Supply Nation CERTIFIED

MINBARINGU SERVICES

Electrical Licensing Board: Lic. No. EC 13443

SOLAR & ELECTRICAL CAPABILITY

MINBARINGU Services Pty Ltd

June 2022

CLEAN ENERGY COUNCIL ACCREDITED DESIGNER
David Crooks

CLEAN ENERGY COUNCIL ACCREDITED INSTALLER
David Crooks

www.minbaringu.com.au

ELECTRICAL CONTRACTORS LICENSE EC13443

Government of Western Australia
Department of Mines, Industry Regulation and Safety

MINBARINGU SERVICES PTY LTD
20 PARSONS WAY
INNALOO WA 6018

CERTIFICATE OF REGISTRATION

ELECTRICAL CONTRACTOR'S LICENCE

Nominees Registered with the Electrical Licensing Board:
EW139412 DAVID CROOKS

Management Representatives Registered with the Electrical Licensing Board:
DAVID CROOKS

Licence Number: **EC013443**

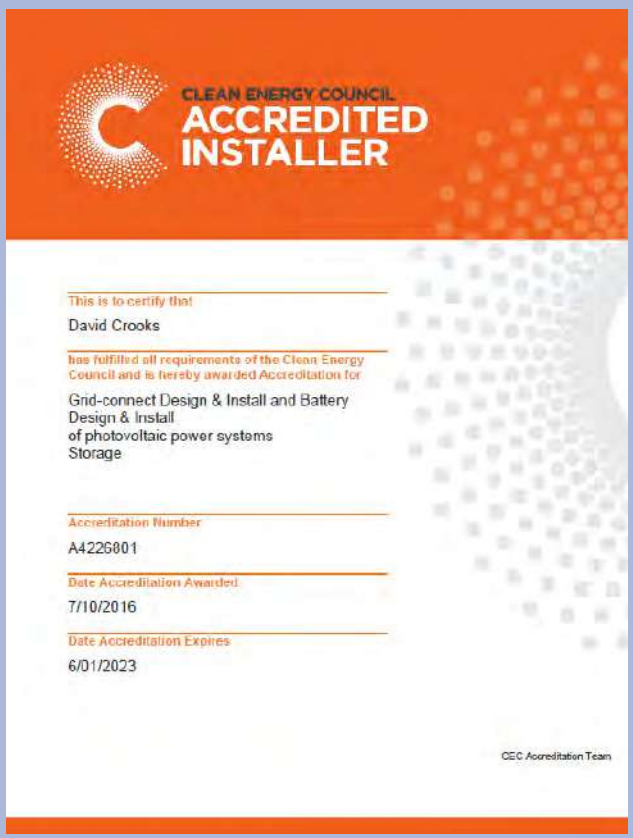
Expiry Date: **1 June 2023**

Please note that the holder of a licence shall ensure that the licence document and certificate of registration are conspicuously displayed at the principal place of business.

If the registration of your licence is cancelled and your name is removed from the register, you will be required under the Electricity (Licensing) Regulations 1991 to make application to the Electrical Licensing Board and pay the appropriate fees to restore your name to the register.

ISSUED BY AUTHORITY OF THE ELECTRICAL LICENSING BOARD WA

PVC SOLAR POWER ACCREDITATION: A4226801



CLEAN ENERGY COUNCIL
ACCREDITED INSTALLER

This is to certify that
David Crooks

has fulfilled all requirements of the Clean Energy Council and is hereby awarded Accreditation for
Grid-connect Design & Install and Battery Design & Install
of photovoltaic power systems
Storage

Accreditation Number
A4226801

Date Accreditation Awarded
7/10/2016

Date Accreditation Expires
6/01/2023

CEC Accreditation Team

MINBARINGU
SERVICES

ELECTRICAL CONTRACTING

We provide a wide range of electrical contracting and maintenance services. Our qualified team of electrical technicians, project managers and support staff have the capability and expertise to provide a high-quality service in the following areas:

- electrical design, installation, and contracting services
- electrical maintenance and service including testing verification and energy auditing
- PV solar power system design and installation

RENEWABLE ENERGY

We have the capability to provide for solar power system solutions to an extensive Client base throughout Western Australia in the commercial, resource and government market sectors. We have engineered and installed several PV grid connect installations from 50kW to 300kW in capacity.

