THANK YOU REV2026 SPONSORS

SOLAR'S SECOND ACT

Repowering • Recycling • Decommissioning

Moderated by Eric Phaneuf

General Counsel | Norwich Technologies, Inc.

Renewable Energy Vermont | REV 2026

Wednesday, October 14, 2026

Session begins shortly

Vermont’s Solar Development

Solar installations ≥150 kW | 2012–2024

293.4 MW

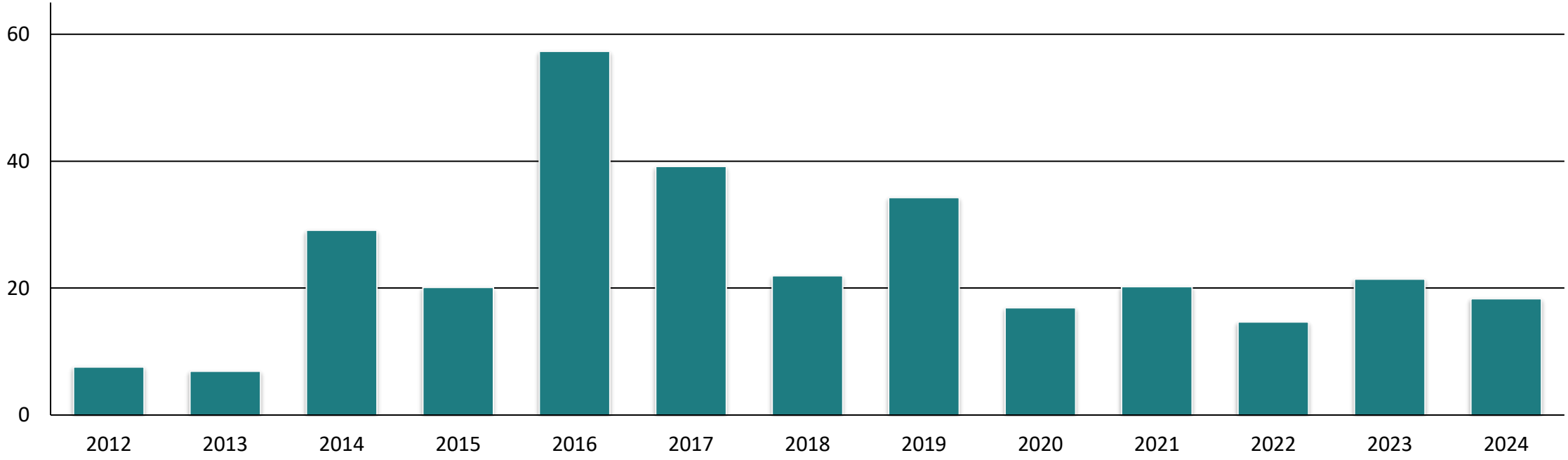
Installed 2014–2024

346

Projects installed 2014–2024

95.3%

Share of 2012–2024 MW



Source: ISO-NE PP-12 | 2025 excluded because only partial-year data were available

The conversation

How do we maximize the value of the solar infrastructure Vermont has already built?

01

REPOWER

When should we repair, maintain or reinvest?

02

REUSE & RECYCLE

What value remains in equipment coming out of service?

03

DECOMMISSION

How do we ensure responsible end-of-life funding?

AFFORDABILITY | Preserve value. Avoid unnecessary cost. Protect landowners and the public.

Meet the panel

Three perspectives on the next stage of solar projects

MATT MURPHY

CEO | Flux Energy

Repowering and optimizing operating renewable-energy assets

SARAH DAMASKOS

Commercial Solar Panel Recycling

Module reuse, recycling and material recovery

STEPHANIE HOFFMAN

General Counsel | Vermont Public Utility Commission

Decommissioning obligations and financial assurance

SOLAR'S SECOND ACT / REPOWERING

Repowering

Making more of the solar infrastructure we've already built

MATT MURPHY

CEO | Flux Energy

REV 2026 • OCTOBER 14, 2026

The Gap In The Market

Misaligned Timelines – Asset Assumptions vs. Operational Realities

- Asset Owners (Underwriting)
  - Financial models assume 35-40 years of useful life, implying sustained performance and monetization beyond initial contract terms
- Developers (Origination)
  - Projects structured around 20 year leases and PPAs, optimizing for near-term bankability and exit.
- Policy & Incentives
  - Revenue support (e.g. RECs, tax credits) typically declines within 10-15 years, front-loading project economics
- Operations & Engineering
  - Major maintenance and repower needs emerge in years 10-14, requiring capital decisions before initial contracts expire to maintain performance
- Grid & Market Planning (ISOs / States)
  - Long-term capacity planning and State RPS's assume continued generation from existing assets, often treating them as effectively perpetual.

