Build a Circulate Solar Eco-System

The World's First Circular Solar

RePV
Renewable PV Alliance

RePV Tech, Inc.

A PV to PV, Renewable PV Technology

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RePV

RePV Tech: Circular Solar Total Solution

1. RePV：The World's First Circular Solar

2. How to Build a Circulate Solar Eco-System

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RePV：The World's First Circular Solar

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The rapid growth in global solar demand leads to millions tons of panel WASTE.

Source: BloombergNEF

Figure 1: Global PV installation estimate and forecast, as of January 2022

- Solar Panels usually last for 20-25 years, projects tend to replace with higher eff. panels for better returns.
- The **waste** from end-of-life solar panels leads to a serious **Global ISSUE**.

The Global Decommissioned PV Panels Market:

- In 2022, global solar installation reach 220GW/year
- In 2042
  - Est generate 11.7 million tons of PV waste
  - Disposal materials valued USD$ 33 billions/year
  - With RePV solution
    - Valued USD$ 17 billions/ year
    - Reduced at least 128 million tons of CO_2/ year

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RePV – A start-up transferred innovative tech from ITRI

"Contributing to ESG goals: zero-waste solar systems fulfill social responsibility and governance principles."

RePV Product & Service

1. Circular Solar Films/Panels
2. Solar Module Recycling Apparatus & Service
3. Solar System/Aesthetic Design and Construction
4. Low Carbon Material Supplier and Carbon Right Management

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循旭科技 Renewable PV Tech

- RePV Mission: Recirculate and reuse the retired PV modules.

RePV
Renewable PV Tech

- Date of Incorporation： 2023.05
- Capital： USD 5.6 Million
- Founder： Dr. Alex Peng
  (Former Executive Vice President & Director of Net-Zero Sustainability Strategy Office, ITRI)
- Location： Taiwan

- Innovation
- Renewable
- Sustainable
- Sharing

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RePV Team Member

Founder & Chairman

Dr. Alex Y.M. Peng

- Ph.D., & M.Sc., Material Science, Manchester University, UK
- Former Executive Vice President & Director of Net-Zero Sustainability Strategy Office, ITRI
- General Director, Material and Chemical Research Laboratories, ITRI
- President, Chinese Society for Management of Technology

Executive Advisor

Dr. Stan Shih(ITRI Laureate)

- Co-founder & Honorary Chairman, Acer Inc.
- Laureate, ITRI
- Founder and Chairman, StanShih Foundation
- Founder and Chairman, CT Ambi Inc.

Mr. Kevin Chang

Co-Founder & Vice President

- Semisils Applied Materials Co.Ltd silicon slurry recycle plant COO
- REI-PENG Technology Co. Ltd Solar Power Plant G.M.
- ATAN-GTECH Technology Co.Ltd USA TV/Monitor Repair Center V.P.
- WINTEK Technology Co.Ltd Director of Cell Phone Module Processing Department
- FORMOSA SUMCO Technology Co.Ltd semiconductor wafer technology transfer and construction specialist

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RePV Team Member

Prof. Martin Charter (FRSA)

Sr. Strategic Adviser

- Director of Center of Sustainable Design, UCA Co-founder, Sustainable Innovation Lab, SILAB
- Global chairman of ISO 14006 (Eco Design standard)
- Expert committee of World Resource Forum
- Member, International advisory board of CARE green electronics network

Ms. Ichin Cheng (FRSA)

Co-Founder & Sr. Strategic Adviser

- Fellows, Royal Society of Arts Director and Co-Founder, Sustainable Innovation Lab(SILAB)
- Technical Advisor of UK Foreign Commonwealth and Development Office (FCDO)/UNCTAD SMEP program
- Formal advisory board member of EU Horizon 2020 'Leadership in Enabling and Industrial Technology

