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Is your company capturing the 2020 safe harbor?

23 September 2020

5 PM – 6 PM | CEST, Berlin
10 AM – 11 AM | CDT, Mexico City
11 AM – 12 PM | EDT, New York

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CEA

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CEA
Clean Energy Associates


SAFEHARBOR
U.S. DEPARTMENT OF COMMERCE

CEA Snapshot

Clean Energy Associates is a technical advisory company that provides unrivaled insight into the solar PV and storage manufacturing industries to ensure the success of solar PV and storage projects worldwide. The purpose of this report is for CEA clients and partners to obtain the latest information on COVID-19 within China and Southeast Asia and to understand the secondary effects on the solar and storage supply chains.

800+
Years of industry experience

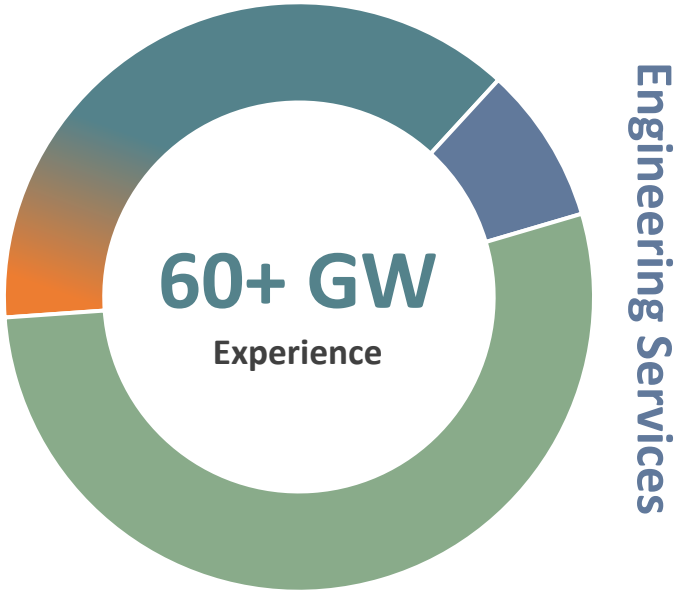
130+
Professionals

85+
Engineers

12
Year track record

12
Countries with a physical presence

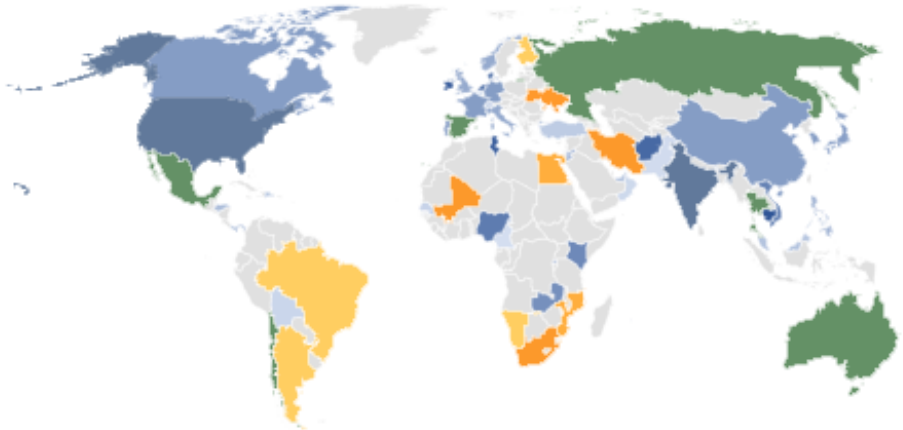
Supply Chain Management



Engineering Services

Quality Assurance

Client engagements in **55+** countries



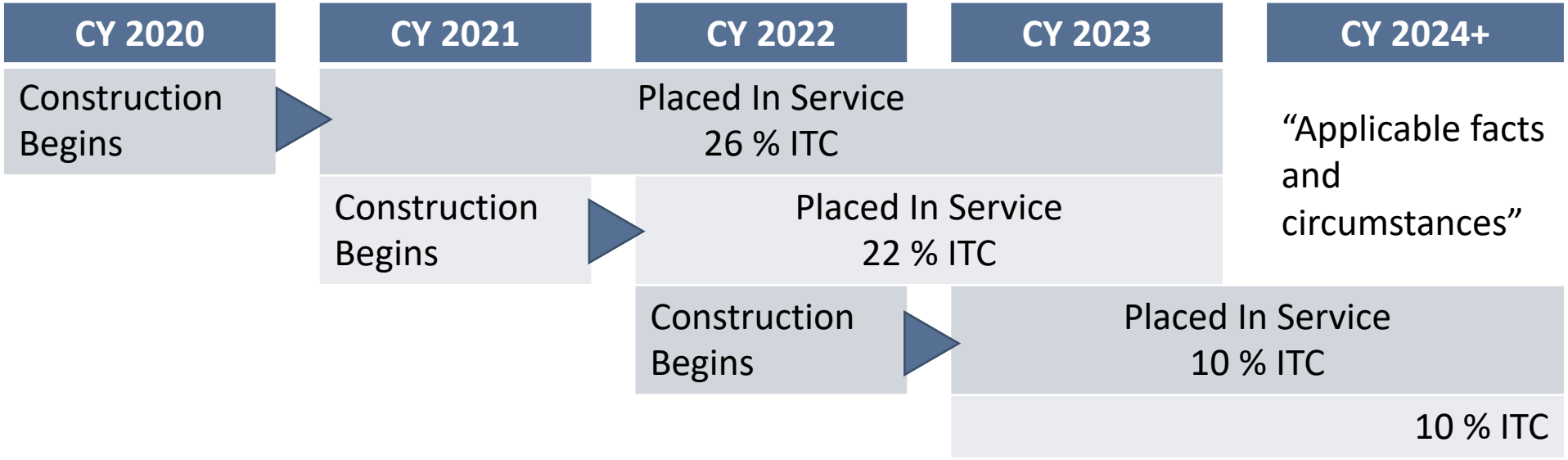
Engagements at **350+** solar and storage factories worldwide

Proud member of

SEIA Member | SolarPower Europe | CESA

Timeline

- Placed in service must be before 1/1/24
- As long as you get the system online before 1/1/24, you meet the continuity requirement ("Continuity Safe Harbor")
- May 2020 Updates – the 4-year period became 5 years for 2016/2017 projects
- The 3 ½ Month Rule that results in "You Bought It" is extended to October 15 (Delivery at time of payment)