A structural gap that Flux is positioned to fill.

- Without asset redevelopment, there is no defined strategy or market structure for years 21+
- Owner's face sunk capital and lost output if major maintenance is performed reactively, causing value compression after year 10
- Smart solutions require extensive expertise in contracting, engineering, permitting, procurement, and construction management
  - Owner/IPP's do not have the required internal resources or expertise for redevelopment which creates market demand for Flux's services

The Solution

FLUX ENERGY

RECONTRACTING AND REPOWERING

Electricity prices are at an all time high and rising which creates incentive for offtakers to renegotiate/extend PPAs. There is opportunity to combine upgrades and repower with contract renegotiation to extend the contracted life of an asset to match its useful life. This is mutually beneficial to owners, offtakers, and landowners.

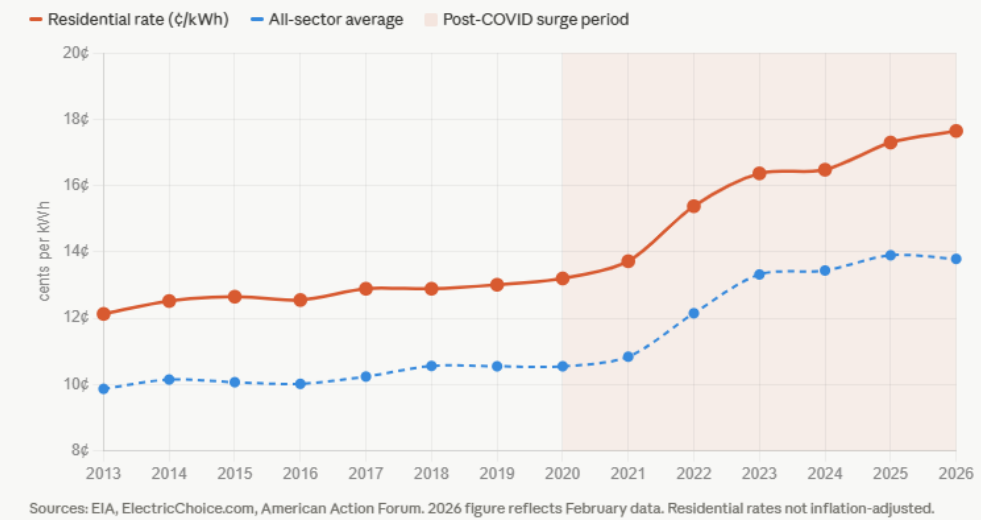
BESS / NEW REVENUE STREAMS

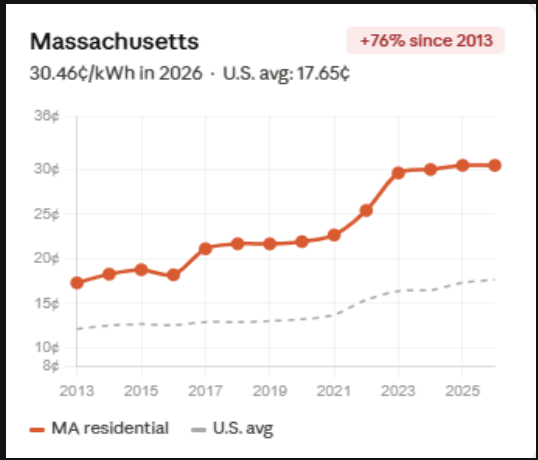
State incentive programs and federal tax credits for solar are being replaced by programs that promote battery energy storage systems (BESS). Deploying BESS on existing projects helps mitigate interconnection risks, capture newly available incentives, and unlock new stackable revenue streams via grid services markets.

