

## Executive Summary – Supplementary Information



## **Constitution of the Supplementary Information**

The Guthalungra Aquaculture Project Draft EIS was made available for comment by the public and advisory agencies from 22 October to 4 December 2003. In response to the submissions made on the Draft EIS, a number of supplementary documents have been prepared.

The Supplementary EIS was prepared and provided to the Department of State Development, Trade and Innovation for comment in early April, 2006. Subsequently, additional issues were raised by the Qld Environmental Protection Authority. These issues have been addressed in five other separate reports appended here.

The response of the Proponent to the comments on the Draft EIS is therefore constituted by:

- Executive Summary – Supplementary Information (December 4, 2006).
- Supplementary EIS, Guthalungra Aquaculture Project (April 4, 2006).
- Effect of proposed actions including offsets on net load and impact on environmental water quality (December 4, 2006).
- Assessment against standard criteria under the Environmental Protection Act 1994 (December 4, 2006).
- Guthalungra Aquaculture Project - Net State Benefit. AEC Group Ltd.
- Is the addition of 24 T of nitrogen as a result of the Guthalungra Aquaculture project predicted to significantly increase the nutrient load from the Don River Catchment?

The EIS documents have been prepared over a period of 4 years. In the event that there is a conflict between the information presented, the most recent should be taken as the prevailing information.

These documents meet the obligations of the proponent to consider the submissions made on the Draft EIS and prepare a supplementary report. They further deal with issues not previously raised in response to the Draft EIS, but which have become relevant in the period between making available the Draft EIS for comment and the present.

## **A Significant Project**

The project has been declared to be a significant project pursuant to the *State Development and Public Works and Organisation Act 1971*. The Queensland Government has recognised the opportunity that aquaculture provides for economic diversification and employment creation, particularly in regional areas. Queensland aquaculture production was lower in 2003/04 than in 2001/02 reflecting 1) the difficult operating environment of aquaculture and 2) the difficulty of attracting new investment to the industry. The present proposal has the potential to add over \$29 million in value per annum or 40% of the state's 2003/04 aquaculture production.

In achieving this significant economic outcome, the project will impact on the environment. It is expected that there will be a small increase in nitrogen and phosphorus loading in the Great Barrier Reef Lagoon and there will be some impacts on particular habitats of regional and national significance.

However, in terms of economic return for environmental cost, the project will provide substantially increased returns per tonne of sediment (260x), nitrogen (5.55x) and phosphorus (1.27x) over current land uses.

The economic return will provide an additional \$29 million in turnover, support up to 270<sup>1</sup> additional direct and indirect employment and provide a Gross State Product of \$13 million - \$16 million. Significant social and community benefit will also flow to the Bowen Shire from this development.

The project also allows the State of Queensland to implement actions to meet obligations under the Reef Water Quality Protection Plan to reduce diffuse source nutrient input to the Great Barrier Reef Lagoon.

## **Modified aspects of the proposal**

Responses to the Draft EIS raised a number of issues regarding the operation of the project.

Pacific Reef Fisheries has a strong commitment to utilising world's best practice and technological advances in its prawn farming operations. It conducts in house and collaborative research and development and has joined a program sponsored by the Australian Prawn Farmers Association to achieve ISO 14001 accreditation for its farming operations.

Outcomes of the research and development undertaken at the proponent's farm at Alva Beach have allowed the proponent to further refine aspects of the design and operation of the project to specifically reduce the impact of the project on the environment. The major modifications are:

- utilising an off-shore pumping station. This substantially reduces the impact upon the marine, dune and wetland ecosystems by reducing the area of footprint that the intake and discharge pipelines and pumping station will occupy and reducing the land based access systems (roads, tracks etc.) required for the operation in these sensitive ecosystems. This innovative technology for Australian aquaculture will require final proving at the detailed design stage. The additional cost of this innovation is estimated to be in the order of \$2 million.
- co-location of intake and discharge pipelines thereby removing any pipeline structures from areas of seagrass in Abbot Bay.
- addition of sand filter technology developed by Pacific Reef Fisheries at the Alva Beach Farm with the aid of the Qld Department of State Development, Trade and Innovation. This technology will significantly reduce the nutrient level in the discharge thereby minimising the impact of the project on water quality in Abbot Bay and providing a real means by which water quality objectives in the Great Barrier Reef Water Quality Action Plan can be met in the Don River Catchment. The additional cost of this innovation is estimated to be \$1.25 million.
- development of a property management plan for predator control. Pacific Reef Fisheries is the first Queensland prawn farming company to develop such a management plan and stands as an example to the industry.

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<sup>1</sup> Analysis conducted in 2003 and presented in the Draft EIS indicated that there were likely to be 118 FTE produced as a result of this project. More recent, separate analysis by AEC Group Ltd found that the direct and indirect jobs created as a result of this project is 273 FTE.

- development of detailed offset arrangements in which 240 ha of productive land will be turned over to conservation uses. The offset incorporates rehabilitation of approximately 59 ha of wetlands and approximately 180 ha of terrestrial habitat.

These modifications, undertaken to further ensure the future environmental sustainability of the Guthalungra Aquaculture Project also ensure that this project provides strong, clear leadership in environmental sustainability to the aquaculture industry in Queensland.

## **Responses to public comment**

In general, there were relatively few responses for a project of this magnitude. There were only seven responses by the public, five from organisations and 2 from individuals. Responses from the public and advisory agencies covered a range of topics. However, respondents commonly asked questions regarding water quality and impacts on the Great Barrier Reef World Heritage Area.

