



Role Description

Title	Wind Farm Project Engineer 5 years fixed term	Incumbent	New
Manager's Title	Wind Farm Replacement Project Manager	Date of Last Review	21 December 2021
Team	Scott Base Redevelopment	Geographical Location	Christchurch & Antarctica
Direct Reports	None	Work Environment	Office based Travel to Antarctica is part of this role which requires medical clearance.

Organisational Context

Antarctica New Zealand is a Crown Entity established on 1 July 1996 under the New Zealand Antarctic Institute Act to develop, manage and execute New Zealand's activities in respect of Antarctica and the Southern Ocean.

Our overarching organisational goal is to continue to play an influential role in the kaitiakitanga (guardianship) of Antarctica and the Southern Ocean as a natural resource devoted to peace and science. We do this by facilitating high-quality scientific research in Antarctica and supporting initiatives to protect the environment. Other key activities include the operation of Scott Base; managing logistics to, from and within Antarctica; and raising public awareness of the global significance of the continent and surrounding Southern Ocean.

The Scott Base Redevelopment (SBR) project aims to replace the existing Scott Base infrastructure and provide fit-for-purpose science and logistics facilities. In Budget 2021, Antarctica New Zealand was granted funding to finalise the design then construct, transport and commission the new base, a temporary base and a wind farm in Antarctica. Now that funding is granted, the project team will scale up in order to complete the project by 2028.

This agreement is for a fixed term period to provide additional engineering resource to the team to assist in the management of the preliminary and detailed design, construct and commission the wind farm replacement together with deenergising the existing wind farm and safely transporting this back to New Zealand for resale or recycling.

Business Unit Purpose

To safely and successfully deliver the Scott Base Redevelopment project on schedule and on budget.

Role Purpose

Manage the design, procurement, construction and deconstruction of the wind farm replacement project in order to provide a high percentage renewable energy network to support the redeveloped Scott Base.

Work of Role

Health, Safety and Environment

- Fulfil accountabilities as documented in the Health, Safety and Environmental Management Systems.
- Ensure all activities are aligned with Antarctica New Zealand Health, Safety and Environmental Management systems.



- Maintain and contribute to the highest level of quality, integrity and performance aligned with Antarctica New Zealand values.
- Ensure the Wind Farm Replacement project is delivered in accordance with our commitments in the Comprehensive Environmental Evaluation (CEE).

Project Management

- Review and provide engineering advice and methodology input into the Wind Farm Replacement project schedule in close collaboration with the Wind Farm Replacement Project Manager and the Antarctica New Zealand Project Controls Manager.
- Assist in the implementation and continuous updating of the Project Execution Plan for the design, procurement, construction, operation phases of the project.
- Assist in the planning and implementation associated with the deenergisation and removal from Antarctica of the existing wind turbines and obsolete equipment.
- Actively contribute to risk management and reduction processes and meetings.
- Assist in the review of all contractor quality assurance (QA) plans & procedures and assist in aligning all plans with project requirements.
- Ensure stakeholders (including the science community and the United States Antarctic Programme/ National Science Foundation) are engaged throughout the process to ensure requirements are understood are met, where practicable.
- Attend and contribute to Wind Farm Design Team meetings and workshops.
- Assist the Wind Farm Replacement Project Manager in the procurement and delivery of all required resources.
- Support the contract tender processes, including assessment of tenders to identify, manage and minimise, safety, environmental, time, cost, quality and other contract risks and opportunities.
- Ensure that relevant documents and records for business activities are created and maintained, and that all legislative requirements for record keeping are met.

Engineering Systems

- Provide professional engineering direction and technical opinions in relation to the Wind Farm Replacement project and the interfaces with the redeveloped Scott Base, McMurdo Station and the Ross Island Wind Energy Network as a whole.
- Act as Antarctica New Zealand's Subject Management Expert on the Wind Farm Replacement project.
- Undertake reviews and provide feedback in relation to medium voltage transformer, frequency converters, cable reticulation systems, protection and switchgear design and implementation.
- Monitor, review and integrate the work of the design team (and others, such as specialist designers and specialist contractors) ensuring compliance with all New Zealand legislation and standards insofar as is possible.
- Review and advise on site earthing systems in a complex and unique environment.
- Review and advise on the engineering aspects as it relates to the implementation of a microgrid type system combining a number of sources of renewable energy and utilising energy storage systems.
- Collaborate with the Engineering Team representatives responsible for the management, operation and maintenance of the equipment at completion of the project.
- Assist in the development of maintenance and asset management plans for the Wind Farm Replacement project new assets.
- Monitor civil, structural, mechanical and electrical construction work in accordance with the engineering designs. This could be either on site in Antarctica or other locations as required due to factory acceptance testing, witnessing and fabrications reviews.
- Represent Antarctica New Zealand in developing and maintaining effective relationships with engineering specialists throughout New Zealand and overseas.



