



Section 7

South East Open Cut Project
&
Modification to the
Existing ACP Consent

SECTION 7 – PROJECT JUSTIFICATION AND CONCLUSION

CONTENTS

7	PROJECT JUSTIFICATION	S7-3
7.1	INTRODUCTION	7-3
7.2	NEED FOR SEOC PROJECT AND ACP MODIFICATION	7-3
7.3	SUITABILITY OF SITE	7-4
7.3.1	Project Location	7-4
7.3.2	The “No Project” Alternative	7-4
7.3.3	Project Design Alternatives	7-5
7.3.4	Alternatives for Infrastructure and Facilities	7-8
7.3.5	Alternatives to the Modification of Existing Development Consent	7-10
7.4	OBJECTS OF THE ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979	7-11
7.4.1	Proper Management, Development and Conservation of Natural and Artificial Resources	7-11
7.4.2	Promotion and Co-ordination of the Orderly and Economic Use and Development of Land	7-12
7.4.3	Protection, Provision and Co-ordination of Communication and Utility Services	7-12
7.4.4	Provision of Land for Public Purpose and Provision and Co-ordination of Community Services and Facilities	7-13
7.4.5	Protection of the Environment	7-13
7.4.6	Ecologically Sustainable Development	7-14
7.4.7	Affordable Housing	7-16
7.4.8	Sharing of Responsibility for Environmental Planning	7-17
7.4.9	Provide opportunity for public involvement and participation in environmental planning and assessment	7-17
7.5	SUMMATION OF ENVIRONMENTAL IMPACTS AND BENEFIT	7-17
7.5.1	Residual Environmental Impacts	7-17
7.5.2	Environmental Benefits	7-18
7.5.3	Socio – Economic Benefits	7-18
7.6	CONCLUSION	7-19

Tables

Table 7.1:	Alternatives considered to the proposed open cut configuration	7-5
Table 7.2:	Alternatives considered to the proposed open cut infrastructure and facilities	7-8
Table 7.3:	Alternatives considered to the proposed ACP modifications	7-10

Figures

Figure 7.1:	Open cut configuration alternatives	7-6
Figure 7.2:	Out of pit emplacement and facility alternatives	7-7
Figure 7.3:	Out of pit emplacement and facility alternatives	7-7
Figure 7.4:	Early concepts on the mine design and landform	7-8

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7 PROJECT JUSTIFICATION

7.1 Introduction

The Director General's requirements states the EA Report must include:

A conclusion justifying the project, taking into consideration: the suitability of the site; the economic, social and environmental impacts of the project as a whole; and whether the project is consistent with the objects of the Environmental Planning & Assessment Act 1979

This section addresses this requirement.

7.2 Need for SEOC Project and ACP Modification

Open cut operations within the existing ACP are due to close in October 2010. The SEOC effectively replaces the existing open cut operation, creates 100 construction jobs and maintains continuing employment for 160 employees and contractors currently working within the existing open cut.

SEOC and ACP modification are being developed to provide coal to the domestic and international coal markets. The project will deliver economic benefits at regional, state and federal levels as well as to other stakeholders. The project will bring economic benefits to these groups by:

- The associated economic benefits of maintaining employment for 160 people and the associated contractors.
- Coal supply continuity from the ACOL operations.
- Increasing the total annual coal output of Felix Resources Limited.
- Optimising the value of the coal resources at the ACP by allowing more coal to be handled and processed by ACP infrastructure and transport facilities.
- Increasing flexibility in delivery of different coal products (i.e., varying ash contents) allowing production rates to be matched to the price and demand for various grades.
- Meeting contractual obligations as an equity participant in the Newcastle Coal Infrastructure Group.

The other socio-economic and environmental benefits that the project will deliver are described below, that include a net quantifiable benefit to the community of the project proceeding of \$368 million dollars.

SEOC requires the utilisation of the approved ACP infrastructure (as modified pursuant to the modification application) to handle and process SEOC ROM coal and to transport product coals to market. The availability for ACOL to integrate the two stages and utilise ACP infrastructure for SEOC provides ACOL with improved coal handling efficiencies and reduced capital expenditure and operating costs. The sharing of infrastructure across the ACP will reduce the need for duplicated infrastructure and reduce the environmental footprint of SEOC. The integration of ACP and SEOC and the ability of ACOL to construct and operate the ACP as an integrated mining complex will be made possible by the modification of ACP.

The coal mining industry is of fundamental importance to Australia's economic and social prosperity. Global energy demand is increasing and will continue to play a vital role in economic growth and social advancement.

Many of the world's economies are heavily reliant on coal to meet basic energy needs domestically and internationally. Coal is a proven safe, secure and relatively inexpensive source of energy. Coal

provides approximately 90% of NSW energy needs, 75% of Australia's energy needs and 24% of global energy needs and is used to produce about 39% of the world's electricity.

Access to energy remains a critical development need, particularly for approximately one quarter of the world's population who do not have access to electricity. As living standards in Third world countries increase, the demand for coal is forecast to continue to rise, along with clean coal technologies and other renewable energies, in conjunction with the capture and storage of greenhouse gas emission. The SEOC project and ACP modifications will contribute toward satisfying both domestic and international energy markets, whilst contributing to the prosperity of local, national and international economies.

7.3 Suitability of Site

7.3.1 Project Location

Coal mining is the utilisation of natural resources that were formed before the human habitation of the land. Unlike other industries, coal mining is restricted to areas where the formation and subsequent weathering of earth over time governs the methods that can be used to recover the resource. Given the relatively shallow depth of the coal resources the SEOC must be an open cut mine to ensure the safe and efficient recovery of the resource.

In many cases towns and villages grew in close proximity to natural resources such as water, agricultural soils and coal deposits. Camberwell has had similar origins with local coal resources such as Rix's Creek, Elsmere Colliery and New Park mines commencing as early as the 1870's.

The SEOC and existing ACP are located within an area dominated by open cut and underground coal mining (refer to *Section 5.4.3* for further detail). To the north of the site is the Mt Owen Complex consisting of the Glendell, Ravensworth East and Mt Owen open cut mines. To the east is Rix's creek open cut and the Integra mining complex consisting of the Glennies Creek underground, Glennies Creek Open Cut and the Integra South Pit. To the south west is the Hunter Valley Operations mine complex, consisting of the Narama and Ravensworth West pits and Ravensworth underground. In this regard the proposed SEOC and modification to the existing ACP are consistent with other mining operations which prevail in the locality.

The SEOC and existing ACP are appropriately located with respect to New England Highway for access to the mine by employees and contractors and with respect to the Main Northern Railway line for the transport of product coal to the Port of Newcastle.