We have a highly experienced and qualified team for the design, construction, commissioning, training, and maintenance of PV Grid Connect and stand-alone solar power systems. MINBARINGU have a thorough understanding of Supply Authority requirements for class 2 and class 3 PV systems on the SWIS and Horizon power networks. We have residential PV installation teams throughout the Northwest of WA for the execution of PV system installations throughout the Pilbara and Kimberley regions.

We utilise our in-house resources and capability with our PV software packages to assess and analyze energy consumption data. This provides an optimum design solution for all applications and PV systems.

A comprehensive analysis and return on investment and cost estimate is included with our proposals.

Sustainability

With the ever-increasing demand on reducing carbon emissions and utility usage, we understand our role is pivotal in reduction goals as the mechanical services systems can be of the largest emitters in a property carbon footprint. Our maintenance practices ensure the best possible efficiency from your installed plant and equipment. It is one of our goals to provide solutions for our clients in energy efficiencies and equipment performance. We constantly invest in our people and systems to ensure we are up to date with all new products and practices within the marketplace. We provide testing, auditing, and monitoring services to complement our sustainability and optimization solutions.

Monitoring & Improvement of Energy Consumption

We offer to work with our clients and determine if their systems are working to achieve efficient operation and lower running costs. We provide remote monitoring capability for all PV installations and continuously advise, educate, and offer training to staff and clients on their installed equipment.

Electrical Testing & Tagging Services

Client	Department of Finance Building Management and Works (BMW)
Project Manager	Stewart Fraser
Value	$350k p.a.
Referee	Ross Lynes (08) 6551 2039

Scope of Works
Project commenced July 2018 - Current

MINBARINGU Services were awarded the BMW Provision of Pilbara-wide Electrical Testing, Switchboard testing and Thermographic reporting.

This contract includes the provision of electrical testing, tagging and inspection work to all Pilbara Schools, TAFE's, Department of Prisons and Justice and Police stations.




RCBO Electrical Upgrade – Pilbara

Client	SODEXO
Project Manager	Stewart Fraser
Value	$2M
Referee	Peter Carr – 0416 200 108

Scope of Works

- Carry out switchboard upgrades to RTIO Housing assets in the below Pilbara towns. This includes replacement of circuit protection devices (RCBO) for lighting, power, AC circuits and electrical appliances. The scope also included earthing and meter upgrades where required. Commissioning and safety testing undertaken for the completion of all upgrades.

    - Paraburdoo
    - Tom Price
    - Karratha
    - Dampier
    - Wickham
    - Pannawonica

Yampi Sound Training Area
40kW Stand-Alone Solar Power System

Client	Department of Defence
Project Manager	David Crooks
Value	$600k
Referee	June Chen – Project Manager PDS Defence – WA +61 8 9483 8521

Scope of Works

Yampi Sound Training Area is located in Kimbolton, WA.

MINBARINGU undertook the complete design, supply and installation of:

- 40kW Stand-alone solar power system with 55kW hour storage capacity.
- Supply and installation of 2x CAT 22kVA Gensets backup.
- Ground preparation and trenching requirements.
- Supply and installation of Clenergy Solar Terrace Mounting systems.
- Supply and installation of Surefoot Footing foundations.
- Supply and installation of new sub-metering to comply with DEFENCE Electrical Sub-metering requirements.
- 4G Comms booster equipment and Wi-Fi amplification system to facilitate DEFENCE remote monitoring requirements.

This Stand-alone system presented many challenges due to limited accessibility with access only available during the dry season (May-October).

Strategic and forward planning was required to gain all necessary approvals from DEFENCE and commence work on site for completion prior to commencement of the 2020 wet season.

The Stand-alone solar system was fully operational by November 2019.

Finalisation of metering will be completed on our return site visit at the end of the 2020 wet season.

DER Project Onslow – 2.83MW System

Client	Horizon Power
Project Manager	Jessica Sanders
Value	$3.7M
Referee	Trevor Starcevich (08) 6310 1000

Scope of Works
Project commenced February 2019

MPS/MINBARINGU Services were awarded the Horizon Power DER Onslow project in December 2018.

This PV Solar project consists of 2.83MW Group housing and Commercial Buildings.

Individual PV systems with Battery storage will be installed to the majority of the Residential and Commercial buildings throughout Onslow, to provide 2.83MW of power generation with 0.8MW/hr capacity.

All installed systems will be linked by a sophisticated solar gate control system to provide virtual power network functionality which will be monitored and controlled by the retail network operator, Horizon Power. The Distributed Energy Resource Management system (DERM) allows the network operator to regulate the flow of power for each individual battery and inverter in and out of the grid.

