

Impact of the Auxin Solar Tariff Petition

Solar Industry Impacts from U.S. Department of Commerce Investigation into Imports of Crystalline Silicon Photovoltaic Modules and Cells from Cambodia, Malaysia, Thailand and Vietnam

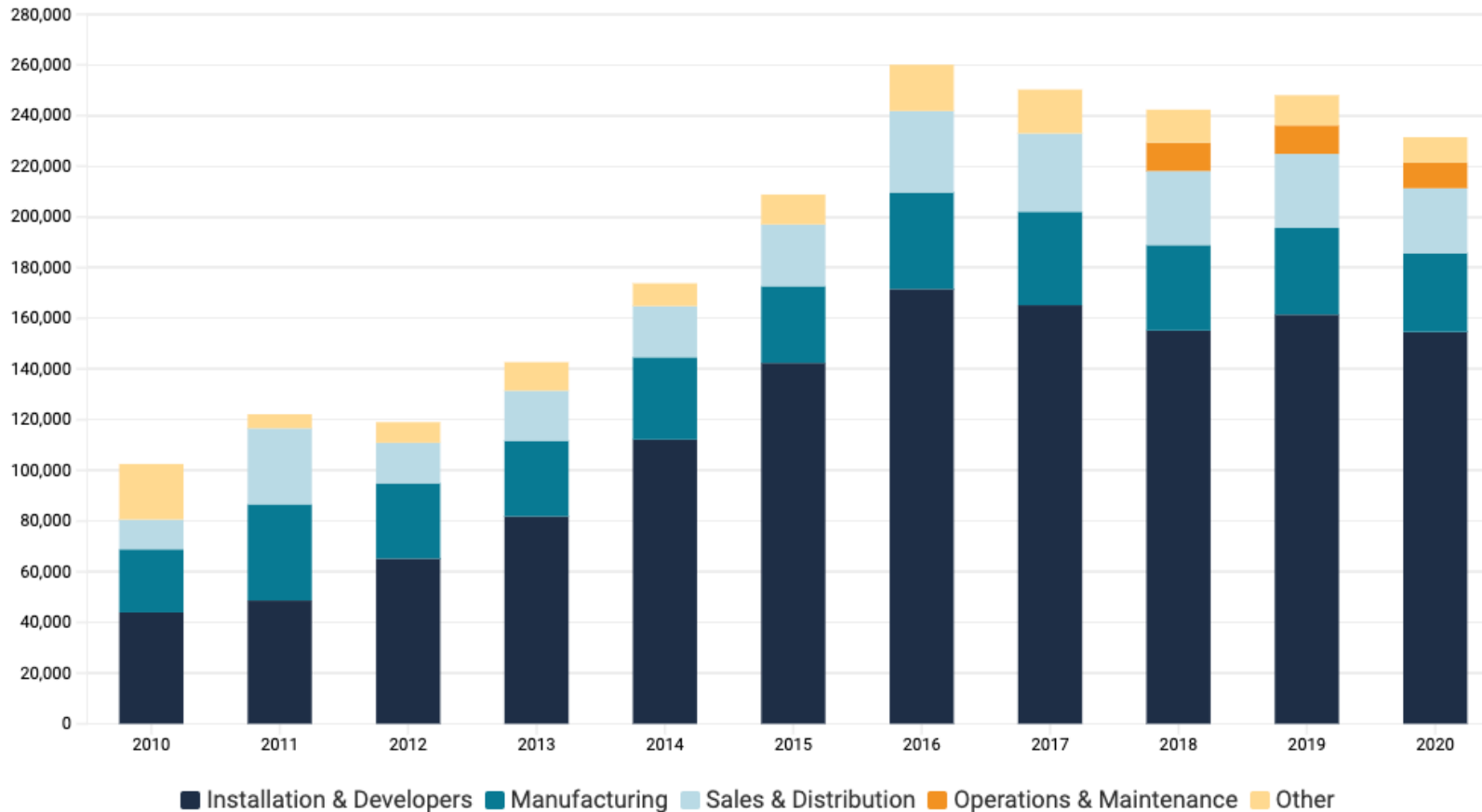
Based on a survey of 412 companies

April 7, 2022



Background: Solar is an Economic Engine

U.S. Solar Workers by Job Category



- As of 2020, more than **230,000 Americans** work in solar at more than **10,000 companies** in every U.S. state.
- In 2021, the solar industry generated nearly **\$33 billion of private investment** in the American economy.

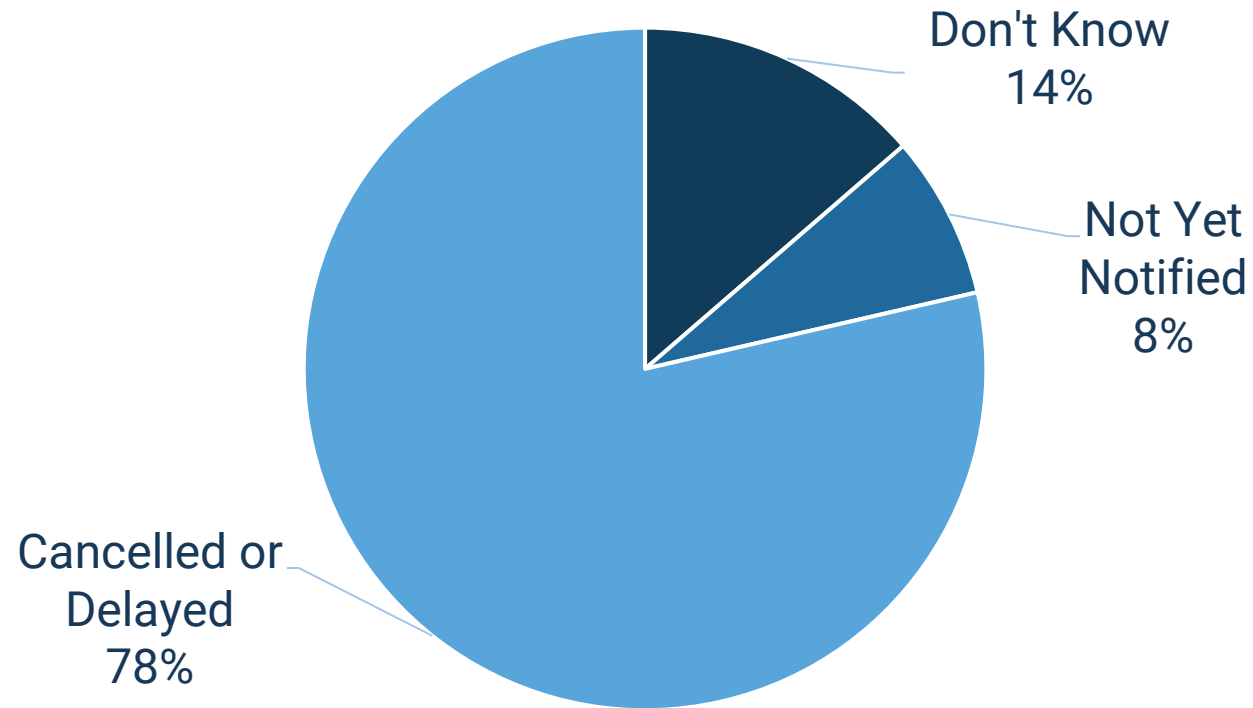
Source: National Solar Jobs Census 2020



Survey Results

If your company purchases or uses PV modules, have you received indication that your expected module supply has been delayed or cancelled?

