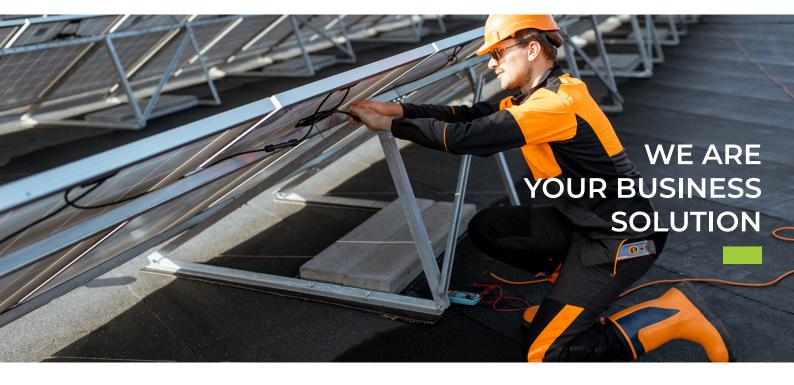
# RESPONSIBLE MANAGEMENT

# FOR END-OF-LIFE PV PANELS







# **TECHNOLOGY**

SRC's clean technology recovers 99+% material from all types of end-of-life solar panels. The technology uses computerised mechanical and electronic systems for the recovery process without the use of thermal, chemical or pyrolysis, resulting in high quality recovered materials instantly ready for use in circular economy industry sectors.



# COMPLIANCE

SRC will issue a Certificate of Recovery for end-oflife (EOL) solar panels surrendered to our facilities that aligns with the European WEEE Directive and Environment Protection Authority (EPA) Victoria guidelines, which mandate how EOL solar panels must be managed to protect the environment and human health.



# **LEGISLATION**

Governments across Australia recognise that a responsible management process is required for EOL solar panels. EOL solar panels are classified as a hazardous waste stream. The Victorian State Government, through its Environmental Protection Agency (EPA Vic), on 01 July 2021 introduced into law a new Environmental Protection Act 2017 and Subordinate Legislation. Other States across Australia are currently reviewing and are likely to introduce similar regulations to Victoria over the next 2 years.



# **ABOUT US**

Solar Recovery Corporation (SRC) is committed to diverting all end-of-life solar PV panels from landfill streams, to the recovery of all the materials for use in new applications to create new local jobs in new industries. This will also deliver positive outcomes for our environment, sustainability practice and human health.



# CONTACT



**HEAD OFFICE** 

117/566 St Kilda Road, Melbourne 3004



PHONE 03 7016 1640



EMAIL

solution@srcorp.com.au



WEBSITE

www.srcorp.com.au























# DISRUPTING LINEAR ECONOMY MODEL; TRANSITIONING TO CIRCULAR ECONOMY MODEL;

#### DIVERT ALL EOL SOLAR PANELS FROM LANDFILL.

Solar Recovery Corporation (SRC) provides a breakthrough in circular economy focussed, materials recovery capability in Australia. We are committed to establishing infrastructure capable of diverting all types of photovoltaic solar panels that have reached end-of-life (EOL) from landfill and recovering the maximum volume of the valuable material in them for use in other applications and industries. We will be a key contributor to the renewable energy sector, supporting emissions reduction, sustainability and resource recovery efforts. We are setting benchmark standards for product stewardship, policies and procedures in the context of other rapidly evolving industries in the circular economy. SRC provides social, environmental and economic benefits for Australia.

### ESG: SRC's primary focus

ESG (Environmental, Social, Governance) is now an essential component in every corporate strategy from a risk mitigation and opportunity optimization standpoint. ESG provides enormous challenges and opportunities. For twenty-five years, sustainability has been measured by the social, environmental, and economic '<u>Triple Bottom Line</u>'. Today companies are expected to be accountable in all operations, tying sustainability to financial performance. Without ESG, performance and reporting brand risk at all levels is substantial.