This is a pilot project and breaking new ground in Australia for distributed energy management which allows a significant increase in PV hosting capacity and grid stability for small power networks and micro grids.

Woodside – Solar Power Embedded Network

Client	DOWNER EDI Engineering Pty Ltd
Project Manager	David Crooks
Value	$200K
Referee	Tim Guthrie (M) 0419 736 311

Scope of Works

Installation of the first cluster of trial houses for the Woodside Solar Power Embedded Network project.

Installation of x11 systems ranging from 12kW to 22kW in capacity and 30-40kWh battery storage capacity.

This project is breaking new ground for the installation of embedded network renewable energy power generation capacity with battery storage, to support local network power requirements.

These installation will set the benchmark for future similar projects throughout the North West Regional towns and Horizon Power networks.

Total install generation capacity is 5.4MW.

This project was completed in April 2019.

Carnarvon Solar Farm – Remote Monitoring System

Client	Downer
Project Manager	David Crooks
Value	$85K
Referee	Tim Guthrie (2) 9814 8607

Scope of Works
Project commenced February 2019

The Carnarvon Solar Farm fitted with a Scada Energy Management system, the system developed a fault and prevented power export to the local Carnarvon grid. MINBARINGU Services were contracted to travel to site to correct the problem. The software faults within the Scada software system were identified and rectified to bring the system to full operation.

Project Completed February 2019

CASA Building, 130 FAUNTLEROY – 100kW System

Client	Glouster Services
Project Manager	David Crooks
Value:	$165K
Referee:	Peter Stanley (08) 9537 6646

Scope of Works

Installation of a 100kw PV grid connect system to the Perth airport precinct.

This is the first project to be installed at the Perth airport and required extensive preparation and submission documentation to achieve final approval. We were able to navigate many obstacles and barriers relating to the Perth Airport power network to gain final sign off for the installation.

Phase 2 of this project is due to commence in June 2019 for an additional 360kw of PV capacity to this precinct.

This project was completed in December 2018.

Burswood Road – 45kW System

Client	Wealth Management Partners
Project Manager	David Crooks
Value	$95K
Referee	Adrian Whitaker (08) 9368 6030

Scope of Works

This 45kW PV grid connect system was installed close to Perth CBD and utilizes Fronius Inverters and Trina Panels grid connected to the Western Power Network.

The project presented challenges for the maximization of available roof space.

The Array will produce approximately 67,000 kW hours per annum.

This project was completed in November 2018.

Adventure Sports – 19.2kW System

Client	Adventure Sports
Project Manager	David Crooks
Value	$50K
Referee	Adam Ambroziak (08) 9185 4242

Scope of Works

The Adventure Sports building is located in Karratha, Western Australia and required the design and installation of a 19.2kW PV solar power system.

This project comprises of x1 20kW Magellan Smoother direct DC coupled and x64 Q-Cell PV Panels grid connected to the Horizon Power Network.

They system will produce approximately 35,000 kW hours per annum; approximately 5% will be exported to the grid.

This project was completed in June 2018.

North Regional TAFE – 192kW System

Client	North Regional TAFE
Project Manager	David Crooks
Value	$540K
Referee	Murray Levis (08) 9159 6778

Scope of Works

The North Regional TAFE is located in Karratha, Western Australia.

This project comprises of Fronius inverters, Tier 1, 320 watt panels and Magellan Solar smoother units, grid connected to the Horizon Power Network.

The newest facilities on the Karratha Campus were selected for PV panel installation following engineering assessment of the Skills Centre and Fabrication buildings.

The project design and application process was complex and involved Horizon Power and The Australian Energy regulator. Adherence to feed in management and system engineering was also required. Time line requirements were critical aspects of this project.

The system will produce approximately 3.4 Megawatt hours per annum, the majority of which will be consumed by the campus.

This project was completed in January 2018.

Primero Group – 64kW System

Client	Primero Group
Project Manager	David Crooks
Value	$85K
Referee	Ryan McFarlane (08) 6500 9500

Scope of Works

The Primero Group required the design and installation of a PV solar power system. The Primero Group building is located in South Hedland, Western Australia.

This project comprises of Fronius inverters, Tier 1, 320 watt panels and Magellan Solar smoother units, grid connected to the Horizon Power Network.

The project design and application process was complex involving Horizon Power, adherence to feed in management, system engineering and time line requirements were critical aspects of this project.

They system will produce approximately 111,000 kW hours per annum; approximately 15% will be exported to the grid.

This project was completed in 2018.

MINBARINGU Services Pty Ltd

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