



COMMERCIAL
SOLAR PANEL
RECYCLING

“End-of-Life Solar Panels: Navigating the First Wave”

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President and Co-Founder

About CSPR

- Headquartered in Phillipsburg, NJ
- 100% US-owned, privately-held
- Zero debt, financially stable
- National coverage
- **Only NJDEP permitted recycling facility in NJ for solar panels**
- OSHA trained and compliant
- SEIA member, SEIA 602 PV Recycling Standard Committee member

Our Services



Recycling

We provide environmentally responsible solar panel recycling, ensuring compliance with industry regulations and sustainable disposal practices.



Logistics

Our end-to-end logistics solutions, including small quantity scheduled transport, streamline the transportation of solar panels, ensuring safe and efficient handling.



Resale

We maximize value by inspecting and reselling viable solar panels, promoting reuse and reducing waste.



Consolidations

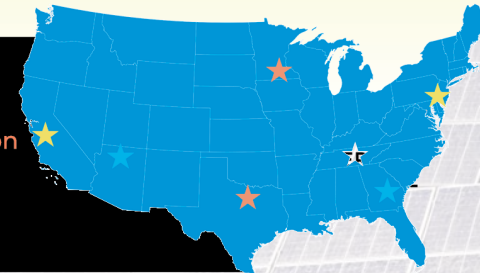
Our consolidation services simplify bulk solar panel collection, optimizing storage and transportation for efficient processing.

Recycling, Logistics & Resale

Logistics, Consolidation & Resale

Resale

Future Locations



Solar panels last forever (right?)

CAUSES of “early loss” solar



Improved Technology/ROI



Abandoned/No Maintenance



Defective/Damaged



Natural Disasters



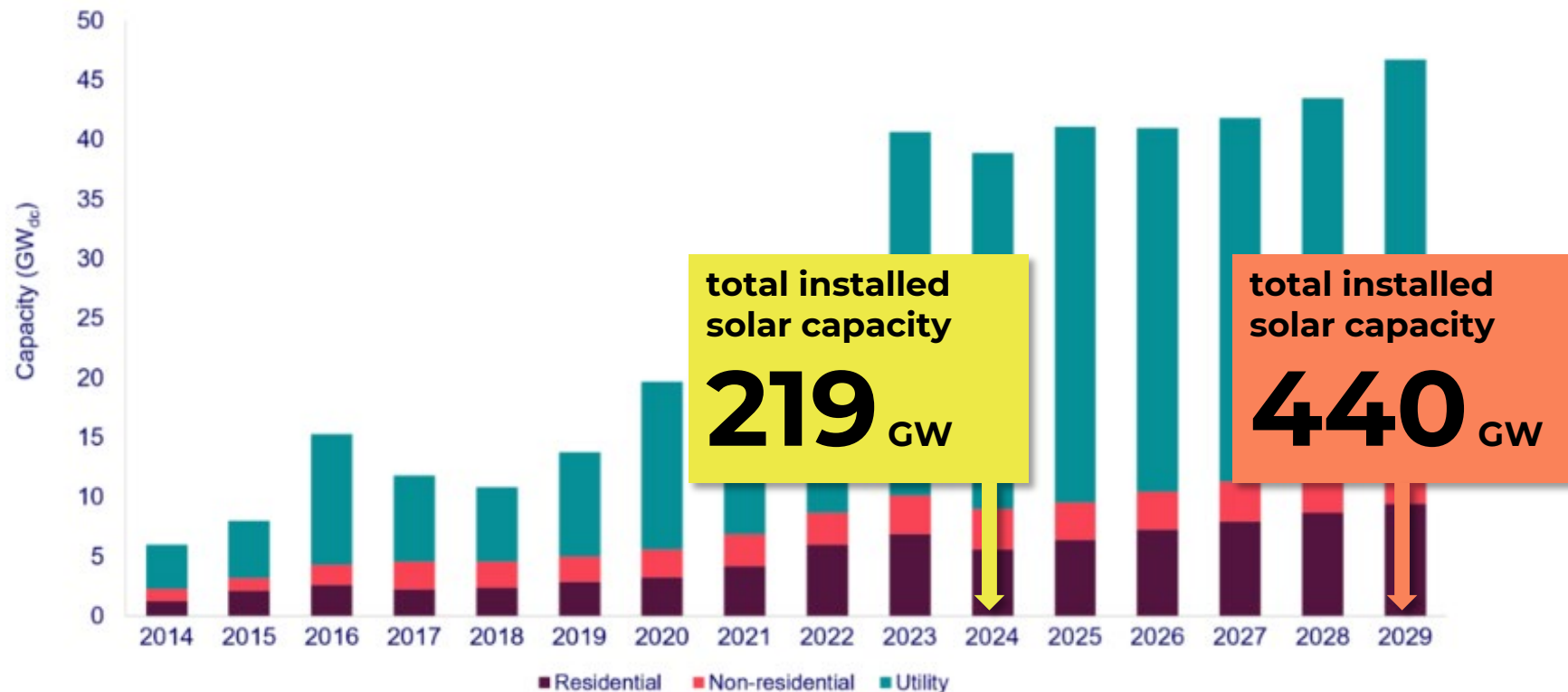
Reroof/Structural Work

US PV by the numbers



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2024, 2030 Installed US Solar Capacity