Renewable energy generation in Australia will play an essential role in mitigating global warming through decarbonisation and electrification of the energy sector. Resource recovery will play another important role in reducing energy demand and through the ethical management of valuable minerals, redirecting them back into manufacturing streams. This circular system minimises the impact of waste in our environment and reduces CO2 emissions.

SRC's materials recovery technology ensures maximum recovery of all the materials in photovoltaic panels of all types. Coupled with high product stewardship standards and reporting, our process facilitates superior ESG outcomes for the solar industry.

# Keeping precious materials in Australia

United Nations Sustainable Development Goal 12, to ensure sustainable consumption and production patterns establishes a clear objective for the renewable energy sector. <u>Indicator 12.4</u> provides a target for the 'sound management' of all wastes throughout their life cycle; according to international frameworks; minimizing environmental and human impacts, by 2020. This goal does not specifically refer to circularity principles, however, the circular economy is linked through several <u>SDGs</u>.

A circular economy approach to the management of end-of-life solar panels is paramount, to avoid landfill and groundwater contamination but equally importantly to retain and utilise valuable materials that will contribute to material availability for the renewable energy manufacturing industry sector. Instead of importing costly materials for photovoltaic manufacture, there is an opportunity to utilise already imported metals from end-of-life solar panels for remanufacture into new panels at a lower cost with fewer emissions.

# World Leading Technology

SRC technology has been purposely built to process 230,000 EOL solar panels per annum, which equates to approximately 4,600 metric tonnes of recovered material, helping to reduce the use of virgin resources and the production of CO2 emissions.

We support the technology with an internationally compliant management system to support a more sustainable future for the renewable energy sector. There are now many solar panels approaching their end-of-life, and there are many that have a shortened useful life for a range of reasons. We must all play a part in ensuring valuable resources are directed away from landfill and materials recovered for reuse in local Australian industries.



# SRC CIRCULAR ECONOMY OPERATING MODEL





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# **DROP OFF PROCESS**



# BOOK YOUR DROP OFF ONLINE

To comply with all legal and regulatory requirements, SRC has launched a drop off portal in order to record the flow of end-of-life solar PV panels from the business site, to a lawful place for processing and the destination for recovered materials. The portal is also a part of our management system.

Instructions can be found on page 7

The portal can be accessed at: https://www.srcorp.com.au/dropoff-form



# DROP OFF YOUR SOLAR PANELS

After booking your drop off on SRC portal, you can now organize transport to the previously selected location. A QR code will be sent by email and must be presented to our staff when dropping off the solar panels.

Packing and sorting instructions can be found on page 5.

Our current locations are listed on our website: www.srcorp.com.au/ and our drop off portal: https://srcorp-drop-off-portal. com/



# RECEIVE YOUR CERTIFICATES

After dropping your solar panels, you'll receive a certificate of delivery acknowledging your drop off and stipulating the quantity and types of panels.

When all the materials are recovered and recycled back into the manufacturing stream you'll be receiving a certificate of recovery.

Both of those certificates are part of SRC management system and can be used in your environmental management plan.

More information can be found on page 8

# **TYPES OF SOLAR PV PANELS**



SRC Recovery Centres use patented world leading technology to fully recover raw materials from ALL TYPES OF SOLAR PV PANELS



MONO, POLY, THIN FILM & CADMIUM TE



CRACKED OR DAMAGED



**SOILED** 







### Polycrystalline Silicon Panel

Hard to determine individual cells. Looks uniform. Most commonly available PV Panel. Aluminum frame.

# Monocrystalline silicon panel

Back sheet seen at corners of cells. Looks spotty. Aluminum frame.

# Amorphous Silicon Panel or "Thin Film"

Very uniform appearance. May or may not have grid lines. May be flexible.

The following materials can be found in thin film Amorphous solar PV panels: Silicon (a-Si), cadmium telulide (CdTe), copper, indium, gallum and selenium ( Gts / CIGS ).

# PV PANELS PACKING & STORING INSTRUCTIONS

Solar PV panels must be packed as per below to ensure safe transport and efficient storing.





