EtaVolt

Dr Stanley Wang

CEO & Co-Founder

ETAVOLT Management Team

Dr Stanley Wang
Co-Founder
Chief Executive Officer

- **15 yrs in solar research, manufacturing & tech transfer**
- PI EDB-SCRP & Programme Director ERI@N, NTU
- **7 years with REC Solar Singapore** with managerial role
- UNSW PhD, Photovoltaic Eng.

Dr Andy So
Co-Founder
Chief Technology Officer

- **15 yrs in solar research & industry**, BIPV and automotive production process (BOSCH)
- **7 years with Bosch Singapore** with managerial role
- Certified PM & Agile Master; Start-up & innovation mgt.
- UNSW PhD, Photovoltaic Eng.

Dr Gordon Ling
Co-Founder
Head of Engineering

- **>10 yrs in solar renewable energy R&D**
- PV process, manufacturing & product development expert; Quality control mgt.
- **REC Solar Singapore, leading role**
- NUS (SERIS) PhD, Electrical and Computer Eng

Solar PV for our sustainable world, but in reality…

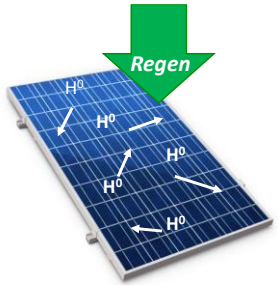
	Today	2030	2050
PV Installations	700GW	1,600 GW	4,500 GW
PV Waste	250k Tonnes	8M Tonnes	78M Tonnes

Unprecedented environmental problem & creating serious challenges

Delivering a TRUE circular PV economy by Etavolt

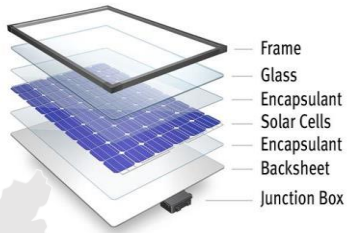
PV Regeneration Solution

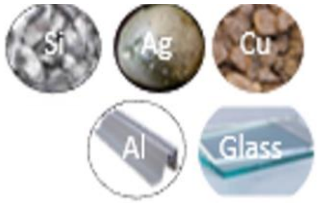
Onsite PV performance recovery and degradation protection

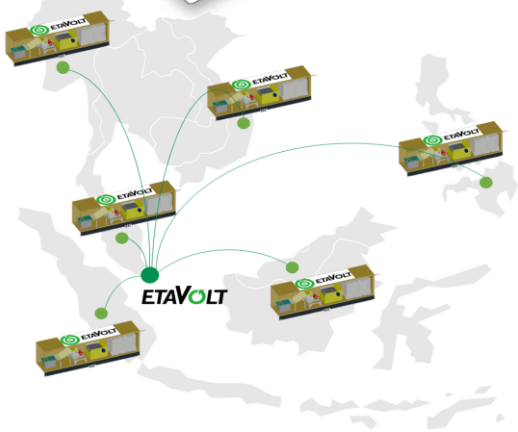


Advanced PV Recycling

Component deconstruction, reutilization and closing the loop of the sustainability cycle

