

Sydney Port Botany Terminal 3 Project

Energy Management Action Plan

Terms and Definitions

The following terms, abbreviations and definitions are used in this plan:

Terms	Explanation
SPBT3	Sydney Port Botany Terminal 3
CEMP	Construction Environmental Management Plan
EM	Environmental Manager
EPA	Environmental Protection Agency
ERAP	Environmental Risk Action Plan
OEH	Department of Climate Change and Water
EMAP	Energy Management Action Plan
EIS	Environmental Impact Statement
MCoA	Ministers Conditions of Approval

Distribution

The master 'controlled' Energy Management Action Plan (EMAP) document forms part of the project's CEMP as an Appendix. The controlled copy will be retained in TeamBinder, the Laing O'Rourke document management system, where it can be accessed by personnel as necessary.

All paper copies of this EMAP will be considered as 'uncontrolled' unless they have been allocated a 'copy number' in a colour other than black.

The client representative will be provided with a copy in conjunction with the submission of the CEMP.

Issue, Revision and Re-issue

The initial issue of this EMAP has been reviewed by Laing O'Rourke's Regional Environmental Manager to ensure it meets the requirements of the current EMS and policy, contract, specifications and standards. The plan is approved for use on the project by the Project Director. Evidence of initial review and approval is by signatures on the cover sheet.

In conjunction with the submission of the EMAP, Laing O'Rourke will coordinate and facilitate an initial EMAP Workshop with representatives from the client and Laing O'Rourke to discuss the contents and application of the EMAP to facilitate the approval of the EMAP and agree the proposed management measures and controls.

Revisions of this EMAP may be required throughout the duration of the project to reflect changing circumstances or identified opportunities for improvement.

Revisions may result from:

- Management Review
- Changes to the Company's standard system
- Audit (either internal or by external parties)
- Client complaints or non-conformance reports.

Revisions shall be reviewed and approved by the Project Manager prior to issue. Updates to this EMAP are numbered consecutively and transmitted to holders of controlled copies.

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1. Introduction

This Energy Management Action Plan (EMAP) has been developed to address the construction activities associated with the Sydney Port Botany Terminal 3 (SPBT3) Project. In particular, the plan has been developed to address the requirement for a Energy Management Action Plan as outlined in the Framework Construction Environment Management Plan.

Development of Sydney Port Botany Terminal 3 will involve the construction of onshore civil infrastructure including container stacking areas. The proposed Terminals have four berths with a total length of 1,180 m. The approximate Terminal area, excluding the Wharf area is 46 ha.

The key components of the Sydney Port Botany Terminal 3 include:

- Ground treatment and consolidation measures
- Drainage, utilities, services
- Container yard
- HV & LV electrical
- Buildings
- Rail yard.

1.1 Objective

This EMAP seeks to ensure that energy resources are maintained and managed effectively. Appropriately trained personnel and experience gained from previous projects will be used to achieve high environmental performance on the SPBT3 Project.

It is recognised that during construction some specific areas will require alterations to the planned control measures due to changing circumstances. In these situations, the planned control measures will be reviewed, risk assessed and, where appropriate and practical, amended as necessary prior to commencing new or modified activities.

This EMAP aims to satisfy the following objectives:

- Address the requirements of the planning approval for the SPBT3 Project
- Address the requirements of the Environmental Impact Statement (EIS) for the Port Botany expansion
- Address the requirements outlined in the Aurecon Framework Construction Environmental Management Plan
- Address the requirements of the relevant environmental legislation as it applies to this project
- Address the requirements of the Environment Protection Licence issued for the works undertaken for the SPBT3 Project

Responsibilities for the implementation and management of this EMAP are in accordance with the Project's Construction Environmental Management Plan.

1.2 Targets

The following targets have been identified in terms of soil and water management for the project:

- Implementation of best practice energy resourcing methods
- Ensure construction activities are managed to meet energy resourcing objectives.
- Monitor the effects of activities and the effectiveness of management measures
- Ensure all personnel are appropriately trained in environmental awareness.

- Maximise renewable energy resources.

