

## **NER WORK STATEMENT**

### **EMPLOYMENT HISTORY**

**Position:** Principal Electrical Engineer (Renewables)

**Company** AECOM

**Location:** Melbourne

**Date:** October 2024 -Current

**Responsibilities:** My duties are as follows:

- Reviewed solar and BESS project designs to ensure compliance with technical standards and regulatory requirements.
- Mentored and guided junior and graduate engineers to develop expertise in renewable energy systems, focusing on Solar and BESS technologies.
- Led project formalization activities by defining scopes, deliverables, and technical frameworks for renewable energy projects.
- Developed and implemented strategies for Battery Energy Capability Building to enhance internal expertise and industry knowledge.
- Provided Owners' Engineering services, supporting clients in project development, design validation, and implementation oversight.
- Delivered technical advisory services, addressing complex engineering challenges and optimizing renewable energy system performance.
- Conducted feasibility studies and risk assessments to support decision-making in solar and BESS projects.
- Managed stakeholder engagement, including coordination with clients, contractors, and regulatory bodies, to align project objectives.
- Reviewed technical documentation, specifications, and compliance reports to ensure adherence to industry best practices.
- Oversaw Factory Acceptance Tests (FATs) and Site Acceptance Tests (SATs), ensuring system reliability before deployment.

**Position Title:** Senior Renewable Engineer (Solar and BESS)

**Employer name:** GHD, Melbourne

**Location/address:** Melbourne

**Responsibilities:** My duties are as follows:

- Prepared comprehensive proposals for renewable energy projects (Solar & BESS).
- Coordinated and mentored junior and graduate engineers to improve their skills in Solar and BESS sectors.
- Conducted design reviews for Solar and BESS projects as part of Owners Engineering engagements with clients.

- Performed pre-feasibility and detailed feasibility studies to support clients' project development.
- Conducted site inspections as part of Technical Advisory or Owners Engineer engagements with clients.
- Assessed and prepared technical reports and memorandums as part of engineering studies.
- Managed clients, subcontractors, and vendors as part of project management activities.
- Participated in business development meetings and engaged with clients to assess their needs.
- Developed concept designs and detailed designs as part of project engagements.
- Conducted commercial and technical due diligence, including red flag reports, for buyer and vendor-side evaluations.
- Provided ad-hoc technical advisory services to address clients' various technical challenges.
- Witnessed Factory Acceptance Tests (FATs), Site Acceptance Tests (SATs), and oversaw testing and commissioning on behalf of clients.
- Undertook root cause analysis and provided recommendations for addressing plant safety incidents and failures.

#### **1. Referee:**

Name: Peter Killeen

Title: Technical Director – Battery Energy Storage System

Employer: GHD

Position: Technical Director

Phone: 0459 917 963

Email: peter.killeen@ghd.com

Work Relationship: Working relationship under direct supervision / Project Lead for BESS Projects

#### **2. Referee**

Name: Shehan De Fonseka

Title: Technical Director / Practice Lead – Secondary Systems

Employer: GHD

Position: Technical Director / Practice Lead

Phone: 0450 556 592

Email: shehan.defonseka@ghd.com

Work Relationship: Working relationship under direct supervision at GHD

**POSITION TITLE:** Renewable Engineer (full-time)

**Employer name:** Ecologi, Melbourne

**Location/address:** Melbourne

**Responsibilities:** My duties are as follows

- Efficiently participated in R&D of engineering solutions for various renewable energy applications, including automation and system maintenance solutions.
- Precisely prepared solar PV layouts, AC schematics, DC schematics, and protection schematics based on client requests for large-scale PV systems ranging from 100 kWp to 10 MWp.
- Accurately conducted feasibility studies for renewable energy projects for various industries, organizations, and project developers.
- Effectively analyzed project viability and prepared technical specifications and tender documents.
- Successfully evaluated tender responses received from various developers and ranked them according to the tender and technical specifications provided in the documents.
- Engaged with various renewable project developers and acted as a client's project engineer to evaluate project feasibility studies, technical documents, and complete project life cycle audits.

- Coordinated with various councils, government bodies, and organizations to prepare technical requirements and regulations to achieve net-zero carbon emission targets and carbon neutrality.

**Achievements:**

- Prepared, evaluated, and executed renewable energy projects for the Victorian Building Authority, Victoria University, and the Department of Education (NSW), combined worth of several hundred million Australian dollars.