The proximity of the proposed SEOC project to a relatively small amount of non mining land uses such as agriculture, rural dwellings and the Camberwell village will be managed by appropriate operations carried out in accordance with the Statement of Commitments. ACOL in the operation of the SEOC will avoid, mitigate and minimise environmental impacts to these properties, and where impacts are too great the landowner may request the acquisition of their property (refer to *Statement of Commitments*). ACOL is committed to maintaining properties within the village (where structurally feasible) such that as mining retreats away from Camberwell the village will continue to function and provide rural residential lifestyle opportunities for the inhabitants.

7.3.2 The "No Project" Alternative

The direct consequences of not proceeding with the project can be summarised as follows:

- Socio-economic benefits of the SOEC project and proposed ACP modification described in *Section 7.5.3* will not be realised.
- Environmental benefits described in *Section 7.5.2* will not be realised.
- Environmental and social impacts will be avoided: the impacts on land, water and air (and associated physical, biological, and social impacts) as summarised in 7.5 will not occur.

- Realisation of the economic value of the coal resource will not occur.

7.3.3 Project Design Alternatives

As discussed above the location of the resource is governed by the underlying geology. **Table 7.1**, **Table 7.2** and **Table 7.3** review the components of the SEOC and modification to the existing ACP to ensure that the selected design is justified.

Snapshots of the alternatives and mine planning considered during the development of the SEOC Project are illustrated in **Figure 7.1**, **Figure 7.2**, **Figure 7.3**, and **Figure 7.4**, these iterations in planning led to the final SEOC Project as presented in *Section 4*.

Table 7.1 details the alternatives to the proposed open cut configuration.

Table 7.1: Alternatives considered to the proposed open cut configuration.

Alternative	Analysis of Alternative		Justification for Chosen Configuration
	Negative	Positive	
Mining south to north.	Does not fit into potential long term resource recovery.	Provides greater initial buffer to Camberwell village.	Mining from the north to south provides opportunity to potentially access reserves to the south and results in a final void in a more isolated location. Provides a visual and environmental screen for the open cut operations and a barrier from the highway.
Dragline or strip mining.	Large capital investment.	Smaller out of pit emplacement required.	The use of truck and excavator allows machinery used in NEOC to be transferred to the SEOC with minimal additional machinery capital investment.
Smaller standoff from Glennies Creek (refer Figure 7.2)	Potential for greater impacts to alluvium and creek.	Greater recovery of coal.	Proposed pit shell justified by groundwater investigations, balanced between environmental constraints and resource recovery.
Larger standoff from Glennies Creek.	Sterilises coal reserves, makes project uneconomic.	Greater certainty in protection of alluvium and creek	Proposed pit shell justified by groundwater investigations, balanced between environmental constraints and resource recovery.
Alternate mining fleet.	New capital investment required.	-	Economic benefits, allows for utilisation of existing fleet, with improvements made as required.
More generic final landforms (refer to Figure 7.4A).	Poor aesthetics, very linear.	Lower establishment costs.	While more complex in construction, final landform will be sympathetic to adjoining topography.
Smaller out of pit emplacement footprint (refer Figure 7.4B).	Requires higher final landform elevation.	Reduced surface disturbance.	The chosen landform while having a larger footprint results in a lower more aesthetically pleasing final landform that merges with the foothills to the east and is less imposing on the New England Highway.
Alternative pit design with no north western (near Perry Street) or south western corner pit setbacks (refer to Figure 7.1, Figure 7.2, Figure 7.3 and Figure 7.4).	Impact footprint larger. Removes vegetation that provides useful screening. Impact to drainage line. Impact to additional Aboriginal and European Heritage items. Requires optic fibre cable relocation. Greater buffer to Glennies Creek and reduced encroachment	Greater resource recovery.	While the pit design has resulted in a reduction in resource recovery this is balanced by the environmental benefits that will be gained through avoiding the negative impacts as stated.

Alternative	Analysis of Alternative		Justification for Chosen Configuration
	Negative	Positive	
	on the 1 in 5 and 1 in 20 year ARI flood events		
Out of pit environmental bund extending further west and/ or north to Glennies Creek (refer to Figure 7.2 Figure 7.3, and Figure 7.4).	<p>Closer to Glennies Creek.</p> <p>More vegetation clearance.</p> <p>Fills drainage line.</p>	<p>Improved noise attenuation to Camberwell.</p>	The out of pit emplacement was designed to ensure the retention of trees north of the open cut, the protection of a heritage site and retention of an existing drainage line.
South-western final void location (refer to Figure 7.4B).	Close proximity to Glennies Creek.	Given the dip of coal seams, most efficient void location.	Mining design modified to ensure the selected void toward eastern side provides greater buffer to Glennies Creek, to minimise potential interaction post mining.
No mining of the SEOC.	Loss of jobs, royalties, taxes.	Nil environmental impacts.	Significant economic loss to local, regional state, and national economies in the form of royalties, taxes and direct and indirect employment (further justification detailed with <i>Section 7 – Project Justification and Need</i>).