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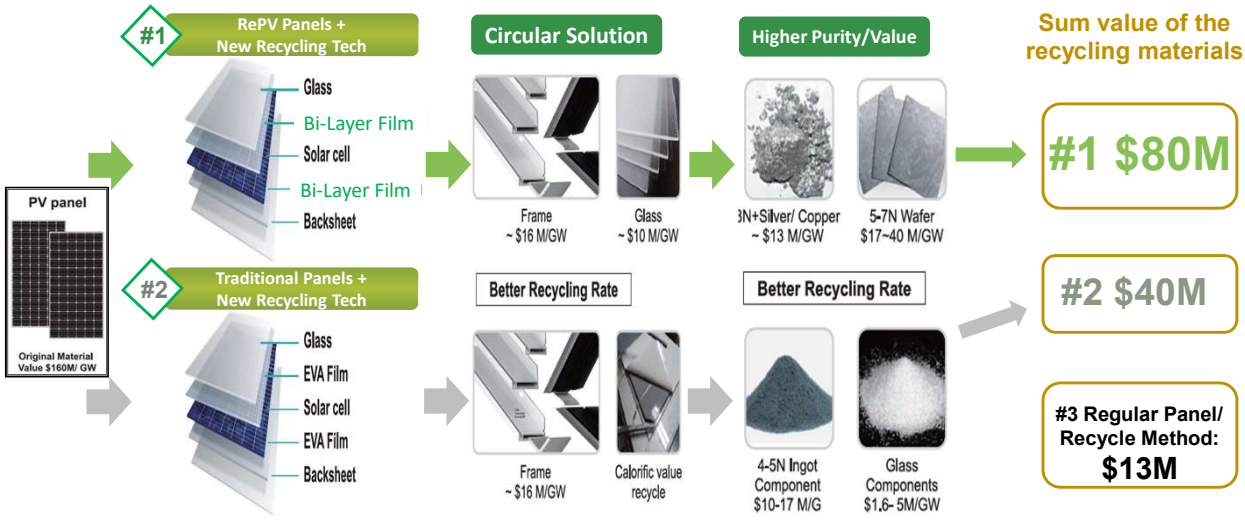
RePV Circular Solar Technology

- Redesign Bi-Layer Film, implement Easy-to-Disassemble PV module
- Boost up the value of recycled components, re-use higher purity and greener components



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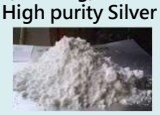
Economy and Carbon Reduction value per GW

Currency : USD

Commercial Method: Crushing/ Shattering

Module	Current Module		RePV Module	
Material	Commercial Method*	RePV Recycle Apparatus		Note
Aluminum	12M ($2/kg)	12M ($2/kg)	12M ($2/kg)	
Glass	0.2M (<$0.01/kg) Shattered Glass 	8.9M ($0.23/kg) Full Glass Plate 	8.9M ($0.23/kg) Full Glass Plate 	Shattered glass contains plastic and metal welding ribbons by crushing method.
Silicon	0.45M ($0.02/kg) Silicon Fragment 	7M ($4.13/kg) Poly Silicon, 5N 	43M ($25.6/kg) Silicon Wafer, 7N 	Silicon Fragment contains glass, plastic, and metal welding ribbons by crushing method.
Silver	0.38M ($0.095/kg) Silver Power 	6.4M ($483/kg) Silver Compound 	10M ($636/kg) High purity Silver 	Silver value depends on recycling rate and purity.
Ribbon	Mixed in fragments	0.95M ($5.6/kg)	0.95M ($5.6/kg)	Tinned copper strip
Total Value	Est. 13M (CO_2 ⇩ 0.7%)	Est. 40M (CO_2 ⇩ 40%)	Est. 80M (CO_2 ⇩ 60%)	

*The calculation is based on Japan's NEDOPV Recycling Research Plan (2016) and Ichikawa Environmental Engineering Company's report data.

