

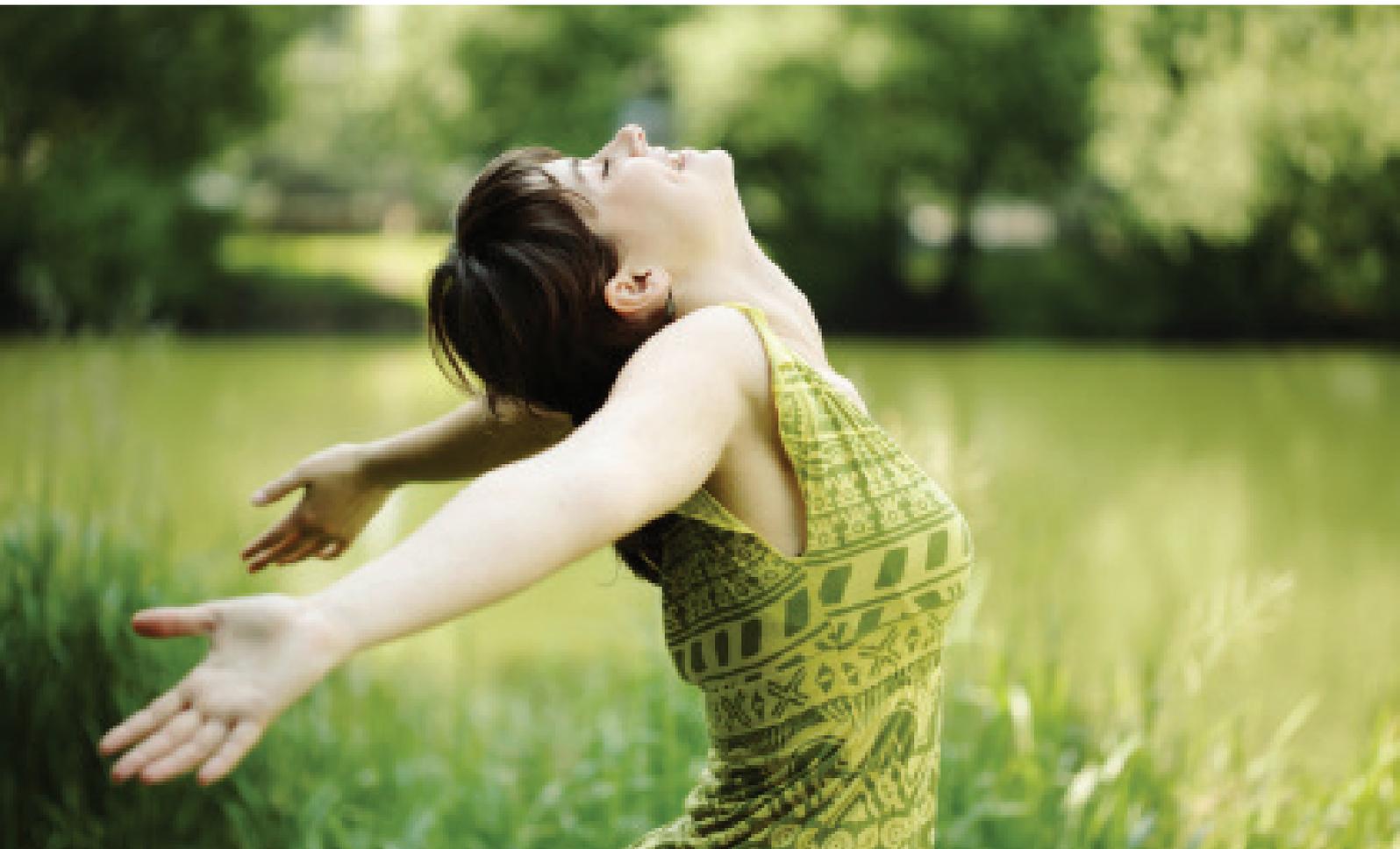
Company Profile

Off-Grid Energy Australia Pty. Ltd. - Securing your power and your future

“

As one of the most experienced domestic energy storage companies in Australia, our professional and innovative team is dedicated to challenging Australia's incumbent energy paradigm and advancing progressive technologies for the betterment of Australian society.

”



Our History

Off-Grid Energy Australia are national leaders in designing, implementing, operating, and servicing distributed storage systems, and we are continuing to lead the industry through strategic partnerships with some of the best companies in the world.

