Australia's National Science Agency

CSIRO, Australian Centre for Disease Preparedness, Electrical Infrastructure Replacement, Geelong, Victoria

Statement of Evidence and Supporting Material to the Parliamentary Standing Committee on Public Works

Submission 1.0

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Sponsor Name:	[redacted]
Author: Email: Location:	[redacted]

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List of Acronyms & Abbreviations

ACDP	Australian Centre for Disease Preparedness
AAHL	Australian Animal Health Laboratories
AEB	Animal Entry Building
APLR	ADCP Part Life Refit Project
BAU	Business As Usual
BCR	Benefit Cost Ratio
BSL	Biosafety Level
BU	Business Unit
Cal	Calorie
CBA	Cost Benefit Analysis
CBIS	CSIRO Business and Infrastructure Services
CCE	Confidential Cost Estimate
CPRs	Commonwealth Procurement Rules
CSIRO	Commonwealth Science and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
DBC	Detailed Business Case
ESB	Engineering Services Building
GWP	Global Warming Potential
kV	Kilovolt
LV	Low Voltage
MD	Main Switchboard
NPC	Net Present Cost
NPV	Net Present Value
OGTR	Office of the Gene Technology Regulator
PCMS	Plant Control and Monitoring System
PPE	Personal Protective Equipment
QRA	Quantitative Risk Assessment
RMU	Ring Main Unit
SoE	Statement of Evidence
Sqm	Square metres
V	Voltage
WH&S	Work Health and Safety
WoLC	Whole of Life Costs

1. Introduction

1.1. Project Context

1.1.1. CSIRO's Australian Centre for Disease Preparedness (ACDP), is a critical piece of national infrastructure, providing Australia's highest level of biocontainment within a purpose-built biosecurity facility in Geelong, Victoria. Operating since 1985, ACDP is Australia's national reference laboratory and a crucial part of the nation's biosecurity response system. Its work protects Australians, and our valuable livestock and aquaculture industries, from exotic and emerging infectious animal and zoonotic diseases such as Foot and Mouth disease, Hendra virus and avian influenza.

1.1.2. ACDP is approaching the 40th year of its planned 100-year operational life and CSIRO is currently planning a multi-stage, part-life refit project for the centre. This "ACDP Part Life Refit" (APLR) Project is being designed to enable ACDP to continue operations and perform as a purpose-built and compliant high-containment facility for the next 30 years. This intended upgrade will address the need to modernise lab spaces and to upgrade large, fixed lab equipment within the facility as it reaches end of life.

1.1.3. In the context of this submission the broader APLR project is a 'related project' and this much larger project will be the subject of a separate referral and committee hearing, for consideration later in 2024.

1.1.4. In May 2023, a report of the condition of key assets at ACDP identified a range of fixed electrical assets which were aging and in need of replacement. These include standby diesel generators, high and low voltage switchboards, and power reticulation across the site – each of which carry a singular and vital role in the redundancy and resilience of ACDP's power and biocontainment systems.

1.2. The Importance of Redundancy Systems at ACDP

1.2.1. As with all plant and equipment in operation at ACDP, the electrical infrastructure is designed and operated according to principles which deliver the highest degree of reliability, in line with applicable standards for regulatory compliance. These principles

are applied in the level of redundancy across electrical systems (such as multiple sources of power and multiple power ring mains) as well as within individual systems, where an "N+1" approach is taken (such as with standby generation capacity).

1.2.2. This in-built redundancy is imperative to maintaining a standard of risk mitigation which is demanded by regulators to ensure workplace health and safety as well as overall biocontainment reliability. Given the purpose and mission of the ACDP facility, this level of redundancy in power systems is essential with any prospect of losing redundancy representing an unacceptable risk to operations.

1.3. Project History

1.3.1. The scope of this project, to replace electrical infrastructure at ACDP, was originally scheduled to follow the broader APLR project which will address a range of aspects of midlife renewal.

1.3.2. Inclusion of this scope within the broader APLR project was also considered.

1.3.3. During early 2024, planning delays to the APLR project led to CSIRO reconsidering the packaging of works within it. It was decided to bring forward the electrical infrastructure package as a separate funding submission due to its greater time criticality compared to the APLR project.

1.3.4. The CSIRO Board agreed at an out of session board meeting on 15 May 2024 that this electrical infrastructure project is to be internally funded from an increase in the CSIRO Capital Management Plan.

2. Purpose of the Works

2.1. Project Objective

2.1.1. The objective of this project is to mitigate the risk of failure of electrical supply to and distribution within the ACDP site, thereby assuring continuity of operations.

