



Official newsletter of Surf Coast Energy Group

WHAT'S INSIDE

MESSAGE FROM THE
PRESIDENT - 02

THE TIME FOR RENEWABLE
ENERGY TRANSITION WAS
YESTERDAY - 03

SURF COAST SHIRE'S CLIMATE
STRATEGY - 06

GEELONG SOLAR BULK BUY -
07

BARWON SOLAR SCHOOLS - 08

SPRING CREEK - 10

FUNDRAISING UPDATE - 11

SCEG COMMITTEE &
VOLUNTEERS - 12

SCEG PUBLIC FUND
COMMITTEE - 13



THE ENERGY EDITION



MESSAGE FROM THE PRESIDENT

As 2021 rushes to a conclusion the SCEG committee has never been so busy. SCEG has always been about tackling climate change and sustainability, but we've sharpened that focus in recent times with the 'E' in SCEG signifying not just Energy but also Ecology, Economy and Equity. This very deliberate step acknowledges that it is not just a climate emergency that we are facing, but a multi-faceted systems failure stemming from a global economy where the centerpiece requires endless growth and consumption. As guru renegade economist Herman Daly says, "infinite growth in a finite system is an impossible goal and will eventually lead to failure".

This is important because, whilst we hope to transition to a 'renewable' energy economy, none of it will be sustainable unless we also acknowledge nature, social justice and a profoundly broken economic system as key parts of the puzzle that need to be fixed. Author and Senior Fellow at the Post Carbon Institute, Richard Heiberg, describes this challenge as moving from a Consumer Society to a Conserver Society.

The SCEG committee continues to draw on that knowledge base in all that we do. In this edition we see how it extends from restoring nature in Spring Creek, to the Barwon Solar Schools renewable energy program; to some analysis of Australia's future energy needs, the role of SCEG's Public Funds Committee, and in building innovative partnerships with the climate and sustainability team at the Surf Coast Shire.

We look forward to any feedback you might have. If you wish to get involved please do get in touch at info@sceg.org.au

Cheers,

Graeme.



Graeme Stockton
Surf Coast Energy Group
Founder & President



THE TIME FOR RENEWABLE ENERGY TRANSITION WAS YESTERDAY

by Stephen Prendergast

When this newsletter reaches you the Glasgow Climate summit will be over and the Australian government will have made its climate change undertakings to the global community. At the time of writing this I therefore have torn emotions, on one hand hoping that sense will prevail, but on the other expecting that governments, including and indeed especially our own, will be unable to put vested interest to the side to make tangible progress.

It is now abundantly clear that climate change is real and that the atmosphere is heating at a pace that only the most pessimistic climate scientists ten years ago thought would be possible. The past decade has provided ample evidence of the problem and its causes. The burning of fossil fuels in response to an insatiable and still growing global energy requirement produces the greenhouse gases that form a thickening blanket over the earth that increasingly traps the sun's radiation. While all countries and peoples contribute to the emission of greenhouse gases, it is rich western countries and Asian tiger economies that dominate and from whom truly massive emission reductions are needed to limit climate change to less than catastrophic levels.

The scale of the renewable energy transition challenge

In January 2019 the world's total energy consumption was estimated to be 162,000 terawatt-hours. This is 162 with 15 zeros after it which is, of course, a very large number. This is the equivalent of running 185 billion 100 watt light globes continuously for a year. What is also interesting about this figure is where that energy came from - across the world 85% of that energy was sourced in fossil fuels (32% of this being coal), leaving the balance of 15% from renewable energy.

Wind back the clock to 2009 and we see that 13% of the world's energy was renewable energy, so the most recent decade has hardly produced any change at all. Furthermore, since the world's energy consumption lifted by 21% over that decade it is clear that emission levels increased meteorically despite that slight fractional increase in renewable energy. The overall increase in energy consumption was largely due to the truly massive industrialization of China and India adding to the existing monumental emissions of major established economies in the USA, Japan and Europe. If the worst impacts of climate change are to be averted the "transition" to renewable energy needs to advance at a pace well above what it has in the last 10 years.



Alcoa Coal Mine, Anglesea
Source: Geelong Independent

1 | Daly, H. & Farley, J. (2011). Ecological Economics- principles and applications. 2nd Edition. Island Press.

