2. If supplier is uncomfortable with sharing data, you can provide an independent 3rd party to capture confidential BOM data that can do the calculations on your behalf
 3. In supplier contract
 1. Include verbiage of exactly what data (costed Bill of Material) they will provide
 2. Identify 3rd party confidential data source that the supplier will provide BOM data to

Summary to qualify for domestic content tax incentive

- Ensure all steel and iron products used in project are 100% made in US
- Given solar modules represent 75% of project manufactured product costs:
 - If project uses modules with no domestic content, will not achieve 40% manufactured product domestic content requirements, regardless of tracker and inverter
 - If project uses modules that are assembled in the US, then depending on the % of the module components that are manufactured in the US, it is possible to meet project domestic content requirements depending on the inverter and tracker
 - When the US supply chain can achieve modules with high % domestic content, the projects will meet requirements regardless of inverter and tracker
- When working with all suppliers, ensure expectations are clear about providing BOM and are documented in contracts

Example of live domestic content management system - Empact

If you have questions, visit <https://www.iracompliance.com/>



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Ensure IRA Compliance

Empact enables clean energy project developers, EPCs, and investors to manage IRA tax incentive compliance.

[Book a Demo](#)



Feel free to reach out me directly about domestic content, prevailing wage & apprenticeship, or other IRA compliance questions at cdauber@empacttech.com



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Achieving domestic content tax incentives with solar trackers



Anne Fischer

Senior Editor
pv magazine USA



Jerusha Kamoji

Contributing Editor
pv magazine USA



Sergio Prado

Regional General Manager
North America
Soltec



Charles Dauber

Chief Executive Officer
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Enphase co-founder: “2024 will be a year of recovery for residential solar”

by Ryan Kennedy



Solar levelized cost of electricity is 29% lower than any fossil fuel alternative

by Ryan Kennedy



Most-read online!

Coming up next...

Monday, 18 December 2023

8:00 am – 9:00 am EST, New York City

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standard
module formats
in the n-type era**

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