It Pays to Play: Looking at 5 % Test with Modules

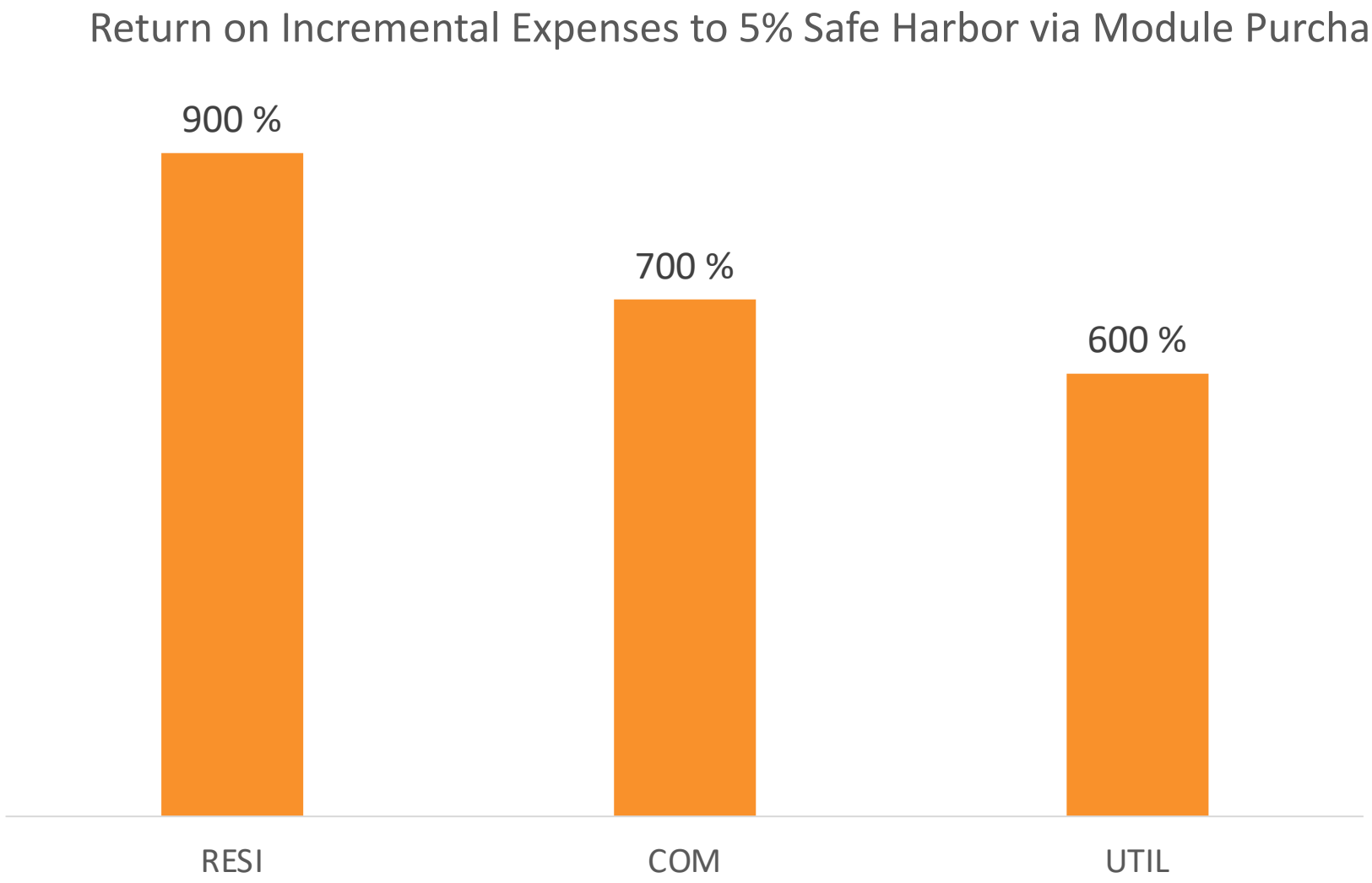
Assumptions

- You buy modules in 2020
- You use them up over the following 3 years (backend loaded)
- Your cost of money is considered (4%)
- Module Prices ($/W) decline at 5%/year
- Residential system cost > Commercial system cost > Utility system cost

Risks NOT considered

- Code changes that would impact future module selection
- Loss of some warranty coverage (the clock is ticking): Double whammy (power + time)
- Technology / Product advances that would have affected product selection
- Utility scale likely has higher risk (v. residential / commercial)
- 2021 is shaping up to be tight on supply; buy now?

It Pays to Play



+/- of 5% Safe Harbor - Modules

Pluses

- Easy to store; can import post tariff drop down*
- Only ~ 15 % of total MW needed

* But - if you're the importer, you are also exposed to a possible INCREASE in tariffs

Minuses

- **Price has a long history of dropping** – you might find that you "overpaid"
- **Technology is shifting fast** – power, size – getting 100 % compatible drop-ins for the balance is unlikely
- **Warranty starts with title transfer** – could lead to shorter effective warranty for the project and lower performance threshold
- COVID has caused delays throughout the value chain
  - Moved some 2020 projects into 2021; demand is relatively high throughout Q1 and into Q2 2021;
  - Some supplies are constrained
  - Coincidental constraints on key materials, e.g., polysilicon
  - Price inflation
- Storage cost

+/- of 5% Safe Harbor - Inverters

Pluses

- Easy to store

Minuses

- Price has a long history of dropping – you might find that you “overpaid”
- Technology is shifting – getting 100 % compatible drop-ins for the balance is at moderate risk
- Unknown impact from **Executive Order**
- Since inverters are less $/W (v. modules), to hit 5 %, you may need to **buy most/all** of the needed inverters and still need to buy more
- Site-specific requirements might hamper deployment (unless known prior to purchase)
- Permitting authorities and interconnection requirements might change (making the inverter obsolete or incompatible before it is deployed)
- Storage cost