We are a trusted provider of battery storage systems for both grid connected and off the grid applications, and are nationally accredited for system design and installation.

Our expertise ranges from small domestic applications through to larger residential and commercial renewable energy storage projects.

Since Off-Grid Energy's inception we have commissioned more than 1.5 Megawatts of off-grid solar energy, more than 8 Megawatt hours of battery storage, numerous small-scale wind turbines and countless generator sets, for hundreds of commercial and domestic customers across Australia.

Off-Grid Energy also provides design and feasibility services to the public and private sectors.



Our People

The team at Off-Grid Energy Australia bring together extensive industry experience in renewable distributed energy solutions, and members of our team have been involved in some of Australia's pioneering renewable energy projects.

Our enthusiastic team combine their passion for renewable energy with their strong work ethic and customer focus.

Off-Grid Energy Australia operates nationally through a network of qualified industry partners and installers. We are proud that many grid connect solar companies consider Off-Grid Energy to be their preferred supplier for on-grid and off-grid battery storage products.

We work closely with our partners to ensure our products are commissioned at the highest standard of workmanship and technical compliance.



Emily Driscoll
Operations &
Marketing Manager



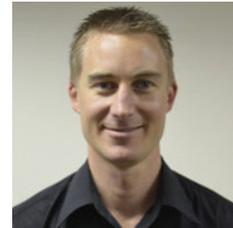
Greg Tonkin
Head Technician



Claire Mitchell
Purchasing &
Logistics



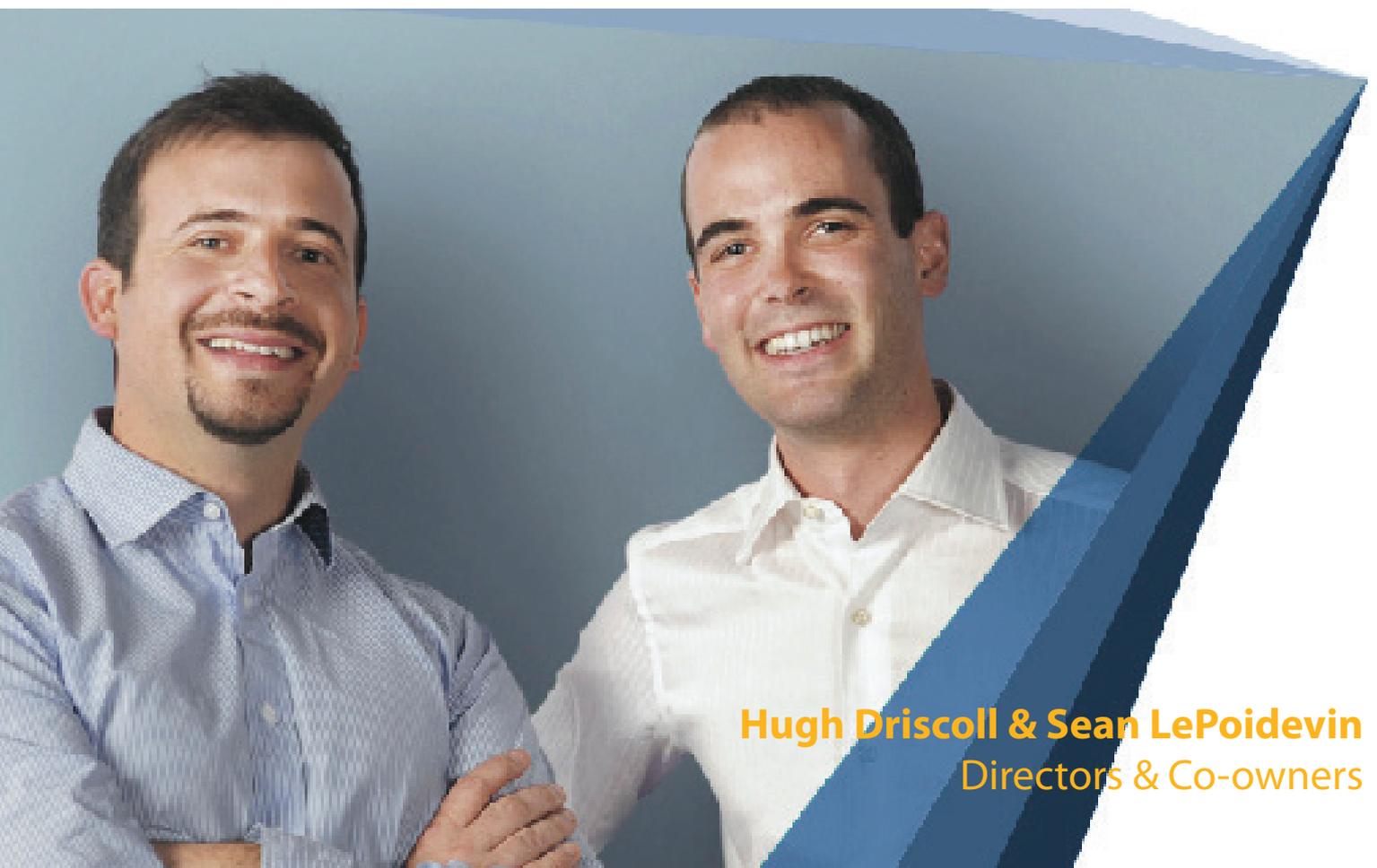
Adam Crickmar
Technical Support &
Manager - WA & NT



