

From Kitchen Table to Solar Farm

A Love Story

By the people at Community Energy for Goulburn



April 2025

The Goulburn Community Solar Farm was made possible by a \$2.1 million grant from the NSW Regional Community Energy Grant Program of the Office of Energy and Climate Change and a matching contribution of \$2.7 million raised by community investors through the Goulburn Community Energy Co-Operative. The grant was novated to Goulburn Community Solar Pty Ltd which was subsequently purchased by the Co-op in 2025.



Dedication

This story is dedicated to the memory of
Gretchen Alt-Cooper, treasurer of CE4G and GCEC from 2020-24 who passed away on 18th February 2024. Gretchen was crucial in setting up the Co-operative and was passionate about the project

AND

David Penalver who passed away in December 2020. David and his wife Daphne believed in the project and stepped up as Angel investors in the early years. This kept us going.

Disclaimer

The views expressed in this story of the Goulburn Community Solar Farm are the views of CE4G Inc Committee, as at April 2025. It documents our point of view and attempts to capture the experience over ten long years. The perspectives of a sample of investors were sought during this period and quotes are included. The report does not represent the views of the NSW Government.

Table of Contents

Dedication.....	2
Disclaimer.....	2
Why a love story?.....	5
Why did we build a solar farm?.....	6
Community connections came first.....	7
The Goulburn Group.....	7
Festivals.....	7
Regional networks.....	8
We received expert assistance in spades.....	8
We needed a site up front.....	8
We had to wait for Government to catch up.....	8
The NSW Regional Community Energy Grant Program arrives.....	9
The community were kept informed.....	10
Regular meetings and newsletters.....	10
Choosing a Co-operative as the governance structure aligned with community values.....	10
We worked with great contractors.....	12
Due Diligence and managing risk - the Special Purpose Vehicle (SPV).....	12
Managing contractors and consultants.....	12
Civil works 1 and 2 - site preparation.....	13
Civil works 3 - construction.....	13
Solar farm design and selling electricity.....	14
Solar farm design: getting it right.....	14
Solar panel systems:.....	14
Solar with Battery Storage:.....	15
Options for selling electricity.....	15
Becoming a retailer:.....	15
Playing the wholesale market:.....	15
Large-Scale Generation Certificates (LGCs):.....	16
Power purchase agreements (PPA):.....	16
Can our project be replicated elsewhere?.....	16
We stayed true to purpose.....	17
Using local contractors wherever possible.....	17
Setting up a community fund.....	17
Working with organisations / contractors with aligned values.....	17
We said “No” to Siemens battery inverter.....	18
The agonising final stages.....	19
Things we had no control over:.....	19
Global pandemic, unrest, politicisation of energy and privatisation.....	19
Changes to the Public Tax Ruling TR 2006/3.....	19
You have to be in the black to be green.....	19

Not one regulatory approval process was expedited within a reasonable time frame.....	20
Land size.....	20
Permission to connect.....	20
Development Approval - Goulburn Mulwaree Council, WaterNSW and local contractors.....	20
The downside of getting a Government grant.....	21
Departmental culture.....	21
Onerous reporting.....	21
Approvals required for media releases and public statements.....	22
Costly Independent Review.....	22
In summary.....	22
Conclusion: How did we go?.....	23
Appendix I: Political inertia mobilised Goulburn.....	24
Appendix II: How to build a solar farm.....	26
Motivation is crucial.....	26
Critical early actions.....	26
Community engagement was key at every stage.....	26
Tips for building a solar farm.....	27
Appendix III: Communication is everything.....	28
Appendix IV: CE4G: The faces behind the project.....	30
Appendix V: We couldn't have done it without you!.....	31
Appendix VI: Useful links.....	33
CE4G Youtube Videos:.....	33
Appendix VII: Technical Specifications.....	34

"This is *our* story about *our* experience in building a *community owned* solar farm on land that we chose for a particular reason. We have learnt many lessons on what to do and what not to do. Some of these lessons may be useful to other groups in deciding if and how to do something similar. But what we now know is that each situation is unique and the way forward can only be discovered by trial and (hopefully not much) error. We offer our story as an example of what might be possible for other communities. No guarantees." (p16)

Preface

Why a love story?

The poet and essayist Wendell Berry says: *it all turns on affection*¹. In our experience this is true. The people of Goulburn who support the community owned solar farm, also love the ground beneath their feet, their neighbours and neighbourhoods, the watersheds and scraggly woodlands of the country. They love Australia's unique ecologies. Human induced climate change is exacerbating the pressures on nature and human communities. Community Energy for Goulburn (CE4G) was formed in the belief that action on climate change has the greatest impact when done locally and collaboratively. By building a community solar farm Goulburn could participate in reducing emissions and signal regional concern for broader action.

The Goulburn Community Solar Farm is a story first and foremost about the power of expanding circles of friendship and collaboration to deliver a solar project. At the start we had no idea how difficult the volunteer effort would be over ten long years or the quality of business collaborations that would grow from this volunteer base. Who would have thought that waiting for grass to grow could threaten the project's viability or that a global pandemic and economic shutdown was just around the corner? The steep gradient of the learning curve was unimaginable. We had to understand complex technical, legal and contractual issues as well as keep ahead of continual changes in the energy market. We rode the waves of energy policy uncertainty that plagues Australian politics.

CE4G did all this and more. The solar farm came from a *red wine idea* through *feasibility* to *reality*. We started with a small group of activists and ended up with an investor base of three hundred. We began with no money and ended up securing over \$2 million in grant funding matched by community contributions. It is April 2025 and the solar panels and racking are ready for installation.

This is our philosophy: *If not us, who? If not here, where? If not now, when? **This is our story.***



¹ From the Jefferson Lecture for the National Endowment for Humanities given by William Berry, 2012

Why did we build a solar farm?

We could have done an easier community energy project but the decision to build a solar farm reflected the historical moment and the strength of feeling in our particular regional community.

By 2014 Australia had become a laggard on climate action with attempts to weaken our renewable energy target and international obligations. The Federal LNP Government was hostile to progress, throwing its weight behind coal and gas. Climate denial was a political weapon². In Goulburn anger, shame and frustration transformed into a desire to do something bold. It only needed a match to light the flame and Community Energy for Goulburn (CE4G) was the match!

The following sentiments express what a community owned solar farm meant to supporters many of whom became investors:

"Bloody hell, I see the project as an extraordinary opportunity to step past all the [political] inactivity!"
Local cattle farmer

"I no longer believe that economic growth should be the driving force for the nation. Instead it should be sustainability." CEO, local business owner

"It will [prove] that change can come from the bottom up, rather than it being expected from top down. You don't have to wait for others to create change, you have the means to do it yourself."
Local engineer

"I know the people leading the project and they've adapted to changing circumstances. I trust them."
Sheep farmer

"We see a bright future for Australia with renewable energy - just need the politicians to stop talking it down." Queensland supporter/ investor

"I bought shares for my children because I'm concerned about their future. It offers something I can do - an antidote to despair... a positive response to [climate change]." Local retiree

"We are on a collision course to destruction - we need to fast track renewable energy if our children are to have a chance." Regional business leader

This story celebrates the know-how, grit and community cooperation in this piece of Australia. We chose to build a solar farm because we wanted to be bold, support the renewable energy transition, and we had no idea how hard it would be! A small group of volunteers took up the challenge at a particular time in Australia's history and in a particular place they called home.