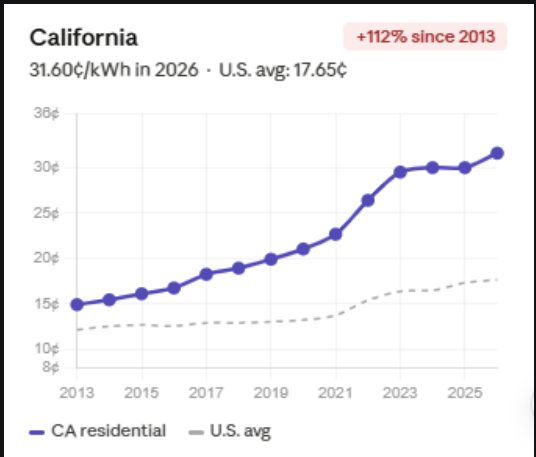
ONE-STOP SHOP FOR REDEVLOPMENT

The industry lacks a single, trusted provider that can navigate the contractual, regulatory, and financial restructuring involved in redevelopment while also tackling the complicated engineering,

Rising Electricity Rates







Structural demand shift

- Load growth from Data Centers, EV's, and Building Electrification is expected to continue to accelerate and constrain the grid.
- Rate-based cost allocation for grid updates and modernization will continue to put upward pressure on rates.

Changing offtaker behavior

- Previous decades of rate stagnation when these assets were first installed meant offtakers were less motivated to contract beyond 20 years.
- Favorable climate for recontracting and repowering assets as offtakers are now eager to renegotiate and extend their existing contracts.
- Energy storage systems can also act as a hedge against rising rates while provide valuable new revenue streams.

Shifting Ownership Landscape

The passing of the BBB in 2025 put an end to the Solar and Wind Investment Tax Credits, which were 30%-50% of a new project's capital stack

Wood Mackenzie predicts this will slow development by 20% of the next ten years

It is also expected to compress the IRRs on new assets by several hundred basis points

Battery storage tax credits still exist, battery installations are growing year over year, and the most cost-effective way to install storage is on existing solar power plants

These factors, combined with a growing fleet of aging solar assets that need revitalization to continue operating, is causing owners to focus more of their deployable capital into operating assets.

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Reuse & Recycling

Giving solar equipment and materials a second life

Sarah Damaskos

Commercial Solar Panel Recycling

PLANNED LOSS VS “EARLY LOSS”

ROI / Repowering

Abandoned/ Not Maintained

Defective/ Damaged

Natural Disasters

Reroof/ Repair

COMMERCIAL SOLAR PANEL RECYCLING

RETIRED PANELS DOESN'T MEAN "WASTE"