+/- of 5% Safe Harbor - Racking

Pluses

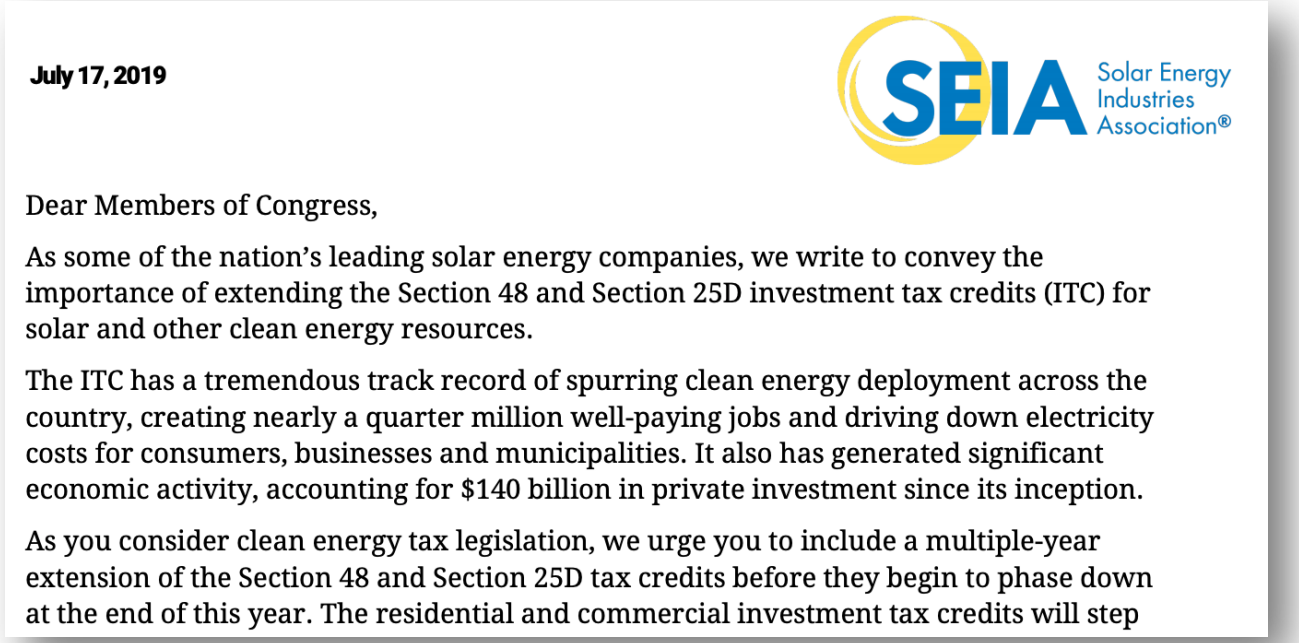
- Moderately easy to store (but many individual parts makes it easy to lose parts too)

Minuses

- Module **form factor is shifting** – could mean that the rack you buy today won't fit the modules you buy tomorrow
- **Site specific requirements** might hamper deployment (unless known prior to purchase)
- Storage cost

Risks & Mitigation for Buyers

- Because the delivery deadline MUST be met to qualify
  - Oversight of progress of manufacturing to look for and address delays
  - Contracted liquidated damages for late delivery (and LDs that represent the value of the delay)
- Changes in AD/CVD, 201, 232, etc.
  - Could result in higher prices that make projects non-viable
- ITC could be extended / the full 30 % ITC could be reinstated
  - This is not a bad thing – but it would undermine the benefit of a Safe Harbor plan



July 17, 2019

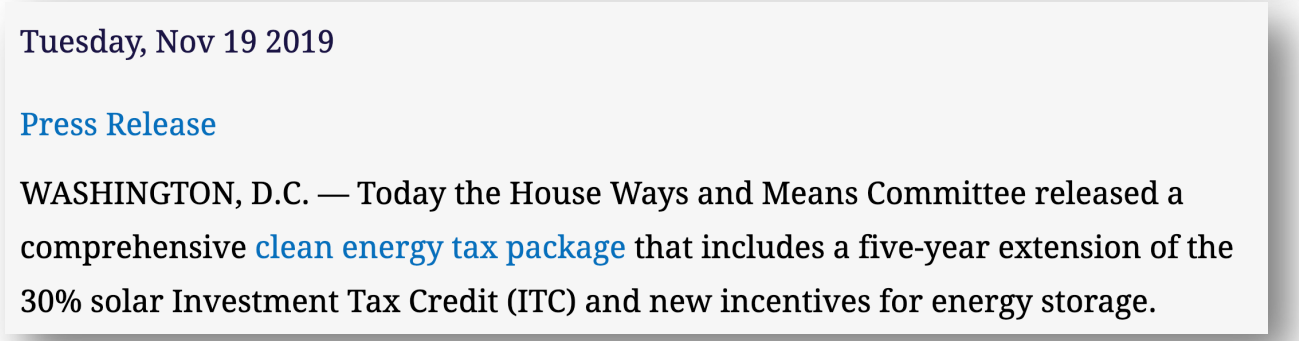
SEIA Solar Energy Industries Association®