That small group became a 300 strong group of investors with ever widening circles of support from business, community and environment groups, media and eventually Government.

Bringing a solar power plant under the control of ordinary people in a regional community is a story worth being told. <https://goulburnsolarfarm.com.au/>

² For more on the historical context see Appendix I.

Community connections came first

The Goulburn Group

Supporters did not come out of the blue nor did their commitment start with the solar farm project.

In 2008, a group of residents concerned about climate change and regional sustainability formed an incorporated association - [The Goulburn Group Inc \(TGG\)](#).

Coming out of the millennium drought had impacted the region's economy, social life and environment. TGG approached the Fenner School for Environment and Society at the Australian National University (ANU) to help shape a strategic vision for Goulburn that would achieve results the community could see, celebrate and build upon.

The result was the 2009 Goulburn Growth Action Plan and for the next four years it shaped TGG's role as an incubator of successful practical projects that reduced fear of climate action.

By 2013 TGG had stimulated the uptake of domestic rooftop solar through a Goulburn Goes Solar project; facilitated Council's adoption of the progressive [Goulburn Australia](#) logo, brand and marketing strategy; secured and managed a NSW Environment Trust Grant to restore [Goulburn Wetlands](#) and set up [FROGS Landcare Inc.](#) to oversee ongoing rehabilitation work.

Through these projects residents, business people and Council staff worked together, negotiated differences and celebrated success relatively quickly. They grew a network of solidarity across business, environment and social organisations in pursuit of sustainability goals.

Festivals

In 2013, 2014 & 2015, TGG embarked on a new ambitious strategy to mobilise a broader community push for climate action: the [Goulburn Connects Sustainability Festivals](#). These iconic festivals saw further collaboration with business, Local and State Government, arts, education and community groups. They re-imagined Goulburn with sustainability as the main driver of regional resilience.



At the 2013 festival, themed Sustainability is Everyone's Business, former LNP Opposition Leader, Dr John Hewson addressed a packed business breakfast and became a strong ally for the future solar farm project. The 2014 festival, themed There's no Planet B, included an electric vehicle expo with a local hybrid excavator and the Model S Tesla electric car - the first Tesla displayed outside Sydney. The connection with Tesla saw the [first regional supercharger](#) installed in Goulburn in 2015.

At the 2014 festival the NSW Community Energy Feasibility Grants Program was announced. Within three months TGG secured a grant of \$50,000 and went to work.

Regional networks

While all this was happening a quiet revolution was taking place in community support for wind farms with [The Australian Wind Alliance](#) (now Re-Alliance) putting the economic case for combining renewable energy and agriculture. Andrew Bray, Charlie Prell and Mhairi Fraser were tireless [advocates](#) for community benefit sharing from large scale projects and the retention of Australia's Renewable Energy Target. (In 2020 Andrew Bray became chair of the Co-Op.)

We received expert assistance in spades

Contacts made through the Coalition for Community Energy (C4CE) brought loads of assistance from the renewable energy network. The boldness of the project within a politically hostile environment galvanised a lot of goodwill at that time. Within three months we delivered the Feasibility Study to a packed public meeting and launched Community Energy for Goulburn Inc. (CE4G). Not all funded projects got through the feasibility stage.

"My job was to identify which projects could succeed. As a department we were dipping our toes in the water on community energy - we didn't know where it would lead. I had to be careful because although there is meant to be a divide between politicians and public servants, this is not always the case. When Rob Stokes came in as Planning Minister, things changed for the better."

Former project officer with NSW Community Energy Feasibility Grant Program, 2022

That was 2015! CE4G and supporters had to wait another four years before the NSW Government stepped up with infrastructure funding necessary to get the project started.

We needed a site up front

A regional business offered land in the heart of Goulburn with visual exposure to the main road, southern rail line and a 33KV line for grid connection. The offer included environmental studies and surveys to assist with the initial DA. In addition, pro bono engineering and project management support was shared during the feasibility stage and support continued throughout the project's development and construction stages. While the shape of the land was not ideal (north facing square is best), proximity to the city, visibility to visitors and residents, and a good connection to the grid guided our choice.

We had to wait for Government to catch up

The feasibility study confirmed the project was viable provided that CE4G could raise investment from the local region to secure 51% community ownership. Through indicative pledges we were confident we could raise the community investment required. Between 2015 - 2019, CE4G explored other avenues for investment and revenue streams and kept reviewing feasibility in line with economic changes. The focus was on minimising risk.

This period felt like the doldrums but CE4G kept supporters/potential investors engaged through media stories, newsletters and forums. In 2016-17 CE4G partnered with Suncrowd to host a solar and battery bulk buy program which was oversubscribed. The appetite for renewables was increasing.

“The CE4G team are like ducks on a pond - paddling furiously underneath but the surface stays smooth.” Regional business leader

During this time CE4G considered a range of panel designs and made contact with serious suppliers many of whom considered underwriting the project.

However between 2017-18, questions about the Federal Government’s commitment to the clean energy transition as well as leadership volatility cast doubt about the future of community energy in Australia. This paused the project and by 2018 CE4G was ready to give up. Without investment certainty and infrastructure funding we could not build the farm. Then Jonathan Prendergast from the UTS Institute for Sustainable Futures, (Syd) got in touch.

Jonathan had a long history in renewable energy. He had co-ordinated the City of Sydney’s Technical Working Group on Trigeneration and worked as Project Analyst for Bendigo Bank on Renewable Energy and Community Impact Investments 2014-16. He and Gerald Arends were to form Komo Energy to facilitate innovative ways for communities to host distributive renewable energy projects. They encouraged CE4G to continue and their insights helped find a way forward.

The NSW Regional Community Energy Grant Program arrives

With lobbying and media pressure the NSW Government finally committed to community energy and set up the Regional Community Energy Grant Program in 2019.

Jonathan and Gerald assisted with CE4G’s application for a grant of \$2.1 million to build a community solar farm with battery storage and with the success of the grant application in 2019, Komo Energy was appointed as the development partner for the Goulburn Community Solar Farm. The project could now move forward. We had a long long way to go.



Local member Pru Goward MLA (3rd left) organised a meeting with Planning Minister Anthony Roberts MLA (4th left) in the early stages of the project seeking support from the NSW Government.

The community were kept informed

Regular meetings and newsletters

None of this would have been possible without broad community engagement and years of lobbying the NSW Government for a commitment to community energy beyond the feasibility grants program.

"I had a positive sense from the beginning that you were going to make it. You had the intellectual capital and grit required to see it through but also [deep connections to the community](#). Your community engagement was textbook! All of this was crucial. I watched you make mistakes but I also saw you learn and recalibrate. CE4G was probably one project that helped lay the foundations for the Regional Community Energy Grants program."

Former project officer with NSW Community Energy Feasibility Grant Program, 2022

Most important was the stamina and grit shown by community supporters who later become investors. They were patient, affirming, connected. They activated when necessary. They would wait a long time for an investment return but their support for the project did not waver.

