



Killcare Wagstaffe Trust
keeping an eye on the environment

Killcare Wagstaffe Trust

Newsletter

April 2020

Annual General Meeting

The next meeting is on Sunday 3rd May at 9.30 am
It is our AGM

Given the Covid restrictions it will have to be a Zoom meeting.

The link is <https://us02web.zoom.us/j/7280537843>

Just click on the link above if you have an electronic copy of the newsletter. If you have a hard copy you will have to copy the address into your browser. If you are unfamiliar with zoom it is worth doing a little internet research on joining a zoom meeting for the first time. It is relatively simple. You don't have to sign up to zoom to join the meeting.

Public Meeting to hear from Climate Scientists

The public meeting on 27th February at the surf club was a big success with a full house and excellent speakers. Bob Conroy (bushfire expert) and Mark Diesendorf (renewable resources expert) presented their material to around 140 attendees. Their presentations are available on the Trust's website (www.killcarewagstaffetrust.org.au).

We organised this meeting because for many of us the Christmas / New Year bushfires were a final wake-up call about the reality of the climate emergency we face. The fires were hotter, wilder and more extensive than ever previously experienced in Australia, a consequence of the 1° of global temperature rise we are already experiencing.

NSW data is provided in the following table.

2019-20 NSW Fire Season Comparisons

Year	Hectares Burnt	Homes destroyed	Lives lost
1993-94	800,000	225	4
2001-02	744,000	135	0
2002-03	1,500,000	112	0
2012-13	1,400,000	62	0
2013-14	118,000	248	2
2017-18	260,000	74	0
2018-19	288,000	37	0
2019-20	5,400,000	2,424	25

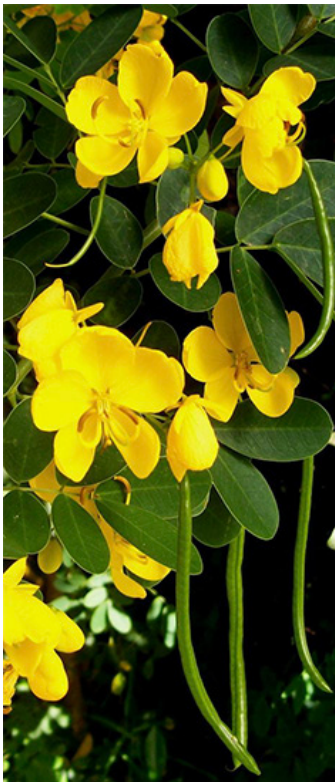
Dr Mark Diesendorf's presentation demonstrated that we have the technological knowledge and ability to meet the challenge of keeping the global temperature increase to 1.5° of pre-industrial levels, which is the target of the Paris Climate Agreement. Mark outlined an energy transition strategy for Australia that's possible given our array of renewable options, and that included transition arrangements for employees in the fossil fuel sector. The technical capacity is there, however achieving the Paris Agreement needs a huge shift in political will – we need to achieve a reduction of carbon dioxide emissions that is 5 x more than current commitments to global targets.

Keeping climate change on the agenda during the pandemic

..... and now we have the pandemic and once again our world is turning upside down. From the climate perspective we now have a prime example we can build from, of those in power paying attention to "the science". But we also have the potential of the fossil fuel lobby positioning itself at the centre of the economic recovery and holding us back in an unsustainable past. We do seem to be at a cross roads with an opportunity to change to be cleaner, safer and more equal world.

The Trust will continue to work on climate change issues, and looks forward to hearing from you if this is something you are interested to be involved in: (killcarewagstaffetrust@gmail.com).

Cassia removal day



Each year (well almost) several Committee members do a few hours removing cassia plants from the peninsula. Cassia is an invasive weed originating from Brazil and Paraguay. This year was no exception with social distancing proving only a slight inconvenience.

It is a member of the pea family and its botanical name has changed over the years – first *Cassia bicapsularis*. then *Cassia coluteoides*, and now *Senna pendula* var. *glabra*

Despite being invasive, in many ways it is an ideal weed. It loves edges and on the Coast it populates roadsides and driveways, which makes it easy to access. It flowers profusely with bright yellow flowers in late March and early April (one of its common names is Easter Cassia). This makes it easy to spot. Finally, it is easy to kill. Small plants can be pulled out without much difficulty. Most can be cut at the stem with secateurs or cocky beaks and then painted with poison. Only the oldest specimens need to be sawn off.

Over the years we have managed to clear a substantial amount of these plants from the roadsides of the Peninsula. Total elimination is our goal.