Other Tasks

- Undertake other discrete packages of work or tasks to support the SBR Project Team with the delivery of the SBR Project. Tasks will generally be in accordance with the work described above.
- Any other task assigned by the Wind Farm Replacement Project Manager.

Key Challenges

- Balancing cost, time, safety, resource allocation, and quality as determined by the Project Management Plan to deliver the SBR Wind Farm Replacement project
- Provide complex solutions for bespoke electrical and generating equipment
- Maintain current knowledge of complex Scott Base engineering systems by living and working at Scott Base. This seasonal deployment is expected to be in the order of four weeks.
- Maintain technical currency through proactive involvement in industry events, developing industry contacts and membership of industry working groups.
- Living and working at Scott Base for up to 3 months at a time (as required)

Key Functional Relationships

Internal	<ul style="list-style-type: none"> • Wind Farm Replacement Project Manager • Senior Project Manager • Project Director • GM Antarctic Operations • SBR Logistics Manager • Commercial Manager • Project Controls Manager • Construction Manager
External	<ul style="list-style-type: none"> • Wind Farm Replacement design team • Civil contractor, energy storage system contractor, wind turbine supplier, other contractors and suppliers • Key external stakeholders • SBR Design Team • Wider scientific community • Arrival Heights Working Group • All-of-Government support agencies

Minimum Capability Necessary to Work to Role

Capability area	Description
Qualifications, Certificates and Memberships	<ul style="list-style-type: none"> • Engineering degree (four year degree or equivalent) qualified in electrical engineering specialising in power systems or relevant trade qualification with minimum 10 years' experience. • PMP and/or PRINCE 2 certification is desirable but not essential • Member of Engineering New Zealand and/or PMINZ
Knowledge, Skills and Experience	<ul style="list-style-type: none"> • 5 years of power systems engineering with renewable energy exposure



	<ul style="list-style-type: none"> • Experience in the design or installation of wind turbines or energy storage systems in remote locations, preferably in cold climate or non-standard environmental conditions would be an advantage • Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions. • Knowledge of engineering compliance requirements for wind and diesel energy generation and MV and LV electrical distribution. • Ability to identify innovative solutions to resolve complex design and construction problems. • Proven ability to maintain productive relationships with a diverse range of stakeholders. • Highly effective written and verbal communicative skills. • Understanding of and commitment to tikanga and Treaty of Waitangi principles. • High level of computer literacy including Microsoft Word, Excel, Project.
<p>Judgement, temperament and influence</p>	<ul style="list-style-type: none"> • Confronts issues and persists to resolve them. • Ability to plan, resource and manage tasks to a successful conclusion. • Effective interpersonal and communication skills. • Develops strong relationships and respect from staff and stakeholders. • Strong ability to think critically, using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems. • Solutions focused and able to work collaboratively. • Professional manner and positive attitude. • A passion for project management and knowledge.

Antarctica New Zealand Values

<p>To honour our obligation to Antarctica:</p> <ul style="list-style-type: none"> • Ka ngākau whiwhita tātou ki ā tātou mahi katoa We are passionate about what we do • Ka tiaki tātou i a tātou anō, ka tiaki hoki i te taiao We care for each other and the environment • Ka mahi tahi tātou We work together • He ngākau pono ō tātou We act with integrity • Ka whai tātou i ngā taumata tiketike • We aspire to the highest standards

Roles Authorisations

I confirm that this role description accurately describes the work of the Wind Farm Replacement Project Engineer:

Project Director

Date



**Antarctica
New Zealand**

I accept this role description accurately describes the work of the role for which I am accountable:

Wind Farm Replacement Project Engineer

Date