Dear Members of Congress,

As some of the nation's leading solar energy companies, we write to convey the importance of extending the Section 48 and Section 25D investment tax credits (ITC) for solar and other clean energy resources.

The ITC has a tremendous track record of spurring clean energy deployment across the country, creating nearly a quarter million well-paying jobs and driving down electricity costs for consumers, businesses and municipalities. It also has generated significant economic activity, accounting for $140 billion in private investment since its inception.

As you consider clean energy tax legislation, we urge you to include a multiple-year extension of the Section 48 and Section 25D tax credits before they begin to phase down at the end of this year. The residential and commercial investment tax credits will step



Tuesday, Nov 19 2019

Press Release

WASHINGTON, D.C. — Today the House Ways and Means Committee released a comprehensive clean energy tax package that includes a five-year extension of the 30% solar Investment Tax Credit (ITC) and new incentives for energy storage.

Demonstrate Compliance

"For example, consider requiring manufacturers to certify daily or weekly reports of component assembly or fabrication. Augmenting those reports with photo or video evidence of the activity is also a leading practice. Finally, consider hiring an independent engineer to regularly visit project or manufacturer sites to review daily reports, personally witness the work, and sign off to affirm that construction activity is underway. Detailed records should also be produced and retained substantiating any excusable disruptions."

Deloitte Special Report: *Digging In: Beginning of Construction for Energy Credits*

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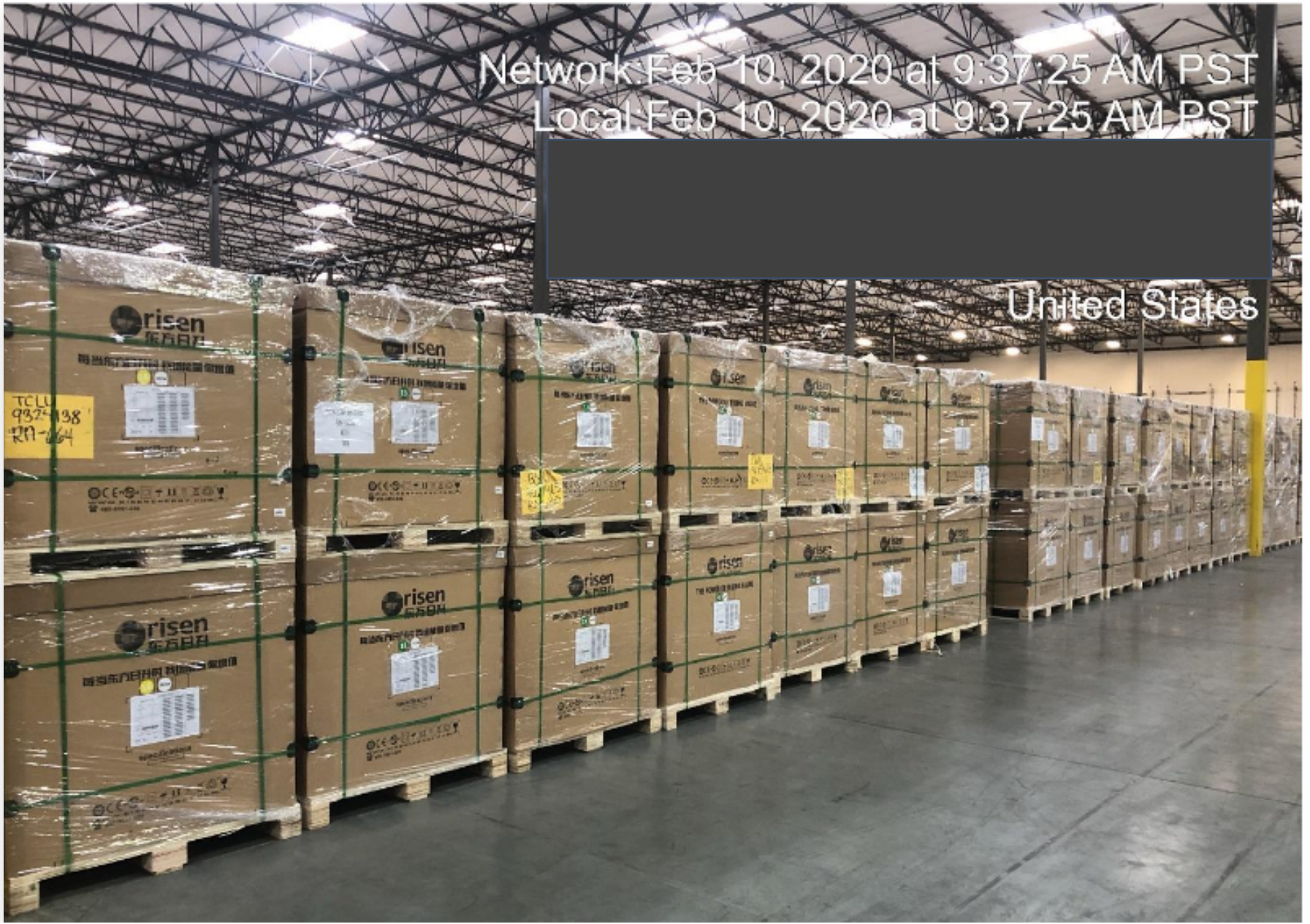
Deloitte Special Report: *Digging In: Beginning of Construction for Energy Credits*

