Be a Net Zero Superhero

‘No Cape Required’ !!

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Acknowledgement of Country

We would like to acknowledge the Traditional Custodians of the land in which we gather upon today. We acknowledge their continuing connections to the land, culture and community. We pay respect to Elders past, present and future.

Towards Net-Zero Emissions

Shoalhaven City Council

UN CLIMATE CHANGE CONFERENCE UK 2021

01-12 NOV 2021
GLASGOW

COP26

IN PARTNERSHIP WITH ITALY

OUR VALUES
ADAPTABILITY
COLLABORATION
INTEGRITY
RESPECT

Shoalhaven LGA – Climate Change

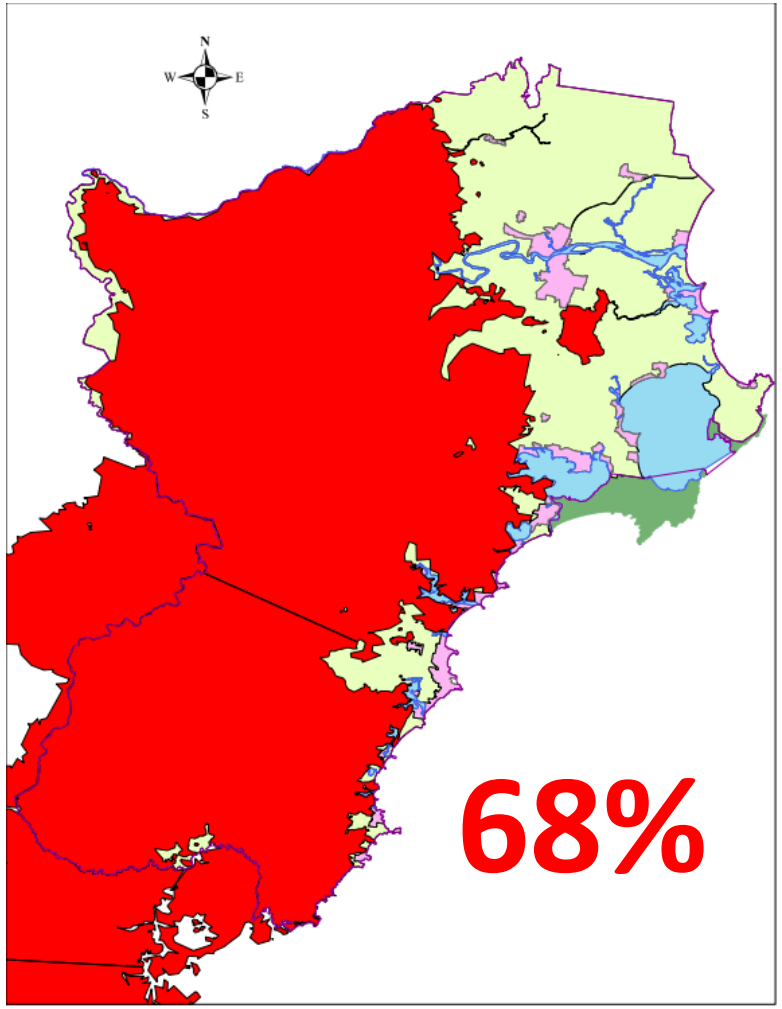


Photo courtesy of South Coast Register

Presentation Outline

- ✓ Sustainable Energy Policy (targets) and Strategy (initiatives)
- ✓ Revolving Energy Fund (REFund)
- ✓ Solar PV on Council and Community facilities
- ✓ LED Street Lighting Upgrade
- ✓ Electric vehicles (EVs)
- ✓ Renewable Power Purchase Agreement (PPA)
- ✓ Recovery into Resilience – bushfire recovery project
- ✓ Bawley Point/Kioloa microgrid/community battery
- ✓ 3MW Solar Farm on Council land

The ‘Drivers’ – Policy & Strategy

2019 Sustainable Energy Policy TARGETS

AIM TO ACHIEVE NET-ZERO GREENHOUSE GAS EMISSIONS BY 2050

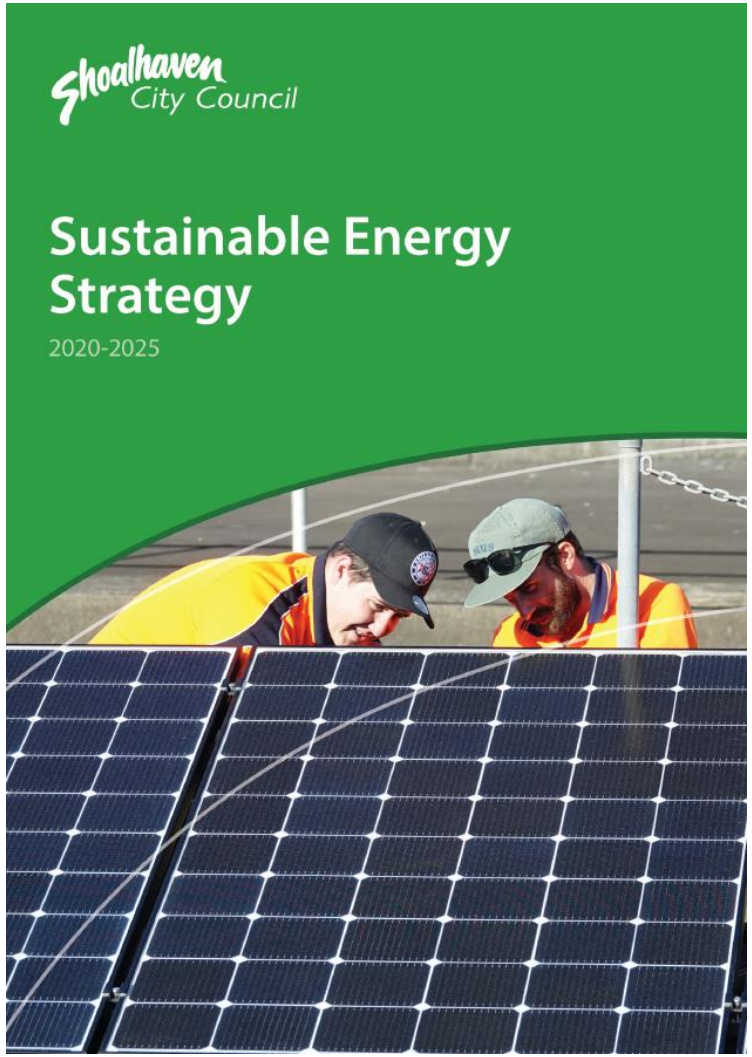
INTERIM TARGETS TO REDUCE EMISSIONS ARE 25% BY 2025 AND 50% BY 2030, COMPARED TO 2015 LEVELS

SEEK OPPORTUNITIES TO SOURCE OR GENERATE ELECTRICITY SUPPLY FOR COUNCIL’S OPERATIONS FROM RENEWABLE ENERGY SOURCES, WITH AN INTERIM TARGET OF 25% RENEWABLES BY 2023 AND EVENTUALLY 50% FROM RENEWABLE SOURCES BY 2030

