133 Castlereagh Street, Level 15
Sydney, New South Wales 2000
Australia
www.ghd.com

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Joanna Bakopanos
Industry Assessments
Department of Planning, Industry and Environment
4 Parramatta Square
12 Darcy Street
Parramatta, NSW, 2150

Response to submissions to Shoalhaven Starches Modification 23

Dear Joanna,

Thanks for the opportunity to respond to the public submissions to Shoalhaven Starches' proposed Modification 23. This letter documents our understanding of the key issues raised and responses.

1. The Project

Manildra is an agribusiness that produces a range of Australian food and industrial products including wheat flours, gluten and proteins, starch, syrups, ethanol, and stockfeed for domestic and export markets. The largest facility owned by the Manildra is its Shoalhaven Starches facility at Bolong Road in Bomaderry near Nowra, New South Wales (Nowra plant) which manufactures the full range of products.

Fundamental to the food production process is the use of steam, this steam needs to be produced on site and is highly energy intensive. Currently this is done through the combustion of natural gas, biogas and coal. The manufacturing process also involves significant electricity consumption. Manildra is planning to expand production at the Nowra plant and to facilitate that it needs to increase its capacity to produce steam.

As part of increasing its steam capacity Manildra is also keen to reduce and eventually move away from coal combustion and is planning the installation of natural gas co-generation plant in its place. This installation will require a change to the Shoalhaven Starches Expansion Approval (Mod 23). Currently approximately 68% of the steam generated comes from the burning of coal, this will fall to zero as part of the implementation of this project. Thus, greatly reducing the emissions per unit of production output.

As part of Mod 23, Manildra propose to construct a new gas-fired co-generation plant which will consist of two natural gas turbines that will not only generate the required steam but also generate an anticipated power output each of 30 MW, providing a total power generated on site in the region of 60 MW, as result significantly reducing the demand for power from the grid, and the power losses involved in transmission and distribution.

This new application for a gas fired co-generation plant will replace the approved gas fired and coal fired co-generators. In addition, Manildra also proposes to convert their existing coal fired boilers to gas as well, thus further expanding capacity, at reduced emissions level.

It is assumed that if progressed, the plant will be operating by the end of FY22. As the combustion of coal is considerably more greenhouse gas (GHG) intensive per unit of energy output (electricity or steam) than the combustion of natural gas in a co-generation unit, GHG emission savings in absolute terms and per unit of output are expected.

1.1 Limitations and Assumptions

This response to the objections letter is subject to the same limitations and assumptions documented in GHD's Greenhouse Gas Assessment Technical Report - Shoalhaven Starches Modification 23, of 24 May 2021.

2. Report Exhibition

The REF was placed on public exhibition from 22 October 4 November 2021 on the following website:

– https://www.planningportal.nsw.gov.au/major-projects/projects/on-exhibition

Members of the community were invited to review the report and submit feedback during the exhibition period.

3. Response to Submissions

Three community submissions were received following exhibition of the report, comprising of two objections and one submission in support of the proposal.

A summary of the issues raised in the submissions of objections and our responses to these issues is provided in the following sections.

3.1 Use of natural gas

Issue

Both objection submissions noted their view that there is not enough use of renewable energy to support the proposed project.

Response

The facility is a 24 hours a day, 365 days a year operation, that has a very high demand for heat. The principal purpose of the co-gen units that will combust the gas, is to provide heat for the generation of steam, and drying. Consistent steam demand of 245 tonnes per hour is designed for this plant expansion. The fact that the co-gen units are sized to optimise steam production, not electricity production demonstrates the relative importance of the two energy types in this process, with heat production more of a priority. The cogeneration unit makes the combustion of gas more efficient by also using it to generate electricity. Through which aggregate emissions in Australia are reduced, as it will reduce Shoalhaven Starches' reliance on grid sourced electricity which, even with the growth in renewable energy sourced power, is still significantly more emissions intensive than the power generated in the proposed co-gen unit.

In addition, where possible, biogas is currently and will continue to be used as a fuel source for this heat production however, the supply of biogas is limited and on its own it is not sufficient to meet the demands of the plant. Beyond this, effective alternative fuel sources or heat generation systems are not yet considered viable for Shoalhaven Starches' requirements.

Beyond the requirements of heat, the facility has a requirement for electricity supply that is 24 hours a day, 365 days a year. Whilst combinations of renewables could no doubt provide power for large parts of the year, a grid electricity connection would still be required to provide supply, as it will with the co-gen project in place.

Issue

Both objection submissions raised the issue that the supply of gas from the Bass Strait is likely to be insufficient to meet future demand.