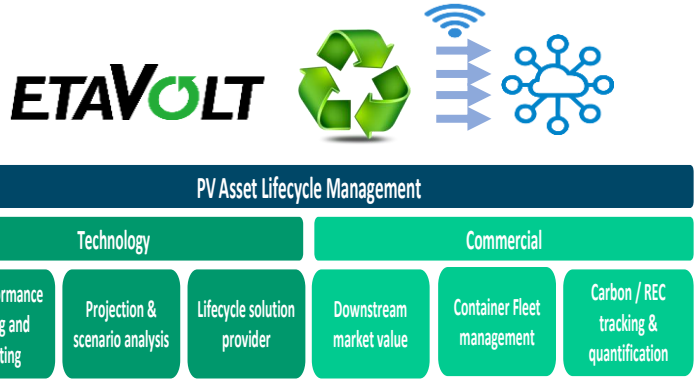






Digitalized PV Lifecycle Management

Advanced IoT implementation for economic value enhancements



Envision digital

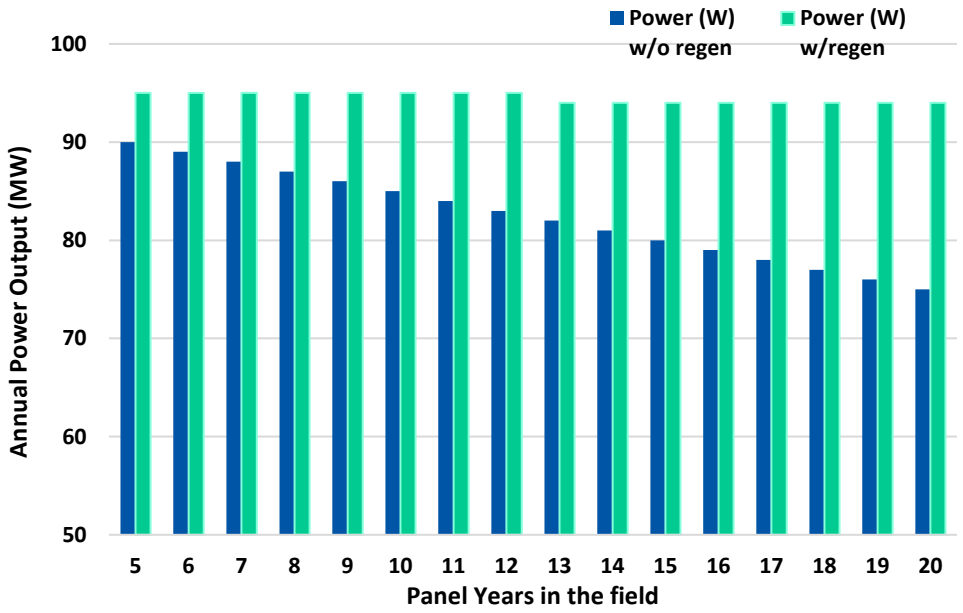
Advanced Regeneration Testbed

Monitored performance results (Kedah Malaysia)

PV Cells → Regeneration → PV Modules → **PV systems** → Real time monitoring → Performance comparison

Customer Prefer EtaVolt's Regeneration Solution

Case Study: Degraded Panels vs Regen Solution (100MW Solar Farm)



*Solar arrays - modules with and without the advanced regeneration technology are installed on a commercial building rooftop in **Kedah, Malaysia.***

Key benefits of regenerated solar arrays

- Higher initial performance & power
- Long term stability
- More power over existing installed areas (+8%)

	Reference	Regenerated
Initial month (kW)	25.0	26.6
Average power over first 12 months (kW)	24.3	27.0
Relative change to reference array (%)	-2.8	**+8.0**

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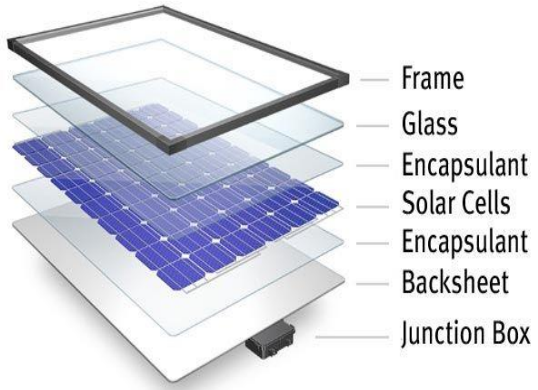
Delivering a TRUE circular PV economy

