



**EnergyBin Insights**  
**Episode 12: R2 International Standards for**  
**Solar Panel Reuse & Recycling**  
**February 20<sup>th</sup>, 2024**

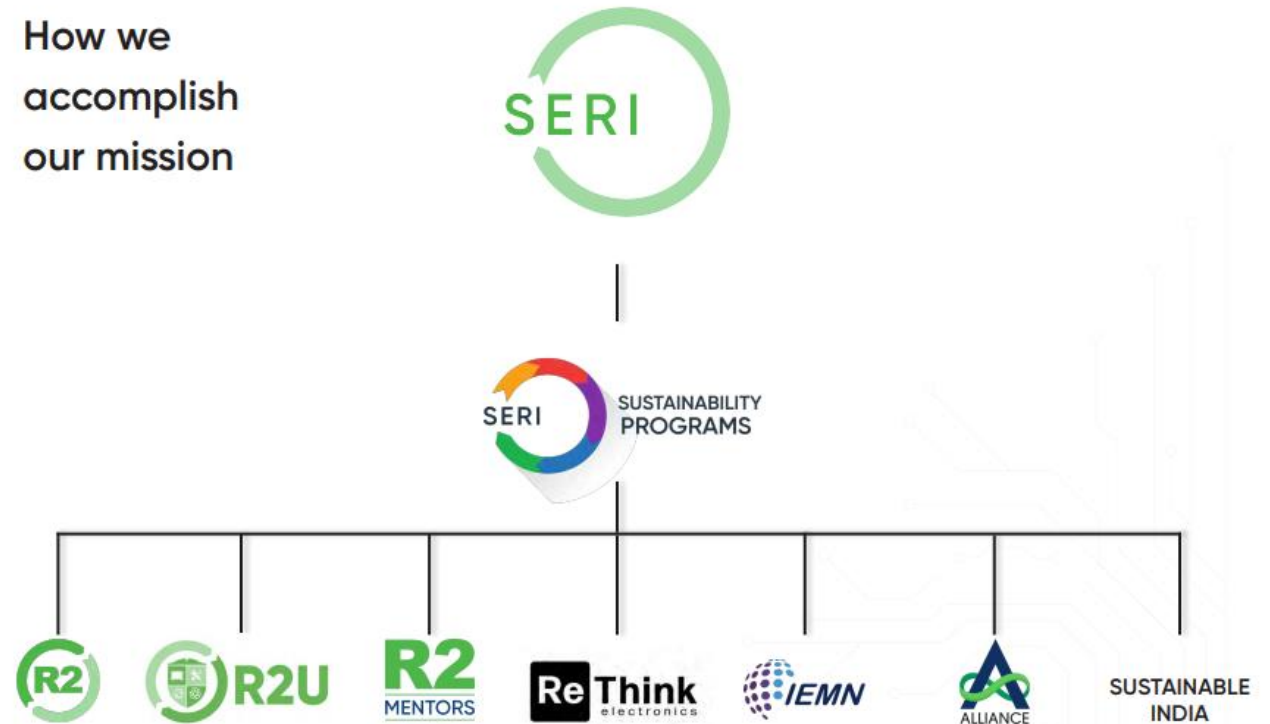
Champions of Electronics Sustainability



# OVERVIEW OF SERI AND THE R2 STANDARD

- SERI Purpose and Goals
- Other SERI programs

How we accomplish our mission



# OVERVIEW OF THE R2 STANDARD AND SERI

- R2 Standard Structure
- Core Requirements (ALL R2 Facilities)
- Process Requirements (Only those carrying out processes/activities covered by the Appendices)
- Addition of Appendix G

# THE R2 STANDARD CHANGE PROCESS

- ANSI Accredited
- ANSI process
  - 1) notify ANSI,
  - 2) Small group,
  - 3) TAC proposed changes,
  - 4) CB approve for public comment,
  - 5) Public Comment, (repeat steps where significant changes are made to draft standard)
  - 6) TAC review and address comments,
  - 7) CB approve for SERI Board,
  - 8) SERI board approve,
  - 9) Publish. (WE ARE HERE!)

# INCLUSION OF PV MODULES IN R2V3

- Why? History
- PV panel recommendation small group (Oct 2020-Mar 2021) -5 meetings –to determine if R2 would work with PV modules reuse/recycling
- TAC decides to adopt PV modules in the standard and add new TAC members from the PV Industry (May 2021)
- ANSI notification -6/23/21 –Project need notification.

# INCLUSION OF PV MODULES IN R2V3

- TAC member additions (added 9 in Oct 2021):
  - Ed Mopas, SunPower Corp -Customer
  - Jan Clyncke, PV Cycler -Customer
  - Ricky Sinha, First Solar -Customer
  - Evelyn Butler, SEIA –Public Interest
  - Ron Vance, EPA –Public Interest
  - Garvin Heath, NREL –Public Interest
  - Tommy McGuire, Echo Environmental –R2 Facility
  - Dwight Clark, We Recycle Solar –R2 Facility
  - Sam Vanderhoof, Recycle PV Solar –R2 Facility

# INCLUSION OF PV MODULES IN R2V3

- TAC –PV Drafting Small Group (Jan 2022-Mar 2023) Members, 12 meetings

Beverly Kennedy	GEC (Global Electronics Co	PubInterest
Bob McCarthy	Adams Cable	Recycler
Don Hennen	RLGA	Customer
Dwight Clark	We Recycler Solar	Recycler - PV
Edwin Mopas	SunPower Corp	Customer - PV
Evelyn Butler	Solar Energy Industry Asso	PubInterest - PV
Garvin Heath	Nat'l Renewable Energy La	PubInterest/Gov - PV
Jan Clyncke	PV Cycler	Customer - PV
Jay Illingworth	EPRA (Canada)	Customer
Kelley Keogh	GreenEye	PubInterest - Historic
Mike Watson	Global Resale	SERI Board Rep
(Patty) Patricia Whiting	Sims Lifecycle Solutions	Recycler
(Ricky) Parikhith Sinha	First Solar	Customer - PV
Sam Vanderhoof	Recycle PV Solar	Recycler - PV
Sarah Cade Kim	eReuse	PubInterest/expert - hist
Scott Marks	PA Recycling Markets Cent	PubInterest/State
Stacey DeSantis	NSF	PubInterest/CB
Tommy McGuire	Echo Environmental	Recycler - PV
William Dampier	Best Buy	Customer

# INCLUSION OF PV MODULES IN R2V3

- Overview of Appendix G and other changes:
- Appendix G
  - Make PV modules applicable to rest of R2
  - Process for evaluating hazards related to PV modules
  - Process for evaluating modules for reuse and recycling
  - Reuse and recycling and brokering requirements
- R2 Equipment Categorization
  - Categorization of Functional PV Modules –assigned to those that required repair vs. those that were functional when tested
- R2 Standard
  - Definitions –PV Modules and Solar Cells as a Focus Material



# INCLUSION OF PV MODULES IN R2V3

- Con Body approval, SERI Board approval, Publish
- Changes to the Code of Practices for time allotment to audit to Appendix G –CBs implement COP
- Auditor Training -May
- Guidance for R2 Facilities -soon
- Transition timeline -1/31/27



**Thank you!**