These issues have been addressed in detail throughout the documents.

- Water quality data is discussed in Sections 5 of the Supplementary EIS and the document “Effect of proposed actions including offsets on net load and impact on environmental water quality”.
- The impact of the project on environmental water quality is discussed further in Section 7 of the Supplementary EIS and the document “Effect of proposed actions including offsets on net load and impact on environmental water quality”.

Environmental values determined through consultation with the community were described in Section 7.2.6, GAPFR, 2003.

The beneficial uses to be managed are:

- The protection of aquatic ecosystems and in particular seagrass meadows, which are important grazing grounds for dugongs and turtles, and coral reefs;
- Maintenance of recreational values; and
- Maintenance of aesthetic values.

Additional environmental values relate to the presence of the World Heritage Area of the Great Barrier Reef. These are discussed in more depth in Section 7.14 of the Supplementary EIS.

## **Offset arrangements**

Although government regulations and guidelines are currently silent on the issue of offsets, the Guthalungra Aquaculture Project will incorporate a significant offset in the form of rehabilitated wetland and terrestrial habitat.

The offset proposed under the project will result in a net reduction of sediment entering the Great Barrier Reef lagoon. It will also reduce the diffuse source nutrients entering the lagoon and provides a mechanism by which the State can meet its obligations under the Reef Water Quality Protection Plan.

The report compares natural and constructed wetlands as means for processing runoff to reduce sediment load to in-shore waters. This report recommends natural rehabilitation of terrestrial and wetland habitat as it -

- allows normal successions of plants;
- allows the formation of natural community structure and therefore development of habitats suitable for endemic fauna species;
- takes advantage of the proximity of similar ecosystems nearby;
- avoids the risk of selecting inappropriate target species that don't then form functional groupings.

This report also finds that although the efficiency of nutrient removal by wetlands is not definitive and will vary with hydraulic loading, it is likely that rehabilitated wetlands will remove at least 80% of sediment, 50% of nitrogen and 55% of phosphorus from runoff flows. The benefit of rehabilitating wetlands is likely to accrue rapidly and continue for the life of the project.

Nutrient loads into the Don River Catchment have been investigated and alternative offsets have been considered. The principles of equivalence (like for like) have been applied and it is concluded that there are no additional or alternative offsets available to the proponent.

### **Application of the Environmental Protection Act 1994**

The Environmental Protection Agency is currently the administering authority of the Environmental Protection Act 1994. As part of considering the application to develop the Guthalungra Aquaculture Project, the Agency must consider the standard criteria listed in Schedule 4 of the Act.

The attached report provides an assessment of the Guthalungra Aquaculture Project against the standard criteria.

In doing so the report particularly compares the project against the objectives of:

- The National Strategy for Ecologically Sustainable Development
- Environmental Protection (Water) Policy 1997
- Environmental protection (Waste Management) Policy 2000
- Reef Water Quality Protection Plan

The report finds that the Guthalungra Aquaculture Project fulfils the Standard Criteria for Environmentally Sustainable Development.

### **Net Benefit to the State**

The proposal is located within an area considered to be an “Area of State Significance – Natural Resources” and the State Coastal Management Plan requires that the development provides a net benefit to the State as a whole. A Net State Benefit Analysis has been prepared to promote discussion of the sustainability of the Guthalungra Aquaculture Proposal and outline its associated costs and benefits. Improvements in economic and social well being (i.e. net benefits) should be achieved only where they outweigh impacts on the environment. Appropriate measures are

required to mitigate or prevent any adverse environmental effects and/or improve existing environmental conditions.

Due to the inherent difficulties, in deriving dollar value estimates for environmental components of cost benefit analysis (CBA), where appropriate, a qualitative approach to the CBA rather than a quantitative approach has been used. This has assisted in assigning accurate, relevant and subsequently justifiable analysis to the environmental and social assets and impacts.

The quantitative CBA focused on the direct costs and benefits associated with the proposed development.

The qualitative CBA includes an assessment of the external economic, social and environmental impacts, and ensures all impacts are assessed on a consistent basis to eliminate bias in the assessment. Where possible, the qualitative impact assessment is informed by detailed quantitative analysis and statistical data.

An economic impact assessment was undertaken in isolation from the CBA. This assessment identifies the direct and flow-on economic impacts associated with the attraction of capital and operational investment from outside of Queensland.

This Cost-Benefit Analysis finds that the proposed Guthalungra Aquaculture development provides a net state benefit to the State of Queensland. The proposed farm is a significant investment for Queensland and is expected to be associated with positive impacts in the Bowen region. In order to generate a commercial return, the investment must be long term. Therefore, the development will remain a stable generator of revenue to the region and Queensland.

The project is financially viable. Commercially, it is a long-term investment in the region.

Social costs of the project will be largely minimal, in part due to the remote location of the site. The social benefits will accrue through the relative lack of large, sustainable industries in the region.

The project will have some negative environmental impacts, however the investment in wastewater treatment and piping of discharge points will greatly reduce these. A number of environmental benefits are also expected, although most are relatively minor.

The project will have major economic benefits to the region, with the investment providing a significant boost to regional jobs and incomes.

Since each of the individual assessments (quantitative CBA, qualitative CBA and economic impact assessment) identify the benefits provided by the Guthalungra Aquaculture development outweigh the costs associated with the development, the development of the Guthalungra Aquaculture project provides an overall Net State Benefit for Queensland.

#### **Addendum Note:**

1. Access to the “Guthalungra Aquaculture Proposal – Net State Benefit” is restricted to maintain the confidentiality of the commercial information contained therein.