2.1.2. The primary benefit to be realised by CSIRO through delivery of this project is the reduced risk of operational failure of the nation's biocontainment facility through the

replacement of ageing electrical infrastructure and resultant improvement in system reliability.

3. Need for the Works

3.1. Current Deficiencies

3.1.1. The electrical infrastructure providing power reticulation and redundancy at ADCP was installed with the original facility's construction in 1985. This infrastructure, including switchboards, cabling and generators for backup power, have been subjected to preventative maintenance over the past 40 years. The instances of reactive maintenance through emergency repairs have increased over the past decade, with the current deficiencies presenting as follows:

a. **Critical Equipment is Reaching End of Life, Leading to Risk of Failure.** Key elements of the electrical services infrastructure are assessed as being at the end-of -life and in need of replacement to avoid short- or longer-term failures. The standby diesel generators and several of the switchboards connecting the generators to the facility are at or near the end of their technical design life, and are becoming less reliable and more complex, costly, and with increasing risk to maintain. Further detail on these deficiencies is provided in Table 1, below.

b. **Long Procurement Lead Times.** The lead times (i.e. time between procurement and delivery) for major electrical components is a key risk factor for ACDP business continuity given its age and condition. Market **observations** indicate that lead times for switchgear and generators may exceed 12 months, with excess global demand for onsite generator capacity particularly severe, and likely to persist. Long lead times are also applicable to spare parts to maintain the existing ageing electrical equipment, with fewer spares held in supplier' inventories and more needing to be machined on-demand, which is both time consuming and expensive. The reliance upon such a fickle supply chain for spares is a key challenge for the ACDP engineering staff, which would be reduced significantly with capital renewal of key equipment.

c. **Inherent WH&S Risks of Old Equipment.** Four low voltage (LV) switchboards in the ACDP machine hall are over 40 years old and have a very high arc flash rating (i.e. physical injury risk level arising from electrical failure) which exceeds the capacity of personal protective equipment (PPE) to mitigate the risk of **operating** them (such as to test their capacity to carry and distribute power effectively). As a result of the excessive Arc Flash risk, in order for the switchboards to be operated safely (i.e. when low voltage systems that serve the generators are tested or isolated for maintenance) there is no alternative other than to de-energise them 'upstream' which results in other unrelated systems being taken offline. This unnecessary and inconvenient business interruption to meet WH&S requirements is another driver for the replacement of the low voltage switchboards.

3.1.2. The works proposed in this project are considered 'business as usual (BAU)' requiring the end-of-life replacement of highest priority equipment. The proposed project cost exceeds $15M and consequently requires PWC consideration and parliamentary expediency to proceed, despite the BAU/end of life replacement purpose.

Table 1. Deficiencies of Existing ACDP Electrical Infrastructure

Item & Description	Deficiency
1. **Standby Generators.** ACDP has three (3) standby diesel generators (6.6kV continuously rated 1800kVA / 1440kW) that are critical infrastructure for ACDP, providing emergency power for the facility in the event of loss of incoming (mains) power. The generators are installed within the Machine Hall building, generate power at 6.6kV, and connect directly to the ESB 6.6kV switchboard also located within the Machine Hall.	The generators are over 40 years old and their operation has become unreliable. Parts are no longer serviceable for the diesel engines as the equipment is no longer manufactured.

Item & Description	Deficiency
2. Machine Hall Low Voltage (LV) Main Switchboards. The four (4) Machine Hall low voltage main switchboards (MDs) are supplied by the four Machine Hall substations and serve all low voltage equipment and system within the machine hall. This includes critical systems such the chillers, cooling towers, chilled water distribution, air compressors, and ancillary systems for the standby generators. The MDs are 40 years old and at end of life. The risk for failure of the switchboards and its components is high.	The switchboards currently have a very high arc flash rating 49.7 cal/cm2. Arc flash suits are only rated to 40 cal/cm2 which poses a hazard to employees that are required to switch the MD boards during service of plant & equipment as the potential electrical hazard is almost 25% greater than the PPE to complete the task. As the switchboards cannot be safely operated, as an interim measure, switching of power is completed upstream of the MD boards but subsequently also turns off power to other parts of the site that would remain active in normal operation of site power, creating business interruptions. Further, the MD installation within the machine hall does not comply with the Building Code as the switchboards are not in separate fire rated rooms.
3. Animal Entry Building (AEB) 22kV switchboard The AEB 22kV switchboard is part of the substation that steps the supply authority 22kV supply to 6.6kV for internal distribution. The equivalent 22kV switchboard in the ESB failed in 2014 and has been replaced. The AEB 22kV switchboard remains original (40 years old) and is end of life with no parts available to support repair. The oil filled circuit breakers are currently leaking so additional maintenance and upkeep is required, as well as being heavy to move creating HSE manual handling issues.	The AEB 22kV switchboard acts as the main secondary feed of power to site should failure occur on the primary supply or within the ESB 22 KV switchboard. It is therefore critical to site redundancy for biocontainment.