Current Module Supply Status

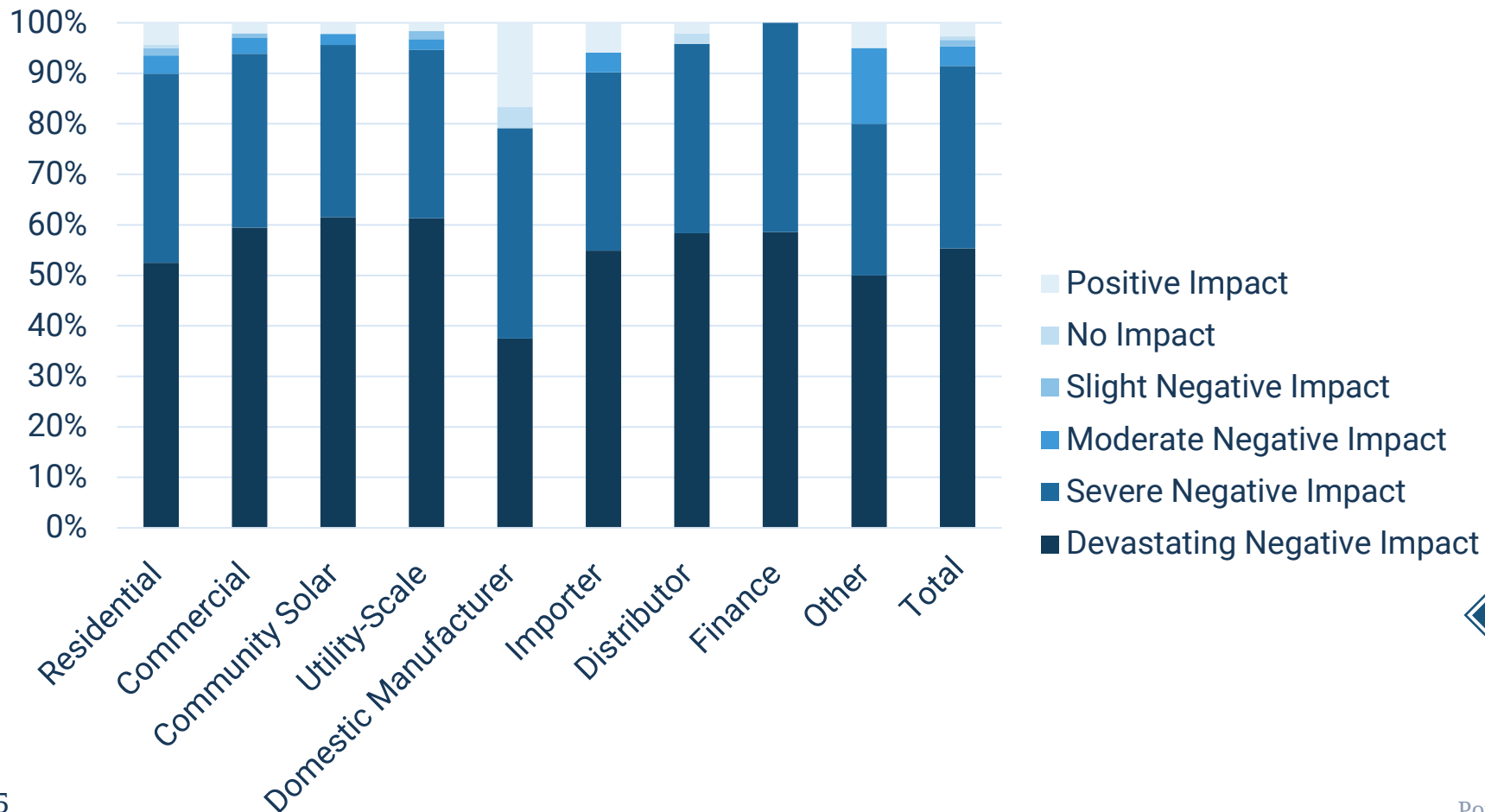


- **Three-quarters of companies report cancelled or delayed module supply.**

**Sample size as of 4/7/22
11:30 am ET: 412**

How do you expect this investigation into imports from Cambodia, Malaysia, Thailand and Vietnam to impact your U.S. business in 2022?