COMMERCIAL SOLAR PANEL RECYCLING

WHAT CAN BE RECYCLED

MONOCRYSTALLINE / POLYCRYSTALLINE SOLAR PANELS

Glass

Cables

Junction Boxes

Aluminum Frames

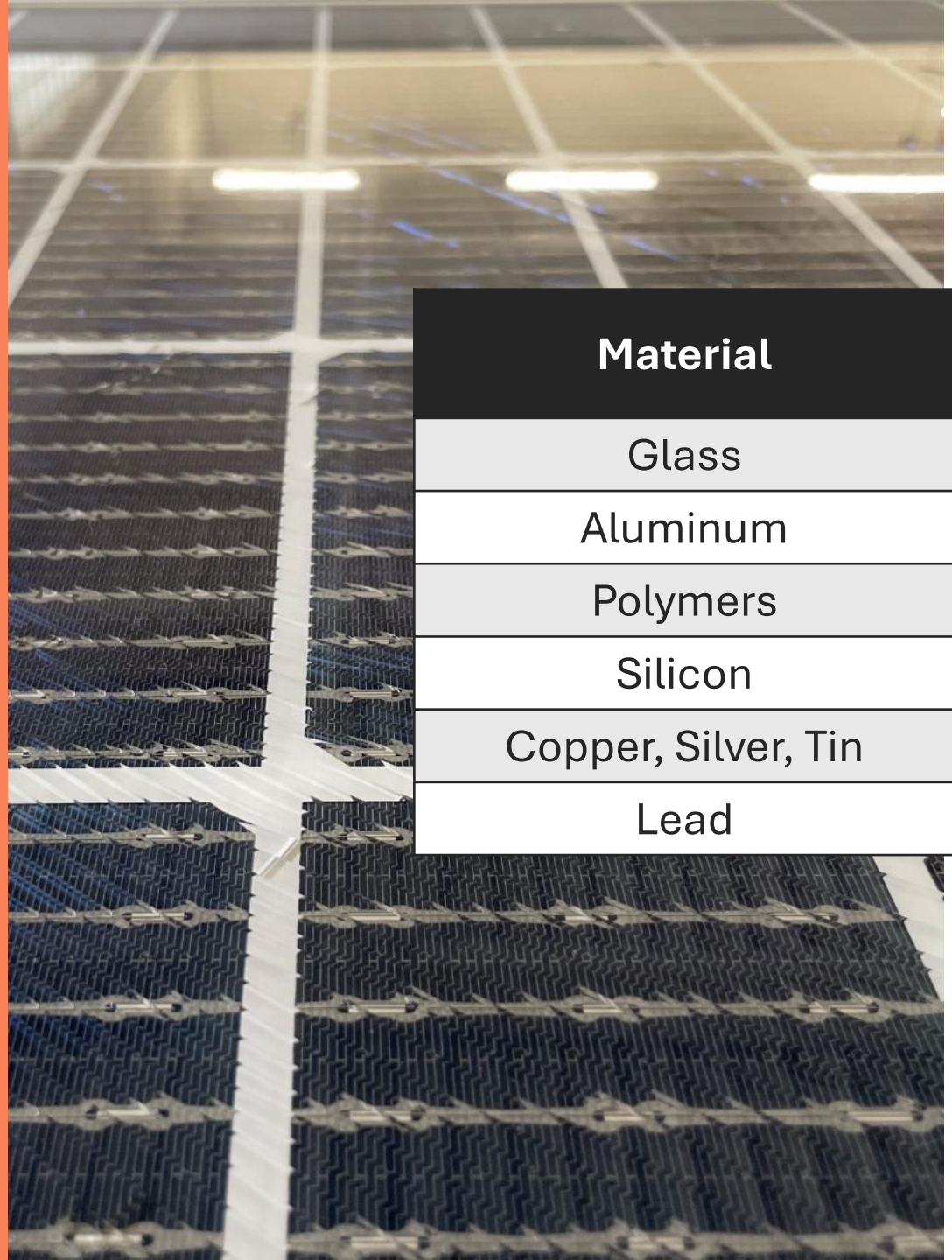
Silicon Layer

COMMERCIAL SOLAR PANEL RECYCLING

Crystalline PV FACTS (vs MISINFORMATION)

97%

MARKETSHARE



Material	Average composition
Glass	77%
Aluminum	10%
Polymers	9%
Silicon	3%
Copper, Silver, Tin	1%
Lead	0-.01%

Source: Mirletz, Heather, Hieslmair, Henry, Ovaitt, Silvana, Curtia, Taylor L, Barnes, Teresa M. (October 2023), *Unfounded concerns about photovoltaic module toxicity and waste are slowing decarbonization.* Nature Physics, Volume 19, Issue 10, pp. 1376-1378.