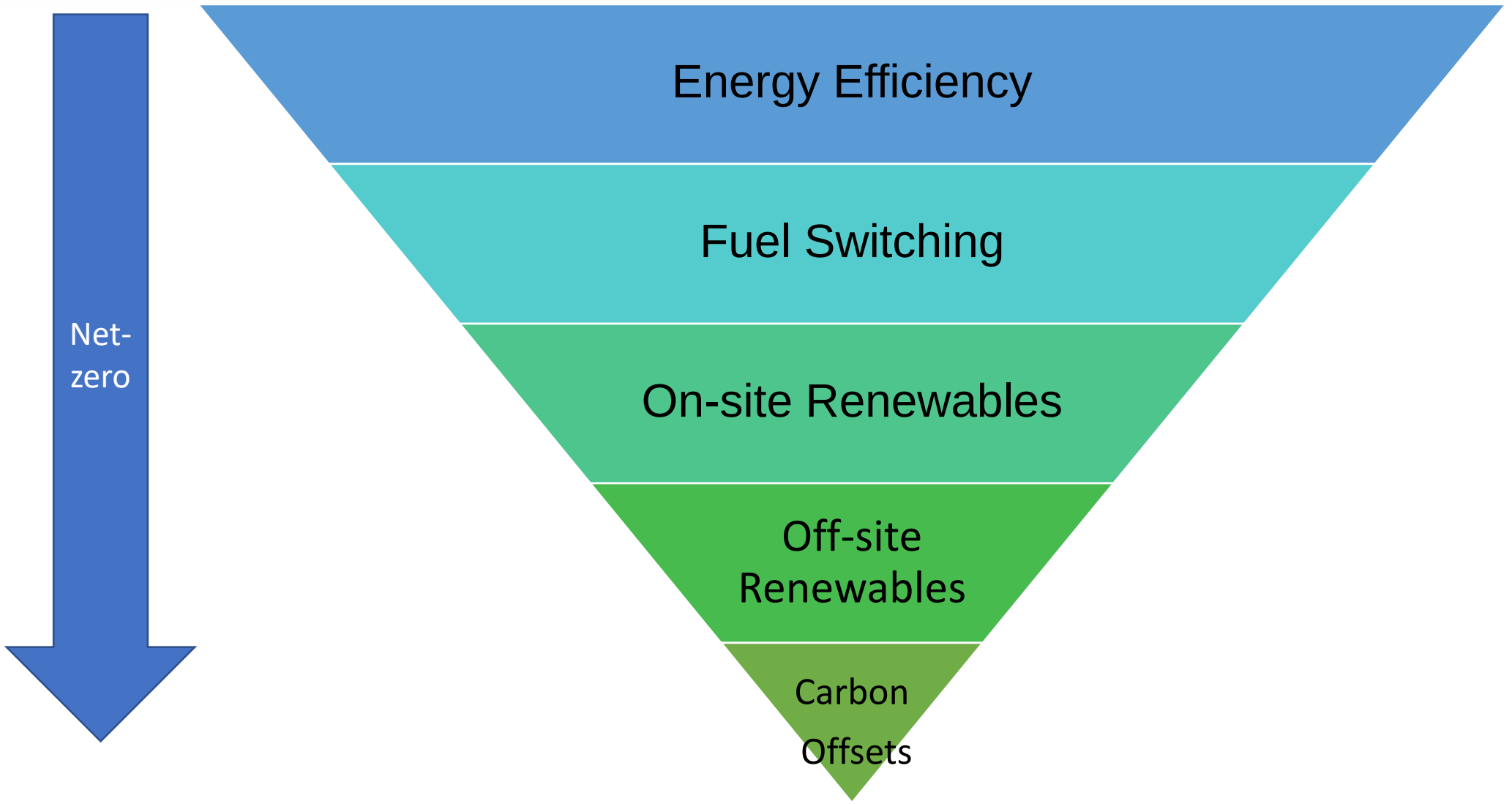
CONTINUALLY IMPROVE MANAGEMENT PRACTICES TO STRIVE TOWARDS IMPROVED ENERGY EFFICIENCY ACROSS THE ORGANISATION

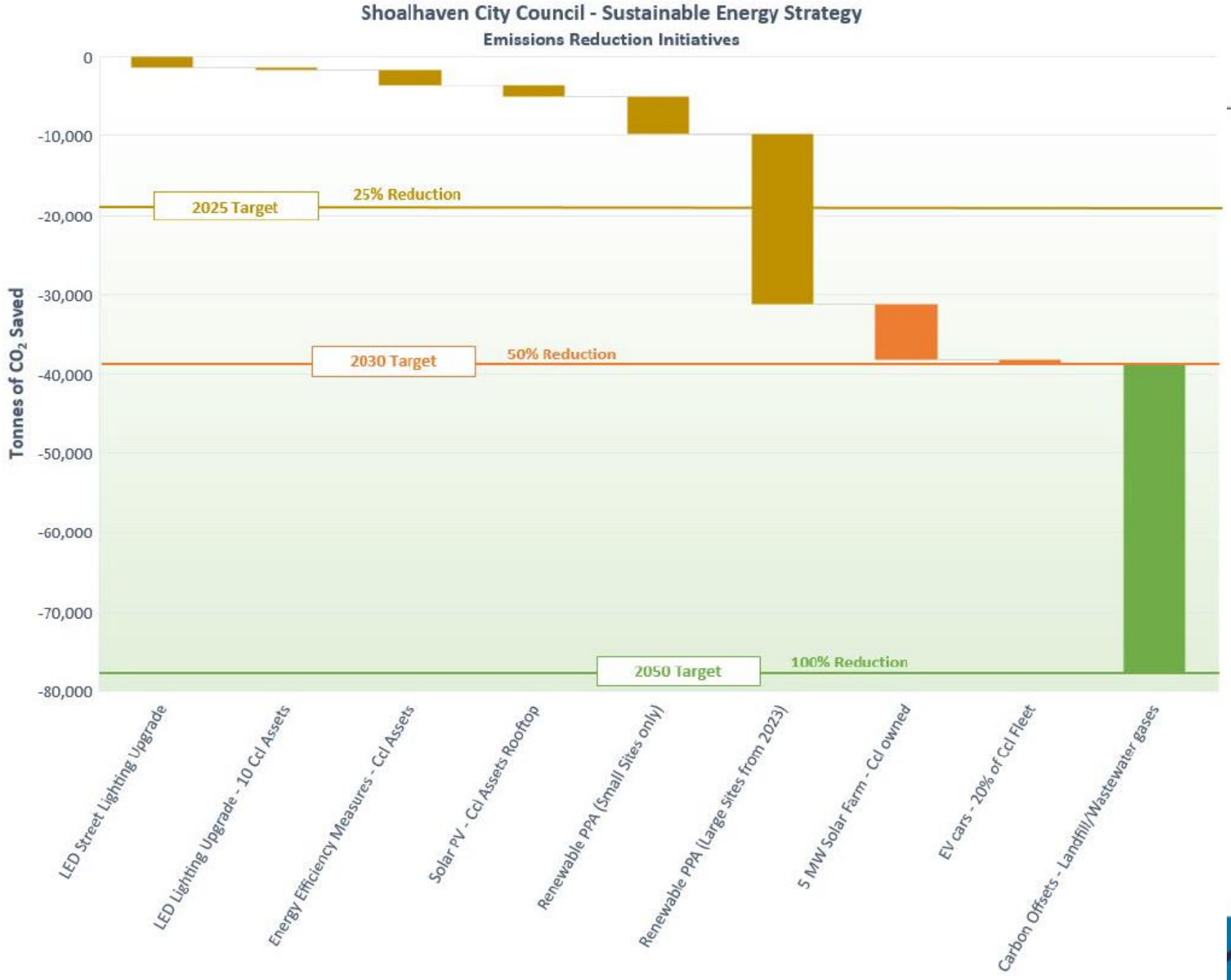
UPGRADE ALL STREET LIGHTING TO ENERGY SAVING LEDS BY 2025

PROMOTE RELEVANT INITIATIVES TO THE COMMUNITY AND BUSINESSES TO INCREASE THE UPTAKE OF INSTALLED ROOFTOP SOLAR PANELS ACROSS THE SHOALHAVEN LGA TOWARDS A TARGET OF 33% OF DWELLINGS BY 2025