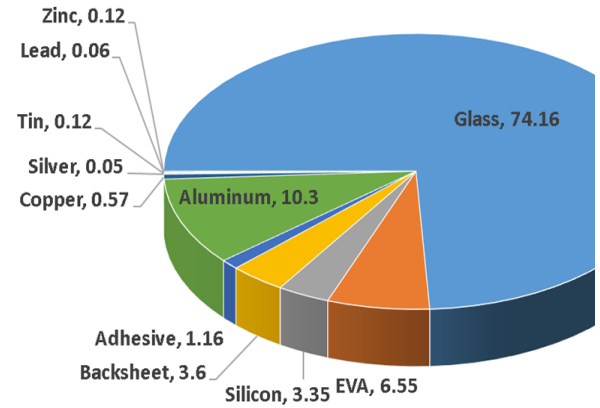
Raw materials → Solar cells → Solar modules → Solar systems → Recycling

Status: Completed
Location: KTPH, SG
Qty: 500 panels
Type: Mono-Si
Module power : 160W
Usage years: 6

Khoo Teck Puat Hospital
National Healthcare Group



Composition Percentage (%)



Market potential

- Exponential increasing PV waste[1]
- Turning recycled materials into raw materials (~multiB$ market)
- Highly scalable business

[1] IRENA, Renewable Capacity Statistics, Mar 2021; [2] IRENA, IEA-PVPS, End-of-life Management: Solar Photovoltaic Panels, 2016

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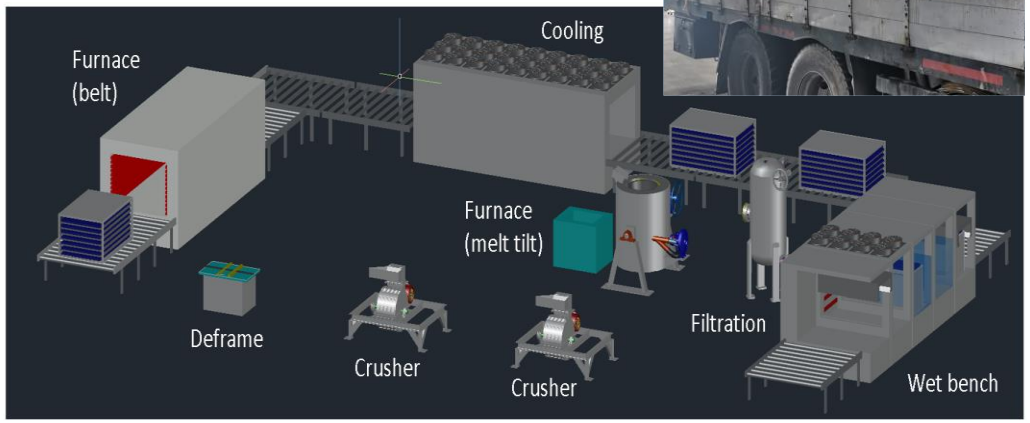
PV Recycling

Deployments

01

Full Scale PV Recycling plant

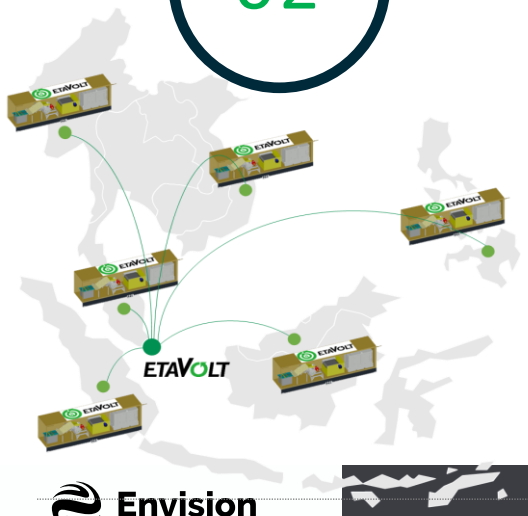
Integrated PV recycling at a single site
Advanced material recovery (target >95%)
High TRL levels with in-house IP
Strong market demand (SG, MY, TH)