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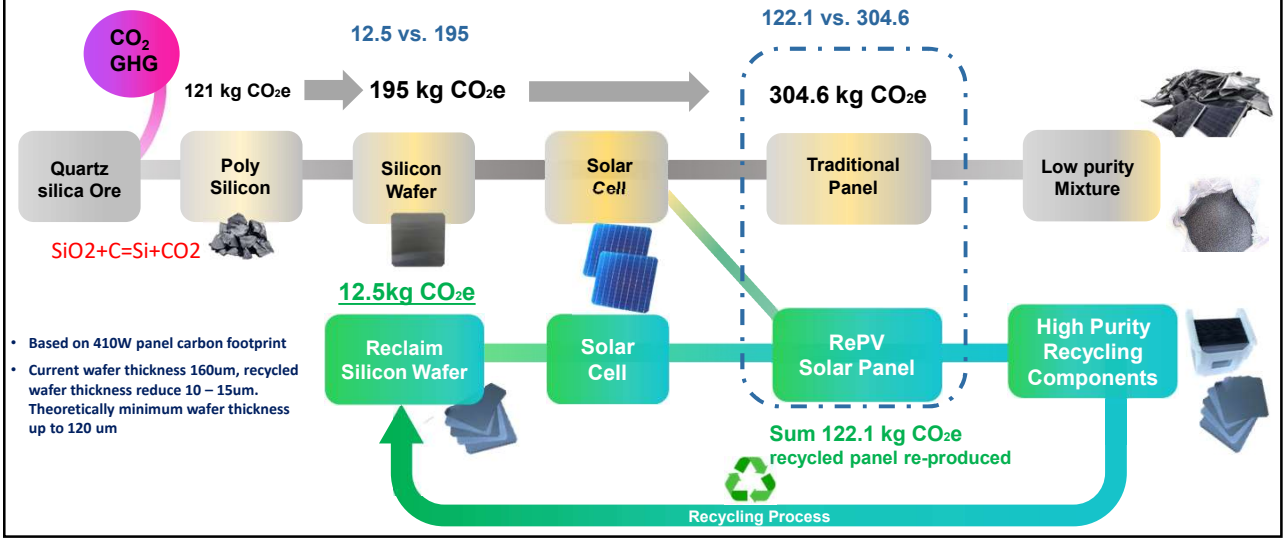
Carbon Footprint Trend

Only 12.5kg CO_2 emission per module to get the reclaim silicon wafer.
Reclaimed vs. Original silicon wafer : 6.4 % carbon footprints (12.5kg /195kg)



- Based on 410W panel carbon footprint
- Current wafer thickness 160um, recycled wafer thickness reduce 10 – 15um. Theoretically minimum wafer thickness up to 120 um

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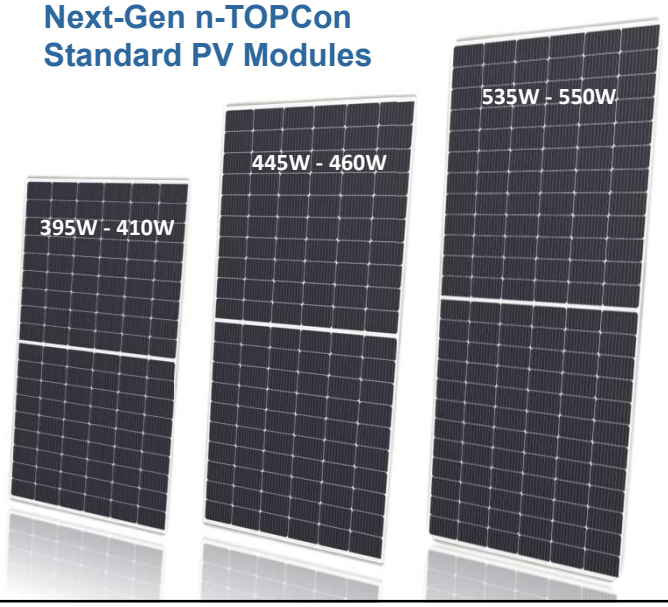
Taiwan Design | Taiwan & Global Mfg.

Easy Disassembly Encapsulant

1. Flexible mfg. and shipment origin per customer's location and tariff reqs.
2. Flexible size and capacity modules per deployment reqs.

Next-Gen n-TOPCon Standard PV Modules



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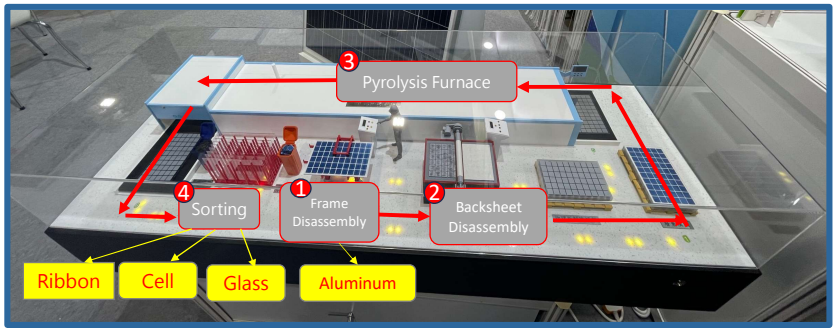
Circular solar panels recycle apparatus and factory planning

- Build-up intelligent-automatic recycling production line.
- Set-up factories with excellent local recyclers, and sell apparatus globally.