Item & Description	Deficiency
4. AEB 6.6 kV switchboard The AEB 6.6kV switchboard is the secondary point of supply for the ACDP facility and provides a level of redundancy to the ESB 6.6kV switchboard. It is located at the southern end of the facility in the Animal Entry Building. The AEB 6.6kV switchboard is able to feed the 15 laboratory substations, but not the 4 machine hall substations and is not connected to the standby generators.	It is a single point of failure for the cold-water pump house that supplies water to the site. This is critical for fire safety, steam generation to autoclaves and general washing and showering out from the secure area of the site. Similar to the ESB 6.6kV switchboard, the AEB 6.6kV switchboard is 40 years old, at end of life, and is no longer serviceable. It has the same HSE issues for safe operation and is leaking oil. The AEB 6.6kV switchboard is critical to site redundancy for maintaining biocontainment.
5. Engineering Services Building (ESB) 6.6kV switchboard The ESB 6.6kV switchboard is the primary power distribution switchboard for ACDP. In addition to the 15 laboratory substations that connect between this and the secondary AEB 6.6kV switchboard, it is a single point of failure for the operation of, and maintaining of biocontainment of, the ACDP facility, if incoming mains power is lost.	The ESB 6.6kV switchboard is 40 years old and at end of life. It is no longer serviceable with spares, and the circuit breakers are leaking oil. It creates significant HSE for issues for operators with racking of the heavy oil filled circuit breakers, and the lack of ability to remotely operate the switches. It is a single point of failure for the machine hall substations and the connection of the standby generators.
6. 22kv Incoming power supply switches The F1 and F2 22kV main switches are the connection point to the two (N+1) incoming 22kV authority feeders and incorporate the power metering for the site.	These main switches are 40 years old and are end of life. There are significant safety issues with their operation due to the high risk of Arc Flash. As the primary point of power supply to the site, these switches are considered critical infrastructure.
7. Inground High Voltage (HV) Cabling The cabling between the F1 and F2 incoming main switches and the ESB and AEB 22 kV switchboards is now 40 years old. While the cabling may have a few years of remaining life, the replacement of the switchgear at each end of the cabling, is the ideal time to also replace the cabling as this will ensure a robust and reliable connection to the new endpoints.	Replacing the cable at the same time as the connecting switchboards and other inground works will also provide a lower whole of life cost than if replaced in the future, as the new cabling can be installed within the same trench as the new 6.6kV cabling and avoids future shutdowns and modifications to the new switchboards.

3.2. Strategic Alignment – Project Relationship to CSIRO Corporate Strategy

3.2.1. ACDP provides a series of distinct capabilities, which are inter-dependent on the performance of each other to deliver success. The distinct Corporate and National capabilities which are provided by ACDP are as follows:

a. **Infectious Disease Preparedness and Prevention.** Protecting Australia's people and industry through strategic and collaborative applied research leading to prevention, mitigation and control of BSL3/4 animal and zoonotic infectious diseases aligned with national and global Priorities.

b. **Bio-Risk Expertise.** A trusted advisor to government and industry via the provision of technical, scientific and operational advice and training to domestic and international agencies on diagnostic, biocontainment and disease management and mitigation strategies.

c. **Diagnostic & Emergency Response.** Quality assured diagnostics, surveillance and emergency response to protect human, agricultural and wildlife health against current and future biosecurity threats to Australia.

d. **National Facility Operations.** Management of critical national infrastructure to multiple regulatory frameworks securing sovereign capability and providing a national resource. Maintain operations for access by customers and collaborators including animal models BSL3/4.

e. **Accredited Reference Laboratory.** ACDP's status as an accredited reference laboratory and strong partnership with WOAH, WHO, FAO, DAFF and DFAT* provide regional support for and research into emerging diseases. Capability to monitor emerging pathogens and develop new diagnostics.

3.2.2. Continuity of operations of each of these ACDP capabilities is dependent on continuous access to power reticulation and redundancy.

3.3. Links to CSIRO Property Strategy

3.3.1. In August 2019, CSIRO's Board endorsed the 2019-2029 Property Strategy, which sets out five strategic property priorities. This project will support the delivery of the CSIRO Property Strategy as it directly addresses several property priorities, as indicated in the table below.