THE TIME FOR RENEWABLE ENERGY TRANSITION IS YESTERDAY

Table 1: Energy Sources, World & Australia

2019	Energy consumption (terawatt-hours)	% renewable energy source (solar, wind, hydro, others)
The world	162,200	15%
Australia	1,780 (1.1% of world)	8%

2009	Energy consumption (terawatt-hours)	% renewable energy source (solar, wind, hydro, others)
The world	134,100	13%
Australia	1,520	4%

In Australia in 2019 the renewable energy fraction was 8%. While this was a slight improvement from 2009, 92% of current energy requirements were being met by fossil fuels just two years ago. Even though Australia only consumes about 1.1% of the world's energy, as the fifth largest coal producer and the largest exporter our country is indirectly one of the largest contributors to international carbon emissions.

Our challenge in Australia is therefore to progress quickly in two ways; (1) to transition our domestic energy consumption to renewables from now to 2050 at a pace that is 750% greater than our transition was in 2009-2019, (2) to manage the transition of our economy away from coal and gas exports for the sake of the climate and for economic and social reasons as the world is expected to dramatically reduce imports of these commodities.

Which sectors are responsible for consuming energy in Australia?

We need to look closely at the way that energy is used by different sectors in the Australian economy to complete the picture of where the energy transition challenges are. Only 20% of all energy end-use in Australia is electrical. This is less than gas. In contrast, petrol and other petrochemical fuels comprise about half of all energy end use. This is shown in table two, which also shows that:

- Conversion of all existing electricity use to renewable sources will only get us 20% of the way to zero emissions.
- The largest challenge is to migrate use from fossil fuels used for transportation end-uses (cars, trucks, ships, planes), manufacturing and mining processes and residential and commercial space heating.
- Households represents 30% of all energy use, not a small fraction but still dwarfed by commercial use.
- For households, petrol and fuels are easily the largest energy source (60%) and after adding gas we see 77% of energy being the direct burning of fossil fuels. By far the largest challenge for households is to displace direct fossil fuel use from transport and heating end uses, as well as to increase energy efficiency.

The major challenge lies with **business and government** as this part of the economy uses 70% of Australia's entire energy inventory and fossil fuels provide 75% of this energy.

2 | Source: "Our World in Data" website.

3 | Simple arithmetic shows that 0.4% of the energy consumption moved to renewables per annum during 2009-19. To transition to 100% renewables by 2050 starting with the 2019 level of 8% i.e. over 31 years we would need to convert 3.0% of energy consumption per year to renewables - a pace 750% greater than that over the last decade.

THE TIME FOR RENEWABLE ENERGY TRANSITION IS YESTERDAY

New technologies, no panacea

Ultimately fossil fuel use needs to be displaced and alternative technologies for engine/motor technologies and production processes will be required. In addition to the continued evolution of battery driven motors there are also a range of other significant technological possibilities that could, in theory, support the displacement of fossil fuels from end uses for which battery electric motors are not suitable. These include hydrogen and ammonia powered combustion engines and fuel cell electric motors.

While there are a range of candidate technologies, much research and development will be required and there is no guarantee of success especially in time frames that can assist to address the climate emergency. In the next decade Australia will need to rapidly deploy proven technologies and approaches:

- Solar and wind generation of electricity at the site of energy use, and nearby generation that is distributed through electricity grids.
- Replacing fossil fuels in transportation modes that are suitable for battery or grid delivery of electricity.
- Fossil fuel heating end uses should be replaced with electricity.
- Foster large increases in energy efficiency through focused financial incentives and behaviour change programs.
- Carbon removal via *effective* carbon sequestration programs.

We cannot rely on the development of entirely new technologies as a panacea. It is instructive to reflect on the promise of nuclear fusion power for which practical applications were never developed despite large scale R&D and investment over a 50 year period.

It is incumbent on all of us to muster the courage to make changes ourselves in the knowledge that it is the right thing to do and knowing that our politicians and leaders seem to be incapable of doing it.