Expected Impact on Solar Business by Company Type

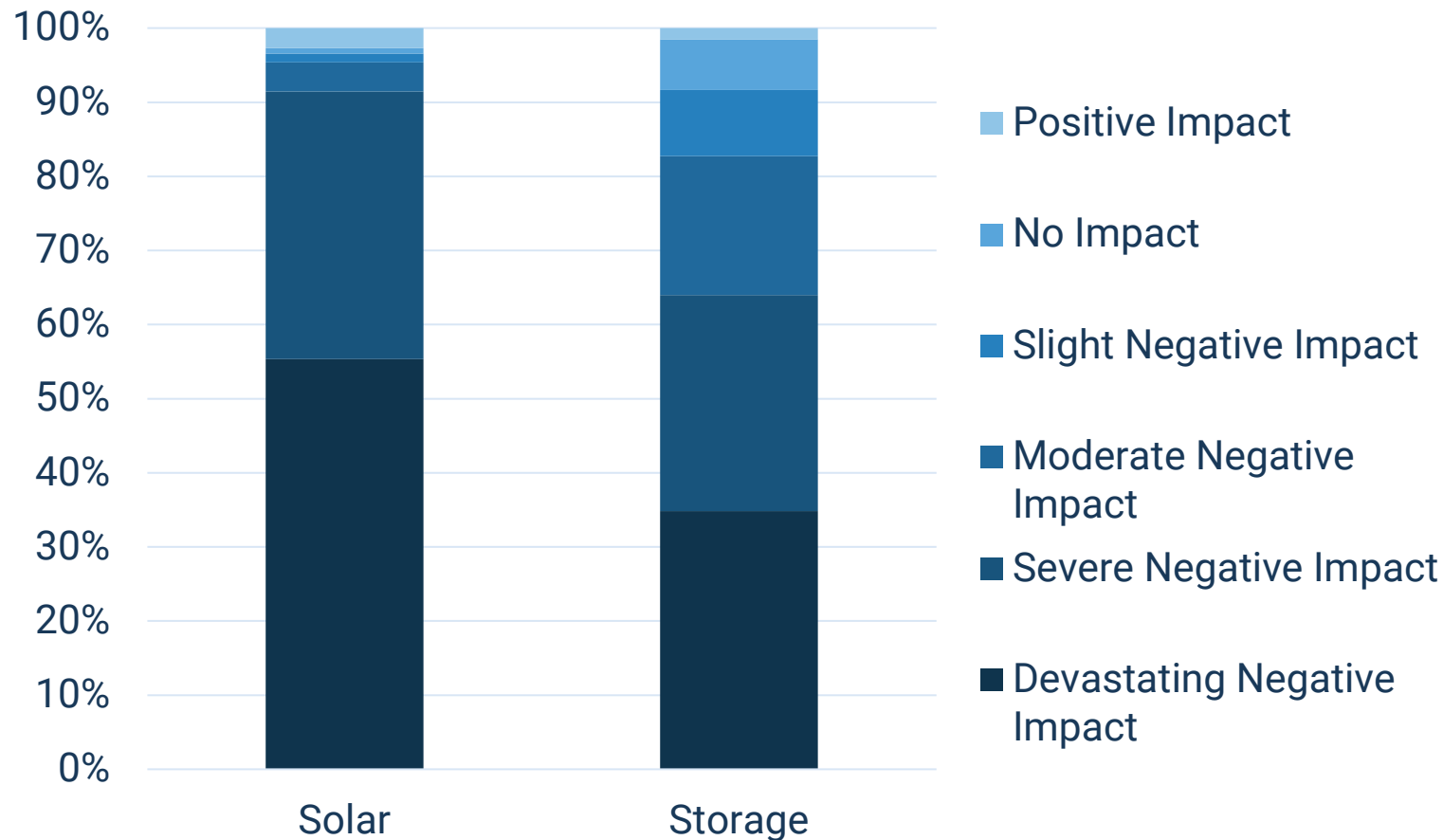


- Companies expect damage across the value chain.
- More than 80% of domestic manufacturers responding to the survey expect severe or devastating impacts.

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How do you expect this investigation into imports from Cambodia, Malaysia, Thailand and Vietnam to impact your U.S. business in 2022?

Auxin Petition Impact on U.S. Solar and Storage Industries

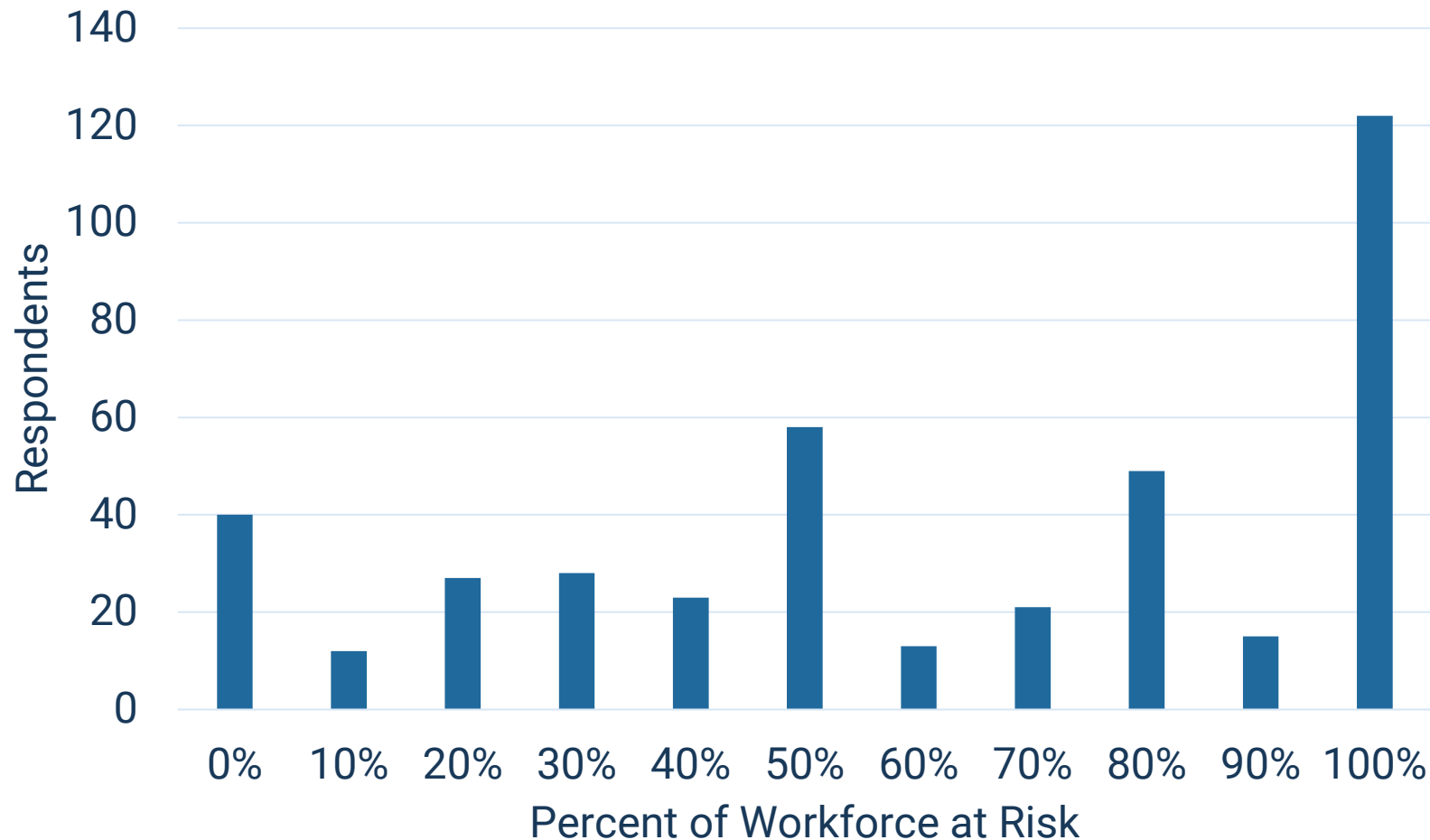


Massive impact on solar *and* energy storage industries

Most energy storage projects are paired with solar. Without the solar components, the energy storage components are likely to become uneconomical. Putting aside the economics, moving forward would require renegotiation of all project financing agreements.