2. References

- Port Botany Expansion Environmental Impact Statement
- Aurecon Framework Construction Environmental Management Plan Sydney Terminal 3 Sydney International Container Terminals Pty Limited, Revision 3
- Sydney Ports Corporation Green Guidelines
- City of Botany Bay Energy Efficiency Development Control Plan
- Reference is also made to the NSW Protection of the Environment Operations Act which integrates into one Act all of the controls necessary to regulate pollution and reduce degradation of the environment. The Act also provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act

3. Background

During the construction phase of the SPBT3 project, energy consumption would result from activities including:

- ground improvement and pavement works;
- berth and port infrastructure works;
- development of terminal facilities; and
- procurement and delivery of construction materials

Energy consumption will utilise resources such as electricity, diesels, petrol, oils and other fuels.

4. Mitigation Measures

Mitigation measures for energy management for the construction phase of the project are outlined below.

Mitigation Measures	Responsibility	Source of Requirement	Timing
Utilise 'Green Power' connections as far as practical for site compounds and buildings.	Environment Manager	Best Practice	Site Establishment
Efficient work scheduling and methods that minimise equipment idle time and double handling of material	Project Engineer Superintendent	EIS Ch 35.4.1	Throughout construction
Throttling down and switching off construction equipment when not in use	Project Engineer	EIS Ch 35.4.1	Throughout construction
Switching off truck engines while they are waiting to access the site and while they are waiting to be loaded and unloaded	Superintendent	EIS Ch 35.4.1	Throughout construction
Switching off site office equipment and lights and using optimum lighting intensity for security and safety purposes	Superintendent	EIS Ch 35.4.1	Throughout construction
Careful design of temporary roads to reduce transportation distances	Project Engineer	EIS Ch 35.4.1	Throughout construction
Regular maintenance of equipment to ensure optimum operations and fuel efficiency	Superintendent	EIS Ch 35.4.1	Throughout construction
Specification of energy efficient construction equipment considered prior to being brought on site	Project Engineer	EIS Ch 35.4.1	Throughout construction

Mitigation Measures	Responsibility	Source of Requirement	Timing
Installation of 'smart meters' at the site compound facilities to allow real time monitoring of energy usage on site.	Environment Manager	LOR initiative	Install during site establishment Use throughout construction

5. Training

All site personnel shall undergo site specific induction training which will include environmental awareness. Toolbox meetings will also be undertaken as and when required. They will cover specific environmental issues and shall include energy resource management.

Personnel directly involved in utilising energy resources on site will be given training in the construction, operation and maintenance of the various measures to be implemented. Training of site personnel will be ongoing through the project to ensure environmental awareness and competency is incorporated into all work during the project.

Personnel conducting measuring, monitoring and reporting activities are to be suitably trained or experienced in the activity. Records of all training are to be filed in accordance with the project filing system.

6. Monitoring

Energy usage on site will be tracked on a quarterly basis. If excessive consumption or fluctuations of greater occur, investigations will be undertaken and appropriate actions taken to address the problem.

Items that require repair or action will be documented on the weekly checklist or on form F 1228 as seen in the CEMP. Items that require specific and detailed action will be recorded on the Project's Corrective Action Register.

A detailed inspection will also be conducted three to four days prior to long weekends, RDO weekends or other periods when the site will be shut down for a lengthy time period. This will enable items requiring attention to be identified, raised on an Environmental Improvement Request (EIR) (Form F 1228) and implemented. An example of an EIR is seen in the CEMP.

The Superintendent will be responsible for providing appropriate resources in terms of labour, plant and equipment to enable the items to be rectified in the nominated timeframes.

Inspections to be recorded on Form 1227 Weekly Environmental Inspection Checklist. If deemed necessary, additional sedimentation control measures will be implemented to ensure that water quality is maintained throughout the works.

Improvement requests received from the Client's Environmental Representative or other appropriate agencies shall be assessed and responded to within 24 hours if the issue is not environmentally threatening.

The following forms and check sheets shall be utilised to inspect, monitor and record erosion and sediment controls and water quality on this project and filed in accordance with the project filing system.

- Form F 1227 Weekly Environmental Checklist
- Form F 1228 Environmental Improvement Request