Table 2: Energy End Use, Australia

Energy End Use 2019-20 Petajoule (PJ)	Total		House-holds	All non-household	Agriculture, forestry & fishing	Mining	Manufacturing	Water and waste	Construction	Transport	Commercial & services	Lubes, bitumens, solvents
	Petajoule (PJ)	%										
Coal & Coke	102	2.4%	0	102	0	5	97	0	0	0	0	0
Natural & LPG	1,012	23.7%	175	837	1	415	356	2	3	4	56	0
Oil & petrochemical & biofuel	2,125	49.8%	771	1,353	80	277	100	1	30	786	29	50
Electricity	858	20.1%	218	640	7	156	194	17	8	22	236	0
Renewables	170	4.0%	65	105	0	0	99	0	0	6	1	0
Total	4,267		1,229	3,037	88	854	846	20	40	818	321	50
	100.0%		28.8%	71.2%	2.1%	20.0%	19.8%	0.5%	0.9%	19.2%	7.5%	1.2%

4 | We should guard against concern that these sectors are large employers as only 0.4% of Australia's employees are employed in coal and oil / gas production; currently there are approximately 13.0 million people employed in Australia of whom 39,000 are employed in coal and 17,000 in oil or gas production.

SURF COAST SHIRE COUNCIL'S CLIMATE STRATEGY

by Rhianan Green

The Surf Coast Shire Council has been playing an active and critical role in facilitating the community's transition towards renewable energy. In June 2021, Surf Coast Shire endorsed its Climate Emergency Corporate Response Plan 2021-2031. This plan outlines the Council's organisational response to the climate emergency including commitments to procure 100% renewable electricity; to transition away from fossil fuels; and to become a carbon neutral organisation this financial year.

As part of this goal, the Council was involved in the VECO project where 46 councils procured renewable electricity together in the single largest emissions reduction initiative undertaken by the local government sector. This meant that as of July 2021, all electricity powering council facilities (e.g. offices, sporting clubs, childcare centres, etc) and streetlights were sourced from 100% renewable energy generated by wind farms across Victoria. Council also installed approximately 575kW of solar on council facilities and 50kWh of battery storage. The combination of these projects has resulted in significant cost savings on electricity and emissions reductions for Council.

Given that electricity, transport and gas are the top three sources of the Surf Coast's emissions, transition to renewables in these areas presents significant opportunities for Council and the community. Council has positively noted a rapid uptake of residential solar in the region, fuelled largely by the available Solar Victoria rebates and Council's Powered by Positive program. Transitioning to solar for local businesses has been more challenging, given the upfront capital costs, commonly leased shop fronts, and financial strain of COVID. However, emerging opportunities include new solar rebates available for small businesses, possible instant asset write off tax incentives, and leasing opportunities of roof space for panels. Another challenge regarding solar is the current restrictions on the local electricity grid's ability to take exports from residential solar. However, Powercor is upgrading the system over the next 3 months which should help mitigate this issue. Council is also seeking to expand EV infrastructure and recently applied for funding to install a number of new electric vehicle chargers within the Shire.

As part of the Climate Emergency Corporate Response Plan, the Council also strengthened its commitment to support local, community-led climate action. An outcome of this has been the establishment of the Climate Mobilisers program which ran from February to August 2021. It brought together passionate community members to explore ideas and upskill participants on local community climate action. The program facilitated and developed a number of projects put forth by the group, including a local led climate change forum to foreshore vegetation and small scale solar ideas for business. Council is currently working alongside SCEG on the upcoming Monash micro-grid feasibility study, and partnering to explore the ideas coming out of the Barwon South West Community Power Hub. The Council continues to show keen interest to engage with organisations and individuals who want to play an active role towards the Surf Coast's sustainable future. To get in touch, you can contact Sean Keown, Senior Climate and Sustainability Officer at skeown@surfcoast.vic.gov.au.

SOLAR BULK BUY PROGRAMS

THE WHAT, WHY AND HOW

by **Rory Tonkin**

No doubt most people have heard of a Solar Bulk Buy program, given that the concept has been around for a long time and there have been multiple bulk buys in the Surf Coast region. We thought it would be beneficial for SCEG to explain the basics of what they are and, more importantly, why you might want to take part.