**Referee:**

Name: Anthony Thyriar

Title: Zero Emission Business Project Lead

Employer: Kingston City Council

Position: Zero Emission Business Project Lead

Phone: 0421 426 663

Email: [Anthony.thyriar@kingston.vic.gov.au](mailto:Anthony.thyriar@kingston.vic.gov.au)

Work Relationship: Client-Side Project Lead

**POSITION TITLE:** Electrical Design Engineer (full-time)

**Employer name:** NRG7

**Location/address:** Kensington, Melbourne

**Responsibilities:** My duties are as follows:

- Accurately designed and developed electrical schematics for commercial, industrial, and utility-scale renewable energy projects for clients.
- Conducted detailed feasibility studies for renewable energy projects across various industries and for project developers.
- Effectively analyzed consumption profile data and system sizing based on detailed energy yield calculations for commercial and industrial (C&I) projects.
- Prepared physical site layouts, AC SLDs, DC SLDs, and protection schematics for grid connection approvals and construction.

- Investigated the impact of voltage rise, cable sizing and scheduling, protection coordination, and other electrical characteristics of solar power systems.
- Drafted and prepared technical reports, project manuals, and presentations for clients.
- Critically analyzed and conducted site inspections for generator integration possibilities at customer properties.

**Achievements:**

Promoted to acting project manager for the company's 2 MWp regional solar project, spread across six sites under one customer.

**Referee:**

Name: Bhanu Mankotia

Title: Managing Director

Employer: NRG7

Position:

Phone: Managing Director

Email: [bmankotia@nrg7.com.au](mailto:bmankotia@nrg7.com.au)

Work Relationship: Manager

**POSITION TITLE:** Electrical Design Engineer

**Employer name:** Clean Technology Partners

**Location/address:** Richmond, Melbourne

**Responsibilities:** My duties are as follows:

- Successfully trained in PV system design for the C&I sector by adapting Australian standards AS/NZS 3000, AS/NZS 3008, AS/NZS 4777, and AS/NZS 5033.
- Precisely prepared grid connection applications for PV systems in line with current Australian standards and best practices.
- Effectively prepared schematics for grid protection solutions and programmed various grid protection relays, such as ABB, ComAp Mains Pro, Intellipro, etc., based on DNSP requirements.
- Precisely prepared engineering designs and drawings for the DC and LV sides of the power generating system for approvals and construction.

- Efficiently participated in document creation for grid protection solution equipment for both C&I solar projects.
- Successfully conducted site visits and factory acceptance testing (FAT) for new and ongoing solar projects.

**Achievements:**

- Offered a casual design engineer position after completing my internship, demonstrating the quality of design and expertise in electrical engineering.

**Referee:**

Name: Shehan De Fonseka

Title: Senior Electrical Engineer

Employer: Clean Technology Partners

Position: Senior Electrical Engineer

Phone: 0450 556 592

Email: shehandef@gmail.com

Work Relationship: Manager

**Key Achievements**

**PROFESSIONAL LICENSE**

**AUG 2019 – Current**

❖ **Certification: Mmembership**

|                            |                     |
|----------------------------|---------------------|
| <b>Issued By</b>           | Engineers Australia |
| <b>Certification Name:</b> | Member (MIE Aust)   |
| <b>Permit No</b>           | -                   |
| <b>Location</b>            | <b>Australia</b>    |

**JAN 2019 – Current**

❖ **Certification: Clean Energy Council Accreditation**

|                            |                           |
|----------------------------|---------------------------|
| <b>Issued By</b>           | Clean Energy Council      |
| <b>Certification Name:</b> | PV Designer Accreditation |
| <b>Certificate No</b>      | -                         |
| <b>Location</b>            | Australia                 |

**JUL 2012 – Current**

❖ **Certification: IEEE Membership**

|                           |        |
|---------------------------|--------|
| <b>Issued By</b>          | ISTE   |
| <b>Certification Name</b> | Member |
| <b>Certificate No</b>     |        |

**July 2010 - Current**

 **Certification: ISTE Membership**

|                           |               |
|---------------------------|---------------|
| <b>Issued By</b>          | ISTE          |
| <b>Certification Name</b> | Member        |
| <b>Certificate No</b>     | -             |
| <b>Location</b>           | International |