Panels to be placed on pallets

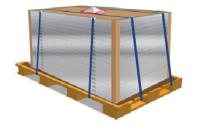




Stack up to 25 number per pallet for framed panels

Stack up to 40 number per pallet for frameless panels





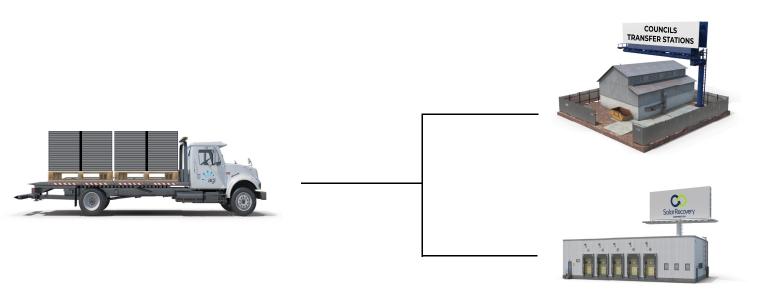
Panels to be strapped on pallet

#### **TRANSPORT**



SRC do not currently offer a collection service, customers must organise their own transport to the closest SRC drop off location. An up to date list can be found on our website <a href="https://www.srcorp.com.au">www.srcorp.com.au</a>.

SRC will roll-out national facilities to accept and process EOL solar panels. SRC will also provide existing infrastructure by working closely with all stakeholders, the drop off sites will include council depots, transfer stations, reverse logistics with our wholesale and retail partners. This provides multiple accessible sites for our customers.



# **LOCATIONS**

#### **VICTORIA**

#### MELBOURNE HEAD OFFICE

566 St Kilda Road, Melbourne, VIC 3004 Monday–Friday 8am–5pm

#### **BENDIGO**

7 Fitt Court, East Bendigo, VIC 3550 Monday–Thursday. 7.30 am–3pm Friday 7.30 am–12pm Site contact: Rob - 0467542366

#### **TOTTENHAM**

12 Quarry Rd, Tottenham VIC 3012 Monday–Friday. 7.30 am–3.30pm Site contact: Charlotte - 0409070425

LA TROBE VALLEY Coming soon

# **QUEENSLAND**

#### **TOWNSVILLE**

74 Shaw Rd, Shaw, QLD 4818 Monday–Friday 7.30am–3.30pm Site contact: Jacob - 0404262111

#### BILEOLA

1 Dawson Highway, Biloela, QLD 4715 Monday–Friday 8am–4pm Site contact : Jacob - 0404262111

#### **BRISBANE**

Warehouse 4a/6 Osprey Dr Port of Brisbane QLD 4178 Monday–Friday. 7.30 am–3.30pm Site contact: Gee - 0436330090

**SOUTH EAST QUEENSLAND** Coming soon

#### **NEW SOUTH WALES**

#### **SYDNEY**

14 Epic Place, Villawood NSW 2163 Monday–Friday. 7.30 am–3.30pm Site contact : John - 0422348962

# **PARKS**

Coming soon

### **HUNTER VALLEY**

Coming soon

#### **SOUTH AUSTRALIA**

Operating 4th Quarter 2022

#### **WESTERN AUSTRALIA**

Operating 4th Quarter 2022

### **NORTHERN TERRITORY**

Operating July 2023

# **NEW ZEALAND**

Operating January 2024

#### **DROP OFF FORM**



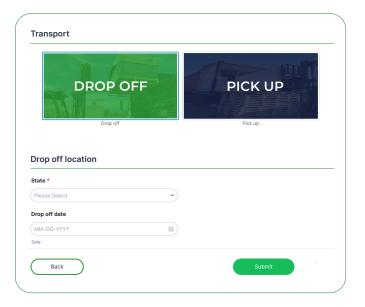
There is a requirement for a chain of custody record for reporting the flow of end-of-life Solar PV Panels from the business site, to a lawful place for processing and the destination for recovered materials. SRC has launched a drop off form to comply with all legal and regulatory requirements, present and future.