2019: 5 % Safe Harbor

- 8 GW of Safe Harbor Modules
- Lots of inverters

PV Modules for qualification under the 5 % overall cost requirement

- Approx. 15 % of estimated module needs can qualify for the 5 % test
- Consider warehousing costs, obsolescence / availability in X years, PV module price decline, PV module innovations / performance increase
- Beware of the Warranty clock



2019: 5 % Safe Harbor

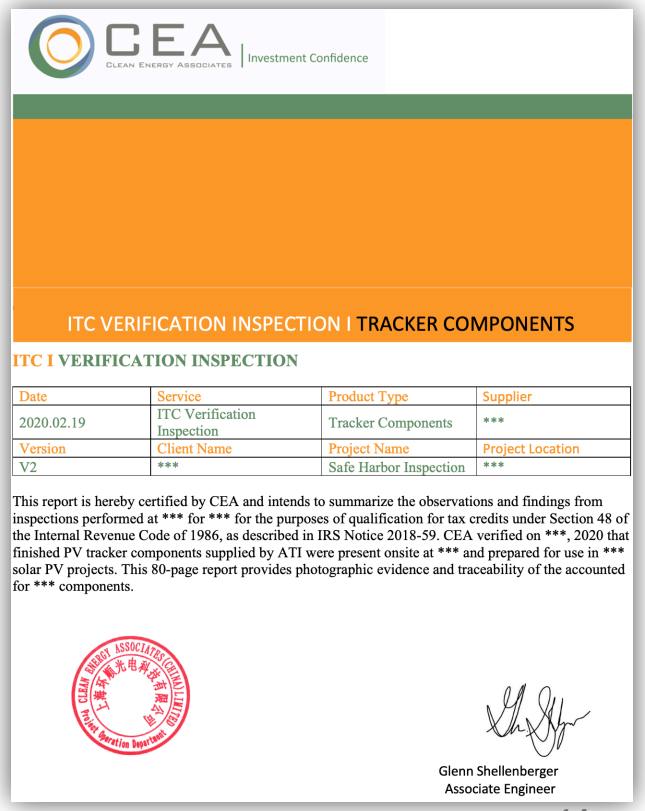
- Verify what was bought was delivered
- Arrange Supplier's "Delivery Certificate"
- Verify Owner identification
- Verify separation of Owner A vs. Owner B