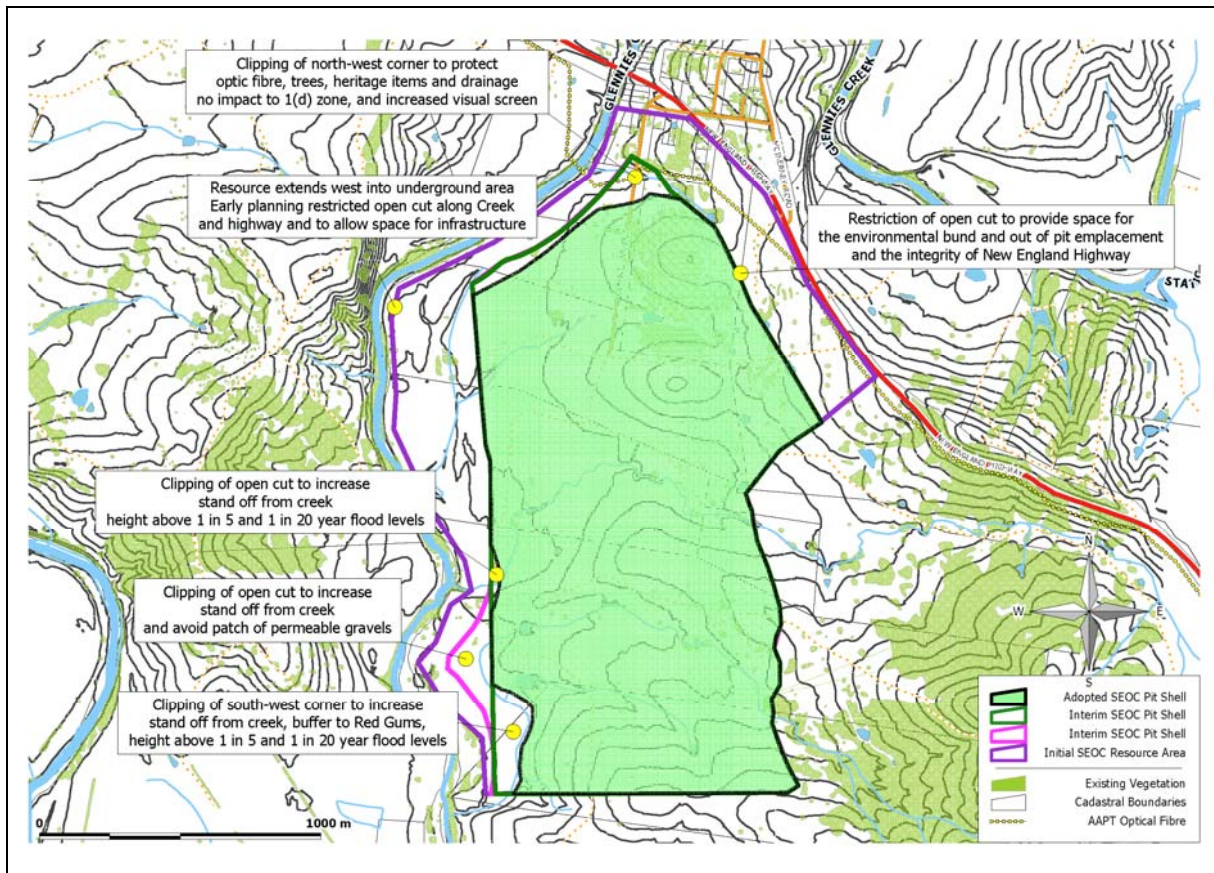


Figure 7.1: Open cut configuration alternatives.

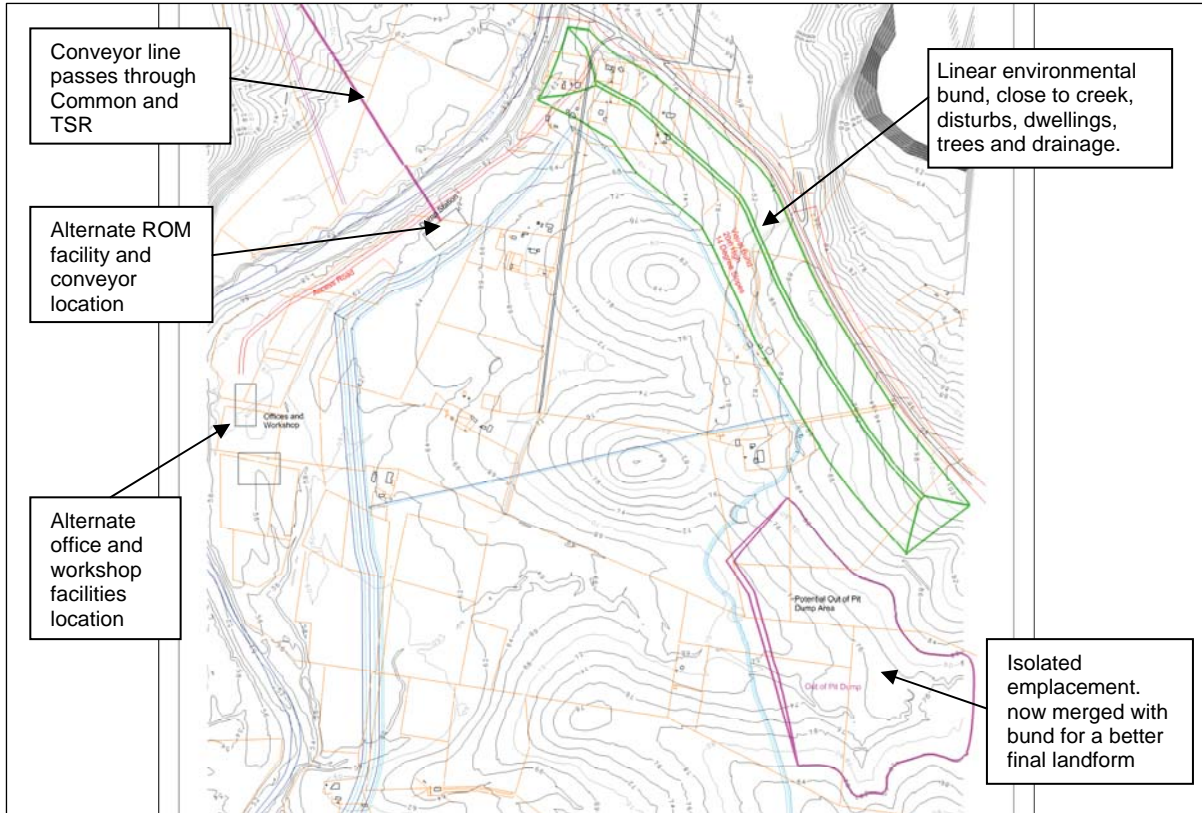


Figure 7.2: Out of pit emplacement and facility alternatives.