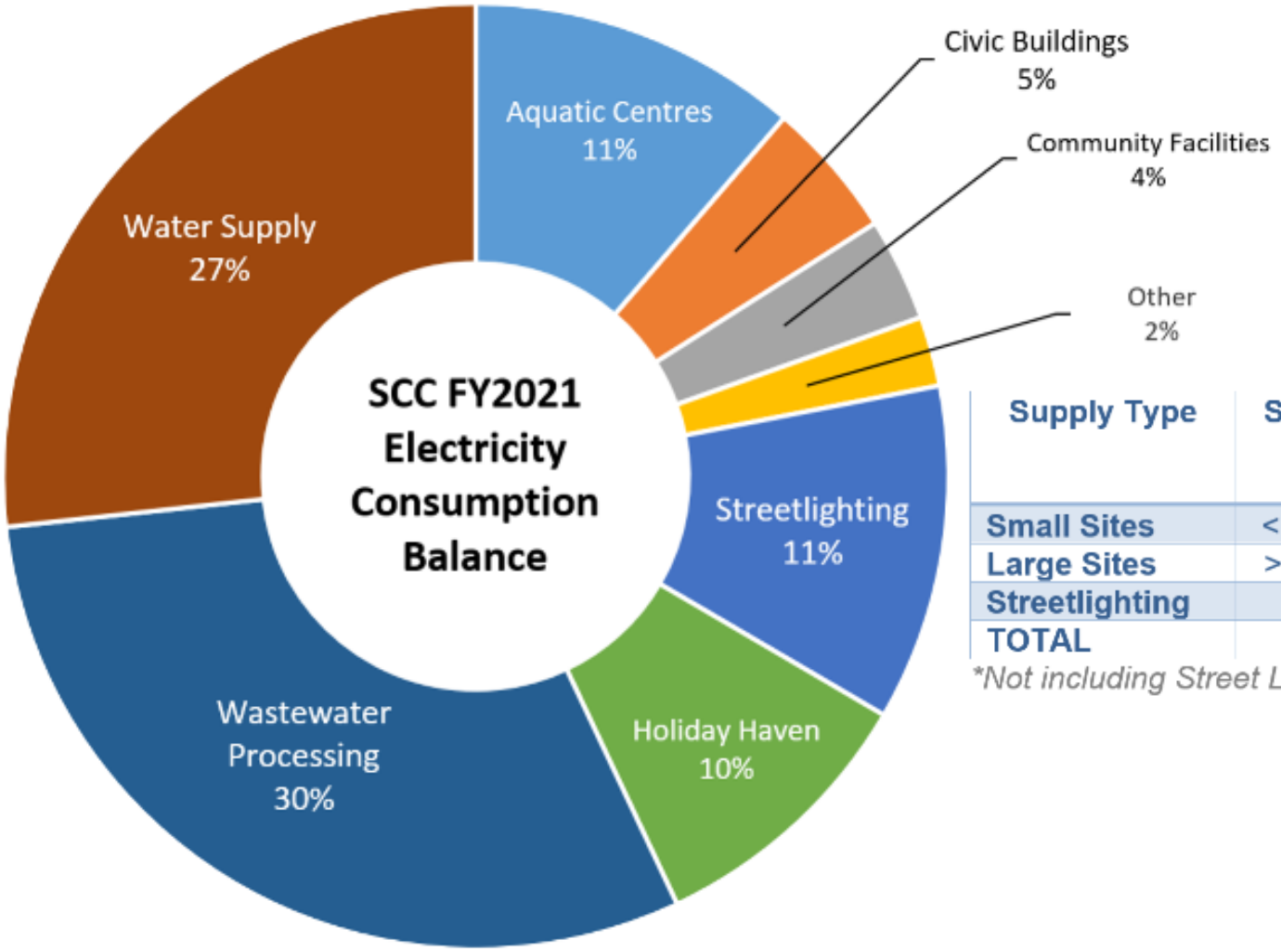


Achieving our Targets




Shoalhaven City Council - Sustainable Energy Strategy
Emissions Reduction Initiatives
Tonnes of CO_2 Saved
0
-10,000
-20,000
-30,000
-40,000
-50,000
-60,000
-70,000
-80,000
2025 Target
25% Reduction
2030 Target
50% Reduction
2050 Target
100% Reduction
LED Street Lighting Upgrade
LED Lighting Upgrade - 10 CcI Assets
Energy Efficiency Measures - CcI Assets
Solar PV - CcI Assets Rooftop
Renewable PPA (Small Sites only)
Renewable PPA (Large Sites from 2023)
5 MW Solar Farm - CcI owned
EV cars - 20% of CcI Fleet
Carbon Offsets - Landfill/Wastewater gases

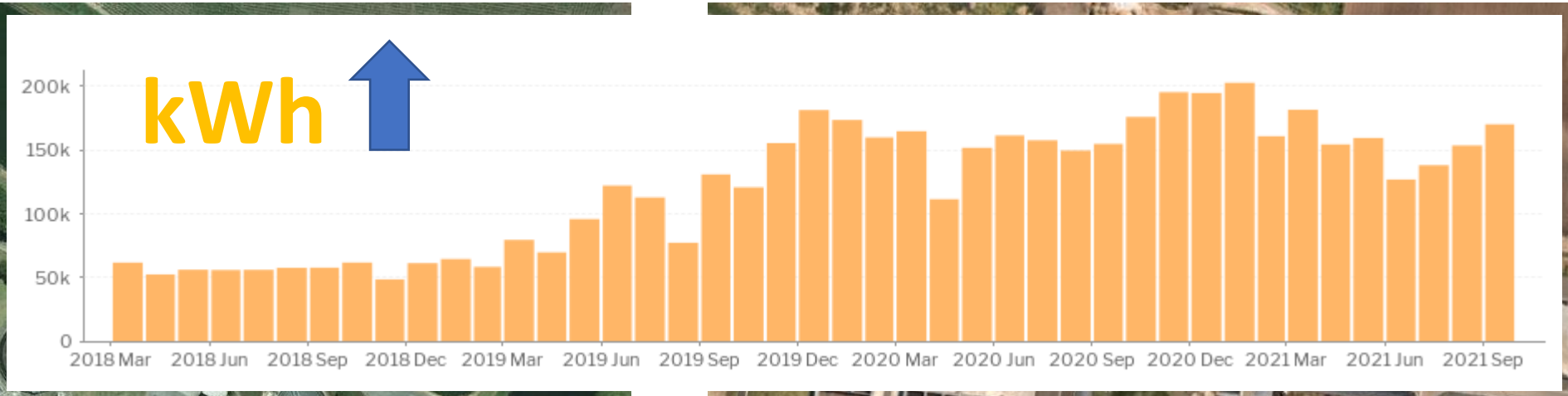
Power Up !!