- Provide Independent Report
- Document review
- Traceably review
- Eyewitness / Photos / Videos

Trackers require a large storage space footprint

Consist of many parts which may present a challenge during the verification work, especially for warehouses with poor management and/or traceability systems

Obsolescence risk somewhat lower than for modules



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ITC VERIFICATION INSPECTION I TRACKER COMPONENTS

ITC I VERIFICATION INSPECTION

Date	Service	Product Type	Supplier
2020.02.19	ITC Verification Inspection	Tracker Components	***
Version	Client Name	Project Name	Project Location
V2	***	Safe Harbor Inspection	***

This report is hereby certified by CEA and intends to summarize the observations and findings from inspections performed at *** for *** for the purposes of qualification for tax credits under Section 48 of the Internal Revenue Code of 1986, as described in IRS Notice 2018-59. CEA verified on ***, 2020 that finished PV tracker components supplied by ATI were present onsite at *** and prepared for use in *** solar PV projects. This 80-page report provides photographic evidence and traceability of the accounted for *** components.

Glenn Shellenberger
Associate Engineer

2019: Continuous Construction

- Verify Product
- Document process
- Verify Owner identification
- Verify segregation of Owner A vs. Owner B
- Provide Independent Report
- Document review
- Traceably review
- Eyewitness / Photos / Videos (date-stamped)

2019: Continuous Construction

HV transformer tank

HV transformer radiator

HV transformer components are produced specifically to order and should have unique traceability to a Purchase Order, although they are not necessarily “unique” or customized

Inverter PCB

Ballast blocks for racking

Printed circuit board (PCB) was used as a basis for ITC eligibility because the buyer was the first customer buying the specific inverter type utilizing this type of PCB

Ballast blocks, used for mounting solar installations without penetration of roof or ground → a low-cost / low-risk solution

Inverters may also be used for continuous construction requirement qualification.

Upstream Verification and Evidence Collection

Transformer radiator verification that the equipment was produced at the facility identified in the manufacturing records

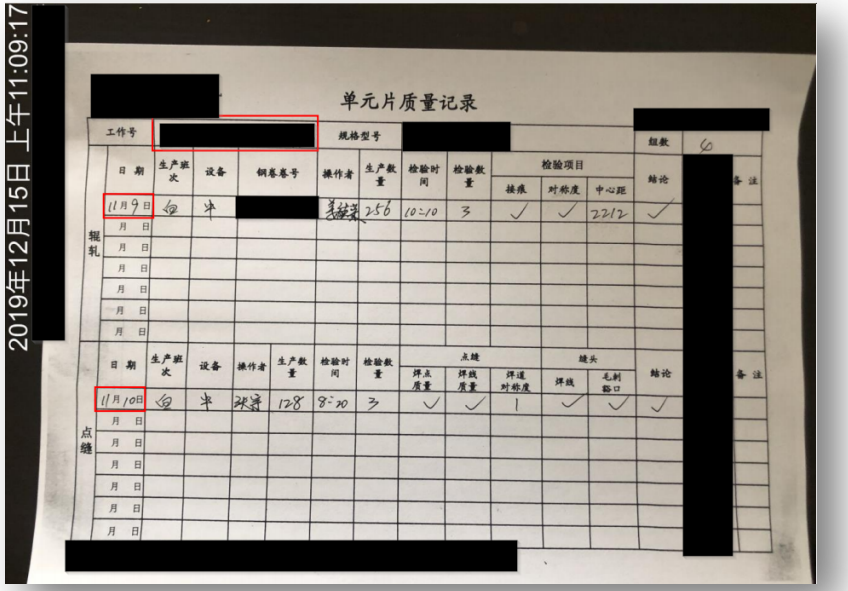
Audit report excerpt

The photos shown below depict the power transformer radiator manufacturing process at [redacted] in [redacted] China. The photographs are representative of the process used to manufacture the radiators for [redacted] The photographs were taken on December 15-16th, 2019.