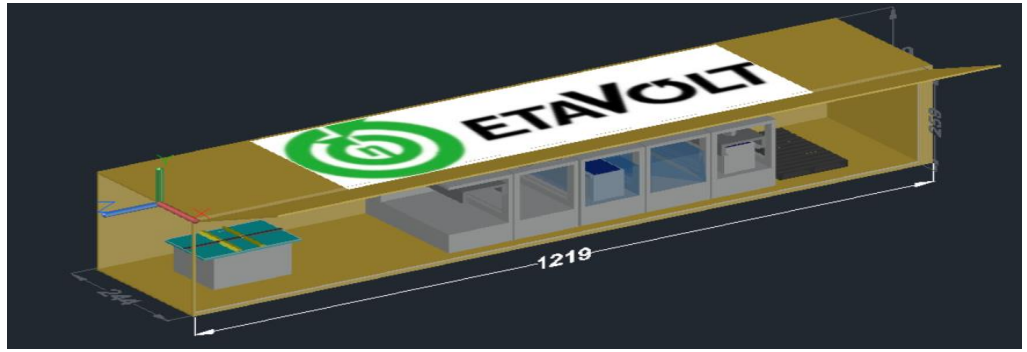


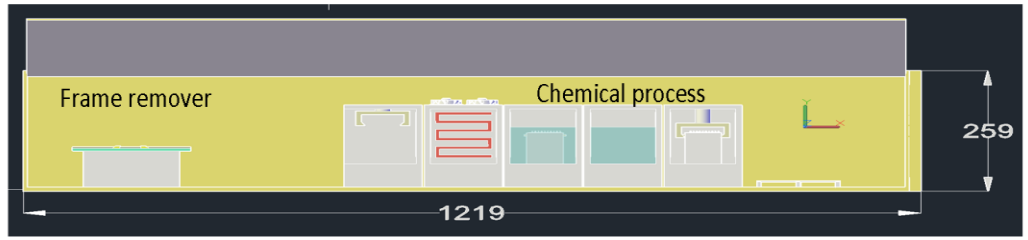
02

Decentralized Outdoor PV Recycling solution

Recycling tools within 40GP container
Achieves on-site PV recycling
Reduces logistics and manpower costs
Complements the in factory regeneration









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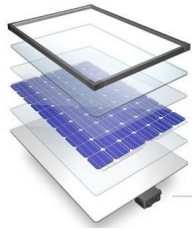
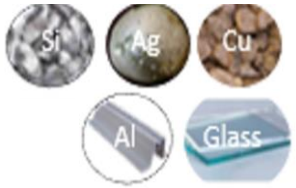
Delivering Digitalized Circular PV economy



PV Asset Lifecycle Management

Technology

- Asset performance modelling and forecasting
- Projection & scenario analysis
- Lifecycle solution provider

Commercial

- Downstream market value
- Container Fleet management
- Carbon / REC tracking & quantification

Expected Benefits to Singapore

- Delivers an integrated digitalized circular PV lifecycle management solution
- Maximize performance & commercial values of PV assets
- Tech, Commercial and Environmental impacts, maximize energy & lifespan extension
- Providing actionable insights to enhance PV development & ownership
- Maximize raw material recovery for PV systems & reduce carbon emissions
- Highly Scalable Business model in Singapore and beyond, compliment SolarNova program

Track Record

ETAVOLT

Enabling Sustainable Solar Energy Business through Advanced Regeneration & Recycling Technology

IP status: 4 filing in progress*; 2 in preparation
Publication status: 2 journals & 1 white paper

** Including 1 NTU exclusive IP license*

Spin-off from ERIAN NTU in 2019 (Nov), seed fund raised & received various grant funding (ESG Startup Founder, SGTECH POC, Market Readiness Assistance) total:

$830k in Funding*

** Not incl. EDB solar CRP01-021 grant $1.4M*

Since 2020 for solar recycling business with leading e-waste recycler Recycling in Singapore, successfully handled:

>1.5k Solar Panels*

** $15k revenue amount to-date*

Etavolt technology to address

the **144GW** degraded solar farm panels

and recover **US7.2B** solar energy economical losses due to degraded panels

Partnerships & Customers **12+** MOU and LOI signed

Connect with EtaVolt