## **PROFESSIONAL AFFILIATION**

### **Project-1:**

#### **Cohuna Solar Farm Post Fire RCA and DC Re-Design**

##### **Problematic Situation**

I identified multiple compliance issues at the Cohuna Solar Farm, which led to repeated fire incidents, prompting Energy Safe Victoria (ESV) to halt production until the problems were resolved. I was responsible for conducting a root cause analysis (RCA) and identified several non-compliance issues, ranging from incorrect design assumptions to poor on-site implementation. I confirmed that the solar farm was neither designed nor installed in accordance with the relevant Australian standards, and multiple safety hazards were present. After submitting the RCA report, the client acknowledged my findings and issued a purchase order to redesign the DC side of the solar farm while retaining all compliant components on-site within a very limited timeframe. Since I had conducted the RCA for the fire incidents, I was also entrusted with leading the redesign project

##### **Actions Taken for Improved Results**

I analyzed all possible options to minimize waste by reusing existing materials while ensuring full compliance with the applicable standards. I conducted thermal scanning to identify malfunctioning components and reconfigured the solar plant layout to meet both regulatory and Australian standard requirements. I ensured that the new design allowed for the reuse of expensive DC main cables, thereby reducing costs. I also designed and procured new DC harness cables and combiner boxes as part of the remodification work. Additionally, I collaborated closely with the tracker manufacturer, optimizer manufacturer, and inverter OEM to ensure the new design adhered to the requirements specified for their respective components. I conducted multiple iterations of the design based on inputs received from the OEMs and regulatory guidelines. Eventually, I finalized the design and issued IFC (Issued for Construction) drawings for project execution.

##### **Implemented Success**

I continued to provide technical support during the decommissioning of the existing harness system and the installation of the new harness system. I ensured that the implementation followed the approved design and complied with safety standards. The installation proceeded according to the agreed schedule, and the solar farm resumed normal operations. I monitored

the system performance as it underwent hold point testing before achieving full power export to the grid. My RCA and redesign efforts successfully transformed the previously non-compliant solar farm into a fully compliant facility, overcoming time and resource constraints to deliver a safe and optimized outcome for the client.

## **Project 2- Nauru Microgrid Project**

### **Situation, Problem & Opportunities**

I identified a critical issue in the Nauru project during the design review process, as the contractor had not incorporated arc flash protection in the 11 kV switchboard, which connects the solar farm and the Battery Energy Storage System (BESS) unit to the grid. Arc flash protection was a mandatory requirement specified in the Principal's Project Requirements (PPR). However, due to time constraints and pressure from the client to meet project deadlines, the contractor proceeded with manufacturing the switchboard in China without addressing several design comments, including this essential safety feature. The contractor's unfamiliarity with Australian standards further contributed to the oversight.

### **Actions Taken for Improved Results**

During the Factory Acceptance Test (FAT), I confirmed that the switchboard had been manufactured without arc flash protection, which posed a significant safety risk. The client was firm on ensuring compliance with all mandatory requirements and insisted on a solution to rectify the issue. Since replacing the switchboard was not a feasible option due to cost and lead time constraints, I was tasked with identifying a viable approach to integrate arc flash protection into the already manufactured switchboard.

I conducted thorough research and consulted with industry experts to develop a feasible solution. I proposed a concept design that involved integrating light detection fibers within the cable chambers and bus chambers to detect arc flash events instantly. Additionally, I suggested incorporating extra relays to identify an arc fault and automatically isolate the affected section of the switchboard to prevent further damage and hazards. I collaborated with the contractor to review the modifications and ensure they could be implemented without compromising the existing switchboard structure.

### **Implementation and Success**

The contractor accepted my proposed solution and proceeded with implementing the system modifications. I supervised the integration of the new arc flash protection system and

coordinated with the testing team to verify its functionality. During the follow-up FAT, I conducted a performance validation test by using a torch lamp to simulate an arc flash event. The light-detecting sensors within the chambers successfully detected the simulated arc, triggering the isolation mechanism as designed. The system operated effectively, ensuring compliance with the required safety standards.

Following the successful testing, the client endorsed the integration of the arc flash protection system, allowing the project to proceed without significant delays. My solution ensured the switchboard met all compliance requirements while maintaining cost-effectiveness. By addressing this critical safety issue, I contributed to the safe and efficient operation of the solar farm and BESS unit, aligning the project with Australian standards and client expectations.