The portal can be accessed with any devices using the following link: https://www.srcorp.com.au/drop-off-form

Company Name *		
Company name (if applicable) +/or Customer name		
ABN		
f applicable		
Company Address *		
Street Address		
Street Address Line 2		
City		
Postal / Zip Code		
State		
Please Select		
riease Select		Next
Quantity  1  Polycrystalline		
Quantity		
Quantity		
Quantity  1  Thin-film Quantity		
Quantity  1  Thin-film Quantity  1  Cadmium te Quantity		
Quantity  1  Thin-film  Quantity  1  Cadmium te  Quantity  1		
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Quantity 1 Thin-film Quantity 1 Cadmium te Quantity 1 Types	Browse Files Drag and drop files here	
Quantity 1 Thin-film Quantity 1 Quantity 1 Types  PV Panel Datasheet(s)	Browse Files Drag and drop files here	
Quantity 1 Thin-film Quantity 1 Cadmium te Quantity 1 Types	Browse Files Drag and drop files here	
Quantity  1  Thin-film Quantity  1  Cadmium te Quantity  1  Do you require panel serial numbers to be l	Browse Files Drag and drop files here listed on your certificates?	ation, sub-contractors)
Quantity 1  Thin-film Quantity 1  Cadmium te Quantity 1  Types  PV Panel Datasheet(s)  Do you require panel serial numbers to be I YES NO	Browse Files Drag and drop files here listed on your certificates?	ation, sub-contractors)

#### **PROCESS**

- 1. Navigate to the drop-off form located at <a href="https://www.srcorp.com.au/drop-off-form.">https://www.srcorp.com.au/drop-off-form.</a>
- 2. Start by filling in the required fields, indicated by an asterisk (\*). These include your business name, ABN, address, phone number, and the name of the contact person for your business.
- 3. Press the "Next" button
- 4. Specify the type and quantity of panels you will be dropping off.
- 5. If possible, upload PV Panel Datasheet(s).
- 6. If serial numbers need to be listed on your certificates, select "YES" and provide the list in the designated field.
- 7. If any other information needs to be listed on your certificate, select "YES" and provide the required information in the designated field.
- 8. Press the "Next" button
- 9. Choose your preferred transport method.
- 10. For drop-offs, choose the closest location and indicate your preferred drop-off date. For pick-ups, fill out the address, phone, and date fields.
- 11. Press the "Submit" button.



#### DROP OFF FEE



Decomissioned solar PV panels are removed from a household, commercial rooftop or solar farm. All solar panels removed are scanned and entered into our database to ensure they make it to the recycling facility. The panels once transported to the Solar PV Panel recovery plant are processed as outlined below:









# **CERTIFICATE OF DELIVERY**

The certificate delivery records solar panels quantity and type surrendered to SRC facility. The certificate is the first step in the management system, ensuring end of life solar panels are diverted from landfill and secured in a compliant facility for processing and material recovery as part of the circular economy model.



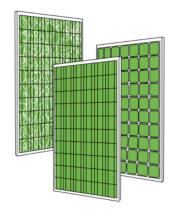
# **CERTIFICATE OF RECOVERY**

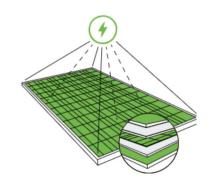
Solar Recovery Corporation certificate of Recovery is part of the compliant management system and process for end of life solar panels.

The certificate is issued once the solar panels are processed through SRC facility.

The separate materials streams are reported by weight and type and number of solar panels accepted. The document demonstrates SRC commitment to benchmark standards, together with an environmental and sustainable future. Recovery Certificate will assist in monitoring the environmental management plan.