**Sample size as of 4/7/22
11:30 am ET: 412**

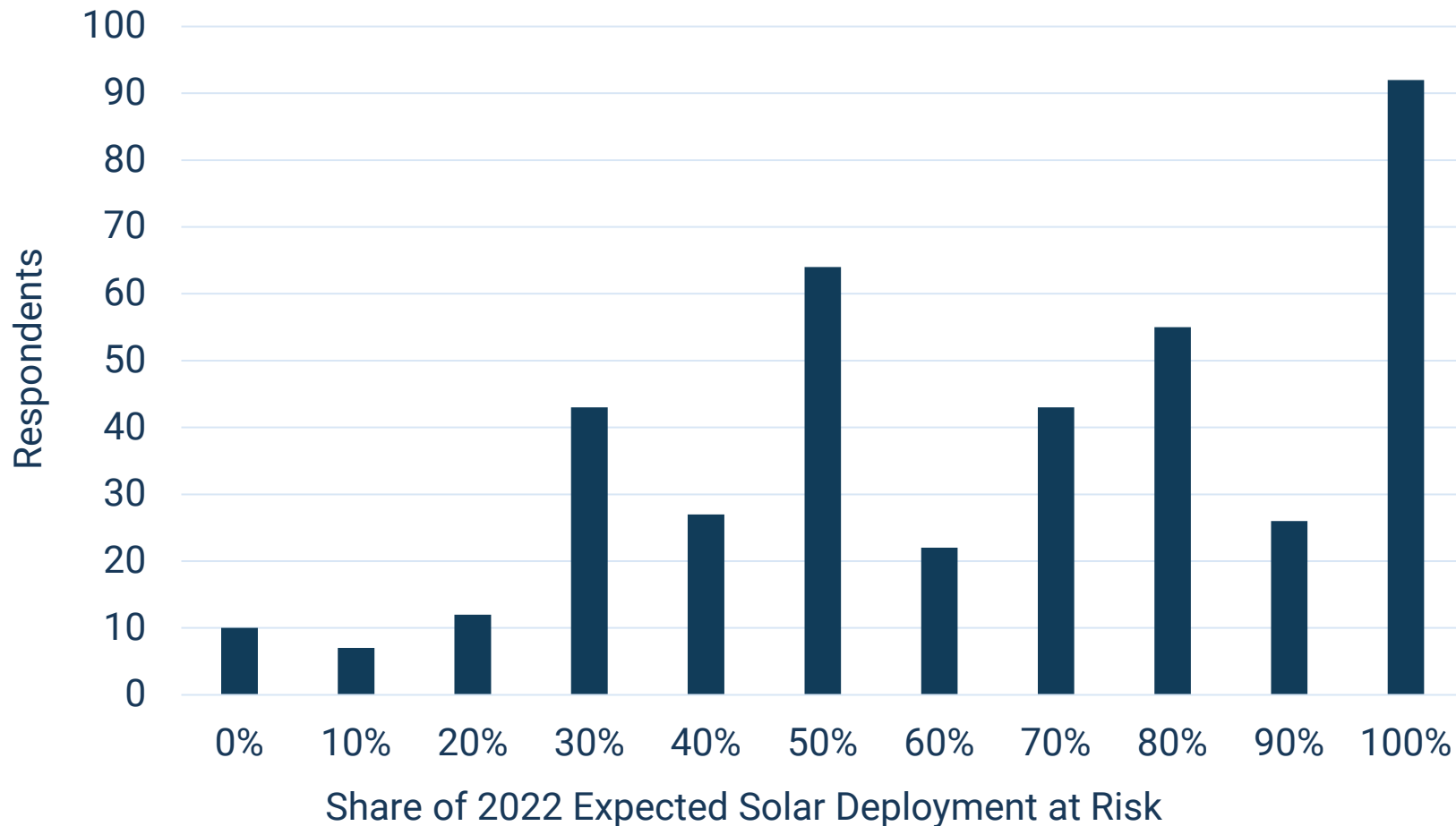
What percent of your company's U.S. solar and storage workforce is at risk due to this tariff investigation?



- Two-thirds of respondents report that at least 70% of their solar and storage workforce is at risk
- One-third of respondents report their entire workforce is at risk

**Sample size as of 4/7/22
11:30 am ET: 412**

What percent of that business volume is now at risk?

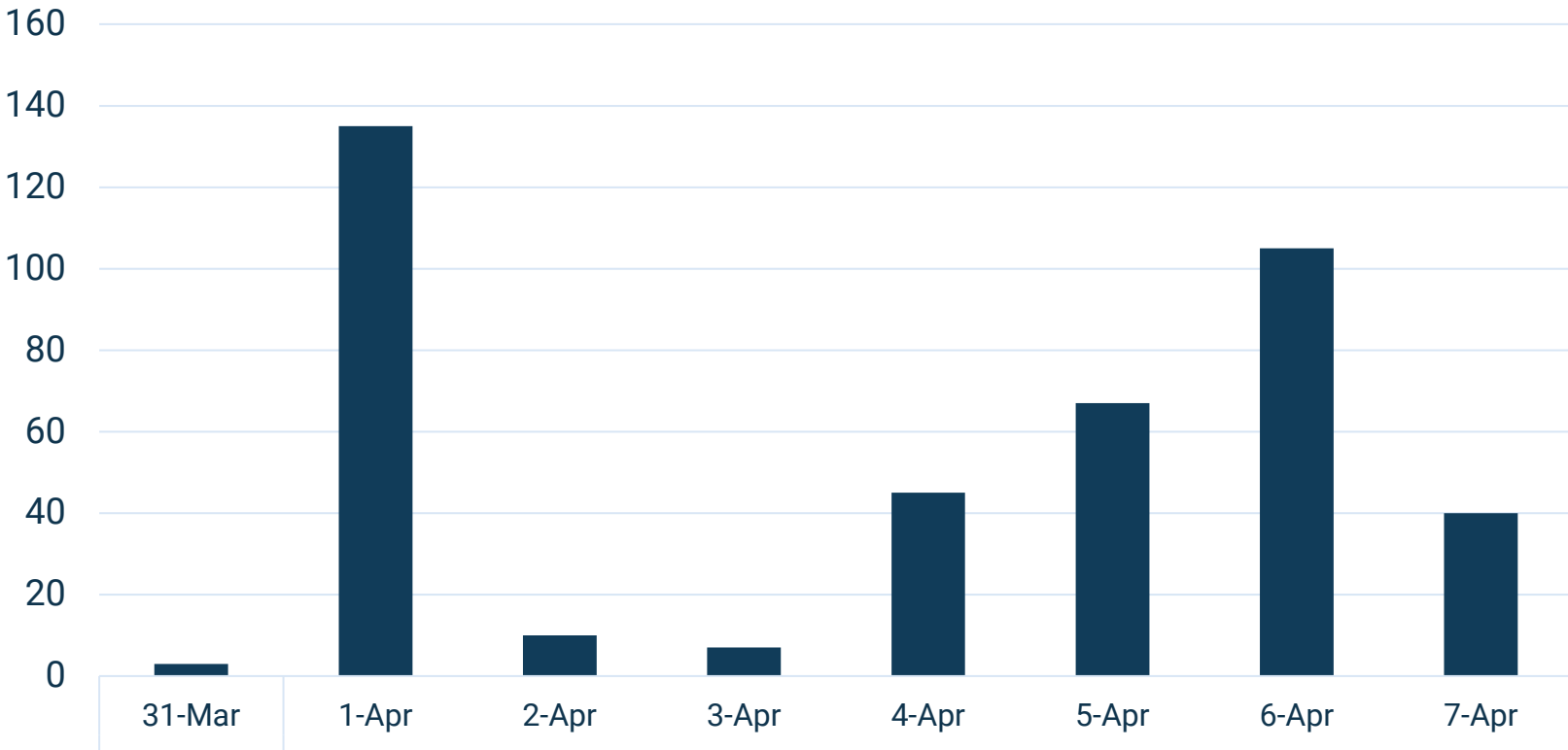


- 56% of respondents report at least 70% or more of their current-year solar pipeline at risk.