"We have over time shifted our money into ethical investments and divested from fossil fuels. This investment [in the Goulburn Community Energy Cooperative], though small, is part of a shift in our behaviour." Regional investors

"We wanted a ROI so ran it past our financial advisor who wholeheartedly agreed that it ticked all our boxes - ethical, green, good return. We were prepared to hang in there."

Retired sheep farmers

"We have watched all the things TGG and CE4G have done over the past decade - an extraordinary group of people that have worked collaboratively with others on a whole raft of issues and projects such as heritage, sustainability, wetlands, renewable energy. This cross pollination of effort has built connections and trust." Angel investor.



First information day to gauge interest in the project and elicit indicative pledges, 2015.

Photo: P. Fraser

Choosing a Co-operative as the governance structure aligned with community values

Post feasibility stage, but before we could make an offer to investors, CE4G had to decide on a governance structure. The most familiar structure to reduce individual risk was a company limited by guarantee. We set one up with nominal shareholders and parked it ready to activate as needed. As time went on and the prospect of substantial grant funding loomed, CE4G held discussions around purpose. We wanted a governance structure that best reflected a community based project.

We received advice from regional people who had tested the Cooperative model in delivering regional healthcare. We investigated the requirements and responsibilities of shareholder run cooperatives. We noted that the model had declined in Australia but was on the rise. The decision to deregister the company and set up the Goulburn Community Energy Cooperative (Co-Op) was hotly contested within the Committee but received positively by potential investors. What appealed was the democratic model with one vote regardless of the size of shareholding, which avoided takeovers.

In 2021 the Co-Op was formed at a meeting of CE4G members and [the Board](#) appointed with expertise in renewable energy, community engagement, finance, strategy and governance. Within a few months of the formal offer, the Co-Op raised \$2.1 million dollars to match the NSW Government Grant. **The Goulburn Community Solar Farm would be 100% community owned.**



First meeting to launch the Cooperative in October 2021 and sign up investors.

Photo: N. Fraser

We worked with great contractors



Jonathan Prendergast (Komo Energy), Chris Shepherd (Divalls Earthmoving), Ed Suttle (CE4G), and Gerald Arends (Komo Energy) signing contractor agreements, April 2022. Photo: P. Fraser

Due Diligence and managing risk - the Special Purpose Vehicle (SPV)

Komo was required by the NSW Government Grant to establish a Special Purpose Vehicle (SPV) as a mechanism to manage the financial milestones of the project on behalf of CE4G and the Co-op. The grant was novated (turned over) to the SPV, as required by the grant conditions, at which time CE4G was no longer responsible for the financial or operational aspects of the project. The SPV was a proprietary company - Goulburn Community Solar Pty Ltd.

The SPV managed investor risk and progressed all aspects of the project. Due diligence was subsequently completed for legal, financial, technical specifications by the Co-op, undertaken by independent reviewers from Key Point Law, Enhar Technical Consultants and Laterals Accountants.

In 2024, the Co-Op purchased the SPV from Komo. The project is now wholly owned by the Co-op.

Managing contractors and consultants

Civil works is about preparing the site and undertaking construction in accordance with the DA requirements. In our case the solar farm site had previously been a fuel depot close to the Mulwaree River which forms part of the Sydney Water Catchment Authority. We had to prevent toxic runoff.

The DA with all the necessary environmental studies and surveys was prepared by a local consultant. WaterNSW required drainage channels and water retention ponds to capture runoff

from the site including water dripping from panels causing erosion. Further to this was the requirement for grass coverage of the entire site and planting out the perimeter.

Civil works 1 and 2 - site preparation

Tenders were put out for a Civil Works Contractor and a company from Wagga won the tender. They then withdrew their tender and the next in line was a local contractor - Divalls Earthmoving and Haulage (Divalls). Their extensive experience helped CE4G troubleshoot a range of issues relating to excessive DA requirements. They fenced the perimeter, leveled the site, put in erosion controls, sprayed noxious weeds and seeded the entire area many times over.

Up until the solar farm development, the site was a mixture of bare earth, weeds and rabbits as well as piles of spent ballast from the Australian Rail Track Corporation (ARTC). The site had to be leveled with water retention strategies in place. Waiting for grass to grow took over 12 months due to the barren nature of the site and lack of rain. Eventually Divalls covered the site in hessian to hold the soil and help the seeding take root.

Civil works stages 1 & 2 took two years due to the wait for grass to grow, ARTC delays and unforeseen costs. Having a supportive relationship with a local contractor assisted enormously with a cash flow crisis in late 2024. Through negotiation we moved the project forward at a precarious time.

Civil works 3 - construction

In March 2025 with civil works 1 and 2 completed, the Co-Op handed the project to the EPC (Engineering Procurement and Construction) Contractor, Smart Commercial Solar, to begin construction. The transformer and inverter skid had been paid for, delivered and stored at a secure site. Smart Commercial appointed Trina Solar to provide the racking and panels by April 2025 and a larger battery which will be delivered by September 2025.



Lauren Hamilton, Marketing Manager, Smart Commercial; Peter Fraser (CE4G); Ryan Sequeira, Trina National Sales Manager; Andrew Zhai, Trina Technical Sales Manager, Sydney Smart Energy Conference, March 2024

Solar farm design and selling electricity



TGG young people at the CE4G launch 2015, looking a little impatient with grown ups

As individuals we outsource a huge amount of our daily lives. Building a community solar power plant is a radical departure from this approach. It brings knowledge and control into the hands of ordinary people. That's a nice idea but making it work in the real world was a steep learning curve. Committee, supporters and stakeholders learned on the go.

Our decade-long journey is littered with detours, u-turns and dead ends but each one added to the knowledge base for the road ahead. We had to keep abreast of innovation to seize opportunities to keep the solar farm profitable. We had to decide on the design and what to do with the electricity.

Solar farm design: getting it right

Solar panel systems:

The range and efficiency of solar panel products increased over the years. Given the shape of the site we looked for products to maximise solar capture at high use periods - morning and afternoon. We looked at the 5B east / west design and single axle tracking systems. We considered Australian vs offshore manufacture. We took our time.

Solar with Battery Storage:

Taking our time paid off because battery storage came along and changed everything. Securing the NSW Regional Community Energy Grant to include a battery meant CE4G could install a cheaper, north facing fixed solar system to capture the strongest load in the middle of the day, then store it for discharge at peak times (morning and afternoon) at a higher wholesale price. The battery's stabilising effect made grid connection more attractive to the energy operator, a win for the shareholders and the energy system.

Since CE4G received the NSW Region Community Energy Grant, the battery component of the project has increased from 2.3 MWh to 2.85 MWh and as we near construction a supplementary Financial Disclosure Statement (FDS) proposes to increase the battery size to 4.07 MWh. This greatly improves the revenue and net profit of the project.

When we started in 2014 we wanted to build a solar farm. By the end of the development phase, technical upgrades and market leaps in renewable energy delivered a more efficient project and predicted stronger investment returns.



We investigated multiple panel systems before choosing a fixed north with a battery. Here we examine the 5B trial project outside Bungendore with Chris McGrath 5B CEO in early 2018.