Mark Constable
Off-Grid Design
Consultant



Aaron Lewtas
Manager - Vic & Tas



Hugh Driscoll & Sean LePoidevin
Directors & Co-owners

Our Commitment

When you are self-sufficient, your system provider needs to be available 24/7 in case the power goes out. Battery system design and installation also requires markedly different expertise to that of normal solar installations. We understand these responsibilities, and do not take them lightly.

When you buy an off grid power system from us, you don't just get power equipment. You get years of attentive service.

We are passionate about renewable energy and sustainable business practices. This passion is central to our business strategy and helps direct everything from the way we use and source energy, what suppliers we partner with, and what products and solutions we plan to offer in the future.

We use 100% green power to run our operations and offset the emissions created by every one of our installations through the purchase of carbon- offsets.

“ We pride ourselves on friendly and lasting customer service, sustainable business practices, expert knowledge, highest quality workmanship, and cutting edge technology. ”



Our Awards

Our dedication, expertise and our strong business acumen have been rewarded with Off-Grid Energy Australia winning the Telstra Australian Business Awards SA Startup of the Year, the Australian Small Business Champion, finalist for the EY Entrepreneur of the Year, and listed in Financial Review (formerly BRW) Fast100.

We are members of the national Clean Energy Council, the Alternative Technology Association, Energy Storage Council, Australian Solar Council, Alternative Technology Association, and the international Alliance for Rural Electrification - solidifying our ongoing commitment to, and influential position within, the renewable energy industry.

Off-Grid Energy has been approved as a Clean Energy Council Approved Solar Retailer, Tesla Powerwall Certified Installer, Reposit Power Accredited Partner, ZCell Endorsed Installer, and a Selectronic Approved Installer.

We have also been selected as the only SA Power Networks Preferred Supplier for all domestic off-grid projects.

Awards



Endorsements



Memberships



Our Experience

Domestic

With installations in every Australian state & territory, New Zealand and the Pacific Islands - we understand the intricacy of designing systems around different applications, demand and weather conditions.

Our domestic project experience includes:

- **Off-Grid Homes**
- **Off-Grid Weekenders & Holiday Homes**
- **Off-Grid Multi-Building Stations**
- **Grid Defection**
- **Grid Connected Solar & Battery Storage (solar self-consumption & backup)**

Commercial

Together with our network of partners, we have been involved in a huge range of diverse work for the public and private sectors.

Our commercial project experience includes:

- **'Peak Lopping', kVA billing Capacity Reduction**
- **Embedded Networks**
- **Micro-Grids & Housing Developments**
- **Diesel Offset Project Commercial solar**
- **Commercial Solar Investment**
- **Commercial Storage and Backup**
- **Project Feasibility & Assessment**

Our team has been
designing off-grid power
systems since

2002

and we are committed to
developing and installing systems
that are built to withstand Australia's
harsh environment.



Case Studies..



Huntlee Housing Development

Developed by LWP Property Group, Huntlee will house 20,000 new residents in 7,500 homes to be built over 25yrs. Huntlee is located at the start of the Hunter Expressway, 50 min from Newcastle. The independent utility grid plan for Huntlee was conceived by Damien Griffith and the Huntlee Energy Technology Alliance (HETA).

Project Design

Off-Grid Energy were selected as the HETA renewable energy and battery storage experts, and were tasked with providing detailed electrical demand modelling and project feasibility study.