**Sample size as of 4/7/22
11:30 am ET: 412**

Count of Survey Responses

Survey Responses by Day



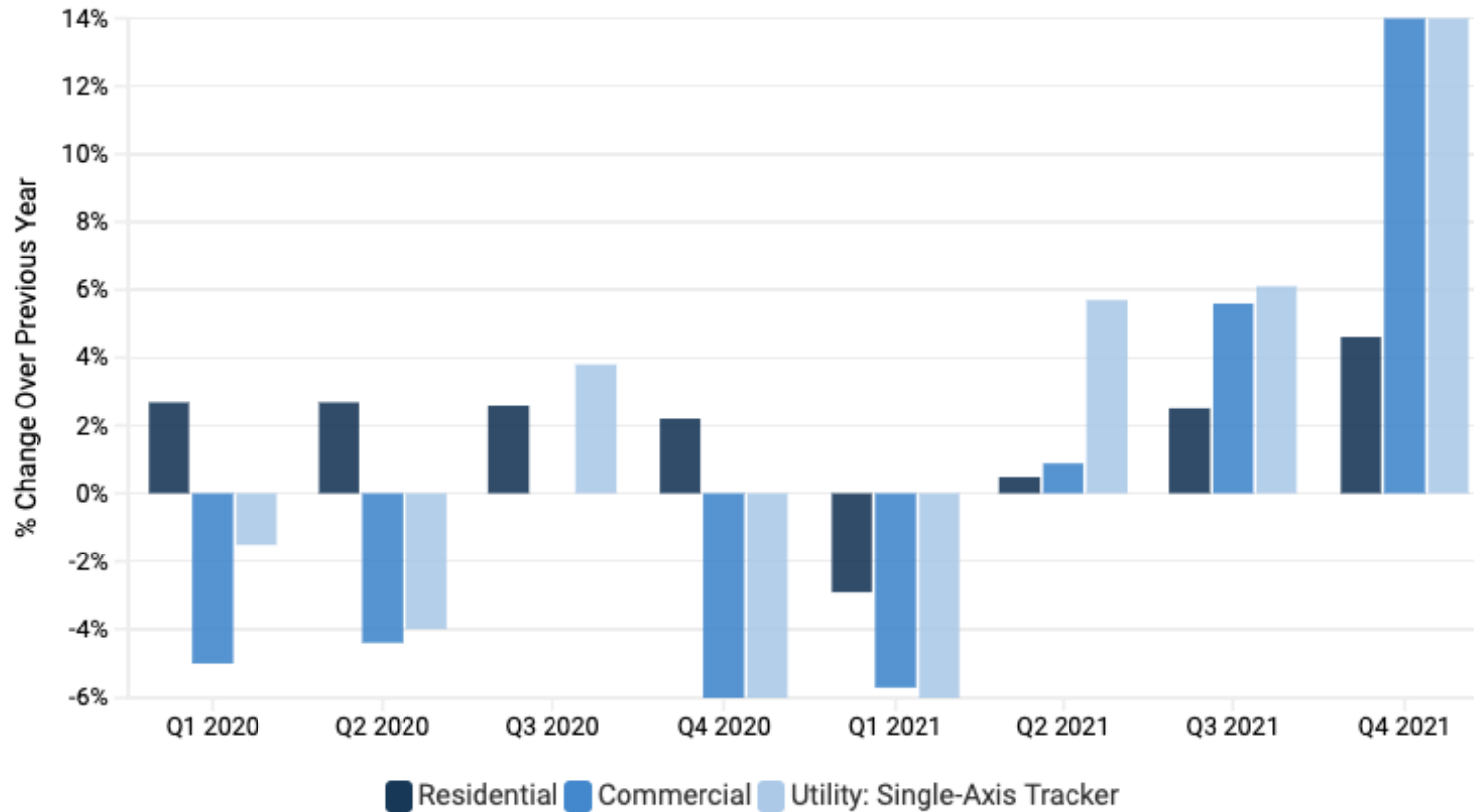
**Sample size as of 4/7/22
11:30 am ET: 412**



Additional Background

Supply Chain Constraints Lead to Price Increases

Year-Over-Year Changes in U.S. Solar PV Installed Price by Segment



SEIA/Wood Mackenzie Power & Renewables U.S. Solar Market Insight 2021 Year in Review

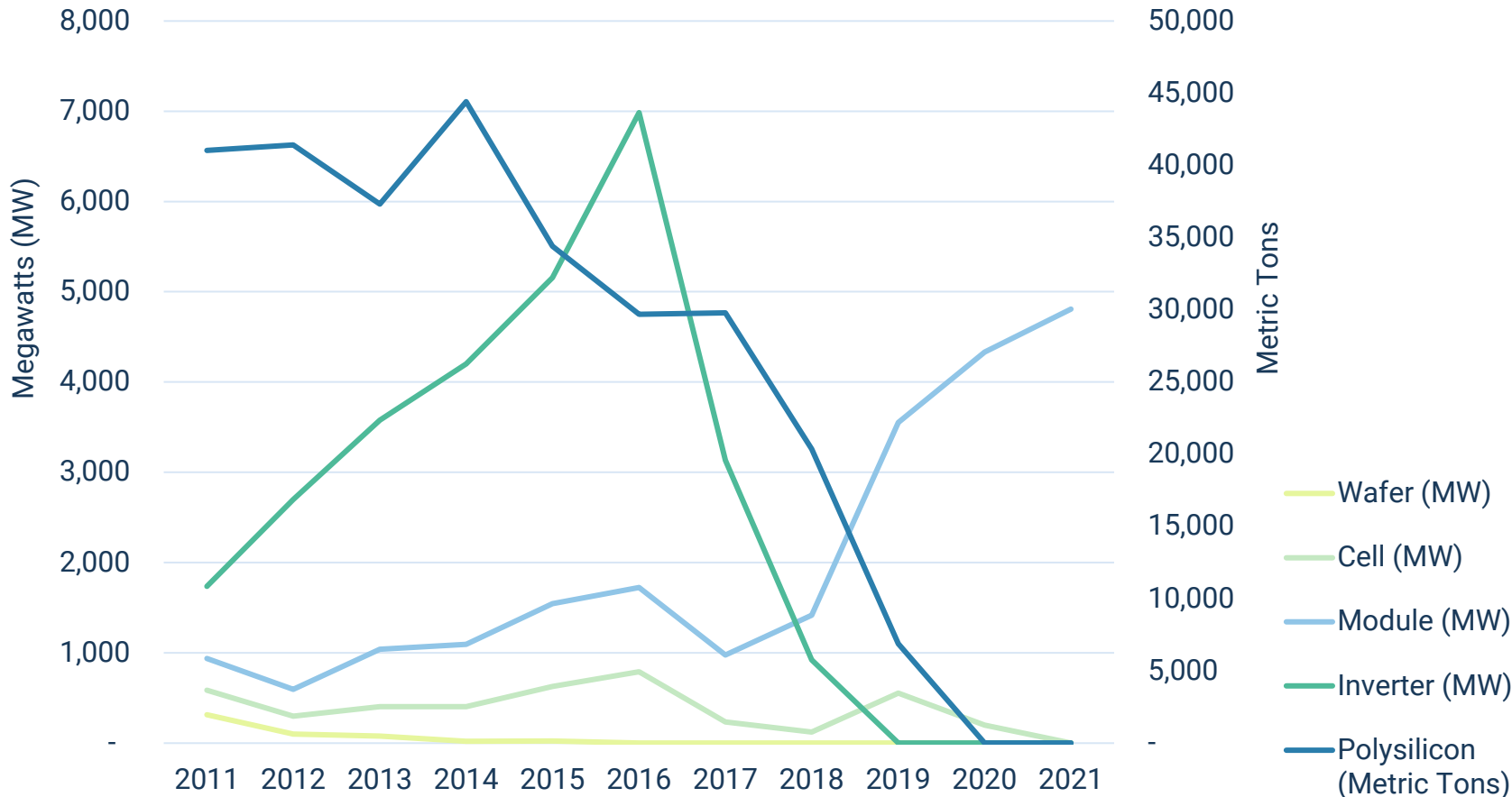
The petition by Auxin solar is not the only supply chain issue placing strain on the U.S. solar industry