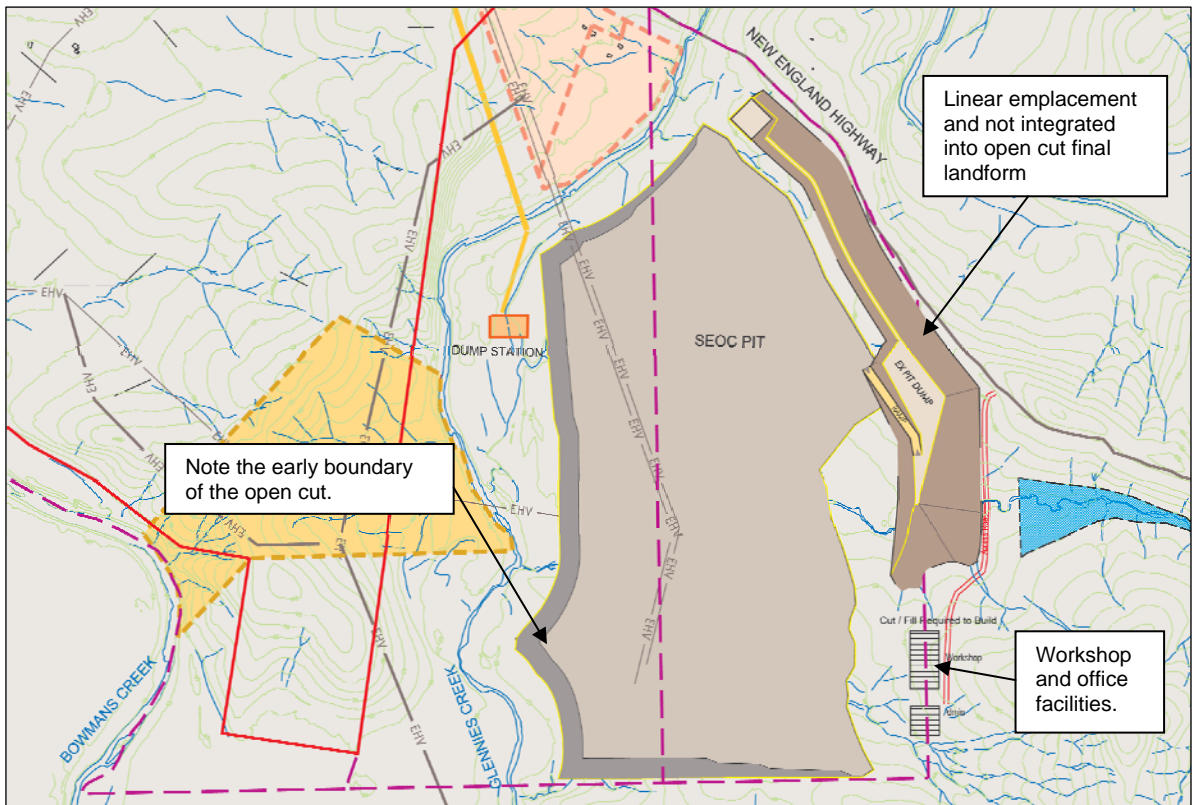


Figure 7.3: Out of pit emplacement and facility alternatives.

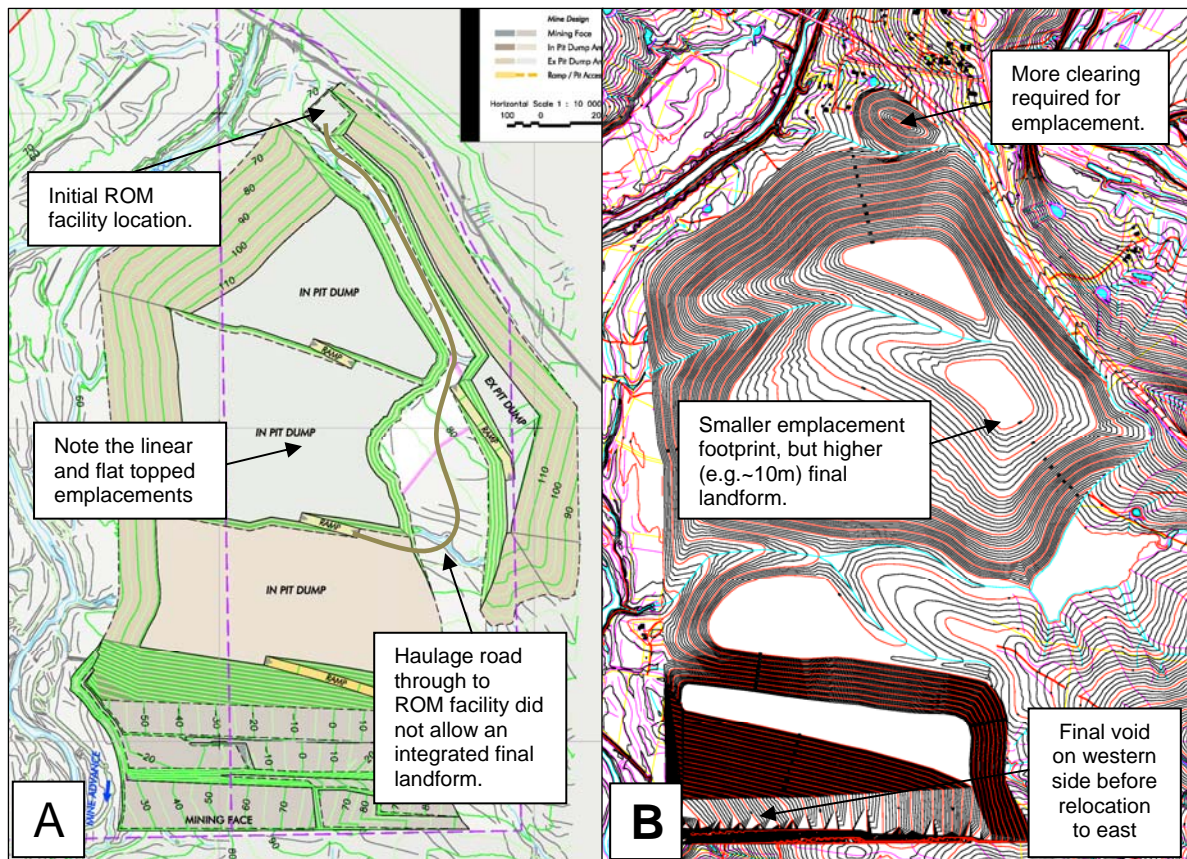


Figure 7.4: Early concepts on the mine design and landform.

7.3.4 Alternatives for Infrastructure and Facilities

Table 7.2 details the alternatives to the proposed infrastructure and facilities that were considered.

Table 7.2: Alternatives considered to the proposed open cut infrastructure and facilities.

Alternative	Analysis of Alternative		Justification for Chosen Configuration
	Negative	Positive	
ROM coal facility located further north (refer to Figure 7.2).	Closer to Camberwell Village, would dissect the Common on western side of Glennies Creek. Reduction in available coal resource.	Outside flood plain and associated impacts.	Preferred location based on conveyor alignment within ACOL land holdings and length of haulage, levee to be constructed to protect from flooding, no significant impact to flood levels.
ROM coal facility located further south.	Within floodplain. Longer conveyor alignment.	Nil	Preferred location based on conveyor alignment within ACOL land holdings and length of haulage, levee to be constructed to protect from flooding, no significant impact to flood levels.
ROM coal facility located further west.	Greater sterilisation of coal resource. Longer conveyor alignment.	Further from Glennies Creek. Above flood levels.	Preferred location based on conveyor alignment within ACOL land holdings and length of haulage, levee to be constructed to protect from flooding, no significant impact to flood levels.
ROM coal facility located on the western side of open cut.	Longer conveyor alignment. Higher capital	Free of flood impacts and areas of potential archaeological	