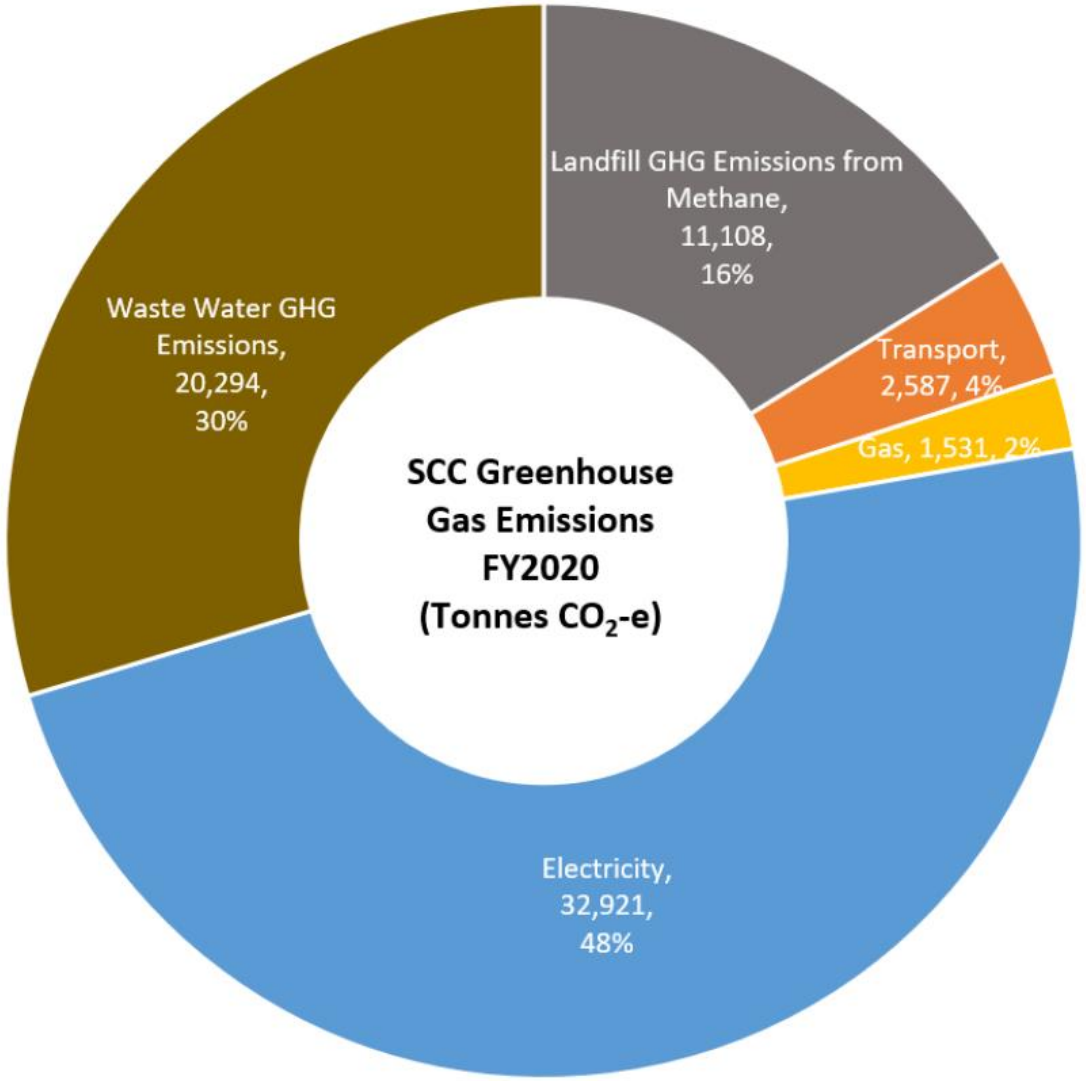
Supply Type	Site Consumption	Number of Sites	FY2021 Consumption (MWh)	FY2021 Total Electricity Spend
Small Sites	<100MWh per Year	~550	5,250	$1.2M
Large Sites	>100MWh per year	48	27,375	$4.350M
Streetlighting	Unmetered	Aggregated	4,225	$777k*
TOTAL			**36,750**	**$6.327M**

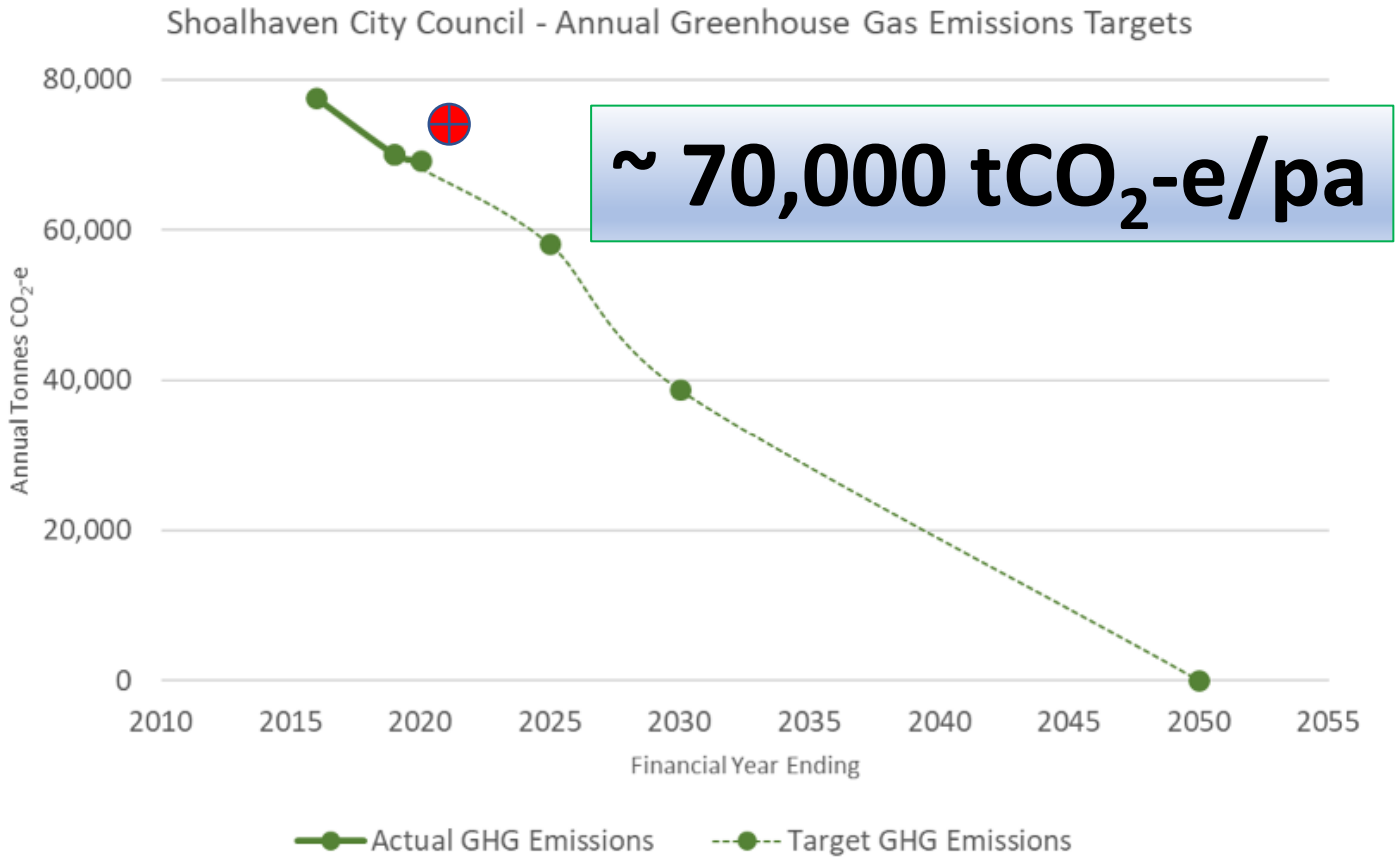
**Not including Street Light Use of System (SLUOS) charges (approx. $1.2M)*