Table 2. Project Alignment with CSIRO Property Strategy 2019-2029

CSIRO Property Priority	Description / Intent	ACDP Electrical Infrastructure Project Alignment
Align infrastructure with science	Align CSIRO's infrastructure and facilities with the current and future needs of the Business Units.	The project will address a significant potential risk to the delivery of science outcomes by renewal of core onsite electrical infrastructure.
Leverage strategic infrastructure opportunities	Capitalise on planned strategic infrastructure investment by other parties, including within the Commonwealth, state/territory and higher education sectors.	The project is closely coordinated with the planned wider renewal of the facility (APLR project) and complements rather than duplicates investment on site.
Consolidate our property footprint	Consolidate to sites and locations that align to CSIRO's future needs, improve the utilisation of properties, and optimise investment of limited funds in key sites.	The project will renew key aspects of a major existing CSIRO facility, rather than advancing expansion into other locations and assets.
Invest in maintaining key infrastructure	Identify key infrastructure and maintain/upgrade these existing facilities to be fit-for-purpose.	The project will renew key aspects of a major existing CSIRO facility, providing another 30+ years to key electrical infrastructure.
Environmental Sustainability	Invest where appropriate in minimising the environmental footprint of facilities and operations while supporting CSIRO's own agenda to support leading environmental practice.	This urgent electrical infrastructure renewal project will deliver enhanced environmental outcomes, by replacing standby diesel generators with modern equivalents able to utilise alternate fuels and maximising reuse of complementary plant and equipment.

4. Options Considered

4.1. Overview

4.1.1. During project planning, three (3) options were considered in order to determine the best response to the business need: a "base case" where the status quo would persist for the foreseeable future, and two asset-based project options, involving the procurement of assets to replace those which are reaching or at end of life. These three options are described below.

4.2. Option 1 - The 'Base Case' (Status Quo)

4.2.1. The base case or "status quo / no project" scenario provides a consistent point of comparison for the other project options. Under the base case no additional capital funding would be obtained to replace the electrical assets, and they would continue to be operated and/or repaired according to current procedures and maintenance plans. This would include various procedural workarounds to mitigate the WH&S arc flash risk from switchboards and switches, including de-energising upstream assets.

4.2.2. Under this situation, short and long-term failures would likely accumulate over time, and interventions and maintenance solutions would eventually be unable to prevent system failure.

4.2.3. The whole of life cost of the base case has been estimated over a 30-year period, and is comprised of cash costs from maintenance and operations, in addition to the quantified risk costs associated with short and longer term interruptions associated with unforeseen shutdowns / breakdowns. These are summarised in Table 3 below.

4.3. Option 2 –Electrical Infrastructure Procurement (Leased Generators)

4.3.1. This project option would involve CSIRO rectifying the urgent deficiencies in the electrical infrastructure at ACDP, by procuring, installing, commissioning and testing the seven (7) scope items in an appropriate sequence to suit lead times and complementary system balancing. However, a distinguishing feature of this option is the procurement of the

three (3) replacement standby generators via a long-term leasehold arrangement. All other assets would be acquired outright and added to the ACDP capital asset register.

4.3.2. This option has been included to enable value for money assessment and consideration of any benefits associated with the standby generators being leased and therefore not owned the Commonwealth or on the ACDP capital asset register.

4.3.3. The whole of life cost of this option would include project costs associated with design and specification, and lease costs for a period of 30 years. The calculated risk-costs associated with potential failure of the assets would also be presented to enable comparison against the other options. This is summarised in Table 3, below.

4.4. Option 3 – Electrical Infrastructure Procurement (Purchased Generators)

4.4.1. This project option would also see CSIRO rectifying the urgent deficiencies in the electrical infrastructure at ACDP, by procuring, installing, commissioning and testing the seven (7) scope items in an appropriate sequence to suit lead times and complementary system balancing. In contrast with Option 2, this Option 3 would involve CSIRO purchasing the three standby diesel generators and adding them to the ACDP capital asset register along with all the other scope items.

4.4.2. The whole of life cost of this option would include capital costs associated with design and specification, procurement, installation and commissioning and maintenance, midlife renewal and operations for a period of 30 years. In this option the Commonwealth (CSIRO) would retain responsibility for the maintenance planning and costs for all scope items including the generators.

5. Comparison of Options

5.1. Option 1 - The 'Base Case' (Status Quo)

Description

5.1.1. Under the base case, status quo option no additional capital funding would be obtained to replace the electrical assets, and the assets would continue to be operated and repaired reactively according to current maintenance plans.

Benefits

5.1.2. The only notable benefit for Option 1 is the lack of immediate disruption to ACDP site operations given there would be no project to implement.