* SEIA/Wood Mackenzie U.S. Solar Market Insight Report Q3 2024

2030 US Installed Solar Capacity

2024 Capacity

219 gigawatts*

2030 Capacity

440 gigawatts*

2024 Quantity

730 million panels

2030 Quantity

1,100 million panels

Generated E-waste

36,500 million lbs

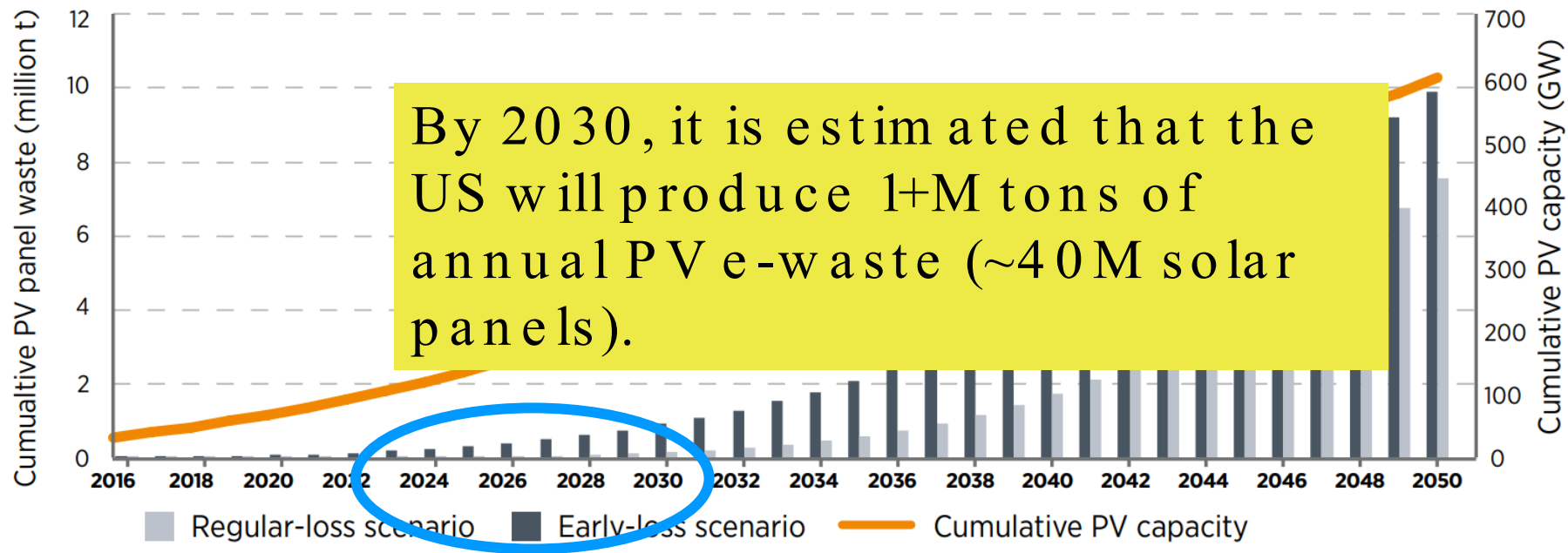
Generated E-waste

55,000 million lbs

* SEIA/Wood Mackenzie U.S. Solar Market Insight Report Q3 2024

PV Waste Growth: Projected vs Early-loss

Figure 19 End-of-life PV panel waste volumes for the US to 2050





Options for End-of-Life PV Panels:

**ENERGY-
PRODUCING**

 **Reuse**

**DAMAGED or
INEFFICIENT**

 **Landfill**

 **Recycle**

Extended lifecycle for PV

Second-life PV panels reduce waste, conserve resources, and protect the environment.

- ✓ Minimal busbar corrosion
- ✓ Minimal “snail trails”
- ✓ Intact wiring and electronics
- ✓ Minimal frame damage
- ✓ No glass damage or scorch marks
- ✓ Minimal solar cell discoloration
- ✓ Desirable wattage
- ✓ High efficiency
- ✓ Desirable physical size



Recycle or Landfill?

“More than 90% of discarded solar panels end up in landfills. By 2030, the retired panels are estimated to cover an area equivalent to about 3,000 football fields.”