After the storms

Solar Power System Basics

Following the successful Climate Change event, organised by KWT, attendees were asked what the further information they would like and what action would they like to consider. One strong theme that emerged was the desire to make a personal contribution by installing residential solar power on either an individual or collective basis. In response, KWT has conducted some research to present basic straightforward information as a starting point.

There are three broad residential solar power options currently available:

- Solar panels without batteries
- Solar panels with batteries combined in one household
- Local solar grids with shared batteries and other infrastructure.

This article will set out the basic issues for the first two options. The local solar grid option will be presented in a later article. The content for this article is heavily reliant on content from solarquotes.com.au, which is recommended reading.

Main Solar System Components

Panels: The most important consideration is to buy quality solar panels. Quality brands should last for more than 25 years. Cheap junk panels will last only 3-5 years.. You will probably need advice about panel selection to ensure value for money.

Inverters: Inverters convert the DC electricity that the solar panels produce into 240V AC electricity, which is required for everything in your home. There are two types of inverters: string inverters; and micro inverters. Micro inverters optimize each panel individually which results in more energy production but will add an average of 20% to the overall installation cost. String inverters are usually sufficient when cost is taken into consideration.

Racking / Mounting: These are attached to roof supports and solar panels are mounted on them. Premium mountings may cost \$100 per kilowatt of power more when compared to budget products.

System Size

You should assess you existing energy requirements and discuss size with your selected provider. If you have single-phase power, the permissible limit will be around 6.5kW. If you have a large rooftop and three-phase power, you can increase this capacity. If you go higher than your requirements, surplus power will be returned to grid and help pay off the overall expense.

Systems with Batteries

The main reason for installing a battery with your solar system is to go 'off grid'. There is a strong emotional attraction to the ideal of independently providing for all your energy needs and turning your house into a carbon emission free mini power plant. However, batteries are relatively expensive and, if you have limited resources, now is probably not the best time to acquire them. They can be added to a system at a later time.

The economics of installing solar power systems

Cost of solar systems: The following table sets out the average cost, after rebates are taken into account, of a solar system without batteries. These costs include installation. The cost range reflects the available quality differences.

System size	Number of panels (approx)	Cost Range
1.5kW	5	\$2,500 – \$4,000
2kW	7	\$3,000 – \$4,500
3kW	10	\$3,500 – \$5,000
4kW	14	\$4,000 – \$6,000
5kW	17	\$4,500 – \$8,000
6kW	20	\$5,000 - \$9,000
7kW	23	\$6,500 – \$10,000
8kW	27	\$7,500 – \$11,000
10kW	33	\$8,000 – \$12,000

Cost of Batteries: A battery with 10kWh of storage capacity will currently cost about \$12,000. However, there is a general expectation that prices will drop significantly in the next 2-5 years.

Other costs: There can be additional costs if you need an electricity switchboard upgrade or other electrical work to make your home suitable for solar power, or if the design of your home makes the system installation more difficult.

Government rebates: There is a Federal solar rebate for the installation of solar photo-voltaic systems. It is known as the *Small-scale Renewable Energy Scheme* (SRES). The rebate is being reduced every year, but is still significant. Your provider will organise this and factor it into their quote. NSW ended its broad-based rebate scheme in 2016. Unlike some other States, NSW does not currently have a comprehensive rebate scheme for solar system batteries.

Feed-In Tariffs: It is more profitable for you to consume your self-generated energy than to export it. This is because you are paying energy companies somewhere between 25c and 30c per kWh for the energy they provide, but they will only pay you somewhere 7c and 20c for the energy you export to them. If you want to shop around for energy companies who provide the best feed-in tariff rates, you should assess all price components.

Payback Time Periods: A solar system without a battery will have a payback time in the range of 3 to 8 years. The broad time range is totally dependent on your ability to meet most of your energy needs during the day. However, even if it takes 8 years, this is still a 12-15% return on your investment. However, at the moment, the average payback period of a battery is about 15 years and, as most batteries only have a 10-year warranty, you may have to replace it before you have broken even.

Conclusion

If you can afford to purchase a solar power system, then do it. It is a secure and attractive investment. Even more important than the pure economics, you will be making a personal contribution to the reduction of carbon emissions and the fight against climate change. Unless you must have a battery right now, wait a couple of years when the price should significantly drop and they become more economically viable. There is the potential to share batteries across households and defray their cost. This involves establishing a local mini-grid. This option will be explained in a future article.

An extended version of this article is available on www.killcarewagstaffetrust.org.au

Trust Website

The Trust website (killcarewagstaffetrust.org.au) has received a very handsome redesign thanks to Joanna Lewis. Have a look and see. We will endeavour to make it a more useful resource in future.