A 'solar bulk buy' program arranges for a particular installer to offer a discounted price on the installation and / or equipment for a solar energy system, based on the presumption that there will be multiple orders from the community. The current bulk buy program - run by Geelong Sustainability and supported by SCEG - sees them teaming up with RACV Solar to deliver value for money from a very well-known and respected organisation. The main benefits of being involved in a bulk buy program are:

- Excellent value for money due to the financial benefits of a bulk purchase.
- Reassurance that the system is being installed by a reputable and stable company.
- Confidence in the overall process, knowing that all stakeholders and participants have been carefully vetted by Geelong Sustainability.
- Dedicated information sessions with full explanations and Q and A opportunities.

These benefits address most of the key concerns people have about installing solar panels - concerns that can otherwise prevent them from going ahead with a solar purchase which slows the overall take-up rate of solar systems in our region. Giving the consumer confidence and trust in the installer is a key issue in helping people commit to installing a good quality solar system.

The program is open to residents of Greater Geelong, Surf Coast, Colac Otway and Golden Plains Shires, and the borough of Queenscliff. There are a range of systems available at different price points, meaning you're not railroaded into any particular system. You have the flexibility to choose from different types of equipment and different system sizes to suit your property and budget. So far over 200 people have signed up, with about 40% of those getting a battery as well. Federal and state government rebates also currently apply, including a \$3500 battery rebate available from the Victorian government. Be aware that you would need to satisfy eligibility criteria to receive this rebate.

While their information sessions are complete, Geelong Sustainability have provided access to a webinar on their website. The thing that's challenging to explain about having a solar system on your roof is the strong sense of satisfaction knowing that a quite profound process is taking place when the sun rises and the panels on your roof start turning light into electricity. It really is quite something!

To find out more information go to www.geelongcommunitysolar.com.au



BARWON SOLAR SCHOOLS

by Adrian Ford

The Barwon Solar Schools project has secured over \$100,000 in grant funding from the Victorian Government to install over 100kW of solar PV on five primary schools in the Barwon region to reduce carbon emissions and electricity bills and fund further sustainability education activities. The project aims to install at least 20kW of solar PV at each of the following schools: Aireys Inlet Primary School, Birregurra Primary School, Highton Primary School, Manifold Heights Primary School; and Ocean Grove Primary School.

It is estimated these solar PV systems will collectively reduce carbon emissions by 140 tonnes and reduce electricity bills by over \$20,000 each year. Over their 25-year life span, it is estimated these systems will collectively reduce carbon emissions by 3,500 tonnes and reduce electricity bills by over \$500,000. Electricity cost savings will be used to fund further sustainability actions, especially those identified in Sustainability Victoria's Resource Smart Schools program and modules on biodiversity, energy, waste and water to increase sustainability and sustainability education across school facilities, curricula and communities.

In addition to grant funding from Round Five of the New Energy Jobs Fund, Surf Coast Energy Group will contribute \$2,000 of community donations raised via The People's Solar crowd funding platform towards the cost of installing the solar PV system at Airey's Inlet Primary School. Similarly, Birregurra Community Group will facilitate a contribution of \$2,500 from Birregurra & District Lions Club towards the cost of installing the solar system at Birregurra Primary School.

First announced in May 2020 by the Victorian Minister for Energy, Environment and Climate Change, Lily D'Ambrosio, Round Five of the New Energy Jobs Fund supports the delivery of community-led renewable energy projects as part of the Victorian Government's commitment to achieving 40% renewables by 2025, 50% by 2030, and net zero emissions by 2050.

Surf Coast Energy Group is pleased to work with the Department of Environment, Land, Water and Planning, Department of Education and Training, Victorian School Building Authority, and each of the participating primary schools to deliver the Barwon Solar Schools project by March 2022, if not before.



Students of Airey's Inlet Primary School, who are to receive a rooftop solar system in 2022

Source: Airey's Inlet PS

STAY UP TO DATE SCEG ON SOCIALS

@surfcoastenergygroup



In addition to our website, you can also follow SCEG's activities through Facebook, Instagram and Twitter. This is where you can find out about future community events such as our tree planting days. Here, we also share important updates on environmental issues and developments across the Surf Coast Shire and Australia at large. You can find us online by searching for @surfcoastenergygroup through the above channels. Below is a recent post about our activities to #SaveSpringCreek.