First Generation
- Batch process(11 panels)
- Airflow control design
- Upgrade energy saving

Second Generation

- Develop intelligent-automatic recycling production line, and expand global market and patent layout. (2024~2025)



✓ Continuous process
✓ Exhaust gas treatment
✓ Patented Temperature Control design

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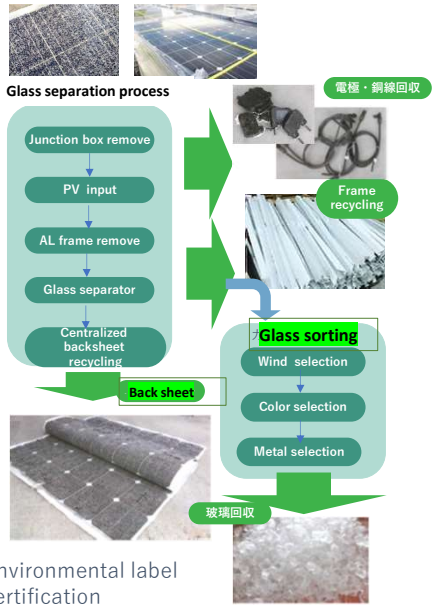
Equipment for recycling solar modules

mechanical processing , no heat ,no chemical

Equipment advantages

1) High degree of automation (OPx2 /line)
2) Production line surface (W9.5mxL12mxH3.6m)
3) Low power consumption ~60kw
4) Large production capacity (1min/pcs)
5) 100% recycled low-carbon materials (ECO MARK)

World Green Procurement GPN Supply Chain



Environmental label certification
『ECO CRYSTAL』

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How to Build a Circulate Solar Eco-System

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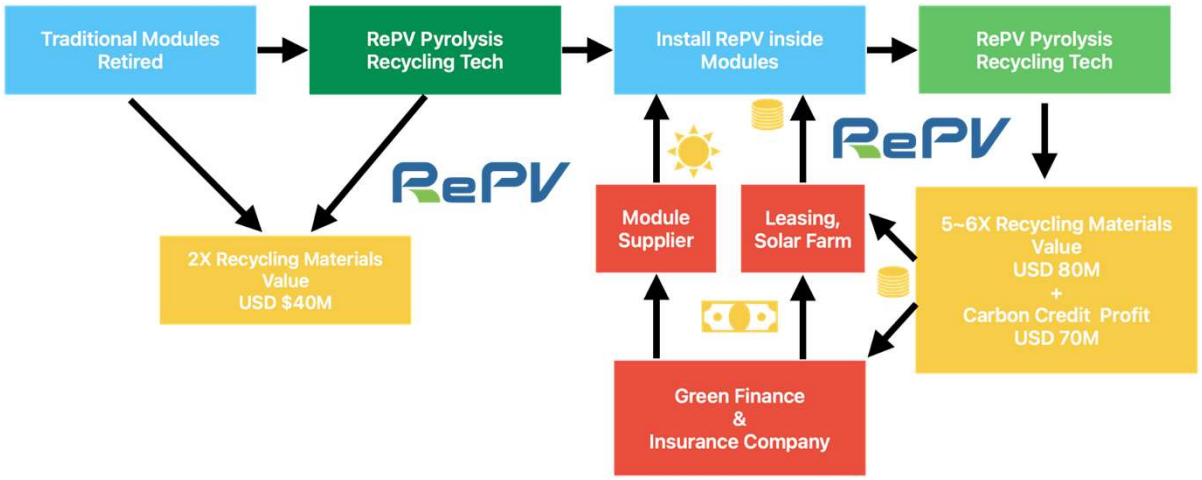
RePV Strategic Partners & Ecosystem

- Innovation、Renewable 、Sustainable 、Sharing



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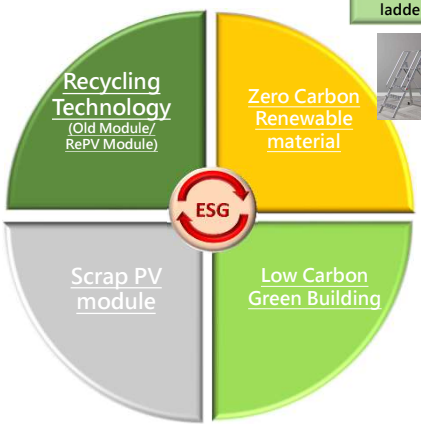
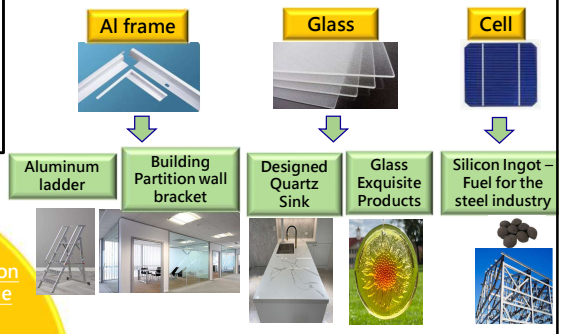
Recirculate and reuse the retired PV materials to make low carbon Green Building