Source: Tracey, B., Novak, A.. (May 1, 2023). *A black eye for green energy? Renewable energy growth brings mounting waste challenge.* CBS News



Where are solar panels required to be recycled in the US?

👍 W A state. Niagara County, NY.

👎 There are **no federal regulations** requiring solar panel users or manufacturers to recycle their panels.

👍 Solar waste initiatives in process: HI, IN, IL, MA, MD, MN, MT, NC, OH, SC, TN, VA, WV and NJ.

NJ State Senator Bob Smith has introduced [SB 3399](#), mandating EOL recycling for solar and PV energy facilities and structures, aiming to reduce landfill waste and promote a circular economy.

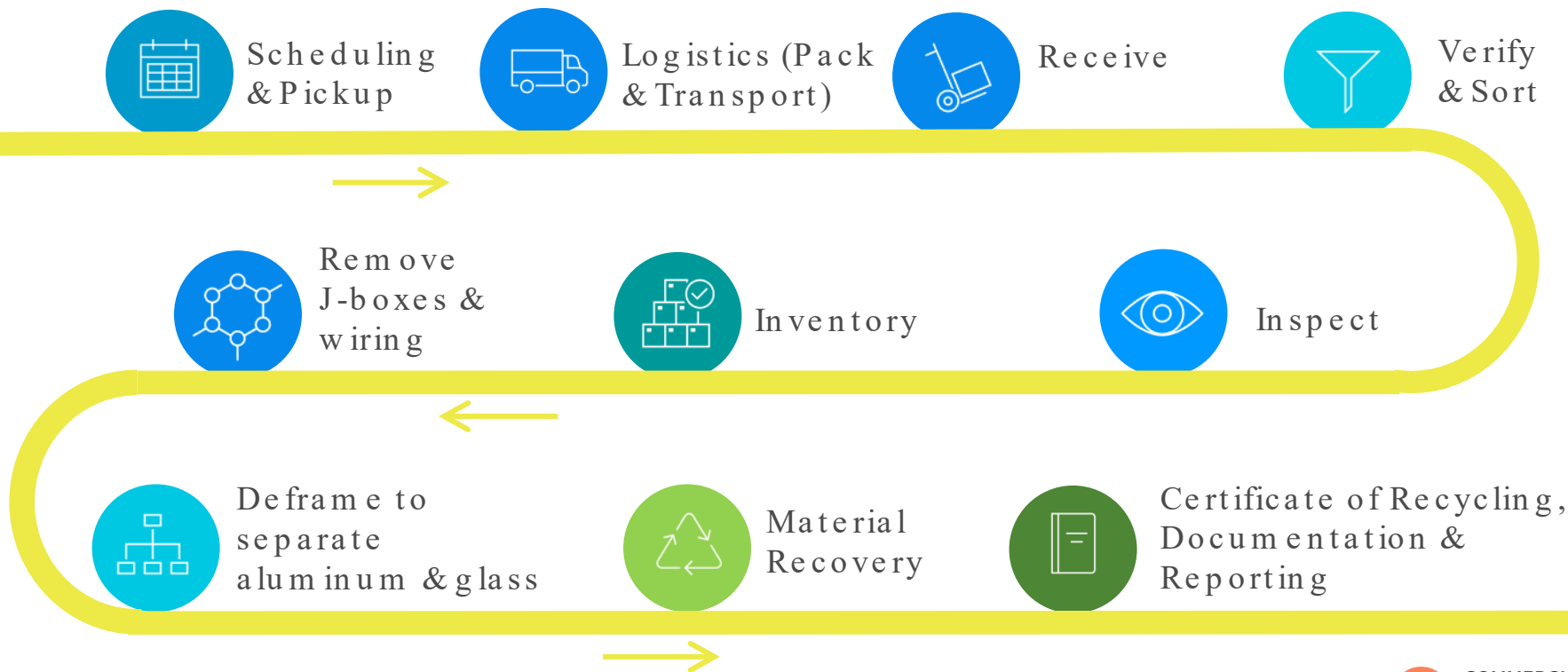


If there's no law, why recycle PV panels?

- Landfill policies
- Environmental responsibility
- Green initiative
- Market advantage (positive brand image)
- Leading edge advantage
- Proactive risk management

Source: *The Council of State Governments.* (Oct 18, 2022).

Our Recycling Process



What is recyclable in a mono/polycrystalline solar panel?



Glass



Cables



Junction Boxes



Aluminum Frame

Downstream products



**BACKING SHEET
SEPARATION**



CULLET



**FINELY
GROUND**



**COLORED STREET
MARKINGS**



**DURABLE PAVERS
(IN PROTOTYPE)**



**SANDBLASTING
MEDIUM**

Recycle or Landfill Solar Panels?

CSPR is an essential partner in creating circular solutions for EOL solar panels.



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Q & A

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