Epic footage of Spring Creek that SCEG is fighting hard to protect. We stand alongside many other organisations and community members of the Surf Coast who deeply value this unique and precious ecosystem. This was taken on the planting day with @ripcurl_au when we planted over 35 acres of native trees to help restore the area to its original woodlands. Thanks for your help Ripcurl and for the shot!
#savespringcreek #surfcoast #gorcapa #communityaction

ECOLOGICAL RESTORATION OF SPRING CREEK VALLEY SO MUCH MORE WHEN TREES BECOME HABITAT

by Graeme Stockton



Whilst the energy to restore the Spring Creek valley ecology continues in overdrive, sometimes it's great to be reminded about why it's important. Recently the Re-wilding Freshwater Creek team sent me this photo (left) of a male Koala in a planted Blue Gum on Loutit Bay Road, Freshwater Creek. It is an interesting image because I'm told he is perhaps the only resident koala in the district.

On one level, it provides first hand proof of Koala as one of the original locals of Torquay, Bellbrae and Freshwater Creek. On another level, it's the story of one little fellow surviving as a refugee in makeshift habitat and remnant bushland of what was once a vast Grassy Woodland. But, like all good stories, there's another layer of nuance. What does this single image say to me? It tells me that everything we've said about restoring the habitat of Grassy Woodland ecology in Spring Creek valley has merit. It appears we're not the only dreamers. In just 2021, RipCurl, Patagonia and Quicksilver all pitched in to assist community with this long-term vision. Over 850 indigenous trees, many of them the endemic Bellarine Yellowgum, were planted and landowners set aside around 100 acres of land for nature. It's very exciting.

RECENT TREE PLANTINGS

A big thanks to Rip Curl, who joined SCEG in planting **244 trees** along Spring Creek! This added to the **141 trees** planted by Boardriders Torquay (from Quicksilver) the week before. Together, over 35 acres were planted to help restore the area to its original Grassy Woodland (as per the Ecological Vegetation Class) using native Bellarine Yellow Gum, Sweet Bursaria and Blackwood. It's so heartening to see local organisations take action to help protect this area's unique, diverse and threatened ecosystem from further development.

The terrain included steep escarpments, tall native grasses, and lots of tree guard equipment which required careful and deliberate teamwork. Both Rip Curl and Boardriders did an outstanding job and were terrific to work alongside. Thank you to all who participated across the days!

For further information on how you can take action to help save Spring Creek or be involved in future plants please visit our website at <https://www.sceg.org.au> #savespringcreek

MEMBER BENEFITS

SUSTAINABILITY EDUCATION, ENGAGEMENT & ADVOCACY

SCEG is now, more than ever, performing a valuable role in prosecuting the case for mother earth in our beautiful Surf Coast corner. We value the thoughts and inputs of members so please, if you have any ideas or would like to help in some way just send a note to here: info@sceg.org.au

For those who haven't already joined up, we encourage you all to take out a SCEG membership. In fact we really need you to join us, and act on this membership drive. Please suggest to like-minded friends, colleagues and family to join SCEG and to participate in fighting the climate disaster just around the corner. Not only would this help to fund our important programs and initiatives, it would also bring enthusiasm and energy to activities that need community effort.

And for those still needing to renew their membership, there's no time like the present! As a reminder an individual annual membership is \$25, a family membership for \$40, and \$100 for organisation members. You can join here: www.sceg.org.au / join or contact info@sceg.org.au

As we are a 100% volunteer organisation, 100% of your membership fees go to projects that benefit your community! That's a sweet deal.



FUNDRAISING UPDATE

by **Matt Fox**

The Foundation for Rural and Regional Renewal (FRRR) has generously provided a grant of \$10,000 to support SCEG's ongoing efforts in the Spring Creek valley. The grant will allow us to work directly with landholders on conservation and restoration of the valley's woodland ecosystem. Over the next year, we will conduct biodiversity surveys, host community events, and work with interested landholders to collectively agree on future actions that can help protect what is the world's largest remaining Bellarine yellow gum woodland. The site supports critical habitat for a range of threatened species and provides an essential green break between the townships of Torquay, Jan Juc and Bellbrae.

Management of SCEG grants such as this is supported by SCEG's Public Fund Committee, which provides oversight to ensure good governance in the use of funds, grants and membership fees in accordance with the organisation's stated purpose and goals.