Off-Grid Energy, together with co-gen and thermal network experts Simon's Green Energy found that the levelised cost of energy per lot is substantially lower for the microgrid than if the development were to connect to the national grid.

The initial design found the optimal balance between sufficient baseload power, and maximum renewable content.

Load control at individual premises and demand side management functionality will be included in Huntlee house design. Electric vehicle (EV) charging at the premise has included in the utility design, and the potential for time-of-use EV charging incentives has been identified.

Project Outcome

Construction has already started on the new township, with 4 stages of housing-lot deployment planned until 2045.

\$442,000 in ARENA funding will allow global asset manager, Brookfield Energy, to complete a \$1.1 million dollar further study into regulatory requirements for microgrid implementation in Australia.



Operation Flinders Foundation

The requirement for a renewable power solution for this project was primarily to reduce the on-going fuel consumption and maintenance costs of the remote facility. In addition, the promotion of clean and sustainable energy sources was a factor in the choice of the power system investment. This was listed in the Alliance for Rural Electrification Best Practice Guide.

System Design

At peak occupancy the property accomodates 40 people for a short time, but for most of the year there is only one or two people on site.

The power system for this not-for-profit organisation would be funded by a private investment trust. Property loads included pumps, workshop and office equipment, cooking equipment, fridges/freezers, and lighting.

The desert-like conditions dicated a choice of reliable and robust soalr modules, and the pre-assembled equipment container included passive cooling features.

- 128kWh Battery Energy VRLA batteries
- 52x Tindo Solar 250W Modules (18kW)
- 44kVA Kohler Diesel Generator
- 6 x SMA SI5048 Inverter Chargers
- 3 x SMA SMC6000 Solar Inverters

Project Outcome

Apart from the long-term financial and environmental benefits of the renewable mini-grid system, the property is now much quieter with reduced noise pollution removed, and cleaner with less fuel & oils kept on site. The diesel fuel savings from the installation of the system will have a payback of roughly four years.



Large Domestic Off-Grid

The system was required to provide the equivalent reliability, capacity (kW), and energy (kWh) availability of the grid, whilst maintaining an economic advantage. The buildings on the property which required power included horse stables, heated swimming pool, bore pump, workshop, 2x guesthouses, painters studio, and of course the main residence.

System Design

No consistent view of the solar array or equipment building, hear no noise from the backup generator at the main living areas of the property, and not disturb the resident wombats. The system design provides an average yearly solar contribution of 117%, peak delivery capacity of 300A per phase, with a 250kVA super silenced generator backup. AC coupled configuration allows the inverter/charger, solar inverters and generator to 'layer' and provide high peak power capacity.

- 264 x Trina 260W Modules (68kW, ground mounted @)
- 3 x SMA STP20000TL Solar Inverters
- 18 x SMA SI8.0 Inv/Ch (144kW)
- 144 x BAE PVV1800 VRLA Batteries
- 250kVA FG Wilson diesel generator
- SMA Multicluseter 36 Box switchboard & Webbox Monitoring

Project Outcome

Off site assembly of the containerised equipment housing allowed for cost reduction, quality control, and passive cooling techniques to be included. Significant ground-works removed system visibility from the main residence. Generator sound attenuation achieved 65dba at 7m distance, and efforts were made to ensure a high-quality aesthetic.

Track Intelligence Rail Project

An off-grid system was required to power trackside monitoring and computer equipment 24/7. The harsh conditions and remote location meant that the power system's reliability, robustness, and redundancy was critical to maintain uninterrupted power.

System Design

Installation crews would be required to meet rigorous client-specific safety training and conduct detailed pre-planning before accessing the site. The difficult location and demanding project requirements provided a unique challenge.

The system design and components were selected to meet the load requirements of the site, and the standard of quality required by the client.

The equipment needed to be capable of withstanding temperatures commonly higher than 45°C during summer. Multiple failsafe systems were added into the design to ensure power reliability was not compromised.

- 2 x SMA SI6.0 Inverter Charger
- 32 x Tindo Solar 250W Modules
- 2 x SMA SB4000TL Solar Inverters
- 2 x 48V PVV770 BAE Battery Banks
- SMA Webbox Remote Monitoring

Project Outcome

After two years of operation the system has not required a technician visit. Remote monitoring allows assessment of system performance and proactive addressing of any system warnings before they become an issue. This system design can be applied to any remote application as an alternative to using a fuel-powered generator.