- Over the last 9 – 12 months, shipping constraints and other challenges stemming from the global pandemic and trade instability have led to price increases across the U.S. solar industry
- For the first time since Wood Mackenzie began modeling solar system price data in 2014, year over year prices have increased across all market segments for three consecutive quarters, leaving utility-scale solar prices 18% higher than they were a year ago
- Price increases have impacted deployment, with 1/3rd of Q4 2021 projects delayed a quarter or more, and 13% of expected 2022 projects delayed by a year or more or canceled outright

Domestic Modules Account for <25% of Demand



Historical Domestic PV Production

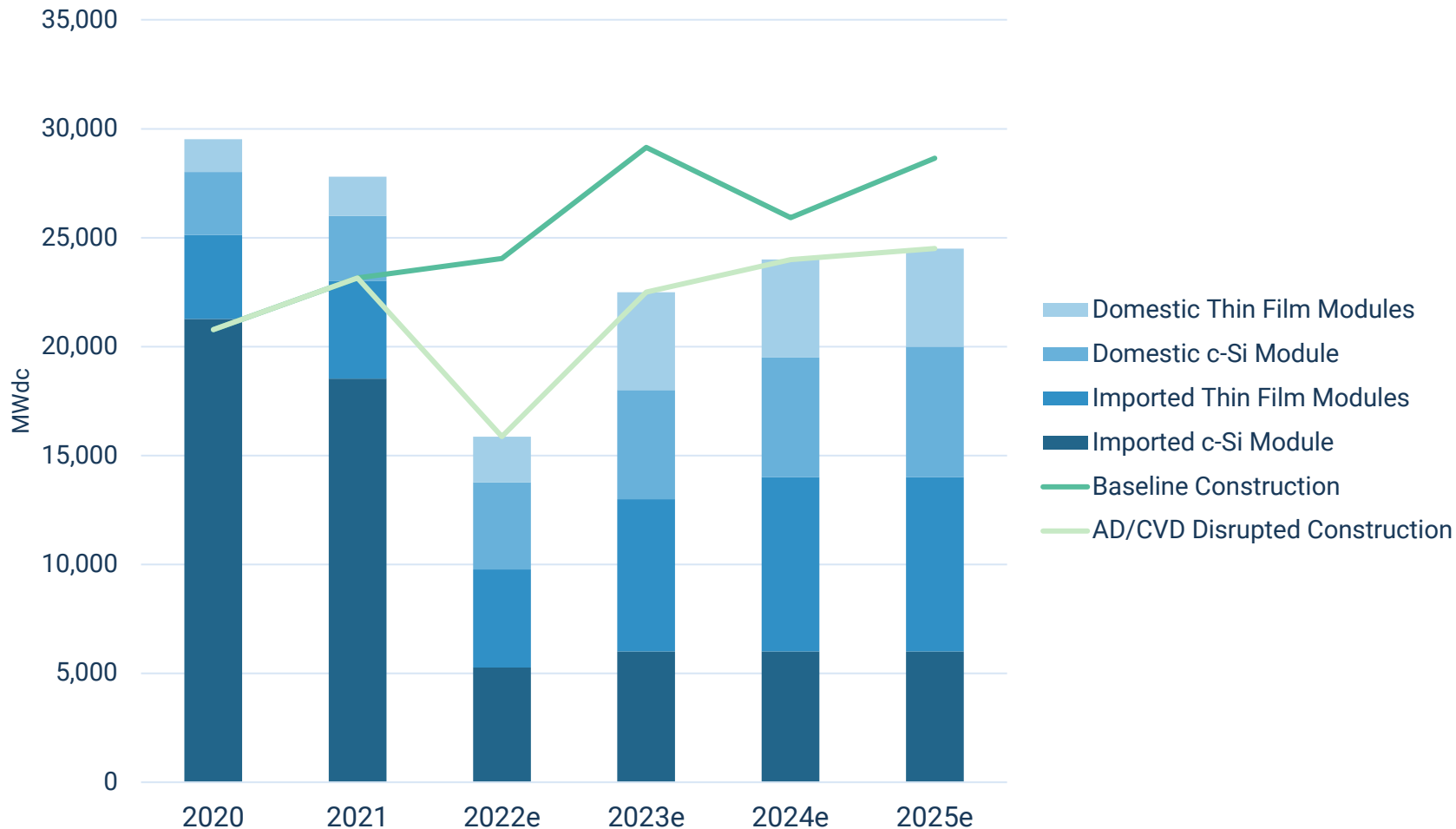


- Domestic wafer production has been zero since 2016
 - No domestic customers for polysilicon
- Domestic module production is the strongest
- To increase domestic content, the U.S. needs domestic glass and frame production
- 20 GW of new manufacturing capacity announced, depends on passage of reconciliation legislation, including SEMA