Response

It is recognised that the Bass Strait region's gas supply is threatened however, this is not a major concern for the project as gas supply sources are various and as reported in the AEMO "Gas Statement of Opportunities" (Australian Energy Market Operator, 2021) the impending development of the Port Kembla Gas Terminal is expected to provide access to an additional supply of gas to the southern regions of Australia. In addition, the committed upgrade of the Moomba - Sydney pipeline should facilitate further supplies of pipeline gas from Northern Australia.

Issue

The risk that a price on carbon could increase the cost of the use of gas and harm the economic prospects of Shoalhaven Starches

Response

Shoalhaven Starches have considered this risk and considered it one that is manageable.

3.2 GHG Assessment calculation methodology

Issue

The submissions suggested that the project would increase emissions and therefore fail to support the NSW Government's target of reducing emissions by 2030.

Response

The Shoalhaven Starches facility has been in operation for a number of years, it is not a new facility, the proposed co-gen unit is to replace gas and coal boilers already in operation. As a result, all emission reduction targets set in NSW are calculated against a baseline that includes operational emissions from the Shoalhaven Starches facility and the electricity it demands. As described Section 4 of the original GHG technical assessment, the introduction of the proposed co-gen facility will reduce total Scope 1 and 2 emissions in both absolute and relative terms, therefore this project will support the NSW Government in achieving its emission reduction targets.

Issue

There was a concern that the GHG assessment did not undertake a whole of life assessment of GHG emissions for the project, as a single year's emissions were considered instead.

Response

The GHG assessment done for MOD23, has been done in line with the National Greenhouse and Energy Reporting Measurement Determination (NGER MD), the standard for large emitters in Australia to report their GHG emissions to the Commonwealth Government in line with the NGER Act. This is a standard commonly used for GHG assessments for approval modifications of this nature that is, it considers Scope 1 and 2 GHG emissions over a financial year period. This is the typical approach used by organisations in Australia and around the world when talking about their emissions. Indeed, year on year reporting is how national and State governments communicate their emissions for the Paris Agreement. Beyond this it is very challenging to provide projections of the likely future emissions as these are reflective of the mix of products and production levels which can fluctuate due to a variety of commercial reasons.

Issue

The first submission raised the issue that GHD has modelled for Scope 2 emissions but did not consider Scope 2 fugitive emissions in the GHG assessment.

Response

In carbon accounting, there is no such thing as Scope 2 fugitive emissions. As per the Greenhouse Gas Protocol, the internationally agreed standard for carbon reporting that underpins the NGER legislation used

in Australia, Scope 2 emissions are indirect emissions from electricity consumption where the electricity is generated off-site (Greenhouse Gas Protocol, 2011). .

That said we believe it is likely that the letter is referring to the upstream emissions associated with the extraction, transmission and distribution of natural gas, which are actually Scope 3 emissions. The reporting of Scope 3 emissions is optional at a corporate level (Greenhouse Gas Protocol, 2011) and was not required in the assessment report for this planning approvals modification. In addition to this, the NGER MD doesn't require reporting of Scope 3 emissions.

However, in response to the objection, GHD has performed a calculation to estimate the Scope 3 emissions associated with the co-generation project and compared it to the FY19 Modification 16 case (only Scope 1 and 2 emissions). The Scope 3 emissions calculation has been based on the factors sourced from the National Greenhouse Accounts (NGA) Factors (Department of Industry, Science, Energy and Resources (DISER), August, 2021).

As per Table 1, we see that despite the inclusion of Scope 3 emissions in the total GHG assessment, the proposed project still leads to a reduction in overall emissions by 11% in comparison to FY20 case, even though production is projected to increase by 37%. In the scenario where production increases but without the co-gen unit, meaning a combustion mixture of coal and gas is maintained alongside high grid electricity purchases, Scope 1,2 & 3 emissions increase to a projected 899,237 tCO_2-e which is 54% higher than the 584,905 tCO_2-e projected to be emitted at the expanded production level with the co-generation units.

Table 1 Comparison of cases with Scope 3 emissions included

	FY20 Current Case	Future increased production (no co-gen)	Future increased production (co-gen)
Scope 1 & 2 Emissions Total (tCO_2-e)	599,019	811,566	470,732
Scope 3 Emissions (tCO_2-e)	58,389	86,525	113,028
Scope 1, 2 & 3 Emissions Total (tCO_2-e)	657,813	899,237	584,905

4. References

Australian Energy Market Operator. (2021). *Gas Statement of Opportunities.*

Department of Industry, Science, Energy and Resources (DISER). (August, 2021). National Greenhouse Accounts Factors .

Greenhouse Gas Protocol. (2011). Corporate Value Chain (Scope 3) Accounting and Reporting Standard. *Supplement to the GHG Protocol Corporate Accounting and Reporting Standard* .

Regards,

Michael J. O'Neill

Mike O'Neill
Technical Director Carbon & Energy

02 9239 7312
mike.oneill@ghd.com