Solution Risk

5.1.3. Option 1 has the following solution risks:

a. Increasing repairs and maintenance costs over time

b. The project objective, assurance of electrical supply, subject to significant and growing risk

c. Increasing WH&S risks.

Implementation Risk

5.1.4. Option 1 has limited if any implementation risk given that no project is implemented.

5.2. Option 2 – Delivery of Electrical Infrastructure (Leased Generators Option)

Description

5.2.1. This option involves acquiring the three (3) standby generators under long term lease arrangements, with the remaining six (6) scope items purchased.

Benefits

5.2.2. Achievement of the project objective, assurance of electrical power supply, is the primary benefit for Option 2. In addition, the costs and risks in maintaining the generators is transferred to another party (i.e. the generator vendor).

5.2.3. Inherent flexibility in the ability to replace/upgrade leased generators in a shorter timeframe.

Solution Risk

5.2.4. Option 2 has the following solution risks:

a. CSIRO's reduced control over the leased generators (i.e. risks associated with third-party ownership of critical assets).

Implementation Risk

5.2.5. Option 2 has the following implementation risks:

a. Disruption to site operations during construction.

5.3. Option 3 – Delivery of Electrical Infrastructure (Generator Purchase Option)

Description

5.3.1. This option involves the acquisition of all seven (7) scope items, including the three (3) standby generators by outright purchase.

Benefits

5.3.2. Achievement of the project objective, assurance of electrical power supply, is the primary benefit for Option 3.

Solution Risk

5.3.3. Option 3 has the following solution risks:

a. CSIRO retains responsibility for repair and maintenance of the standby generators.

Implementation Risk

5.3.4. Option 3 has the following implementation risks:

a. Disruption to site operations during construction.

5.4. Cost Benefit Analysis

5.4.1. Table 3 outlines the costs associated with each of the three options to enable cost comparison.

Table 3. Costs associated with Options

Cost	Option 1 (Base Case)	Option 2 (Leased Generators)	Option 3 (Purchased Generators)
Out-turned capital costs	44.74	22.90	29.90
Out-turned ongoing costs *(includes operating and lifecycle costs, 30 years)*	54.54	139.97	42.74
Total out-turned whole of life cost ***(capital + ongoing costs, 30 years)***	**99.28**	**162.87**	**72.64**

Notes:

1. Costs are presented in $AUD Million
2. Generator leasing costs (included in 'ongoing costs' in Option 2 only) are based on an equivalent power demand 30-day hire quotation, with the cost extrapolated over 30 years.

5.5. Recommended Option

5.5.1. The recommended option is Option 3, to include outright purpose of all equipment including the three replacement generators. This option provides the lowest out-turned whole of life cost, and thereby presents the Commonwealth with the best value for money. It also enables the risk of equipment failure to be addressed in a reasonable time frame.

6. Scope of Works

6.1. Scope

6.1.1. The scope for this project was determined via a detailed assessment of the condition and relevance of infrastructure at ACDP, as the facility approaches 40 years of operations. The recommended scope represents those items identified in the sitewide assessment as prioritised due to their condition, age, criticality and the long lead times associated with procuring replacements. Accordingly, the project scope is as follows, as described in Table 1:

a. Replace three (3) standby (backup) diesel generators

b. Replace four (4) Machine Hall low voltage main switchboards

c. Replace 22kV AEB switchboard

d. Replace 6.6kV AEB switchboard

e. Replace 6.6kV ESB switchboard, with additional network reconfiguration

f. Replace F1 and F2 22kV incoming main switches

g. Replace inground 22kV cabling between front gate and the ESB and AEB.

6.2. Site Selection

6.2.1. All works will be conducted within the boundaries of the existing ACDP site, with new cabling and generator hardstands constructed adjacent to existing. This will minimise site disruption during construction and subsequent operation of the new equipment.

6.2.2. The project does not involve the acquisition or sale of land by the Commonwealth. All works will be conducting on the existing CSIRO ACDP site.

6.3. Staging

6.3.1. The works will be staged to enable new, replacement generators and switchboards to be operational and commissioned prior to the decommissioning and removal of legacy equipment. The switchboard replacement will be staged to ensure ongoing operation of the facility is maintained. This approach will achieve the project object of business continuity of networked electrical supply and backup electrical source.

6.3.2. In addition, the replacement and upgrade works for all scope items will be planned in detail in consultation with stakeholders and ACDP site operational staff. Initial planning has been undertaken for staging to minimise times where there is no electrical redundancy to very short periods while works are completed.