Electricity Usage – trending up



Greenhouse Gas Emissions



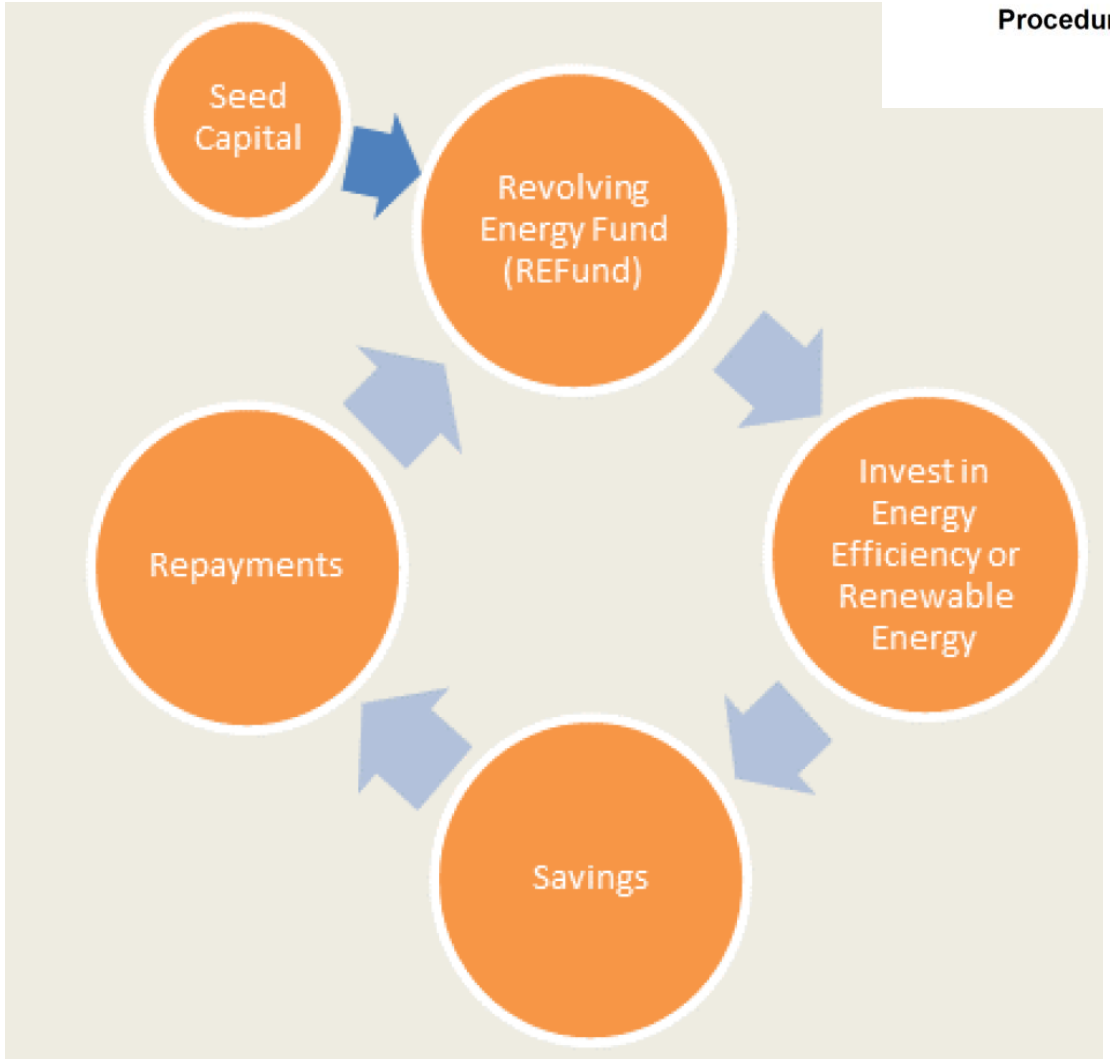


~ 70,000 tCO_2-e/pa

Energy Efficiency – LED Lighting

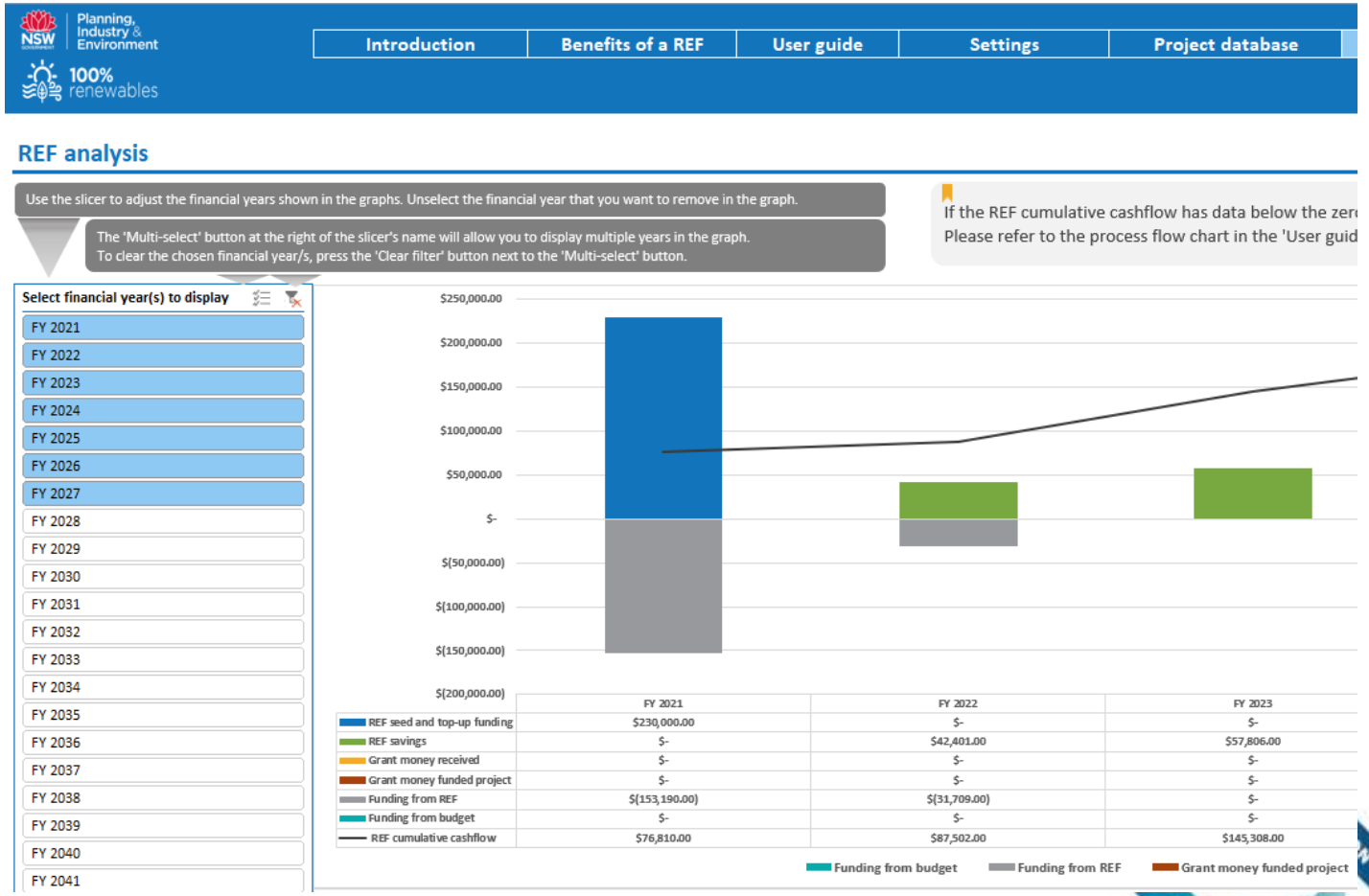
NSW Energy Savings Certificates (or ‘escies’) reduce the capital cost significantly

Revolving Energy Fund - REFund



Procedure - Revolving Energy Fund (REFund) Allocation

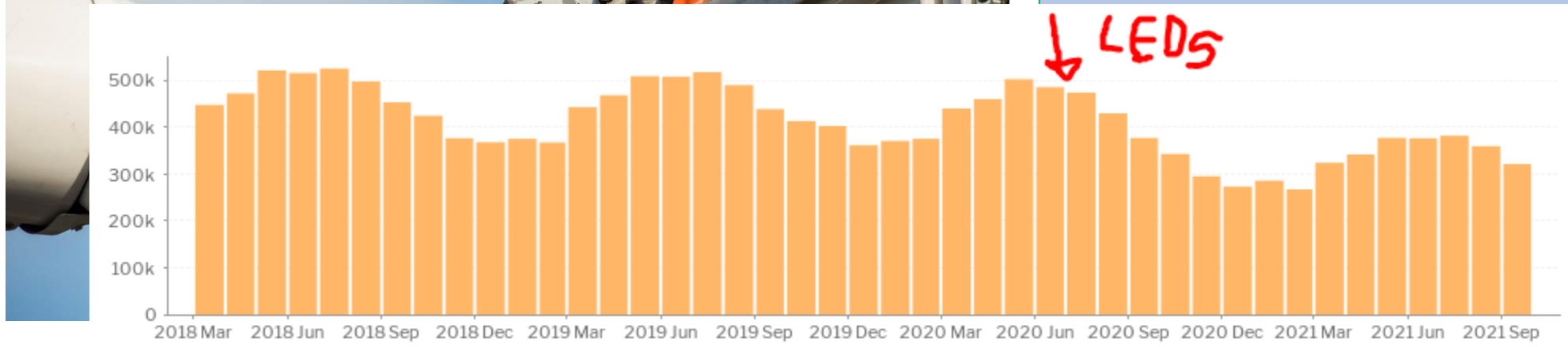
Projects with a payback period < 5 years