Alternative	Analysis of Alternative		Justification for Chosen Configuration
	Negative	Positive	
	expenditure. Complexities in conveying around/across the open cut.	significance.	
ROM coal facility located further east.	Closer to creek. Higher flooding risks.	Greater resource utilisation.	Preferred location based on conveyor alignment within ACOL land holdings and length of haulage, levee to be constructed to protect from flooding, no significant impact to flood levels.
Access road to the office and workshop around the west of dam wall.	Does not allow integration of dam wall with out of pit emplacement.	Construction of dam wall to a lesser degree.	Improved access road profile, and allows for better integration of the dam wall with the out of pit spoil and improved final landform.
Access road to the office and workshop around the eastern side of dam.	More clearing required. Longer access road.	Construction of dam wall to a lesser degree. More gradual profile on access road. Access road can also increase dam capacity.	Shorter access road and less clearing.
Facilities located on eastern side of open cut in alternate position to south (refer to Figure 7.3).	Longer access road. Is within land not currently owned by ACOL. Evacuation required during blasting.	Greater separation to clean water dam and simpler drainage design. Some opportunity for establishment of facilities in area with less vegetation.	The preferred location of the facilities was selected with consideration of ensuring construction was within land owned by ACOL, also resulted in no blast evacuation being required. Vegetation was considered, which resulted in a unique facility configuration as opposed to conventional rectangular set of facilities, with a net result to less significant younger regrowth.
All facilities located on western side of open cut (refer to Figure 7.2).	Would require fill to elevate above 1 in 100 year flood. Intersection improvements required would be too close to Glennies Creek bridge. Close to Glennies Creek. Noise propagation along Glennies Creek. Evacuation required during blasting.	Minimal vegetation disturbance. Combined set of facilities, reduces some capital and operational costs.	Selected location preferred based on economic considerations, intersection location, and relative isolation to minimise visual and noise impacts.
Conveyor line going underground to connect with Underground Conveyors on southern side of highway.	High development costs. Large surface disturbance, and spoil to emplace. Complex coal chain management	No conveyor overpass of highway. Utilises more existing infrastructure.	On balance the construction costs and complexities in handling coal from two different sources made the chosen configuration over the highway the preferred configuration as it allows easier connectivity with the CHPP and management of coal handling.
Conveyor alignment to allow highway crossing further west.	Greater construction costs due to lower cutting depth. Conveyor crossing required for Ashton property access.	More direct access to CHPP.	Good location given New England Highway cutting depth, location further enough west to reduce skyline impacts on eastern approach. The cutting provides height and hence less earthworks.
Truck haulage of coal	High cost of creek and	No requirement for ROM	The use of conveyor from the SEOC to the

Alternative	Analysis of Alternative		Justification for Chosen Configuration
	Negative	Positive	
from SEOC to the ACP CPP.	highway crossings, increased dust and noise impacts, greater surface disturbance and visual impacts.	facility at SEOC.	CHPP minimises surface disturbance and provides for lower upfront capital expenditure as well as a reduction in overall environmental impact.
ROM stockpiles at the existing ACP CPP.	Greater inefficiencies, as some reject is conveyed to ACP, creating additional waste to be managed. Reduced flexibility in stockpiling, no contingency for conveyor and crushing downtime.	Reduced ROM facility footprint, slight reduction in noise associated with stockpile machinery.	The selected ROM facility has been chosen to provide sufficient operational flexibility, improve efficiencies, and reduces void space constraints at the ACP.
Single stage levee.	High upfront construction costs. Disturbs catchments earlier than required.	Reduced overall construction and costs.	Staged levee chosen to reduce upfront capital costs and minimise disturbance until mining progresses.
Powerline realignment north of New England Highway.	Longer route, visually encroaches on historic church, entrance to Camberwell.	Clear of project infrastructure.	The chosen alignment options were selected on the basis of flora, fauna, and visual impacts.

7.3.5 Alternatives to the Modification of Existing Development Consent

Table 7.3 details the alternatives to the proposed modification of the existing ACP development consent.

Table 7.3: Alternatives considered to the proposed ACP modifications.

Alternative	Analysis of Alternative		Justification for Chosen Configuration
	Negative	Positive	
No change to the existing underground extraction rate.	Reduced flexibility in mine scheduling.	Air quality emissions remain as existing.	Increasing the peak underground extraction rate allows ACOL to take advantage of production efficiencies.
Maintain existing CHPP throughput.	Reduced value adding of coal resource.	Air quality emissions remain as existing.	Increased throughput of the CHPP value adds to the coal resource generating greater royalties and revenues and employment security.
New dedicated CPP and rail loading facilities for the SEOC.	Greater disturbance, higher capital expenditure.	-	Utilisation of the existing CHPP provides for the economic utilisation of existing facilities and reduces upfront capital expenditure.

7.4 Objects of the Environmental Planning & Assessment Act 1979

The objects of the EP&A Act are:

(a) to encourage:

(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,

(ii) the promotion and co-ordination of the orderly and economic use and development of land,

(iii) the protection, provision and co-ordination of communication and utility services,

(iv) the provision of land for public purposes,

(v) the provision and co-ordination of community services and facilities, and

(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and

(vii) ecologically sustainable development, and

(viii) the provision and maintenance of affordable housing, and

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

This section documents how the SEOC project and proposed modification are consistent with the objects of the Act.

7.4.1 Proper Management, Development and Conservation of Natural and Artificial Resources

Environmental Planning and Assessment Act section 5 (a) object (i) is to encourage:

“the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment”

The SEOC project and ACP modification will extract coal seams that are one of the state’s natural resources. The integration of the SEOC with the existing ACP will provide for the efficient recovery, development and management of the resource. The design of the SEOC project and ACP modification has taken into consideration the natural resources in the area including:

- Conservation of Glennies Creek is achieved through the standoff of the SEOC from the creek, its riparian vegetation and associated alluviums.
- The standoff to the creek and location of facilities in order to maximise the recovery and proper management of the natural coal resource.
- Implementation and management of an offset strategy for flora and fauna impacted by the SEOC project.
- Clipping of the north western corner of the project has reduced the extent of impact to a small tributary and retained native vegetation. It has ensured that no mining is undertaken within the 1

(d) Small Rural Holdings Zone under the Singleton Local Environment Plan 1996, that generally defines the boundary of the village.

- Clipping of the south western corner of the open cut has reduced impacts to a minor tributary and increased the buffer to a stand of River Red Gum.
- The office and workshop facilities have been located to minimise clearing to existing native vegetation.
- The SEOC project has been designed to minimise impacts to the village and where impacts (such as dust and noise) are unavoidable, ACOL are committed to purchase upon request by landowners and maintaining the existing dwellings, such that the village continues to function. ACOL have proposed a conceptual strategy for the improved enhancement of the village through the implementation of bike paths, street trees, a park and meeting place for the long term betterment of the village. ACOL is prepared to commit to and fund an agreed village enhancement program of works or other identified social – community infrastructure for the local government area and as such will enter into a Voluntary Planning Agreement with the Minister for Planning and Singleton Council.

The Statement of Commitments implements measures set out in *Section 5* of this EA detail the measures proposed by ACOL to avoid, minimise and ameliorate impacts, ensuring the proper management of natural and artificial resources. These measures include the development of an offset package that incorporates the conservation and enhancement of existing vegetation, enhancement of the Glennies Creek riparian corridor to improve both the water resource, native vegetation and habitat.

The development of the State's coal resource provides direct employment security for existing 160 personnel and results in direct and indirect economic benefits to the local and regional communities.