Photo: P. Fraser

Options for selling electricity

Becoming a retailer:

CE4G considered becoming a retailer because the idea of selling directly into the local community was appealing from a marketing perspective. However retailing required levels of regulation and structure that did not make sense from an investor perspective. With the energy crisis of 2022, a number of small community energy [retailers](#) went to the wall. We are glad we looked at other options.

Playing the wholesale market:

The energy transition offers opportunities for renewable energy generators to sell on the wholesale market. With battery storage and related software our electricity can be stored when the market price is low and sold at times of peak demand when the price soars. With a larger battery this option can be combined with PPA and is likely to be our pathway.

Large-Scale Generation Certificates (LGCs):

At the time of writing LGCs are designed to encourage a shift to renewable energy by generators and retailers through the Large Scale Renewable Energy Target (LRET). An LGC is created on the online register of Renewable Energy Certificates (RECs) by renewable energy generators. Each LGC represents 1 MWh of renewable energy generated and is available for purchase by energy retailers who are required to surrender a certain amount of certificates for renewable energy each year.

If commissioned in 2025/26, the Goulburn Community Solar Farm will generate 2500 MW hours per year @ \$40 per REC, but may decline in the future depending on political decisions. This represents close to \$100,000 in additional revenue per annum for the project.

As Australia transitions completely to renewable energy this mechanism will decrease in value.

<http://www.cleanenergyregulator.gov.au/RET/Scheme-participants-and-industry/Power-stations/Large-scale-generation-certificates>

Power purchase agreements (PPA):

When we started we looked for a PPA with a long term, big load customer, the model of choice at the time. All around Goulburn, large scale wind farms were securing deals with the Australian Capital Territory, Universities and big city Councils. Meetings were held with government entities including our local Council and NSW Corrections to negotiate a long term contract. These entities expressed interest but the structural obstacles were high. By 2025 businesses and Councils are clamouring to lock in their energy costs so PPAs are attractive.

Can our project be replicated elsewhere?

Things change so quickly.

This is *our* story about *our* experience in building a *community owned* solar farm on land that we chose for a particular reason. We have learnt many lessons on what to do and what not to do. Some of these lessons may be useful to other groups in deciding if and how to do something similar. But what we now know is that each situation is unique and the way forward can only be discovered by trial and (hopefully not much) error. We offer our story as an example of what might be possible for other communities. No guarantees.

What is crucial is to take the community with you. And that means being part of the community.

We stayed true to purpose



The Goulburn Community Solar Farm will not solve the climate crisis but it's a way for ordinary people to have a stake in the clean energy transition. We resolved to place ethics above expediency and stay true to our core values.

This commitment required patience from the leadership and sometimes added to the cost of the project. Decisions to stay true to purpose were communicated openly to supporters and investors throughout the project.

Using local contractors wherever possible

We committed to buy local to support the regional economy. At times this slowed things down as local contractors were overstretched and often more expensive than their city counterparts.

While the solar panels and development partner were sourced further afield, the water, soil studies, DA application and site preparation were undertaken locally and the installation tender was won by a consortium that will involve local subcontractors.

Setting up a community fund

Two principles established by CE4G later formed the basis of the GCEC Community Relief Fund:

- To help reduce the power costs of the most vulnerable in our community with the aim of making energy more affordable.
- To create a community fund to facilitate the equitable sharing of the benefits of all projects.

A percentage of the solar farm's annual profits will be retained for the Community Fund prior to distribution to shareholders. Shareholders will also be given the option of donating a tax-deductible proportion of their dividends to the Community Fund. Donation will also be open to the public.

The fund will be conducted in partnership with a major charitable organisation to assist with distributions from the Community Fund to help address energy poverty and can also be used to conduct home energy audits including providing recommendations to reduce electricity consumption.

Working with organisations / contractors with aligned values

- Komo Energy was appointed as development partner. The Directors had a solid history supporting innovative community renewable energy initiatives.

- Tendering processes prioritised local employment where possible and deliverables that maximised local community and investor benefits.
- We rejected products or organisations involved with the fossil fuel industry.
- We chose Bank Australia and Bendigo Banks because they did not invest in fossil fuels, arms manufacture, gambling or tobacco.
- We chose a large local welfare organisation to help facilitate the community fund.
- We pursued the PPA with organisations whose values aligned with ours. The outcome of negotiations with a high value partner will hopefully be announced soon.

We said “No” to Siemens battery inverter

In 2020, a more difficult issue emerged after CE4G selected a Siemens solar / battery inverter, one of the best on the market. When, a few months later, the German multinational won the tender to build the rail link from the Adani coal mine in Queensland, CE4G’s decision took on a new perspective. It was a contradiction to use equipment designed by a company supporting a coal mine that would export carbon emissions long term.

So we changed our mind. CE4G media spokesperson, Ed Suttle said at the time: “... we are simply not prepared to support a company that is deeply involved with the Adani mine,”

<https://onestepoffthegrid.com.au/nsw-community-solar-farm-cuts-ties-with-siemens-over-adani-coal-connection/>

<https://www.goulburnpost.com.au/story/6909365/community-energy-group-gives-siemens-the-flick/?cs=181>

Investor and supporter comments flowed in: “a ray of sunshine in a depressing world..” and “the Siemens decision confirms my faith in the Committee and my commitment to the project.”



Handing over to Smart Commercial, the EPC contractor, on site in March 2025.

Left to right: Jonathan Ward (Pace Construction Management), Trent Rowe (Divalls), Gerald Arends (Komo Energy), Andrew Bray (Co-op Chair), Evert Willeumier (Smart Commercial), Louise Bennets (Secretary), Tom Aitken (Sol Srv, Smart contractor), Mhairi Fraser (CE4G), Peter Fraser (Co-op), Shaun Wells (Smart Com), Ed Suttle (Co-op). Photo: N. Fraser

The agonising final stages

By March 2025, most approvals were in place and due diligence finalised by all contractors and financial stakeholders. This chapter is about the real world struggle to reach our goal.



Things we had no control over:

Global pandemic, unrest, politicisation of energy and privatisation

The pandemic threw a spanner in the works and as the post pandemic world went into economic slowdown, the cost of everything skyrocketed. Russia invaded Ukraine creating a global energy, food and labour crisis. In Australia, State and Federal Governments finally committed to a net zero trajectory. Sort of. In 2025 nuclear power is back on the political agenda and approvals for new coal and gas projects continue. The NSW energy transition contends with an old regulatory model and an alarming array of vested interests thanks to the privatisation of electricity assets and generators from 2010 onwards. All along the energy food chain complex regulations protect these interests costing the taxpayer and projects like ours.

Changes to the Public Tax Ruling TR 2006/3

In 2024 we discovered Australian Taxation Office (ATO) changes to Public Tax Ruling TR 2006/3. This new ruling requires industry in receipt of government assistance (grants) to pay tax on that assistance. Tax advice confirmed that this included community energy grants and the tax had to be paid before construction. For CE4G this meant the loss of 25% of the value of the NSW grant and the pressure to pay up to \$500,000 to the ATO before any revenue was generated. This Ruling was brought in at the same time as the NSW Regional Community Energy Fund opened (2018) and neither the NSW Government nor grant recipients were aware of the tax impost on funded projects. It has undermined viability for some community energy projects and impedes success.