	FY 2021	FY 2022	FY 2023
REF seed and top-up funding	$230,000.00	$-	$-
REF savings	$-	$42,401.00	$57,806.00
Grant money received	$-	$-	$-
Grant money funded project	$-	$-	$-
Funding from REF	$(153,190.00)	$(31,709.00)	$-
Funding from budget	$-	$-	$-
REF cumulative cashflow	$76,810.00	$87,502.00	$145,308.00

LED Street Lighting Upgrade

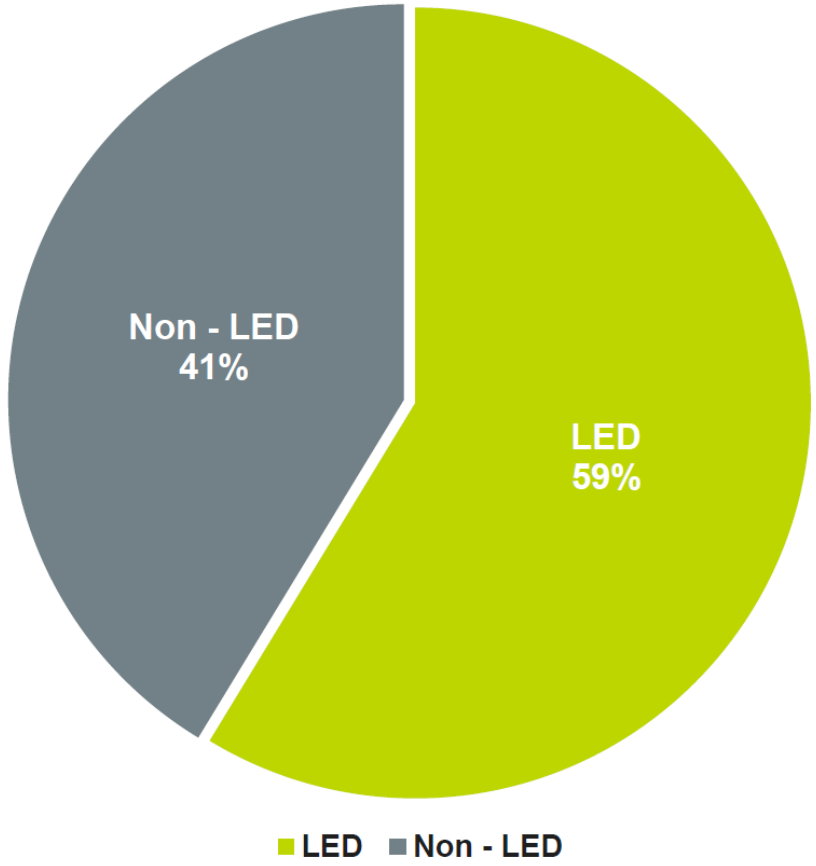
- >5 GWh/pa in electricity consumption for Shoalhaven LGA street lighting with 11,286 lights
- Accelerated replacement program – bringing the electricity/emissions savings forward
- Tariff classes/capital funding alters business case



Stage 1 (2020/21) – 3,641 lights replaced or 32% of street lights

LED Street Lighting Upgrade 2.0

Existing Luminaire Profile	
Total Luminaires on Endeavour Energy network	11,286
Existing LED Luminaires	6,625
Proposed Replacement Luminaires	4,661



Endeavour Energy

Stage 2 proposal – 4,661 lights or 41% of street lights

Fuel Switching – Electric Vehicles

Obvious Barriers

- High purchase cost
- Lack of fast charging infrastructure in region
- Renewable energy availability for charging

Fleet Management Feedback

- Unknown resale market
- Lack of EV models to suit need (mostly small cars)
- Service/warranty work can't be done locally
- EV Garbage trucks have limited range/recharge for regional operations
- Hybrids suit Council's needs – only hybrids now available in small car leaseback list

On-site Renewables – Solar PV

- 32 Council-owned assets have solar PV
- 892 kWp installed
- BTM Solar PV generates around 1,300,000 kWh per year
- This supplies < 4% of Council's electricity needs

On-site Renewables – Tips

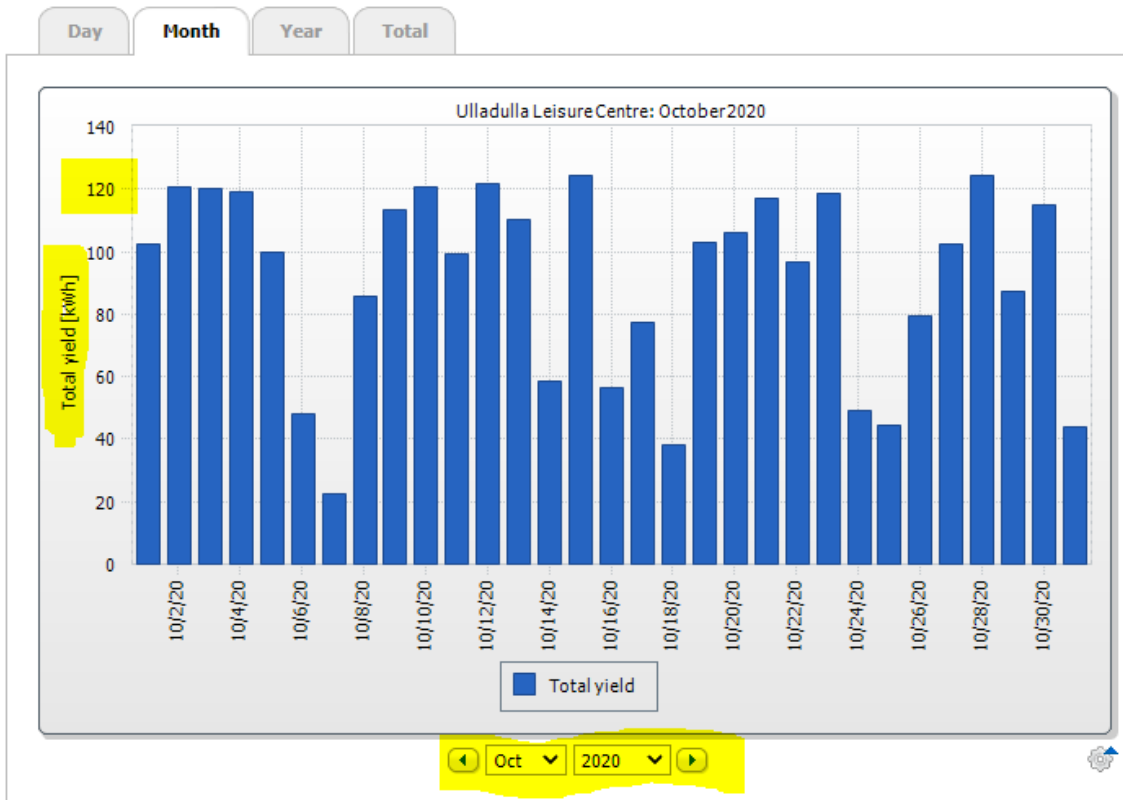
- Use good quality panels (25 year product warranty), inverters and racking
- Solar monitoring is essential for fault notifications
- Solar suitability – shaded assets can still work with microinverters
- Can use pre-vetted LGP319 Energy Services VendorPanel
- Maintenance is essential for safety and performance