Case Studies..



Off-Grid Complete System

Although grid power was nearby, the customer decided that it wasn't worth paying the almost \$11,000 connection fee, pay a lifetime of electricity bills, and only get a minimal feed in tariff for any excess solar. The client is an architect, and designed the house with passive solar principles such as good orientation, thermal mass, double glazing, and seasonal shading.

System Design

The system would be housed in the shed, which would be built before the house. Meaning power would be available on site during the house build. The load demand assessment determined an average winter demand of 19kWh/day. Unfortunately the shed roof was slightly too small to fit the required amount of modules to cover this demand. The client was happy to have an increased generator usage rather than the additional cost of ground mounted array frames.

- SMA SI8.0 Inverter Charger
- 46kWh 6PVV 900 BAE VRLA Batteries
- 16 x Tindo Solar 260W Modules
- SMA SB5000TL Solar Inverter
- Tilted Roof-Mount Solar Framing

Project Outcome

As of mid-2016, the house is still under construction and the system had only been infrequently used. The builders were very pleased with having power available, and have used various power tools - brick saw, angle grinder, cement mixer - directly from the system.

Off-Grid Complete with EV

The client had a sizeable cost to connect to the grid, and also wanted a renewable source of power for his home. He wanted his off-grid system to be able to accommodate charging his new Nissan Leaf electric vehicle (EV), so it would be powered by solar. There was a shed available for solar and system installation.

System Design

It was determined from the load profile analysis that the customer required 10.5kW of solar, 39kWh of battery storage, and 5kW of peak power delivery.

The system was designed to allow for daytime EV charging, with the AC coupled configuration meaning an EV charge would come directly from solar and not affect battery cycling at all.

- 24 x Sonnenschein VRLA Batteries
- 42 x Trina Solar 250W Modules
- SMA SMC10000TL Solar Inverter
- SMA SI5048 Inverter Charger
- SMA Webbox remote monitoring
- Fuel-powered backup generator

Project Outcome

Since the installation the client has easily and successfully worked his EV charging around his solar production. Originally the client had a Hyundai backup generator, but replaced this with a Honda generator and found this was a better fit for his situation.



On Grid Tesla Powerwall

The client had built a new home near the coast in Gippsland VIC, and wanted to be as independent from the electricity grid as possible. His aim was to give his family more power security and stability, and insulate himself against power price rises.

System Design

The Tesla Powerwall 2 was the most ideal product for the client's requirements, and budget. The client requested that the solar be installed on his shed roof rather than the house. In order to provide enough solar generation, the arrays were installed on both the east and west shed roof facings.

- 40 x LG 330W Solar Modules
- 2 x Fronius Primo 6.0 Solar Inverters
- 13.5kWh Tesla Powerwall 2 battery storage
- Fronius Digital Smart Meter

Project Outcome

After some initial delays with the installation of the utility meter, the client has enjoyed a level of energy independence provided by the Powerwall 2 battery with 12.8kW of solar. The Tesla Motors monitoring app has been very useful in keeping an eye on the system output.



On Grid Autonomy System

The client wanted to achieve a high level of solar self consumption and grid independence over the entire year. There was a requirement for intelligent control of specified loads in relation to weather forecasts, solar production, and battery storage levels. It was important to produce a clean aesthetic because of the system's high visibility.

System Design

Blackout protection in the event of grid failure, along with remote system access, monitoring, and control of system was required. Intelligent load management allows large appliances to be automatically switched on when batteries are full during high solar generation. This ensures the clients Tesla EV charging is only activated when it will not draw from the batteries or the grid. This function can also be activated manually via smart phone or online.

- 10kW ground mount solar array (+ existing 15kW solar array)
- SMA Sunny Tripower 10000TL
- 3-Phase SMA Sunny Island 8.0's
- 26kWh BMZ Li-ion battery storage
- SMA Home Manager monitoring

Project Outcome

The client was extremely happy with the intelligent load management, blackout protection for energy security, and the system design optimising solar production for his house loads and Tesla Model-S EV charging.

The system was neatly installed in the preferred location, and the generation from the new solar array is exceeding that of the larger existing array.



For further information and enquiries please contact:

Off-Grid Energy Australia

1300 334 839

info@offgridenergy.com.au

www.offgridenergy.com.au