To date the ATO has refused to exempt community energy projects or allow them to schedule tax payments over time once the solar farm is generating revenue. Delegations to Federal Government Ministers have yielded no action despite promises. CE4G/Co-Op have no issue paying tax. The injustice for us is paying that tax before revenue is generated. CE4G has put in place extensive cost control measures to ensure the tax is paid at each milestone when the next tranche of grant money is received. It is frighteningly scary and in the end the Co-Op will run out of money to pay the tax and will need to borrow.

You have to be in the black to be green

The Goulburn Community Solar Farm was an idea that came from a volunteer base with business and community collaboration at a time when Governments were failing to act on climate change. The community energy movement in Australia is tied to this volunteer model and few projects have made it through the regulatory maze. The same rules that apply to large generators apply to this small regional solar farm but without the paid personnel and expertise. Future projects should receive funding for paid staff to support the hours of community leadership required.

Not one regulatory approval process was expedited within a reasonable time frame

Land size

Transport NSW owned a narrow strip within the solar farm site, leased to the Australian Rail Track Corporation (ARTC). It was unused. The DA required the project to consolidate it within one lease. This step was vital for the DA, subsequent modifications and grant milestones but it took the ARTC 18 months to come through despite delegations to the Wagga Office, countless promises, letters and phone calls. The final rubber stamp sat on someone's desk for 12 months. Then we waited while the ARTC obtained quotes to remove waste from the site. This took months and only after political intervention did the ARTC give permission for CE4G to remove the material. The costs in frustration, anxiety and delegations to Wagga should not have occurred.



The site is next to the Sydney to Melbourne rail line but includes a small slither of land leased by the ARTC (path in foreground) that took over 18 months to finalise a lease.

Photo: N. Fraser

Permission to connect

Essential Energy is a NSW Government Corporation that owns the poles and wires in rural NSW. Since the privatisation of all other aspects of electricity infrastructure in NSW, staffing levels in Essential Energy are low while demand for grid connection is rising, creating bottlenecks. The Goulburn Solar Farm was small and straightforward but had to jump through the same hoops as much larger more complex projects. Provisional approval to connect was given in 2016 but due to delays related to the ARTC and the DA, our approval lapsed. The process began all over again, with more costs and within a more pressured environment.

Permission to connect was finally given in May 2022. It took six years in total. Understaffing was the main cause. This should not have occurred.

Development Approval - Goulburn Mulwaree Council, WaterNSW and local contractors

A range of soil and drainage studies were undertaken for the DA including requirements by WaterNSW, survey of the land size and requisite permissions from the ARTC and Essential Energy. So often we were caught in a vicious loop between all three. The final DA took several years to secure, including the Statement of Environmental Effects and modifications for battery

storage. A minor modification submitted in 2021 for a larger battery took 12 months and in 2024 the final Construction Certificate with Council took six months.

CE4G commitment to “buying local” slowed the DA preparation. In Goulburn there are very few people qualified to undertake the environmental studies. When excessive conditions were placed on the project by WaterNSW there were more delays negotiating alternatives. For example: we could not proceed until grass was visible after seeding. This took over 12 months and was only possible after covering the site in hessian.

The length of time to secure studies and prepare the application meant that the DA threatened to lapse in 2022. At a meeting with Council the CE4G representatives were told that new regulations required significant commencement to occur to avoid the lapse. However we couldn't commence due to the delays in other approvals. Round and round we went.

It was discovered by our consultant preparing the DA that due to COVID, extensions to DAs had been given and the new regulations did not apply to CE4G. Council planners were not across this ruling and their decision with its costly delay could have sunk the project.

The downside of getting a Government grant

Departmental culture

In 2019 CE4G received a \$2.1 million grant through what is now the Office of Energy and Climate Change (OECC). This was a huge boost for the project. However Departmental culture had changed since CE4G received the 2015 feasibility grant from the NSW Office of Environment and Heritage. Gone was the continuity of staff, face to face visits to Goulburn and internal advocacy for the project. While individual public servants were courteous and helpful, changes of personnel, secondments, and reduced working hours were a constant problem. Frequent bottlenecks meant approvals up the line took a long time. The relationship with the Department lacked the sense of partnership experienced 10 years earlier.

Onerous reporting

The reporting requirements for each milestone were frighteningly complex, time consuming and at times costly. Templates were complicated, the language confusing adding pressure to the CE4G executive. CE4G respects the importance of public accountability but the burden of reporting fell heavily on volunteers. CE4G and Co-Op governance structures of accountability were rigorously in place. Annual reports to investors and members should have accounted for the majority of progress reports. Reporting, online meetings and fighting for milestone adjustments sapped the energy of the leadership team.

Approvals required for media releases and public statements

The Government grant was given to CE4G to build a community owned solar farm. As a condition of the grant all media releases had to be approved by DPIE/DPI/OECC. Required changes would often take days to come through from the Sydney office. Turn around times for media releases is crucial in a 24 hour news cycle and delays were counterproductive.

External Approval of communications to ensure nothing negative was printed about the NSW Government conflicted with CE4G's community voice. We pushed back hard.

Costly Independent Review

In 2021 CE4G requested additional funding to help cover the cost of a larger battery (\$210,000) which would benefit the project and provide added benefits for grid stabilisation. This small (in the scheme of things) request, required a full project review by an outside consultancy firm, which took six months funded by the taxpayer. In the light of the scandals around the cost of outsourcing government work to big consultancies (the "Big Four") we question the value for money for such a small sum. Furthermore, This reviewer (one of the above) had been involved in the design of the NSW Regional Community Energy Fund and appeared unaware of changes to the federal tax regulation that would impact not only our project but every other community energy project in the program.

In summary

CE4G and its partners have been more tangled up in red tape, competing interests, onerous conditions and unwarranted delays than anyone anticipated. This experience can break the heart of a community group, changing a brave venture into a missed chance to do something good for the future. The obstacles to progress must be removed for community energy to flourish in Australia.



Conclusion: How did we go?

Community Energy for Goulburn pulled it off! Almost!

At the time of writing (April 2025), construction is due to commence. Then comes commissioning which will take time (no surprise)! Come summer of 2025, we hope to switch on. The battery will follow in 2026.

It will be a proud day for Goulburn when we declare the Goulburn Community Solar Farm open for business.

Imagine it! The ribbon is cut, the pain of the process fading to memory, tears of relief are shed, there are hugs all round. Those gathered will be friends with their children and grandchildren, project partners, local contractors, the requisite local coffee van, journalists, television crews, videographers. A drone or two will fly overhead recording the moment when hundreds of people breathe a collective sigh of relief, clap their hands and jump for joy.

A train may roll past on the Sydney to Melbourne line, passengers leaning towards the windows, wondering what is happening. Huge signs announcing the Goulburn Community Solar Farm along with a 4000 panel array will give them a clue. Politicians and public servants in hi vis will goof for the cameras - hopefully those who genuinely helped the project. Those who didn't may shuffle their feet uncomfortably or send their apologies. Old friends, there at the beginning, will travel from across the country to join those who saw it through to the end. Everyone will have sore cheeks from smiling.