7. Planning and Design Concepts

7.1. Details of Applicable Codes and Standards

7.1.1. The project will comply with all relevant statutory requirements and meet all regulatory and building compliance obligations under the Biosecurity Act 2015 and including the

National Construction Code (NCC) , relevant Australian Standards and CSIRO specific guidelines. These include but not limited to:

a. CSIRO Submetering Strategy 2020

b. AS3000, AS3008, AS3010, AS2629, AS2650, AS2067, AS60076, AS62271 for electrical works

c. AS1170, AS3600, AS2159, AS4100, AS4600, for structural works

d. AS3500, AS1725, AS2890, AS1428 for civil works

e. AS1940 for the fuel system works.

7.2. Design Considerations

7.2.1. Key design considerations for the electrical infrastructure project are as follows:

a. Generator size and rating

b. Fuel delivery systems

c. System redundancy requirements as addressed in the above sections. Each system and equipment will have specific redundancy requirements

d. Ecologically Sustainable Design (ESD) considerations in relation to Diesel Fuel Alternatives, Gas to Electric Transition and Low-Global Warming Potential (GWP) Refrigerants

e. External protective security requirements

f. Acoustic considerations for the new generators

g. Size of generator compound to meet required separation distances

h. Structural considerations and existing geotechnical conditions including for new generator containers and pumphouse kiosk

i. Overland flow and flooding

j. Diversion of existing in-ground services

k. Staging of works (as above) including generator decommissioning and demolition

l. Maintenance access for generators and new switchboards.

7.2.2. A plan diagram depicting the electrical infrastructure works at the ADCP site is attached at Annexure A to this submission.

8. Other Issues

8.1. Work Health & Safety

8.1.1. Safety in design workshops have been convened with stakeholder engagement to identify, mitigate, and assign risk management responsibilities as appropriate throughout the design, construction, operation, and existing equipment decommissioning processes.

8.1.2. Assurance of WH&S for CSIRO staff, works personnel and others visiting the project site will be a key consideration for the Head Contractor.

8.2. Environment & Heritage

8.2.1. An environmental and heritage assessment was conducted by an environmental consultant appointed by CSIRO in respect of the electrical infrastructure project. The consultant determined that there no constraints likely to trigger a referral under the Environment Protection and Biodiversity Conservation Act (1999) (EPBC Act)).

Ecological Constraints

8.2.2. More specifically, the potential ecological constraints were identified as follows:

8.2.3. The shrub to be removed near the generators has been identified as showy honey myrtle (Melaleuca nesophila) and is not considered native vegetation for the site. As such there is no issue relating to its removal.

8.2.4. Four out of the five medium environmental constraints identified relate to the TEC Subtropical and Temperate Coastal Saltmarsh – the project works are outside of the location of this TEC – provided the project works remain outside of the 30 m buffer and

the listed mitigation measures are followed – there are no further concerns which would trigger an EPBC Act referral.

8.2.5. There are no groundwater concerns which would trigger an EPBC Act referral.

Heritage

8.2.6. The Project Site (including ACDP buildings) is not currently listed on the National Heritage List (NHL) nor the Commonwealth Heritage List (CHL).

8.2.7. A 2022 Heritage View Impact Assessment report identified several important views to and from the existing ACDP main building.

8.2.8. Heritage consultants have assessed this project against that report and found that any increased height associated with the replacement generators will not be a concern for the identified view lines, as the view of the concrete water tower is not impeded, and the generators will be located towards the corner of the building.

8.2.9. There are no registered Aboriginal places recorded within the Project Site. CSIRO will monitor excavation in accordance with the Unexpected Finds Protocol for Indigenous Heritage.

8.3. External Consultation

8.3.1. Letters outlining the impact, expected benefits and timeframes associated with the wider APLR project were sent to the following external stakeholders in November 2022:

a. Federal Government:
   i. Treasurer Hon Dr Jim Chalmers MP.
   ii. Minister for Industry and Science Hon Ed Husic MP.
   iii. Minister for Health and Aged Care Hon Mark Butler MP.
   iv. Minister for Infrastructure, Transport, Regional Development and Local Government Hon Catherine King MP.
   v. Member for Corio Hon Richard Marles MP.
   vi. Member for Corangamite Ms Libby Coker MP.
   vii. Office of the Federal Safety Commissioner - Branch Manager and Federal Safety Commissioner Mr David Denney.
b. State Government Representatives:

i. Ms Chris Couzens MP Member for Geelong.
ii. Local Government Representative (Kurrajong).
iii. City of Greater Geelong Mayor Peter Murrihy.
iv. Councillor for Brownbill Ward Sarah Mansfield.
v. Councillor for Brownbill Ward Eddy Kontelj.

c. Other Local Organisations:
i. Geelong Community Groups (Via Email).
ii. East Geelong Golf Course.
iii. Geelong Botanical Gardens.
iv. Triboys Basketball Centre.