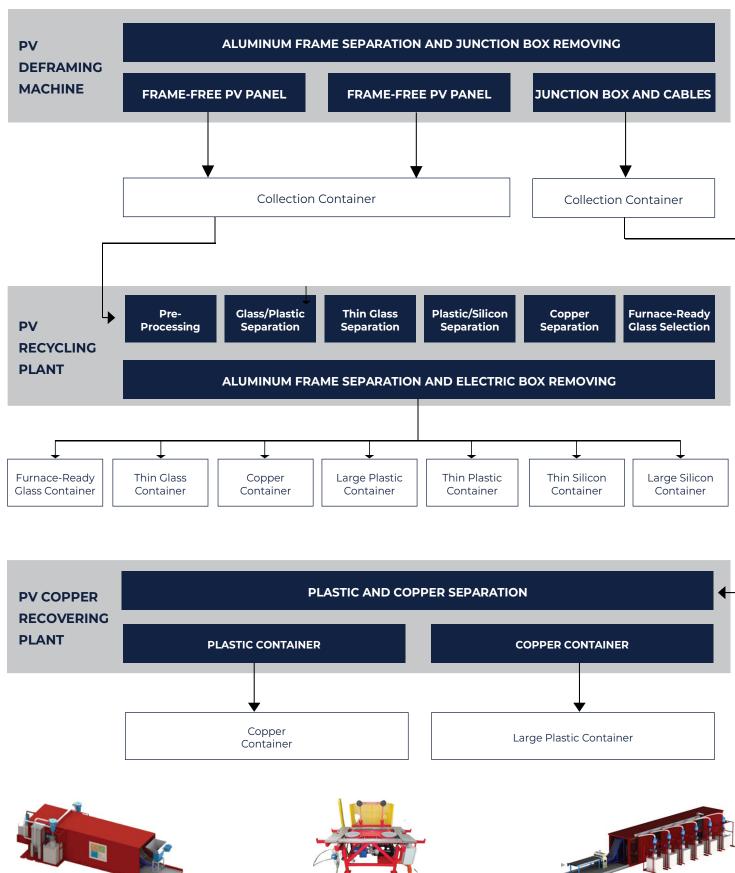




# **HOW THE SOLAR PANELS ARE PROCESSED**



Decomissioned solar PV panels are removed from a household, commercial rooftop or solar farm. All solar panels removed are scanned and entered into our database to ensure they make it to the recycling facility. The panels once transported to the Solar PV Panel recovery plant are processed as outlined below:



PV COPPER RECOVERING **PLANT** 





PV RECYCLING PLANT



#### **DE-FRAMING**

The SRC PV De-framing equipment is a mechatronic machine used to separate the aluminum frame, junction box and cables from the PV panels.





# **AUTOMATED PROCESS**

In order to improve safety and efficiency, SRC uses automation with robotics to complete the disassembly and sorting of the PV panels.

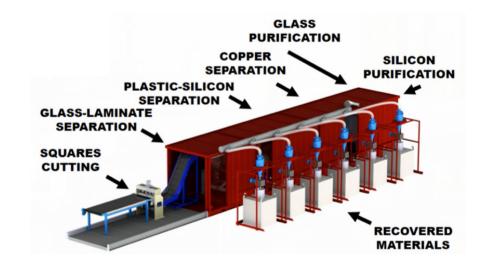




#### MATERIAL SEPARATION

The high quality recovered materials are processed, separated and automatically packed ready for reuse in different industry sectors.

















# FREQUENTLY ASKED QUESTIONS



#### O DO YOU ACCEPT ALL TYPES OF SOLAR PANELS ?

SRC accept and process, monocrystalline, polycrystalline, amorphous or cadmium telluride panels. You will be asked to identify what type of panels you have when you log in to the drop off portal: https://srcorp-drop-off-portal.com/

# O CAN I USE A TRANSPORT COMPANY TO DROP OFF MY SOLAR PANELS?

Certainly. We don't mind how you deliver your old panels to us but please use the drop-off portal to register the number and types panels you will be delivering and other information we require to maintain our Materials Management System. Drop-off portal link: <a href="https://www.srcorp.com.au/drop-off-form">https://www.srcorp.com.au/drop-off-form</a>

#### O CAN I PAY AT THE DROP OFF LOCATION DIRECTLY?

No, we will need you to register on our drop-off portal. We need to know who you are and also information about the number of panels being delivered and what type they are so that we can establish a comprehensive Material Management System. This is very important to maintain high standards of product stewardship.