Converting a desire to act into a compelling idea, then into a real world project in a regional community and to bring that project to fruition is awe inspiring. Even more so as political confusion about our energy future continues and human and ecological costs of catastrophic weather escalate.

But the challenge before us is much more than controlling emissions. It is about finding a genuinely sustainable way to live on Earth. This will most probably be won at the local level rather than on the broad stage. Farm by farm, river by river, neighbourhood by neighbourhood. That is where bonds of affection and trust make a claim. Bringing nature to her knees has consequences that will pull us apart or draw us together. Our experience in Goulburn is that together we are stronger, that love for our community, the earth beneath our feet and the creatures with whom we share the planet, will find a way.

This could be the century of the small.³

³ From an essay by Arundhati Roy: *The Greater Common Good: Dams, Development & Democracy in India*, 2019..

Appendix I: Political inertia mobilised Goulburn

"I'm an angry ranty person, so frustrated by the lack of action on renewable energy in Australia when we have so much sun and wind. I won't stand for election but I can invest in the solar farm."

Investor



Locals demonstrating outside the Goulburn office of local MP Angus Taylor in 2019.

Photo: P. Fraser

From the 1980s onwards successive governments (both Labor and Coalition) kicked climate action down the road. All Australia's eggs were in gas and coal. Despite community support for renewables, political uncertainty undermined community and business confidence.

Australia's inertia reached a new level from 2013 onwards and we had to wait 9 years for [a climate election](#) in 2022. In our story, members of the Federal Government elected in 2013 tried to scuttle Australia's Renewable Energy Target, used carry over [Kyoto credits](#) to fudge Australia's emission reduction commitments whilst approving new coal and gas projects for export. Climate action was politicised. Many Australians were confused in response to the political playbook: divide, obfuscate, frighten and seduce. In Goulburn it galvanised resistance.

Earlier in 2009, the stage was set for what was to come when then Opposition leader, Tony Abbott told his Liberal Party room that "climate change is crap". This summarised a large body of [public statements](#) by Mr Abbott debunking climate science that continued to drive public confidence in renewable energy to an all time low. As Prime Minister, Tony Abbott set about [dismantling](#) the few mechanisms that Australia had in place to reduce emissions and boost renewable energy. Under his Government, it would be business as usual for the fossil fuel industry. There would be a

reduced renewable energy target and no subsidies for clean energy infrastructure, [no economic incentives](#) for reducing emissions. In 2017, his Treasurer, Scott Morrison, later to become PM, brought a [lump of coal](#) into parliament as an object of reverence. The optics and message were clear. Forget climate change. Don't worry. She'll be right mate.

Using the [tactics](#) of the tobacco industry the Abbott/ Turnbull/ Morrison Governments set out to [discredit](#) the science of climate change and amplify fears in the community that climate action would hurt. The spread of false information undermined public confidence in science organisations, the independent public broadcaster and community support for renewable energy. Government rhetoric pitted cities against regions, inner cities against outer suburbs, state against state.

In Goulburn, a region that had suffered the 10 year millennium drought, the local member for Hume, Angus Taylor publicly opposed wind farm projects and scoffed at their economic benefits. Stirring the pot on wind farms set landholders against each other. Later as Australia's Energy Minister (2021) Taylor convinced many that renewables would increase energy prices, spruiking [gas](#) as the new low emission strategy. It looked like we were locked into a fossil fuel future.

During this time faced with aging coal fired power stations, the States, including NSW set their own ambitious renewable energy targets. This provided the impetus for the community energy funding programs.

The Albanese Federal Labor Government swept into power in 2021 after the 2019/20 devastating bushfires and the COVID pandemic. Hopes were high for a renewable energy led recovery but the community continues to be let down. New coal and gas projects have been approved in pristine and sensitive areas on land, offshore and proximate to precious groundwater systems.



"Politicians need to stop thinking about the 24 hour news cycle, put their ideological differences aside and start working together to address climate change."

Dr John Hewson - Speaking at the sustainability business breakfast that launched the solar farm project in 2014.

Appendix II: How to build a solar farm

This guide is for community groups interested in developing a community owned solar farm. There is no one-size-fits-all blueprint. We offer this snapshot to assist others.

Motivation is crucial

The motivation for the solar farm was to be part of the solution

- Enough people were fed up with political inaction on climate change to do something bold
- They understood the benefits of clean energy to the environment *and* the local economy

It started with a sustainability group with local credibility

The Goulburn Group Inc. (TGG) had already delivered a raft of sustainability projects since its inception in 2008. The group was a trusted voice at the local level.

It was inspired and supported by the Community Energy Movement

In 2014, people from TGG, agriculture and business attended the Congress on Community Energy organised by the Coalition for Community Energy (C4CE). This inspired a kitchen table conversation that came up with the idea of a community owned solar farm.

In 2015 TGG conducted a feasibility study funded by the NSW Government's Community Energy Feasibility Grants Program, to build a 1.2 MW solar farm with at least 51% community ownership. Community Energy For Goulburn (CE4G Inc.) was launched to take the project forward

Critical early actions

- Decided to build a community solar farm with at least 51% ownership because it was bold
- A community engagement strategy was undertaken
- Developed logo, website and socials for brand recognition
- Set up technology for communication and engagement
- An appropriate long term site was secured with an 33KV line for grid connection.
- Feasibility was established for a 1.2MW solar farm.
- Permission to connect to the grid and preliminary DA started early
- Community kept up political pressure for development and construction funding
- A trusted development partner was identified
- Legal and accounting advice was set up for due diligence
- A governance structure was selected that best reflected community ownership.

Community engagement was key at every stage

Public meetings, door knocking, videos, press releases, newsletters, political pressure and networking were constant.

We kept up pressure on the NSW Government to support Community Energy

In 2019 the NSW Government launched the Regional Community Energy Grant Fund. CE4G secured a \$2.1 million grant for a 1.2 MWh solar farm and battery in 2020. The Goulburn Community Energy Co-operative (The Co-Op) was formed as the investment vehicle and the *Offer Information Statement* released to prospective investors. \$2.7 million was raised to ensure 100% community ownership!

Expect the unexpected - delays, a global pandemic, inflation/cost spikes, interference, tax rules.