8.3.2. Letters updating the Federal and State Government stakeholders regarding the scope and program for the electrical infrastructure works identified in this statement of evidence will be sent during July 2024.

8.4. Internal Consultation

8.4.1. CSIRO staff at the ACDP site have been kept informed of the project's status through the planning and design process and will be notified of project approval and the construction period.

8.5. Related Projects

8.5.1. ACDP is approaching the 40th year of its planned 100 year operational life, and is currently in the midst of advanced planning of a multi stage, mid-life extension project. This "ACDP Part Life Refit" (APLR) Project is being designed to enable ACDP to continue operations and perform as a purpose-built and compliant high-containment facility for the next 30 years. This intended upgrade will address the need to modernise lab spaces and to upgrade large, fixed lab equipment within the facility as it reaches end of life.

8.5.2. The APLR project will involve the construction of a new Wing building with modern fit-for-purpose labs. The project will accommodate approximately 140 CSIRO ACDP staff and affiliate users in normal operation, and over 200 users during a surge response, such as a pandemic, for the areas that are affected by the project scope.

8.5.3. The APLR project will require the electrical supply assurance to be provided by the electrical infrastructure project (i.e. the subject of this submission).

9. Cost Effectiveness and Public Value

9.1. Outline of Total Project Costs

9.1.1. The Options evaluated involve the following capital costs (out-turned), as presented in Table 3:

a. Option 1 (status quo) – $44.74m

b. Option 2 (leased generators option) – $22.90m

c. Option 3 (purchased generators option) – $29.90m

9.1.2. Each option includes project staffing costs, construction, contingency, project management, design, documentation and escalation in line with the project milestones. While Option 2 (leased generators) includes lower capital costs, when the WoLC are considered (i.e. leasing, repairs and maintenance) Option 3 (purchased generators) has the lowest costs, as indicated in Table 3.

9.2. Funding

9.2.1. The CSIRO Board agreed in out of session board meeting on 15 May 2024 that the project is to be internally funded from an increase in the CSIRO Capital Management Plan.

9.3. Delivery Methodology

Project Planning

9.3.1. CSIRO engaged a client-side project manager, design consultant, and quantity surveyor to support project planning and design for the project. A construction contractor was also engaged under a short-term consulting arrangement to provide advice on buildability, programming, high level cost certainty, and supply chain risks and opportunities.

Tendering Approach

9.3.2. CSIRO is a Corporate Commonwealth Entity subject to the Commonwealth Procurement Rules (CPRs) and accordingly procurement of the supplier for the long lead items and the subsequent head contractor procurement will be by open tender. No exemptions or conditions which would enable a limited tender are applicable to this project. Further detail on the tendering approach is provided in the Confidential Cost Estimate.

9.4. Delivery Program

9.4.1. Subject to parliamentary approval, contractual agreement with the preferred tenderer (Head Contractor) is anticipated by May 2025, with an expected 24-month construction period for the project. The target dates for key project milestones are also shown in the table below.

Table 4. Key Delivery Milestones

Item	Start date	End date	Duration
Generator procurement (long lead items)	January 2025	July 2026	19 months
Electrical Head Contractor procurement	January 2025	June 2026	5 months
Construction (Stage 0 – Stage 4)	June 2025	January 2027	21 months
Trial period for new equipment and decommissioning of old equipment	October 2026	January2027	3 months
Construction period	**June 2025**	**January 2027**	**19 months**
Defects Liability Period (DLP)	January 2027	January 2028	12 months

Notes:

1. Selected procurement and construction activities occur concurrently while the project awaits delivery of long lead time equipment.
2. Scheduling of the works is dependent on procurement of the replacement equipment. Following the Parliamentary Expediency, all equipment will be ordered, with the generators procurement duration anticipated as 18 months, impacting the timing of Stages 3 and 4. In

total, the program, including procurement, is anticipated to extend to just over two years, with the final decommissioning activities expected to be completed in March 2027.

9.5. Public Value

9.5.1. The biosecurity services that ACDP provides to Australia have direct and indirect financial benefits through the avoidance or reduction of impact associated with pandemic outbreaks. This has been estimated at $653m in 2019 dollar terms and escalates to $700m per annum as of 2023.