SCEG COMMITTEE

SCEG's active committee and volunteer supporter base has continued to grow during 2021. We recently welcomed Rhianan Green who has taken responsibility for social media and communications. Feel free to talk about SCEG matters with any of our committee members. See pages 14 and 15 for committee member bios.



GRAEME STOCKTON
Founder and President



SHARI MAVER
Secretary (2021)



MATT FOX
Secretary (2019, 2020)



PERRY MILLS
Treasurer



RICHARD MARKS



ISABELLE ASFAR



ADRIAN FORD



RORY TONKIN



STEPHEN PRENDERGAST



KATIE TRILL



RHIANAN GREEN

PUBLIC FUND COMMITTEE

At present Matt Fox, Barry Lierich and Andrew Wilson are the designated committee members.

Andrew brings great skills and relevant experience from time spent with the banking sector. Matt is conservation and land management consultant, with 25 years professional experience in international and domestic conservation sector, specialising in coastal management, conservation funding and financing, and landscape-scale conservation planning. Matt has a \$50m+ conservation fundraising track-record.

Andrew additionally has 12 years experience in banking and finance at ANZ, with specialisations in product management, pricing and data modelling. Andrew now runs a business planning company, helping environmental organisations with planning and financial modelling. Andrew has a bachelors degree in commerce and environmental biology and is an MBA candidate at UNSW, specialising in Social Impact.

Barry Lierich has a long history with SCEG (as a previous Treasurer and Secretary) and helped to create a lot of the architecture around the Public Fund Committee. Barry is a Certified Practicing Accountant (retired) with expertise in financial systems, financial management and governance.



MATT FOX



ANDREW WILSON



BARRY LIERICH

SCEG COMMITTEE BIO'S

Graeme Stockton - Founder and Chairperson

Community leader and long term involvement in community-based environmental stewardship groups. Proprietor of West Coast Indigenous nursery since 1988. Strong regional ecological restoration expertise.

Perry Mills - Treasurer

Perry is a Landscape Architect in private practice, with 30 years experience and interests in play, permaculture and sustainable design. He helped found Torquay's Danawa Community Garden in 2003, and is responsible for a range of urban interventions and projects across the state.

Shari Maver - Secretary

Shari has been a Physiotherapist, academic and researcher, currently holding a position at Australian Catholic University as Lecturer. She has been involved in various community groups with a special interest in environmental projects.

Matt Fox - Committee Member, Public Fund Committee, Secretary (2019, 2020)

Conservation and land management consultant, with 25 years professional experience in the international and domestic conservation sectors, specialising in coastal management, conservation funding and financing, and landscape-scale conservation planning. \$50m+ conservation fundraising track-record.

Adrian Ford - Committee Member

Adrian is an academic whose research interests focus on the contribution of community groups to renewable energy transitions, and the application of sustainable development models at the local level. Previously, he worked in corporate partnership roles with international development and environment organisations in Australia and the United Kingdom.

Richard Marks - Committee Member

Civil and chemical engineer with over 50 years' experience in the planning and design of water related projects. Owner and Principal of InterWater Pty Ltd a water and environmental engineering consultancy operating throughout Victoria.

Isabelle Asfar - Committee Member

20 year career in project management delivering training, strategy, systems design, environmental sustainability initiatives and public speaking across a diverse range of industries such as telecommunications, electronics recycling, eco retail, residential and commercial construction and materials recycling.

Katie Traill - Committee Member

Engagement officer with b-alternative, environmental education background, publishing and project management.

Rory Tonkin - Committee Member

Background in renewable energy and sustainability currently running consulting business focused on renewable energy 'off-grid' advice and recycled materials.

SCEG COMMITTEE BIO'S

Stephen Prendergast - Committee Member

Market and social research with 33 years experience. Founder of market and social research agencies Prescience Research and FutureEQ which both specialise in human choice behaviour and data modelling. Honorary Fellow of the Australian Research Society.

Rhianan Green - Communications Coordinator

Background in community services and social justice, grass-roots initiatives. Experience in project management, training, advocacy and communications. Currently an Advocate in the disability sector, however passionate about environmental issues.