Tips for building a solar farm

Getting started	Develop as you go
Global view / local focus - Attend a Community Energy Congress or link up with C4CE - Purpose (why) - Size and components of the project (what) - Who will benefit /support project (who) - Desired timeframe (when) - Obtain feasibility funding and then construction grant through your State Government. NB* Be prepared for a long haul. Connection & DA approval - Begin this early as it can take over 12 months Legal entities for various stages - Cooperative - Company - Association NB* We started with an Association to assess feasibility then formed a Co-operative as the investment vehicle. Suitable site - Shape - preferably square - Size - more than 2 hectares - Aspect and slope (N/NW facing) - Security: (long term affordable lease) - Minimum 11KV on-site connection - Room for battery - Appropriate zoning Leadership skill mix - Commitment to a team (years not months) - Manage complex ideas & learn on the job - IT - Marketing, Media and networking - Finance - Community engagement & events Leadership temperament mix - Patience - Audacity - Courage - Humility - Gender balance Finance, Legals and NEM decisions - Government/philanthropic and/or investors - Understand legal documents and regulations - Access to legal and accounting expertise - Selling the electricity-PPA, spot market or retail Development partner - Skin in the game (community energy) - Highly recommended by people you trust	Brand Recognition - logo - internet domain name and email - web and social media presence - regional recognition - acknowledge traditional owners - identify Indigenous name for country Advocates and Allies - Relationships with organisations - Community connections - High profile allies - Locally credible - Available for public events - Will give support when needed Technology, Database and CRM - To manage financial transactions - To manage communications NB* We ended up getting a not-for-profit Google Workspace account that gave us a central place to communicate and store information. Best of all, it was free. Community engagement & collateral - How to contact - queries, media and membership - Newsletters - Protocols - media spokespeople, acknowledgement of traditional owners, legal positions, signing documents - Forums - Webinars - Market stalls - Videos - Banners - Media releases - Identified spokesperson - Take responsibility for stuff ups - Give credit where it's due Celebrate achievements - Acknowledge traditional owners - Tell the story - Be inclusive - Share the credit - Run events well

Appendix III: Communication is everything

At each stage CE4G / Co-Op had to be on the front foot, engaging the community, business, decision makers, contractors, consultants and media, ready to troubleshoot, confront issues and maintain transparency throughout the project. The table below shows how communications evolved.

Stage/ goals	Stakeholders	Key Strategies	Collateral
Stage 1: Establishing Feasibility Community engagement/ community empowerment (2014-15)	Regional community: individual/groups/business. Energy experts: finance/ technology NSW Government: funding body/regulatory entities. Elected Members: local/state/ federal. Goulburn Council staff. Media: local, regional & national. Coalition for Community Energy.	Develop logo/website/build database. Engage influencers. Secure good venues. Hold regular public meetings. Secure partner expertise. Deliver Comms Plan. Secure neighbour support. Market stalls, video. Meet regularly with energy/ business experts. Build media relationships. Report on funding grant. Sign up CE4G members.	Project name. Comms plan. Logo/banners/posters/ website/videos/flyers. Stakeholder and membership databases. Media releases. Reporting templates. Incorporation status. Feasibility Study and funding acquittal.
Stage 2: Securing finance Keep moving forward while pursuing funding (2015-2019)	CE4G membership. Regional community: individual/groups/business. State & Federal MPs. Regulatory entities: Essential energy/ Council/Fair Trading. Landholders: Denrith/ARTC Potential funding bodies. Potential PPA customers & suppliers. Media.	Persistent lobbying for a community energy funding scheme. Partner with Suncrowd Solar Bulk Buy to keep community engaged. Progress grid connection. Secure initial Council DA. Sort out land size anomalies. Investigate solar designs. Secure trustworthy development partner. Identify governance model & potential Board members. Maintain media presence including social media. Participate in Student Climate Strikes 2018-19. Be ready to apply for funding.	CE4G Website /database/social media platform. Media releases. MOU with Suncrowd. MOU re lease of site. Provisional DA. Revised financials. CE4G Inc bank account.
Stage 3: Development begins governance/ finance/legals/ development partner/add battery (2020-2023)	CE4G membership. Goulburn Community Energy Cooperative membership. Regional community. Development Partner. Land owners. Funding body. Cooperatives Association. Fair Trading. Sydney Water. GM Council.	Announce \$2.1 million NSW Govt funding grant. Negotiate milestones/ deliverables with funding body & development partner. Set up Co-Operative/Board. Disseminate Investment Offer Information Statement. Recruit project officer to support Committee. Deliver COVID safe public meetings with online access. Set up a Co-Op database to manage membership & investments. Begin work on Knowledge	Funding agreement. Co-Operative Registration Certificate. New website/social media/flyers/investor & member forms/tshirts DA modification for battery. Permission to connect from Essential Energy. Soil Studies and DA reports. Rental space and office equipment. Legal documents including EPC contracts. ARTC agreement to lease

		Sharing documents. Provide regular Co-Op member newsletters. Deliver/support public meetings on renewable energy related topics - Saul Griffiths (2022) & CCL offerings.	land to solar farm. G Drive - Story: From kitchen table to solar farm and supporting docs. AGM & Public event speakers included: - -Saul Griffiths-electrify everything & - Dr Rebecca Colvin, ANU Crawford School of Public Policy
Stage 4: Construction begins Contracts/site preparation/construction	CE4G and Co-Op Board & membership. Landholders EPC and contractors. Development partner. Legal team. GM Council. Sydney Water. Funding body.	Formal onsite handover with photos and interviews. Local community groups approached to provide seedlings Onsite working bee to plant out site	Sign goes up on newly built fence Photos of activity continuous Newsletters keep investors up to date
Stage 5: Switch on Official launch/celebration. Performance reporting begins. Dividend schedule.	CE4G & TGG. Goulburn regional community. CoOp members. Co-Op Board. Landholder. Development partner/EPC. State Member. GMC. Anglicare - community benefit fund. Regional and national media. Long term supporters.	TBC	TBC

At all stages the Committee sought to engage the community and other stakeholders in a personable yet professional manner.

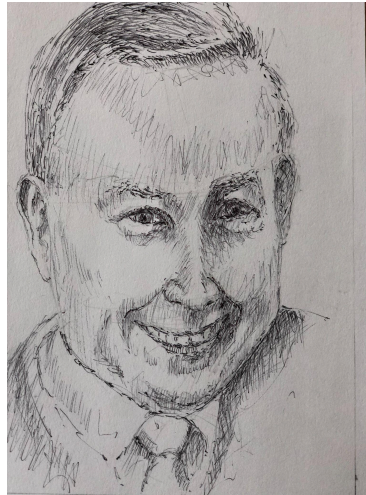
The public events hosted by CE4G and the Goulburn Community Energy Cooperative consistently displayed the following features:

- Every event was well planned with a clear purpose.
- Events were publicised widely through social and print media.
- Venues were accessible, central, well set up and with good technology, equipment and support.
- CE4G / Co-Op collateral was always in place.
- MC and Speakers were thoroughly briefed and selected for their credibility and presence.
- Technology was tested thoroughly beforehand.
- Online access to events was tested and facilitated by an IT expert using various platforms.
- A team of briefed volunteers facilitated the registration / information / Q & A sessions.
- Media were invited as appropriate.
- Events started and finished on time.