On-site Renewables – Maintenance

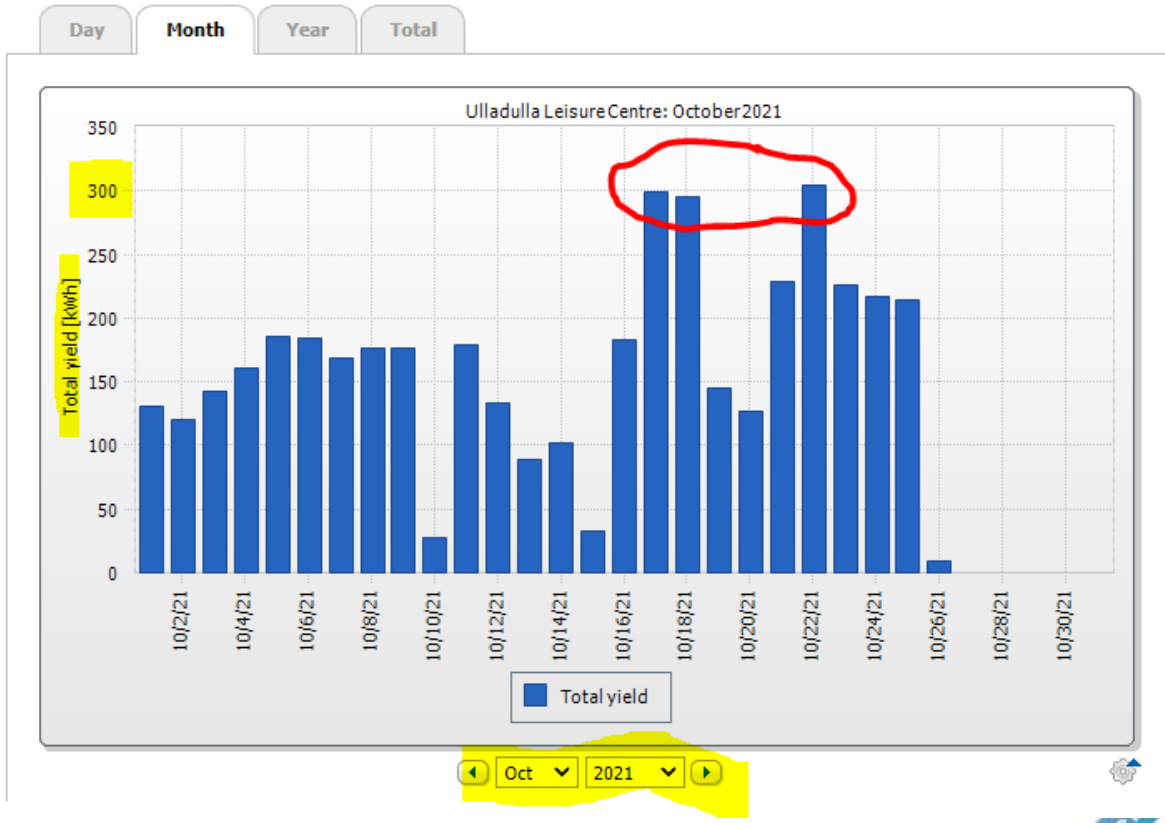
Shoalhaven City Council

Solar panel clean, check/replace fuses, DC isolators, conduits

Energy and Power | Ulladulla Leisure Centre

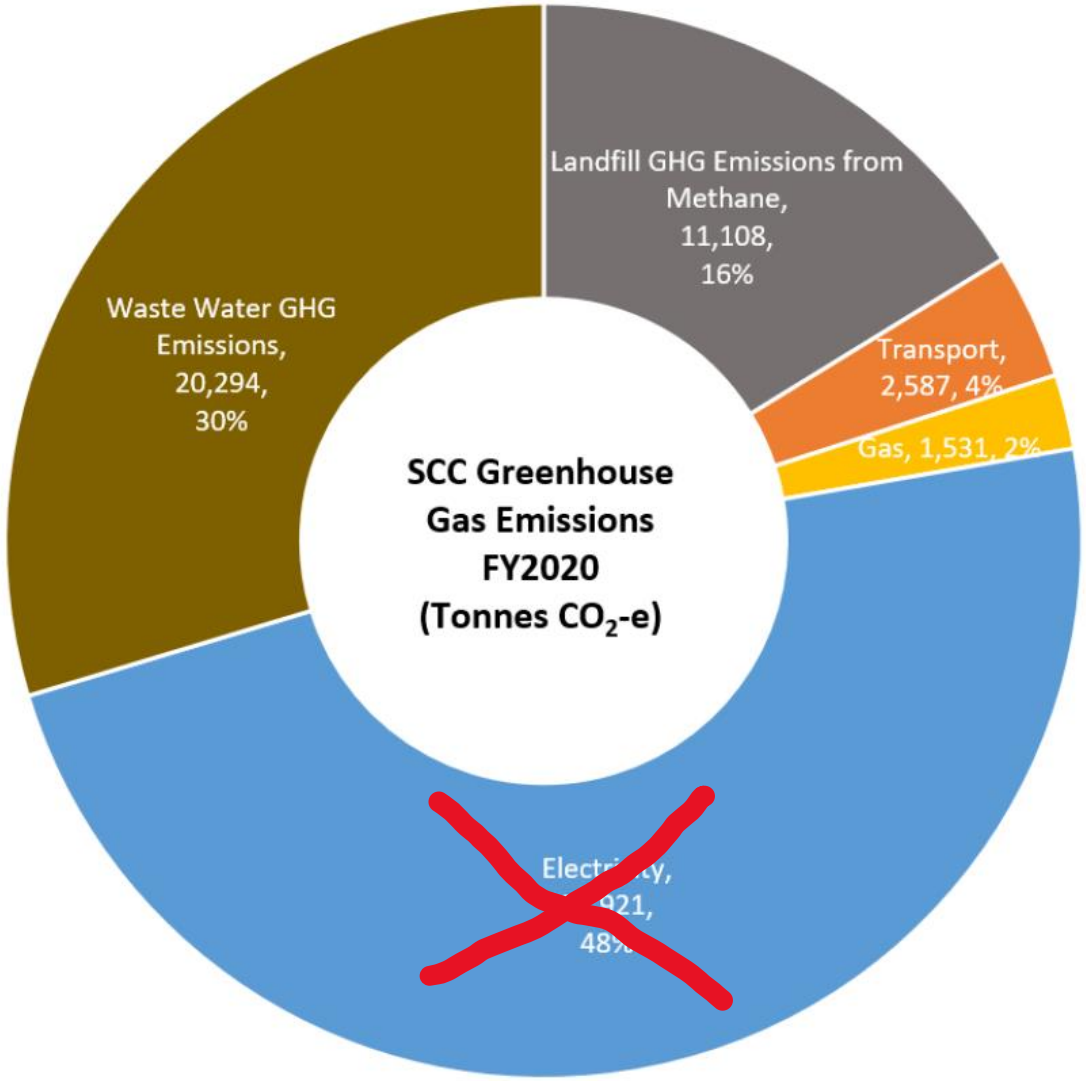


Energy and Power | Ulladulla Leisure Centre



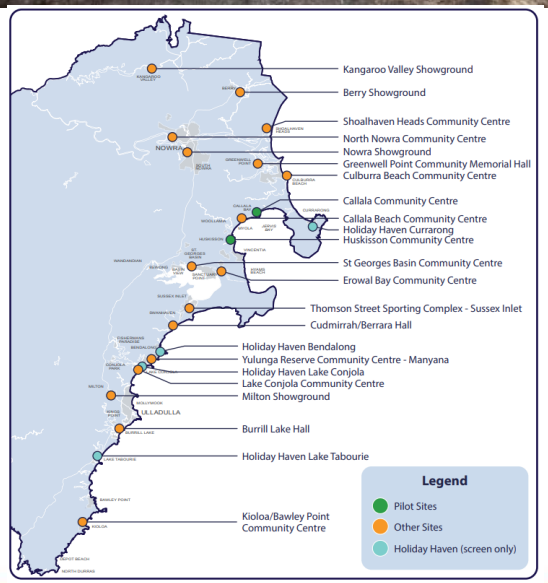
OUR VALUES: COLLABORATION, RESPECT, INTEGRITY, ADAPTABILITY

Off-site Renewables – PPA



- **Slash 50% of corporate GHG emissions via a renewable Power Purchase Agreement**
- **Support regional renewable energy development/REZs**
- **Achieve sustainability targets, future electricity cost stability and likely cost savings**
- **Long-term contract 7-10 years**
- **Currently working with energy market analyst to evaluate business case and consider RFT**

Recovery into Resilience Project



Local Information Hubs

- Communications and energy technology will be installed at 19 Council-owned halls and community centres across the Shoalhaven