Sources: SEIA/Woodmac U.S. Solar Market Insight 2021 Year in Review

Trade Disputes Threaten Growth

U.S. Module Supply and Demand under Auxin Petition

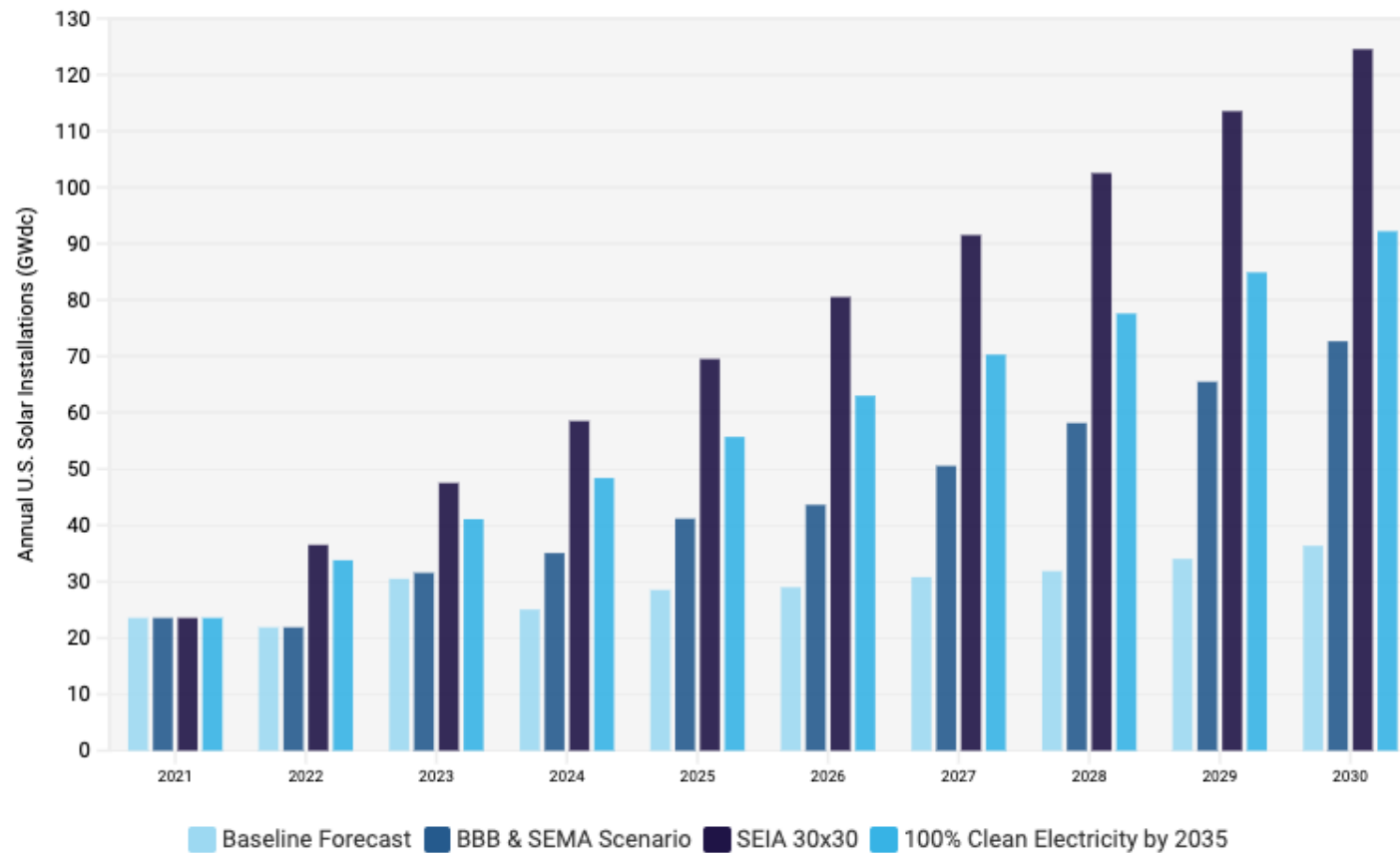


- 84% of all U.S. solar module imports come from the four countries impacted by this investigation
- There is insufficient non-Chinese capacity elsewhere to cost-effectively supply U.S. demand
- Half of all cells imported for domestic module production are also impacted by this investigation
- Some c-Si module imports from other countries also use impacted cells

More Aggressive Growth Needed to Reach Climate Goals



U.S. Solar Market Forecasts Under Various Policy Scenarios & Goals



The baseline forecast is now scrapped and the prospect of achieving climate goals grows dimmer each day this investigation continues.

Bringing Supply Chain to the U.S. Would Take Years

- Even siting and permitting a U.S. plant could take a year or more
 - Construction and production ramp could take an additional 1-3 years
- Interim devastation to the downstream industry would reduce the domestic customer base for prospective domestic manufactures
 - As experienced workforce leaves the industry, recovery could take years
- Without support from smart industrial policy, these tariffs (like tariffs before them) are not enough to draw billions of investment in new domestic manufacturing. It is simply still too risky for many manufacturers



Manufacturing Construction Periods

Based on Chinese and SE Asian public filings, we believe project construction times are approximately:

	Most typical construction period (months)	Common range of construction periods (months)
Polysilicon	18	12-24
Ingot/Wafer	12-18	12-36
Wafer Only	9-12	9-18
Cell	9-12	6-24
Module	9-12	6-24

- These ranges include some very large multi-phase projects. Construction periods for single-phase projects may be at the shorter end of any range, although individual project timescales will be highly dependent on the specifics of site selection, permitting, required infrastructure, etc.
- These timelines do not cover some prerequisite stages such as siting (and likely some permitting)

Source: Exawatt



Take SEIA's market impact survey:

seia.org/AuxinImpacts

Submit Data on Impacts from the Auxin Tariff Petition

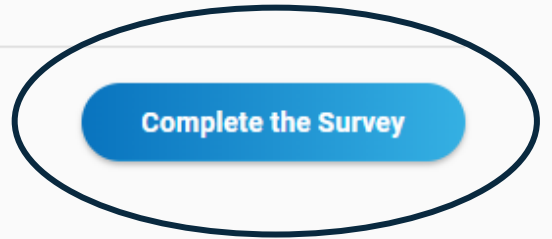
[Complete the Survey](#)



For anyone engaged in the U.S. solar or storage industries

Companies of all sizes, including those that work on everything from residential to utility-scale projects, should complete this form to provide a holistic and qualitative sense of how they expect the anti-circumvention investigation to impact their businesses and workforce.

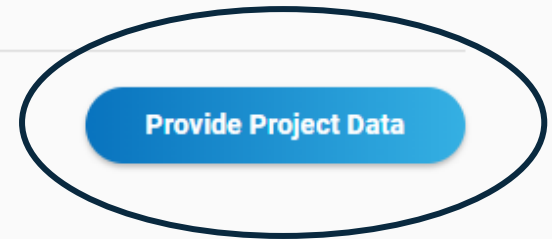
#1



For those with project-level impact data

Project-level data for large projects will be extremely valuable to show policymakers detailed and concrete impacts of the anti-circumvention investigation. In addition to completing the general survey above, those with information about specific large-scale solar projects can use a map tool to find their projects and submit basic information about the impacts from the Auxin petition.