9.5.2. Assurance of business continuity of the ACDP facility underscores the public value of the project.

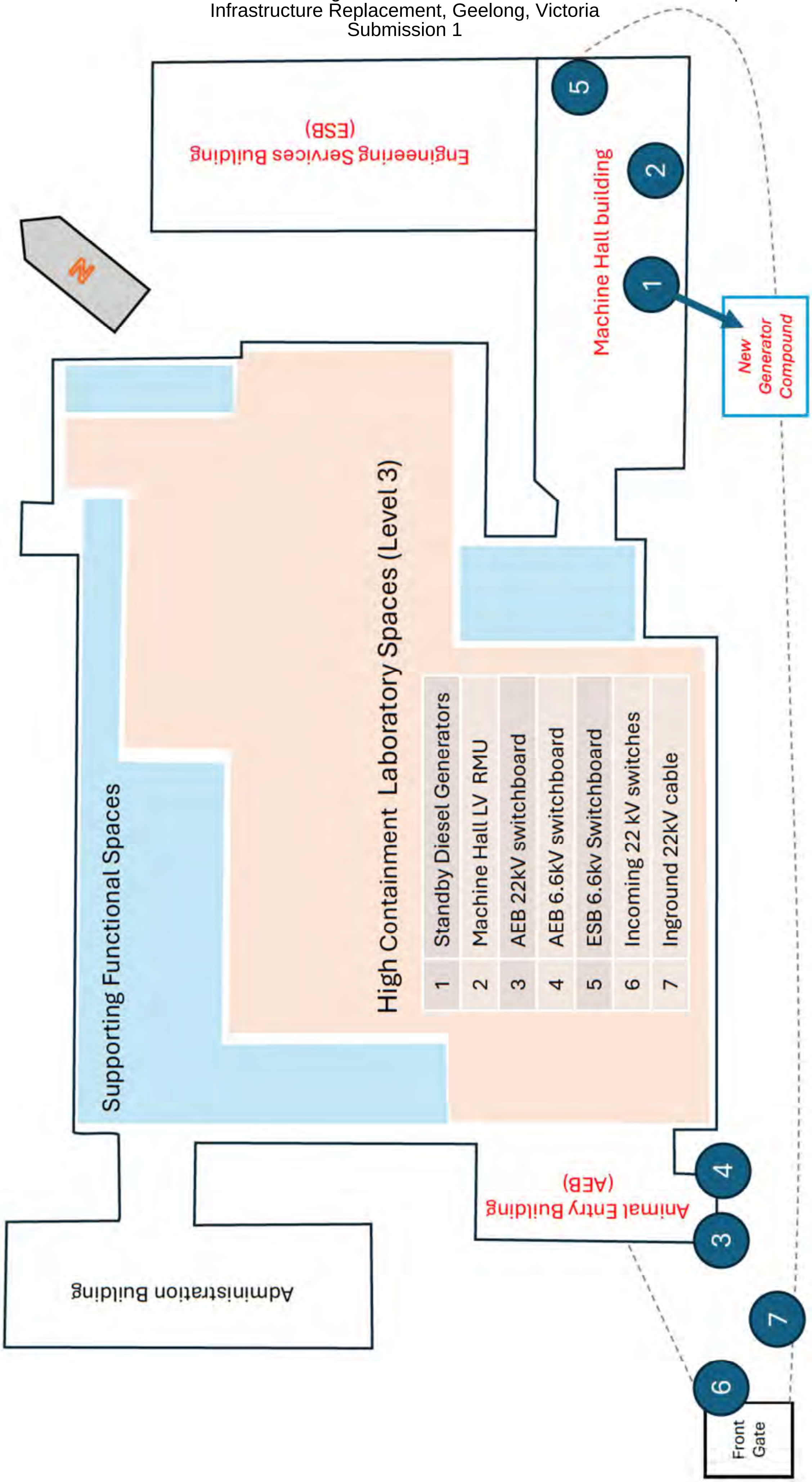
9.6. Value for Money

9.6.1. Value for money through the project is being achieved through the open tender procurement process for the head contractor, and is being assured through the engagement of quantity surveying consultants for provision of cost estimates and validation of schedules of rates.

9.7. Revenue

9.7.1. There is no expected revenue from the project.

Annexure A – Plan Diagram of Infrastructure Works


Engineering Services Building
(ESB)
Machine Hall building
New Generator Compound
High Containment Laboratory Spaces (Level 3)
Supporting Functional Spaces
1 Standby Diesel Generators
2 Machine Hall LV RMU
3 AEB 22kV switchboard
4 AEB 6.6kV switchboard
5 ESB 6.6kv Switchboard
6 Incoming 22 kV switches
7 Inground 22kV cable
Animal Entry Building
(AEB)
Administration Building
Front Gate
N