7.4.2 Promotion and Co-ordination of the Orderly and Economic Use and Development of Land

Environmental Planning and Assessment Act Section 5 (a) object (ii) is to encourage:

'the promotion and co-ordination of the orderly and economic use and development of land'.

Both the SEOC project and existing ACP are located in close proximity to both the New England Highway, Main Northern Railway line and numerous other coal mining developments. The SEOC project will utilise the existing approved ACP CHPP facilities (subject to modification), including the train loading facilities. The ACP and neighbouring mines have been approved by the Minister for Planning (or his/her delegate) in his/her role of co-ordinating the orderly and economic use and development of land. This environmental assessment report considers the cumulative impacts of all of these mines to allow a co-ordinated assessment of the SEOC and modification to the existing ACP as part of overall mine development in the area.

Mining is consistent with the land use planning zone objectives for the Rural 1(a) zoned land under the Singleton Local Environmental Plan 1996. Mining of the SEOC and the ACP modification and the environmental offsets proposed will provide better environmental and economic returns on the land than if it continues to be used for grazing and isolated fodder cropping.

The SOEC/ACP is located in close proximity to Glendell Open Cut, Camberwell Colliery, Rixs Creek Open Cut and Integra Open Cut. The area is therefore an intensive mining, coal handling and processing zone already. Therefore, this area is appropriate for mining and mining purposes conforming with the orderly and economic use of land in the Hunter Valley.

7.4.3 Protection, Provision and Co-ordination of Communication and Utility Services

Environmental Planning and Assessment Act section 5 (a) object (iii) is to encourage:

(iii) the protection, provision and co-ordination of communication and utility services,

The SEOC project is located within an area consisting of existing utility infrastructure consisting of 132kV, 66kV and 11kV power lines, copper telecommunication cables and a fibre optic cable.

The development of the SEOC project and ACP modification will require the realignment of power lines around the proposed SEOC to ensure services are maintained. Copper telecommunication cables have been considered and ACOL will maintain existing connections in consultation with the utility provider to the necessary properties. The SEOC pit boundary has been modified to avoid the relocation of fibre optic cables north of the project.

The protection and/or relocation of the relevant utilities will be undertaken in consultation with the utility service provider to ensure little or no disruption to the service.

The SEOC Project and proposed modification to the existing ACP are consistent with this object of the Act.

7.4.4 Provision of Land for Public Purpose and Provision and Co-ordination of Community Services and Facilities

Environmental Planning and Assessment Act section 5 (a) objects (iv) and (v) is to encourage:

“(iv) the provision of land for public purposes,

(v) the provision and co-ordination of community services and facilities”

ACOL are continuing to work with the Camberwell community to develop plans aimed at sustaining Camberwell village beyond the short term predicted mining. ACOL has developed a conceptual strategy in consultation with the local Camberwell community which proposes the orderly and economic use of certain existing Crown land for public purposes in order to improve the Camberwell community's facilities. The conceptual strategy proposes the enhancement of streets, establishment of bike paths around the streets of Camberwell and the establishment of a park on Crown land (currently reserved for camping) that incorporates a meeting place and associated club house. ACOL is prepared to commit to and fund an agreed village enhancement program of works or other identified social – community infrastructure for the local government area and as such will enter into a Voluntary Planning Agreement with the Minister for Planning and Singleton Council.

The SEOC project and proposed modification to the existing ACP are consistent with these objects of the Act.

7.4.5 Protection of the Environment

Environmental Planning and Assessment Act section 5 (a) object (vi) is to encourage:

“the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats.”

The development and operation of a mine and the extraction of coal inevitably has an impact on the environment. The major potential environmental risks associated with the SEOC include the impacts on groundwater and surface water, clearing of native vegetation, loss of habitat and threatened fauna species, cultural heritage and impacts to the local community from noise and air quality.

The design of the SEOC and ACP modification has avoided or minimised impacts. Where impacts remain, proposed mitigation measures and offsets to protect the environment (as described in Section 5) are proposed, including:

- Clipping of open cut pit limits.
- Positioning of facilities to avoid clearing.
- The development of a management and mitigation strategy to minimise impacts to flora and fauna and its implementation.
- The enhancement, management and implementation of a vegetation offset strategy.
- Enhancement of existing habitat and connectivity through the area.

The effectiveness of these protection and mitigation measures will be determined through an environmental monitoring program. This program will expand on the existing ACP monitoring program. Environmental protection measures will be reviewed and improved based on the results from the monitoring program.

7.4.6 Ecologically Sustainable Development

Environmental Planning and Assessment Act section 5 (a) object (vii) is to encourage: 'ecologically sustainable development'.

Ecologically sustainable development (ESD) is the exploitation of plants, animals and other resources at a level which allows the number and variety of species to remain much the same from generation to generation.

ESD is defined in the EP&A Act by reference to section 6(2) of the *Protection of the Environment Administration Act 1991* which requires the effective integration of economic and environmental considerations in decision-making processes and provides the ESD can be achieved through the implementation of the following principles and programs:

- The precautionary principle.
- Inter-generational equity.
- Conservation of biological diversity and ecological integrity.
- Improved valuation, pricing and incentive mechanisms.

ESD is founded on the basis that current and future generations should leave a natural environment that functions equally as well or better than the one inherited. The following section describes the consideration and application of ESD principles in relation to the SEOC.

7.4.6.1 Precautionary Principle

The precautionary principle means that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (Protection of the Environment Administration Act 1991).

Application of the precautionary principle to the SEOC needs to ensure that there has been: -

- Careful evaluation of the proposal to avoid serious or irreversible damage;
- Predictable and transparent decision making for the proposal; and
- An assessment of consequences of various options undertaken.

The environmental consequences of the proposal have been documented in *Section 5 – Existing Environment and Impact Assessment* and associated appendices. Scientific and engineering analysis of the environment and likely impacts of the project has been thorough, and has involved field surveys, computer modelling, impact identification and measures to avoid, minimise and ameliorate impacts.

At all stages of project development there has been an open and transparent decision making process. Consultation has occurred with the various stakeholders and resulted in the project being modified to minimise the potential for serious and/or irreversible damage to the environment. These modifications include:

- Clipping of the open cut in the north west to avoid impacts to a creek line, vegetation and optic fibre.
- Clipping along the western boundary to minimise interaction with Glennies Creek alluvials.
- Clipping of the project in the south western corner reduces the project encroachment into the flood storage for 5 and 20 year ARI events and increases the buffer to a population of River Red Gums.
- *Section 7.2* provides an overview of the various other project alternatives and justification for selected design often based on reducing potential environmental impacts.