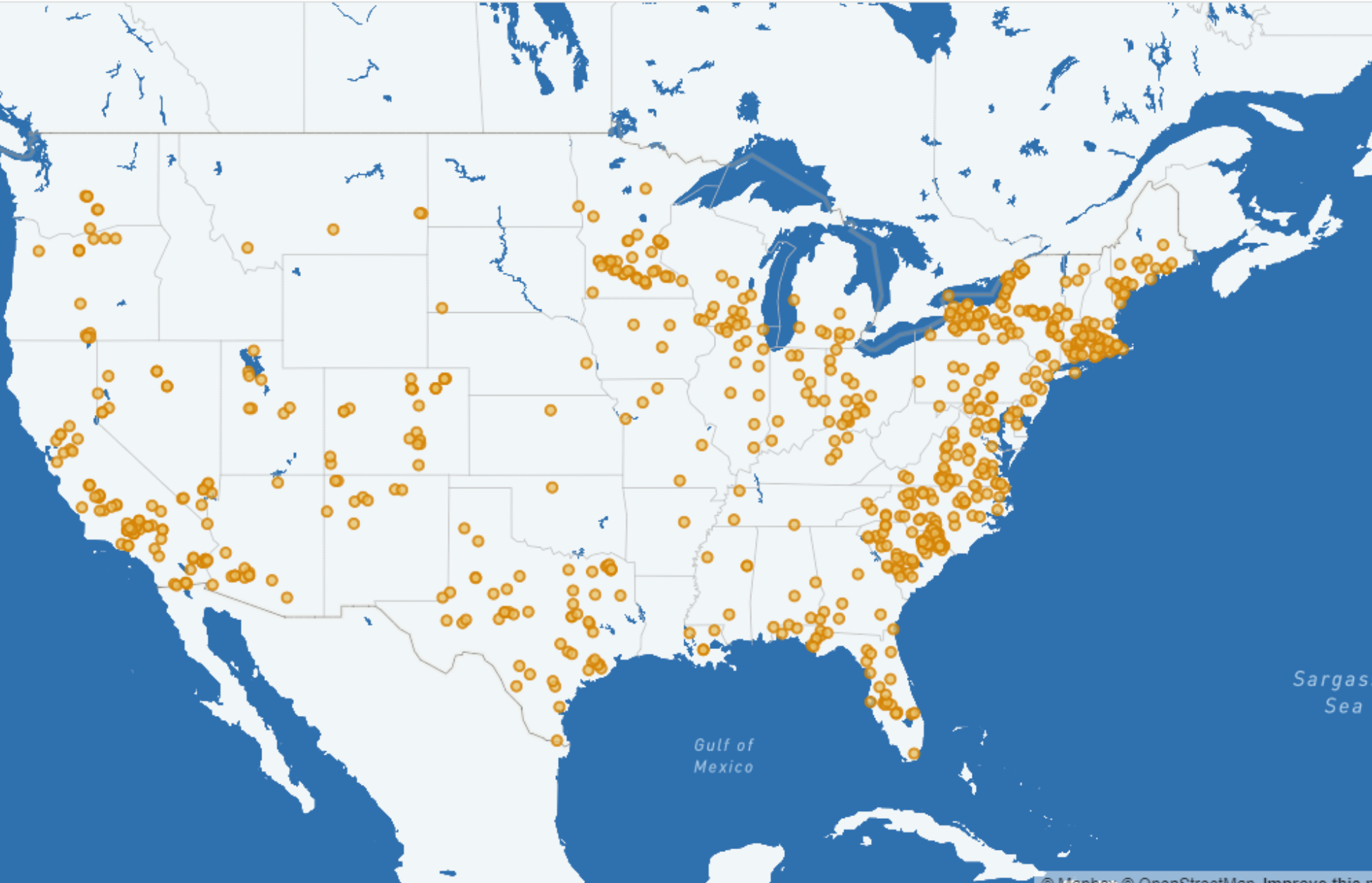
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Large projects



1. Find your projects on the map



Angel Fire Energy Facility

County: Colfax
State: NM
AC capacity: 9.8
DC capacity estimate: 13

[view prefilled survey](#)

2. Confirm it's the right project by looking at details in popup window

3. Click on link to open a survey with details shown prefilled



^ Required

Project Name and project ID (if applicable). *

Note this information will be auto-populated if you opened this survey from the survey map.

Angel Fire Energy Facility (64695)

Project State *

Note this information will be auto-populated if you opened this survey from the survey map.

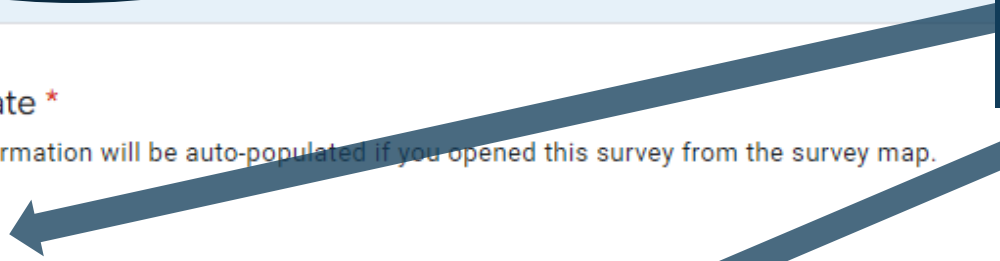
NM

Project County

Note this information will be auto-populated if you opened this survey from the survey map.

Colfax

Prefilled data allows alignment with other databases



Submit Data on Impacts from the Auxin Tariff Petition



[Complete the Survey](#)

For impacts to solar projects 1 megawatt (MW) and above:

Project-level data for large projects will be extremely valuable to show policymakers detailed and concrete impacts of the anti-circumvention investigation. All these projects must report delays and cancellations to the Energy Information Administration (EIA) via monthly Form 860m filings. While the data becomes public 2+ months after the forms are filed, we need the data ASAP to fight this existential threat. In addition to completing the general survey above, we have two asks for you:

1. Submit data on impacts to the large solar projects in your portfolio

Submit Project-level Data

-  Find Your Project & Submit Data
-  **Submit Project-level Data Manually**

If you don't see your project on the map

Ensure EIA Receives Accurate Project Updates

- The Energy Information Administration (EIA) is the source of official government statistics on energy.
- Projects larger than 1 MWac submit EIA form 860 annually and EIA form 860m monthly if they are within 12 months of beginning construction.
- Find the person responsible for submitting these forms for your projects (often developer or owner).
 - Make sure the person is fully aware of supply chain challenges ASAP.
 - Forms typically submitted within two weeks of the close of a month.
- This data is on a two-month delay so make sure March 2022 submissions reflect the current situation.
- Still complete the SEIA survey so we can get the data faster!