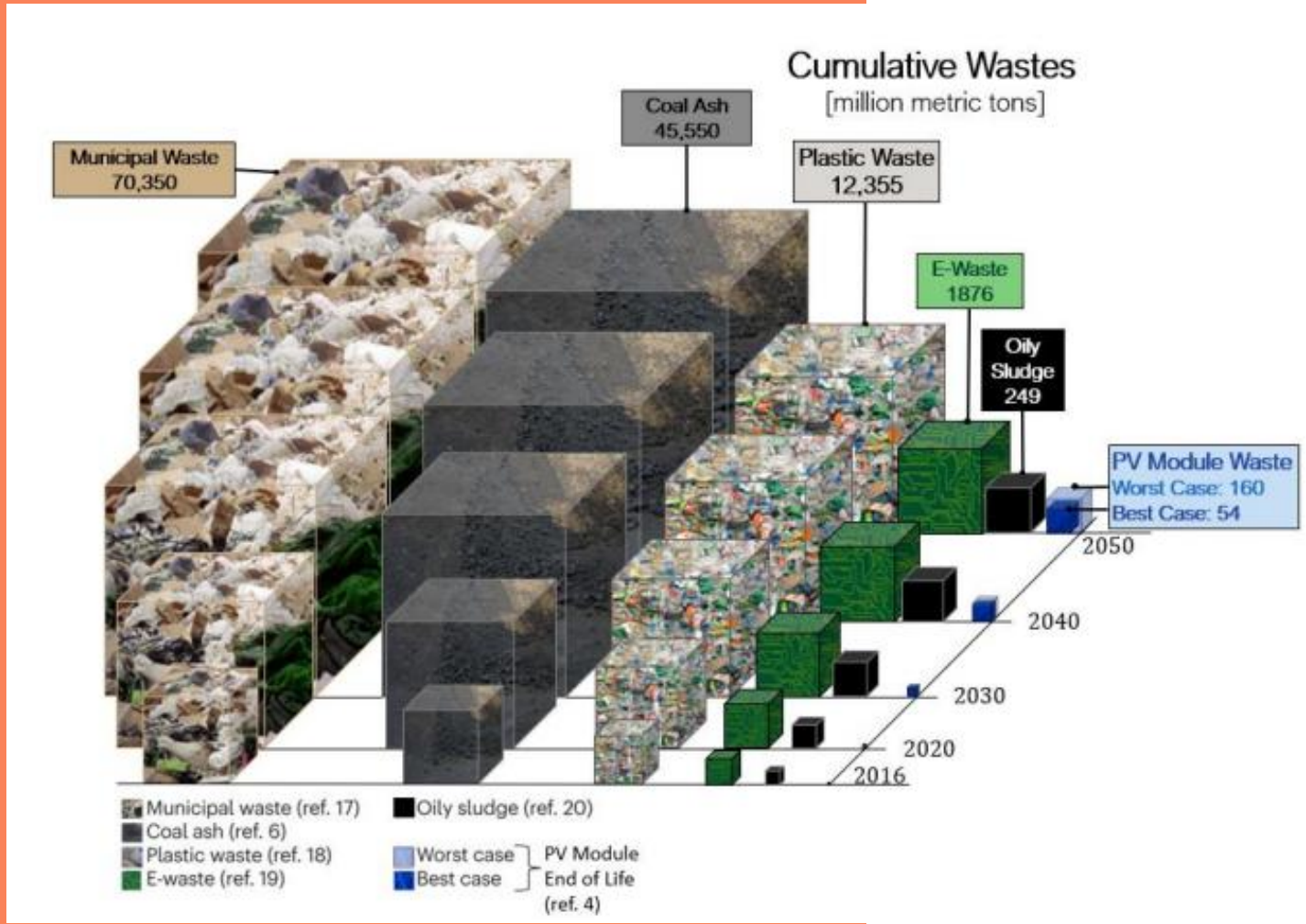
COMMERCIAL SOLAR PANEL RECYCLING

Waste FACTS (vs MISINFORMATION)

Municipal waste is 440 – 1,300 greater than PV module waste.

Cumulative PV module waste is dwarfed by the waste generated by fossil fuel energy.

"PV waste is well within our capabilities to manage responsibly."



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COMMERCIAL SOLAR PANEL RECYCLING