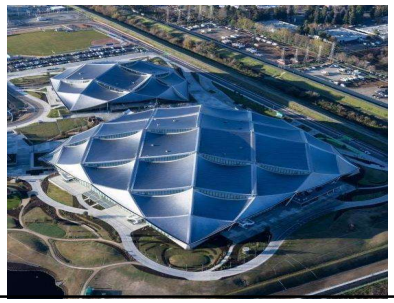
RePV Renewable PV Alliance

Total solution for alternation of retired old and new PV

Key Partners
1. Recyclers
2. Regional master distributors
3. EPC
4. Solar farms
5. Module manufacturers
6. Green finance investors.







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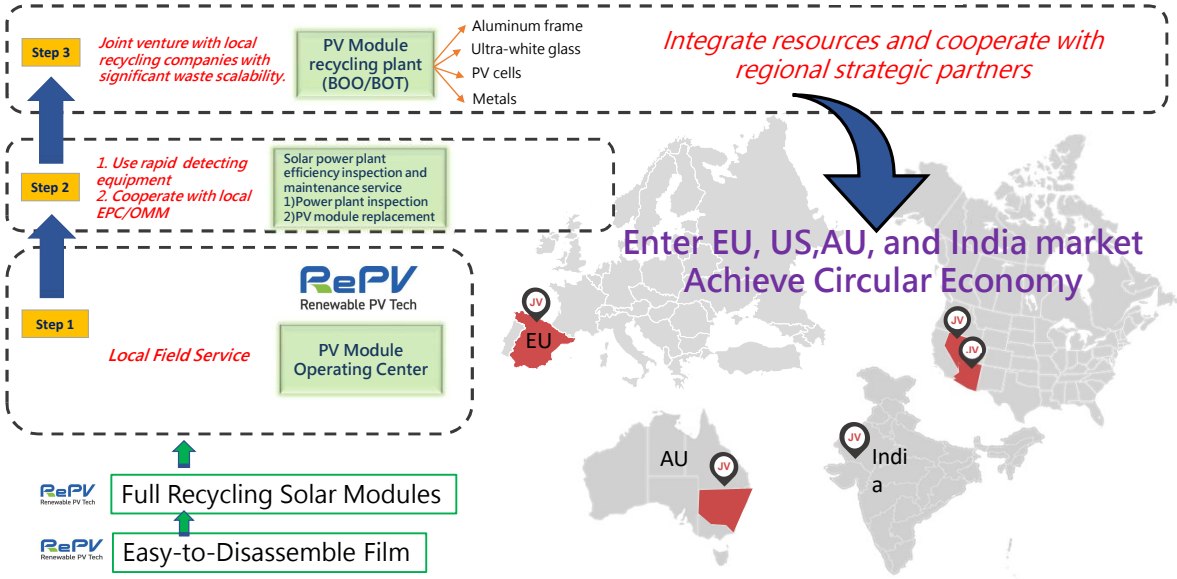
Global Solar Circular Economy Market Strategy



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Global Cooperation & Market Expansion

- **RePV** will provide full circular solar system to Porrima Zero-Emission **Hydrogen** ship.

- Porrima is the world's first ship to travel around the globe with **solar power solely**.
- **Made-In-Taiwan** zero-emission and eco-friendly ship.
- Sailing to **G20 in 2024**(Rio De Janeiro) and **the World Expo in 2025**(Osaka).

Integrated innovative renewable energy tech, and realize the low-carbon future.

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No waste, only misplaced resources

Return clean land to the next generation and join hands to create a circular economy

THANK YOU

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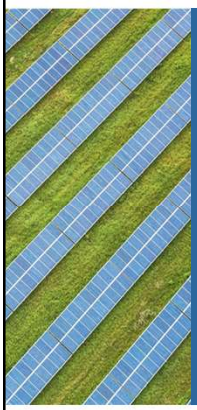

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