Step 1: Raw material preparation

Step 2 a-b: Forming

Manufacturing Progress & Traceability Verification



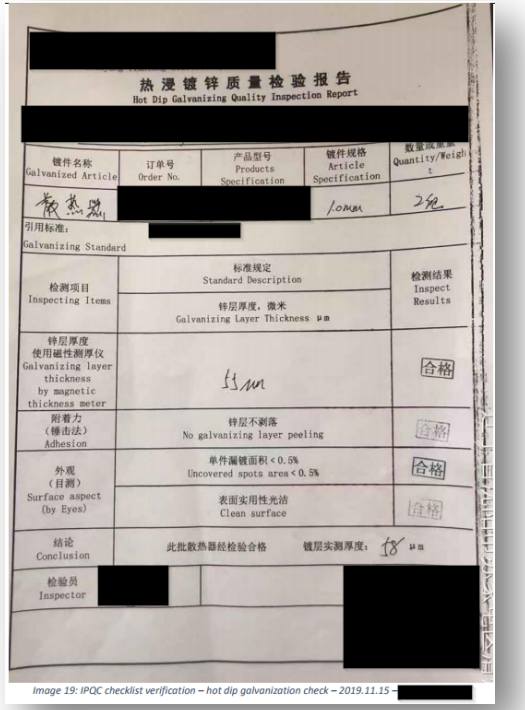


Image 19: IPQC checklist verification – hot dip galvanization check – 2019.11.15 –

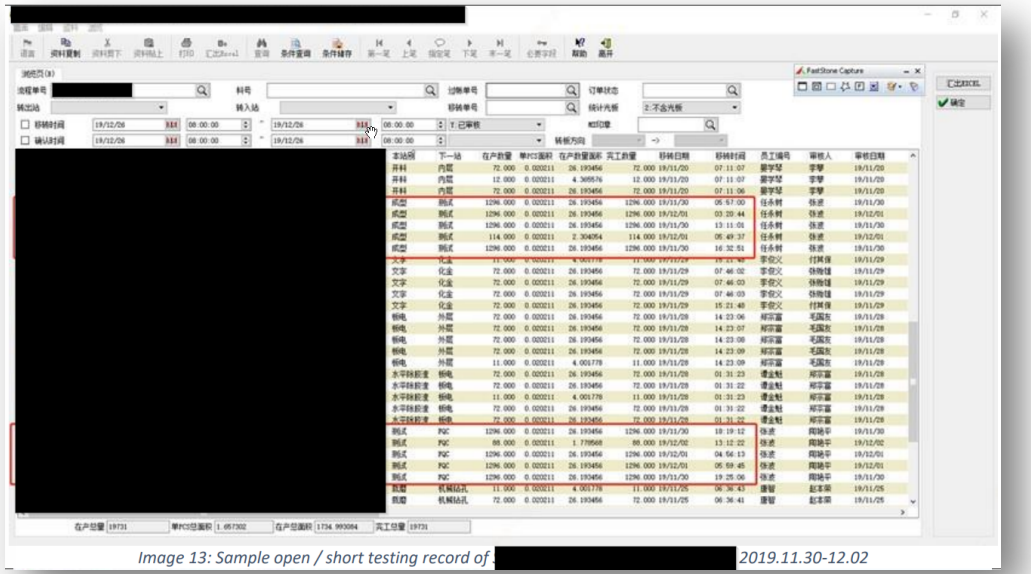


Image 13: Sample open / short testing record of 2019.11.30-12.02

Manufacturing documentation traceability for components

Finished Product Traceability - Photo & Video Documentation

Image 5: Finished radiator – nameplate

Verification that the purchased equipment had been timely produced and bears a unique identifier tying the equipment to the purchase order and the manufacturing traceability documentation

Image 2: Finished conservator for [redacted] – serial number (unique identifier) location

Image 3: Finished conservator for [redacted] – serial number (unique identifier) detail

Takeaways

- The Safe Harbor opportunity can be very favorable
  - But there are risks to address
- Time's running out to execute a Safe Harbor strategy for 2020
  - 5%
  - Continuous Construction
  - Where to store "off-site" components
- Vs. 2019, we see less "5%" than Continuous Construction
- Be intentional with respect to audits and documentation
- Consult your tax counsel

San Diego – another “safe harbor”

Thank you

Clean Energy Associates

www.cea3.com

Contact: Paul Wormser, VP - Technology

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