Epoxy/Resin Additive

Durable Pavers

Sandblasting Medium

YESTERDAY'S SOLAR GLASS – TODAY'S PRODUCT

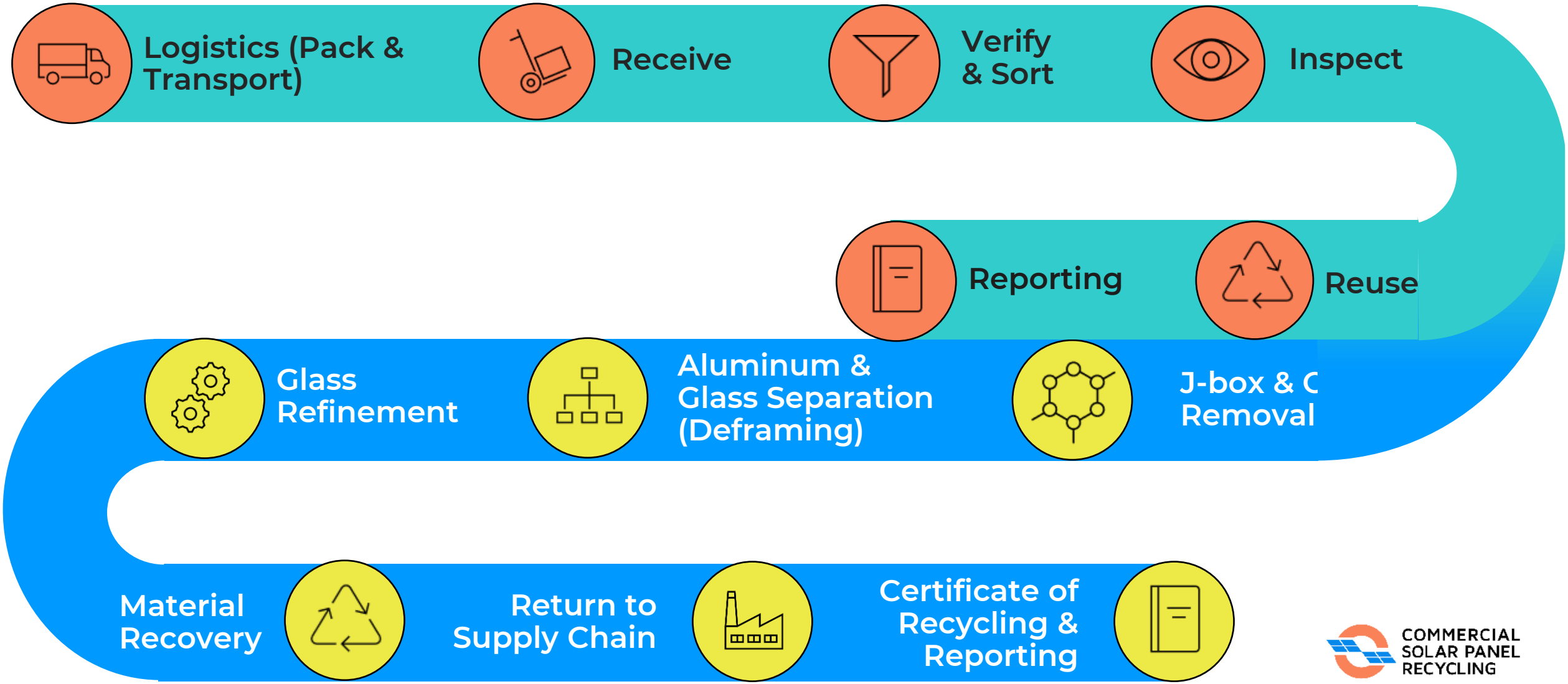
Concrete Additive

Fiberglass

Aggregate Additive

IN DEVELOPMENT

OUR RECYCLING PROCESS



COMMERCIAL SOLAR PANEL RECYCLING

WHO ARE THE STAKEHOLDERS?

We partner with public and private

MUNICIPAL/STATE organizations

SOLID WASTE entities

OWNERS/OPERATORS

E-WASTE/RECYCLERS

SOLAR INSTALLATION companies

INDUSTRY/TRADE organizations

ENGINEERING/LEGAL firms

DECOM/CONSTRUCTION companies

ROOFERS

MANUFACTURERS

WHAT DOES A PROGRAM LOOK LIKE?

Friction-free pathways to meet stakeholder needs

CSPR DROP OFF

TRANSFER STATIONS

MILK RUN PICKUPS

PARTNER NETWORK

LOCAL AGGREGATION

CONSOLIDATION

DIRECT REFERRAL

Gather solar panel data to forecast and develop evolving strategies, policy, and infrastructure: volume, source, location, brand, age, wattage, condition, reason for retirement, reuse vs recycle disposition, etc.

Decommissioning

Protecting communities without unnecessary cost

Steph Hoffman

Vermont Public Utility Commission

Background

- Statutes and rules concerning solar decommissioning
- Solar decommissioning in practice at the PUC

Commission's Current Financial Assurances Approach

Letters of Credit

Escrow Agreements

Surety Bonds

Challenges with Current System

- Administrative Constraints and Impossibility
- Substantial Noncompliance
- Liability and Uncertainty

Fund Model Basics

Up-front contribution

Managed by the Commission/State

Growth over time

Available regardless of delinquency

Covers Commission costs to administer

Accounts for overruns

AUDIENCE DISCUSSION

Questions?

Repowering • Reuse & Recycling • Decommissioning

SOLAR'S SECOND ACT

Thank you

Matt Murphy • Sarah Damaskos • Stephanie Hoffman

And thank you for joining us.

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