The easiest way to make arrangements for the recovery of the materials in your end-of-life panels is to use our specially designed portal that can be accessed using this link: <a href="https://www.srcorp.com.au/drop-off-form">https://www.srcorp.com.au/drop-off-form</a>
We are accepting end-of-life panels now and will be happy to make arrangements with you.

# O CAN YOU ORGANISE PICK-UPS ?

We can organise pick up of your old panels if you are unable to drop them off. We would need to make arrangements with you to utilise the services of an independent freight company at your cost.

#### O WHY DO I NEED TO PROVIDE MY ABN?

We think it's important to establish a professional management system that will track end-of-life panels right through our process. Part of that management framework will be reporting to our customers about the processing of the panels and material flow for EOL panels delivered to Solar Recovery Corporation. The provision of your ABN will assist our record keeping and quality of our Materials Management System.

#### O WHY SHOULD SOLAR PANELS BE RECYCLED RATHER THAN LANDFILLED?

Solar panels contain hazardous materials when compacted and crushed in landfill, which can potentially filter into the environment, through the production of leachates in soil, groundwater, rivers, and oceans. The materials in solar panels such as glass, aluminium and copper can also be recovered and used in manufacturing streams, these materials reduces the need for further mining which helps to protect the environment.

#### O WHY IS THERE A FEE FOR PROCESSING EOL SOLAR PANELS ??

There is a cost to process, provide and maintain records of flow for each panel. The records must be compliant which will support all environmental management policies.

#### O WHY IS THERE A PRICE DIFFERENCE BETWEEN MONO/POLY SOLAR PANELS AND THIN FILM SOLAR PANELS?

Because there is a complete different management and processing for the different types of panels



# FREQUENTLY ASKED QUESTIONS



#### O WHAT HAPPENS TO THE PANELS ONCE THEY ARE DROPPED OFF?

Frames, junction box, cabling and connectors are removed. The PV laminate is processed using automated robotics to complete the disassembly and sorting of the materials. The high quality recovered materials are packed and sent for reuse in different industry sectors, completing the circular economy loop.

#### O ARE SOLAR PANELS INCLUDED IN AUSTRALIA'S E-WASTE BAN?

Yes, solar panels are included in the ban. New legislation came into effect in Victoria as of July 1st 2019. As part of that legislation solar panels are no longer accepted in any landfill or bin. Our recovery process facility provides a compliant place for processing and recovery management.

#### O IS YOUR PROCESS ENVIRONMENTALLY SAFE?

Yes, it's completely safe. The technology used has been developed in Europe over the last decade and meets Europe's world leading standards. We recover materials from all types of solar panels without the use of shredding, crushing, hydrometal-lurgy, chemicals, thermal processing or pyrolysis. The processing technology has no environmental emissions, compliant and is ISO accredited.

#### O RECYCLING VS RECOVERY - WHAT'S THE DIFFERENCE?

Solar Recovery Corporation do not recycle solar panels, we recover the materials from EOL panels, each panel is placed through a mechanised process that separates each component materials. The recovered materials; copper, glass, plastic, silicon and aluminium are valuable resources that can be reused in circular economy streams.

#### O WHAT IS A CIRCULAR ECONOMY?

A circular economy is different from a linear economy, with the traditional linear economy we mine raw ma[1]terials, we process into a product that is thrown away after use. In a circular economy, we close the cycles of all these raw materials by recovery and reuse. It changes the way in which value is created and preserved. A circular economy model helps preserve a sustainable future for the environment.

# LINEAR ECONOMY





# CIRCULAR ECONOMY