7.4.6.2 Social Equity including Intergenerational Equity

Social equity involves value concepts of justice and fairness so that basic needs of all sectors of society are met and there is a fairer distribution of costs and benefits to improve the well-being and welfare of the community, population or society (DUAP, 1995). Social equity also includes concerns for intergenerational equity which requires that the present generation should ensure the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

The ACP modification and SEOC as proposed and the mitigation and rehabilitation measures described in the Statement of Commitments and in *Section 5 – Existing Environment and Impact Assessment* will minimise impacts upon not only the current generation, but also upon future generations. Whilst the winning of the coal resource will remove an opportunity for future generations, the economic benefits generated by the SEOC will benefit current and future generations. The construction and operation of the mine will deliver significant economic benefits to the local community, the region and both state and federal governments during the life of the project whilst appropriately managing environmental impacts and making appropriate provision for rehabilitation and landscape restoration by the following mechanisms:

- appropriate environmental management plans which will be developed and implemented in an adaptive manner;
- development and implementation of an adaptive environmental monitoring programme;
- progressive rehabilitation of cleared land to enhance ecological offset strategy;
- payment of bonds for rehabilitation under mining tenements;
- entering into a Voluntary Planning Agreement with Singleton Council (see section 2.7).

Coal is an essential component of life in Australia, and provides approximately \$8 billion per annum in export income. It is the energy source for over 90% of the State's electricity, and energy is fundamental to sustaining and improving living standards. Coal provides a safe, secure, relatively inexpensive source of energy nationally and internationally, and will continue to do so until alternate renewable energy sources are developed to a commercially viable level. Coal allows us to maintain our current way of life while we tackle the difficult and long term task of developing economically viable renewable sources of energy. The wise use of our non-renewable resources such as coal will ensure Australia's economic future through export income and access to competitively priced energy. It will also help ensure that the legacy we hand to the next generation will be as valuable as the one we have inherited. Coal has a key role to play in ensuring a sustainable future for Australia.

7.4.6.3 Conservation of Biological Diversity and Ecological Integrity

Biological diversity refers to the variety of life forms on earth and is reflected at three levels by genetic diversity, species diversity and ecosystem diversity.

The SEOC and ACP modification (project) are designed to be consistent with the conservation of biological diversity and ecological integrity. The project is founded on known coal deposits in an area which is in the vicinity of existing coal mining activities, extractive industries, agricultural/pastoral activities, transport and utility service corridor developments.

The project has received a thorough examination consistent with statutory authority guidelines (see Section 5), with special attention on threatened and endangered species that may potentially be impacted. Significance assessments have determined that the SEOC will not have a significant adverse impact on any species.

Environmental and rehabilitation procedures will ensure the project does not adversely impact the local environment in the long term.

7.4.6.4 Improved valuation, pricing and incentive mechanism

This principle requires that environmental factors should be included in the valuation of assets and services, such as:

- Polluter pays – those who generate pollution and waste should bear the cost of containment, avoidance or abatement.
- The users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes.
- Environmental goals having been established, they should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

The process of identifying project impacts (positive and negative) on the environment and formulating actions or works to mitigate negative impacts recognises the value of both the resource and environment. The Environmental Assessment has examined the environmental consequences of the SEOC and ACP modification and recommended mitigation measures and safeguards be implemented if the project proceeds. The costs of mitigation and associated management measures proposed for the SEOC and ACP modification have, therefore, been included in the costs of the proposal to ensure that the local environment is protected from pollution. The proponent considers and acknowledges that the environment is a valuable resource for the local and broader communities and also for future generations.

The benefit cost analysis for the SEOC project found that after consideration of greenhouse gas effects, air quality impacts, noise and vibration impacts, Aboriginal and European heritage impacts, ecological impacts, groundwater and surface water impacts, visual and traffic impacts that the project would result in a net community benefit of \$368 million.

7.4.7 Affordable Housing

Environmental Planning and Assessment Act section 5(a) object (viii) is to encourage:

“ the provision and maintenance of affordable housing”.

The Singleton housing market is characterised by high weekly rentals and prices for new houses when compared to other areas of NSW. The sector is sustained by strong weekly household incomes derived predominantly from employment within the mining industry, resulting in relatively high average weekly earnings.

Housing is affordable when households that are renting or purchasing are able to pay their housing costs and still have sufficient income to meet other basic needs such as food, clothing, transport, medical care and education.

Since the commencement of the ACP, ACOL have negotiated the acquisition of private land holdings and dwellings that were impacted by their mining operations. ACOL currently own thirty three (33) dwellings within and in close proximity to the village of Camberwell.

The ACOL owned dwellings are rented or leased. ACOL has a “waiting list” of persons wanting to rent or lease their dwellings as the weekly rents are less than within the Singleton township. ACOL will continue to negotiate and acquire properties that will be impacted by the ACP.

Residential properties already owned by ACOL and future acquired residential properties will be maintained and offered for occupancy generally at rents less than those within the Singleton township.

The ACOL housing strategy for Camberwell ensures that there is affordable housing available for some residents of the Singleton local government area. If the ACOL housing was not available increased demand would drive weekly rentals in Singleton even higher.

The community benefits which accrue from ACOL’s acquisition and rental of dwellings at affordable rates include:

- Providing cheaper housing for a diverse local workforce, retirees and social welfare recipients.

- Promoting economic and social integration by ensuring that families' housing costs are not so high that they cannot afford to meet education and health costs.
- Meeting the needs of the growing number of smaller households living in high cost areas.
- Contributing towards the sustaining of local communities.

ACOL will continue its policy of acquiring properties impacted by mining operations. The properties (wherever possible) will be maintained and offered for rent (at rates less than in Singleton township) so that provisional maintenance of affordable housing at Camberwell continues.

7.4.8 Sharing of Responsibility for Environmental Planning

Environmental Planning and Assessment Act section 5(a) object (b) is to encourage:

“to promote the sharing of the responsibility for environmental planning between the different levels of government in the state”.

The preparation and assessment of the SEOC project and proposed modifications has and will require input from state agencies and Singleton Council. ACOL and its representatives have undertaken consultation with different agencies to better understand their requirements for the project. The DoP held a PFM for the SEOC project. Representatives of government agencies and Singleton Council attended the PFM to be informed of the project and the representatives communicated their environmental requirements. The project has been designed having regard to their input.

There has been a sharing of the responsibility for environmental planning between the different levels of government for the SEOC project.

7.4.9 Provide opportunity for public involvement and participation in environmental planning and assessment

The EA report in Section 3 details the public and government agency consultation that ACOL have undertaken in respect to the ACP and SEOC project.

The public and private landowners have been provided opportunity to discuss the SEOC project (in part or in full) with ACOL representatives. The EP&A Act 1979 provides through the public exhibition of the EA report, further opportunity for public involvement and participation in the environment planning and assessment process for the SEOC project and proposed modification.

7.5 Summation of Environmental Impacts and Benefit

Section 5 of this document provided detailed analysis of the existing environment and the predicted impacts as a result of the SEOC and modification to the existing ACP.