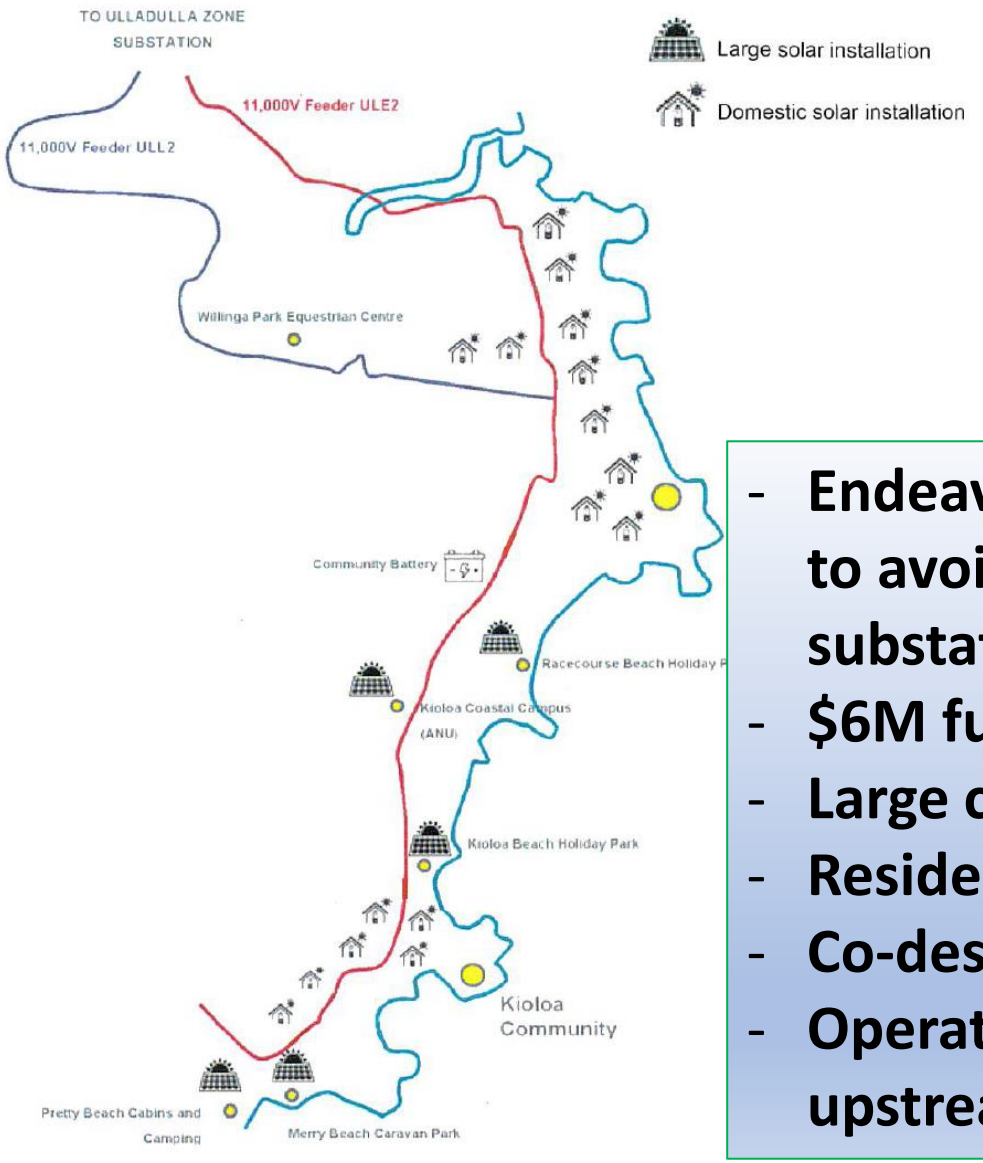
- Essential circuits (lights, satellite modem, power outlets etc.) powered by solar, battery and backup generator if grid goes down

- Screen monitor connected to broadcast emergency alerts

Microgrid – Kioloa/Bawley Point

Our vision

To partner with the Bawley Point and Kioloa community to develop a blueprint for a **resilient, reliable and renewable energy zone** that helps build stronger regional communities across NSW and beyond.



- **Endeavour Energy proposed project to avoid/delay building a new substation**
- **$6M funding + grants**
- **Large community battery ~3.7 MWh**
- **Residential solar PV/battery inputs**
- **Co-design model in planning stages**
- **Operates as an island when upstream connection is lost**

Solar Farm – South Nowra

Photos courtesy of Repower Shoalhaven

- 3 MW solar farm built on Council's disused sanitary waste depot
- Facilitated by Repower Shoalhaven community energy group
- $5M cost - owned by Flow Power
- 20% of power already bought by City of Sydney under a renewable PPA
- 30 year commercial lease

Communication & Recognition

Shoalhaven City Council

Shoalhaven City Council

ENERGY MATTERS

Project Title:
SCC Solar PV Installations

Shoalhaven City Council

Summary:
Shoalhaven Council's adopted 'Sustainable Energy Policy' aims to seek opportunities to source or generate 25% of its electricity supply for Council's operations from renewable energy sources by 2023. To achieve this target, SCC plans to install solar photovoltaic (PV) systems at its owned assets, where suitable. Solar PV systems installed in 2020 included: Shoalhaven Indoor Sports Stadium, 5 Shoalhaven Water treatment plants; Nowra Library and the Bomaderry Works Depot. The total additional solar PV capacity for these 8 sites was 320kW, more than doubling Council's existing solar PV installations.
Proposed new solar PV installations in 2021 include 4 Shoalhaven Water wastewater treatment plants; namely Nowra, Bomaderry, Culburra and Callala for a total capacity of 230 kW. Several Stand-Alone Power Systems are also proposed for around 20 community buildings as part of the 'Recovery into Resilience' (RiRP) project.


Vincentia WWTP 95 kW ground-mounted solar PV array


A 60kW solar PV system installed at the Shoalhaven Indoor Sports Centre in late 2021

Benefits:
Commercial solar PV installations represent good value for money and the current price per kWh for installed solar power (renewable energy) is now cheaper compared to electricity sourced from the grid (fossil fuel energy), making a strong business case for maximising solar PV on Council assets. From Jan 2020, Council's grid supplied electricity price increased by around 20%, making the business case for solar PV installations much more favourable.

Project Team:
Darren O'Connell, Energy Management Consultant
Andrew Truran, Business Analysis Consultant
Gary George, Buildings Project Manager

Progress:

Oct 2019	SEC solar PV installation now complete, additional sites being further investigated, including Shoalwater assets.	DOC, AT
July 2020	Solar PV installations have commenced at 7 Council assets under RFT63027E including: Ulladulla WWTP (25kW); Vincentia WWTP (95kW); Shoalhaven Heads WWTP (20kW); Flat Rock WTP (30kW); Sussex Inlet WWTP (30kW); Nowra Library (30kW); and Bomaderry Works Depot (30kW)	DOC AT
Feb 2021	**New solar PV installation projects are underway for 4 Shoalhaven Water wastewater treatment plants and around 20 community facilities under the RiRP**	**DOC AT**

LOCAL GOVERNMENT NSW

EXCELLENCE IN THE ENVIRONMENT AWARDS 2020

PRESENTED TO

Shoalhaven City Council

WINNER DIVISION C AND OVERALL WINNER:

Towards Net Zero Emissions Award

CITIES POWER PARTNERSHIP CLIMATE AWARDS 2020

The Climate Council congratulates

Shoalhaven City Council

WINNER

Energy Efficiency Achievement Award

OUR VALUES: ADAPTABILITY, COLLABORATION, INTEGRITY, RESPECT

Towards Net-Zero Superhero Moves

Shoalhaven City Council

- ✓ Make a Net-Zero Plan and get it approved
- ✓ Seek internal and external supporters - work as a team and network with others
- ✓ Look for opportunities and 'make hay while the sun shines' (funding, grants, schemes)
- ✓ Follow the 'energy pyramid' hierarchy
- ✓ Trial things first and then scale up
- ✓ Monitor and measure success then communicate it widely
- ✓ Recognise achievements and celebrate them

➢ If all else fails - call the Avengers !!!

Contact: Darren.OConnell@shoalhaven.nsw.gov.au

OUR VALUES: Collaboration, Respect, Integrity, Adaptability