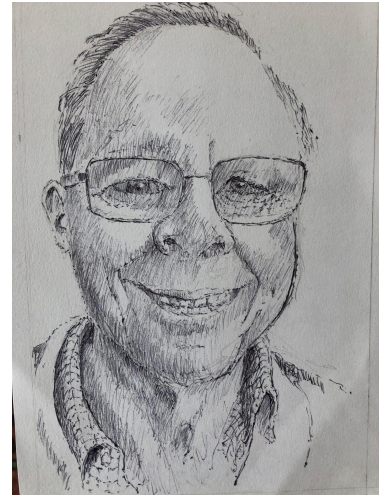
Appendix IV: CE4G: The faces behind the project



Alex Ferrara



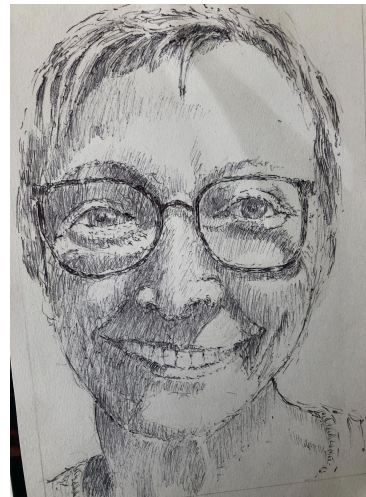
Peter Fraser



Ed Suttle



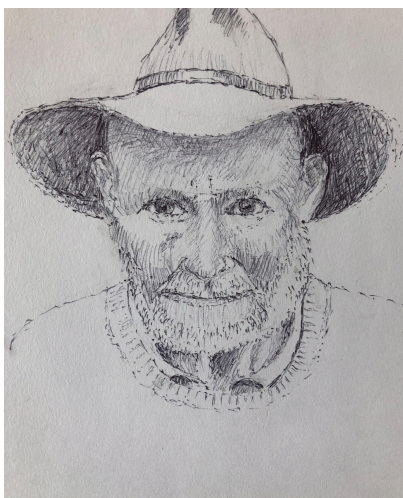
Mhairi Fraser



Louise Bennetts



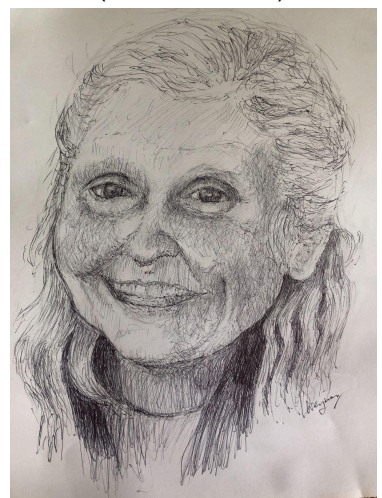
Gretchen Alt-Cooper
(died Feb 2024)



Bill Wilkes



Jane Suttle



Sonya Smythe

Artwork by Charles Weyman. © CE4G.

Appendix V: We couldn't have done it without you!



L-R: Amanda McKenzie (Climate Council), Alex Ferrara, Peter Fraser, Urs Walterlin (TGG) at the EV Expo 2014

The Goulburn Community Energy Co-Operative Board 2021-2025

Andrew Bray Chair 2021 - current
 Peter Fraser 2020 - current
 Ed Suttle - 2020 - current
 Virginia King 2021- current
 Gretchen Alt- Cooper 2020 - 2024. Gretchen sadly passed away in February 2024
 Roger Lucas 2020-current
 Marilyn Biel 2024 - current
 Laurence Street 2024 - current
 Alex Auhl 2024 - current
 Rowena Cantlley-Smith (2021-2022), Kerry Connors (2021-2022), Ben Elliston (2021-2024)

Komo Energy

Gerald Arends 2018 - current
 Jonathon Prendergast 2018 - 2025

Bookkeeping / Accounting

Nicola Fraser (bookkeeper 2024 - current)
 Tim Allen (Laterals Accounting)

Legal advice

Norton Rose Fulbright
 David Young (Keypoint Law)

Ashurst
Pegasus Legal

Knowledge Sharing: *From Kitchen Table to Solar Farm - A Love Story*
Mhairi Fraser

You too!

The Goulburn Group Inc
Nestor Ellinopoulos
Mark Flemming & Chris McKenzie-Davey (Office of Environment and Heritage 2014-2015)
Nikki Ison & Tom Nockolds (Community Power Agency)
Amanda McKenzie (Climate Council)
Lawrence MacIntosh (SolarShare ACT)
Toby Roxborough & Byron Serjeantson (E2 Design Lab)
David and Daphne Penalver (Angel Investors)
Simon Holmes a Court (Hepburn Wind Farm)
Andy Divall, John Degroote, Caleb Fisher, Chris Shepherd (Divalls Haulage)
Dr Anna Cain (Solar Engineer, Infigen Energy 2015)
Steve Blume (Australia Solar Council 2015)
Goulburn Mulwaree Council
Moira Sharp (KJA Consulting 2015)
Mark Bradbury Legal for office space.
Dr John Hewson
Pru Goward Member for Goulburn 2007 - 2019
Michael Pilbrow for advice on Co-Operatives
Goulburn Workers Club for venues

Media and Videography

Vincent MacManus/Stone (Short Black Films)
Sarah Barns (Studio Esem)
The New Jones's Video Company
Dr Jenny Newell, Australian Museum
Louise Thrower (Goulburn Post)
2GN
Goulburn Community Radio
ABC Central West
ABC Radio Canberra
ABC Landline
ABC TV and Radio Illawarra
ABC TV Canberra
Renew Economy
WIN News
The Land
The Australian

Appendix VI: Useful links

Goulburn Community Energy Cooperative: <https://goulburnsolarfarm.com.au/>

Community Energy for Goulburn: <https://www.ce4g.org.au/>

Coalition for Community Energy: <https://c4ce.net.au/congress/>

Community Power Agency: <https://cpagency.org.au/>

Climate Council: <https://www.climatecouncil.org.au/>

Hepburn Community Energy Guide for Victoria:
<https://hepburnznet.org.au/program/community-energy-guide/>

Komo Energy: <https://komoenergy.com.au/>

Business Council of Co-Operatives and Mutuals: <https://bccm.coop/>

RE-Alliance: <https://www.re-alliance.org.au/>

Renew Economy: <https://reneweconomy.com.au/>

One Step off the Grid: <https://onestepoffthegrid.com.au/>

CE4G Youtube Videos:

CE4G Introduction (2015) - <https://youtu.be/Z5c6g7i6yTw>

Community Energy in Goulburn (2017) - <https://youtu.be/ntxx32blwgk>

John Hewson talks Community Energy (2020) - <https://youtu.be/a7dNNtZVPEY>

Goulburn Solar Farm Technical Chat (2020) - <https://youtu.be/jGRveBLz3Z4>

Australian Museum project (2024) -
https://drive.google.com/file/d/1vxRHb-IDwI_er9gMNirdDctyDTHHJn9C/view

The New Joneses (2024) - <https://youtu.be/nwYk9UOAXHQ>

Appendix VII: Technical Specifications

Item	Specifications
Total annual output	2440 MWh (assumed)
AC Capacity	1.41 MW AC
DC Capacity	1.386 MW DC
Inverter	Fimer (formerly ABB) PVS 980-58, 1818kVA
Transformer	Tyree oil transformer
Ring Main Unit	ABB 33 kV 50 Hz V REJxxx
Racking	Trina fixed tilt 2 post (2 portrait module arrangement)
Module (Panel)	Trina NEG19RC.20 620W
DC DC Converter	DynaPower DPS-500 DC-DC 500kW Converter
Battery	Trina Elementa 2, 4.07 MWh