As documented in Section 5, the SEOC and modification to the existing ACP will provide material economic, social and environmental benefits. However, these economic, social and environmental benefits are offset to some degree by the expected residual environmental impacts (i.e. impacts that will remain after the application of all avoidance, minimisation and management measures).

Section 7.4.1 provides a summary of the expected residual environmental impacts, Section 7.4.2 provides a summary of the environmental benefits, and Section 7.4.3 the socio-economic benefits as a result of the SEOC Project and modification.

7.5.1 Residual Environmental Impacts

The main environmental residual impacts of the SEOC and modification to the existing ACP include:

- Elevated noise levels at privately owned residences in Camberwell village and surrounds, the owners of which would have a right to require acquisition by ACOL.

- Elevated dust levels at privately owned residences in Camberwell village and surrounds, the owners of which would have a right to require acquisition by ACOL.
- Total Scope 1 and 2 greenhouse gas emissions generated from the mining and processing of coal from the SEOC of 1.35 Mt CO₂-e.
- Total Scope 3 greenhouse gas emissions from the transport and use of SEOC coal of 33.77 Mt CO₂-e
- Clearing of approximately 24.7ha of native vegetation with a preliminary recommendation to be listed as an EEC, however no threatened flora species or populations will be significantly impacted.
- Vegetation disturbance associated with the construction of the powerline realignment.
- Reduction in base flows to Glennies Creek of 0.03% for average flows and 0.3% for the 5 percentile flows.
- Drawdown of groundwater by the SEOC of up to 1.5m in the Glennies Creek alluvium on the western boundary of the SEOC at the completion of mining, with complete recovery within 100 years.
- Drawdown of groundwater in the Permian coal measures to the base of the open cut, with a small residual drawdown remaining 100 years after mining.
- A localised increase in Hunter River flood levels of less than 30mm.
- The loss of existing tributaries in the footprint of the SEOC.
- Disturbance of some local items of European Heritage.
- The disturbance to approximately 85 archaeological sites and potentially those sites within the constructed powerline realignment.
- Change in the visual outlook from the New England Highway, southern side of Camberwell and other nearby dwellings.
- A final mine void after emplacement of reject and capping will remain approximately 30m in depth in 2028.

7.5.2 Environmental Benefits

Environmental benefits of the SEOC and modification to the existing ACP include:

- Offset the loss clearing of native vegetation with 62ha of 'like' native vegetation at a ratio of 2.5:1.
- Management and enhancement of a 35ha riparian corridor along Glennies Creek.
- Offsetting at a ratio of 3 to 1 the clearing of 70 hollow bearing trees.
- Establishment of improved wildlife corridors connecting existing vegetation and creeks.
- Replacement of tributaries in the final landform and planting with riparian vegetation within and adjoining the areas of disturbance.

7.5.3 Socio – Economic Benefits

The socio-economic benefit of the SEOC project and proposed modifications include:

- Expenditure on construction of the SEOC facilities has been estimated to total \$49.9 million over two years apportioned over four (4) (mining, machinery and equipment, construction, property and business services) sectors. Total expenditure of \$49.9 million over 2 years is expected to stimulate additional production in the region valued at \$31 million and additional consumption worth \$20 million – providing a total benefit to the Hunter Region of \$101 million.
- Total construction expenditure of \$49.9 million is expected to create an average of 127 full time equivalent jobs in each year of the two (2) year construction period. Additional production in the region will create a further 52 jobs and additional consumption will create a further 57 jobs – an induced benefit of 109 jobs providing a total employment benefit to the Hunter region of 236 full – time equivalent positions in each year of construction in the sectors of mining, machinery/equipment, construction, property and business services.

- The HVRF estimates that in total, 430 full-time equivalent positions will be created for the construction phase of the SEOC project.
- Over the 2 year construction period the HVRF estimates that taxation revenue to the Federal Government will total approximately \$9 million, \$5.8 million from income tax, \$1.8 million from indirect taxes and \$1.3 million from company tax. Payroll taxation revenue to the State Government has been estimated at \$1.6million yielding a total public sector benefit of \$10.6 million.
- Output and employment impacts resulting from the ongoing operation of the SEOC will be directly generated in the mining sector of the input output model analysis. The HVRF have assessed that production will be over 7 years with saleable output valued at \$100 AUD per tonne.
- On the basis of these assumptions the total value of the SEOC is estimated at \$1.2 billion whilst operational employment should remain constant at 160 full time equivalent positions in each year of production.
- With total production at \$1.2 billion this will stimulate further production in the Hunter Region to the value of \$808 million and additional consumption estimated at \$322 million an induced benefit of approximately \$1.13 billion, providing a total benefit to the Region of approximately \$2.3 billion.
- Employment at the SEOC will be equivalent to 160 full time positions for each of the seven years of production. Induced production and consumption in the Hunter Region attributable from the operations will generate a further 309 and 213 jobs respectively – an induced benefit of 522 jobs. In total approximately 682 full time equivalent positions will be created from the SEOC project.
- Over the seven years operational period, Federal Government taxation receipts are estimated to total \$152 million - \$92 million from income tax, \$29 million from indirect taxes and \$31 million from company tax. Revenue to the State Government is estimated at \$125 million - \$26 million from payroll tax and \$99 million from production royalties.
- The total public sector is expected to benefit by \$277 million.
- The outcomes and benefits associated with a Voluntary Planning Agreement to fund an enhancement program for Camberwell village or other identified social – community infrastructure and continue to make available housing at affordable rentals.
- The benefits and cost analysis determined a net quantifiable benefit of \$368 million to the community as a result of the SEOC project proceeding.

7.6 Conclusion

The objectives and outcomes of the development of the SEOC and ACP modification are based upon the following principles:

- Maintain employment of 160 people currently employed at the ACP open cut operations.
- Maintain continuity of coal supplies to ACOL customers.
- Ensure that the selected mining methods and mine design safe and efficient.
- Minimise adverse social, environmental and amenity impacts.
- Maximise the recovery of the mineable resources within the area.
- Maintain a cost effective business, with low capital and operating costs.
- Utilise existing infrastructure where possible.
- Minimise capital expenditure requirements.

The Environmental Assessment report has within *Section 5 – Existing Environment and Impact Assessment* considered the impacts, mitigation measures and benefits the SEOC and ACP modification will have on the physical and socio-economic environments, whilst an assessment of the project against the principles of ESD has been provided above.

The authors of this EA report have formed the opinion as detailed within *Section 7.3* that the SEOC and ACP modification meet the objects of the EP&A Act, 1979.

Based on the investigations for the SEOC and ACP modification the site is suited to open cut mining and modifications to the existing ACP are appropriate. The project is in the public's interest and accordingly it is respectfully requested that the Minister for Planning proceed to grant conditional approval to the SEOC Project and modification to the existing ACP development consent, subject to the implementation of the proponent's Statement of Commitments contained in Section 6 of the EA report.