ASSESSMENT REPORT

Section 75W Modification

Visy Smithfield Boiler Reinstatement (DA 13/94 MOD 7)

1. PROJECT BACKGROUND

Visy Industries (the Applicant) owns and operates a paper and plastics recycling facility (the facility) in Smithfield which is located in the Holroyd local government area (see **Figure 1**). Operations on the site include the sorting and conversion of post-consumer waste into new paper and plastic products.

The facility currently operates under a Ministerial consent (DA 13/94) granted by the then Minister for Planning and a number of development consents granted by Holroyd City Council. The closest residential receivers are located around 100 metres (m) to the south of the site.

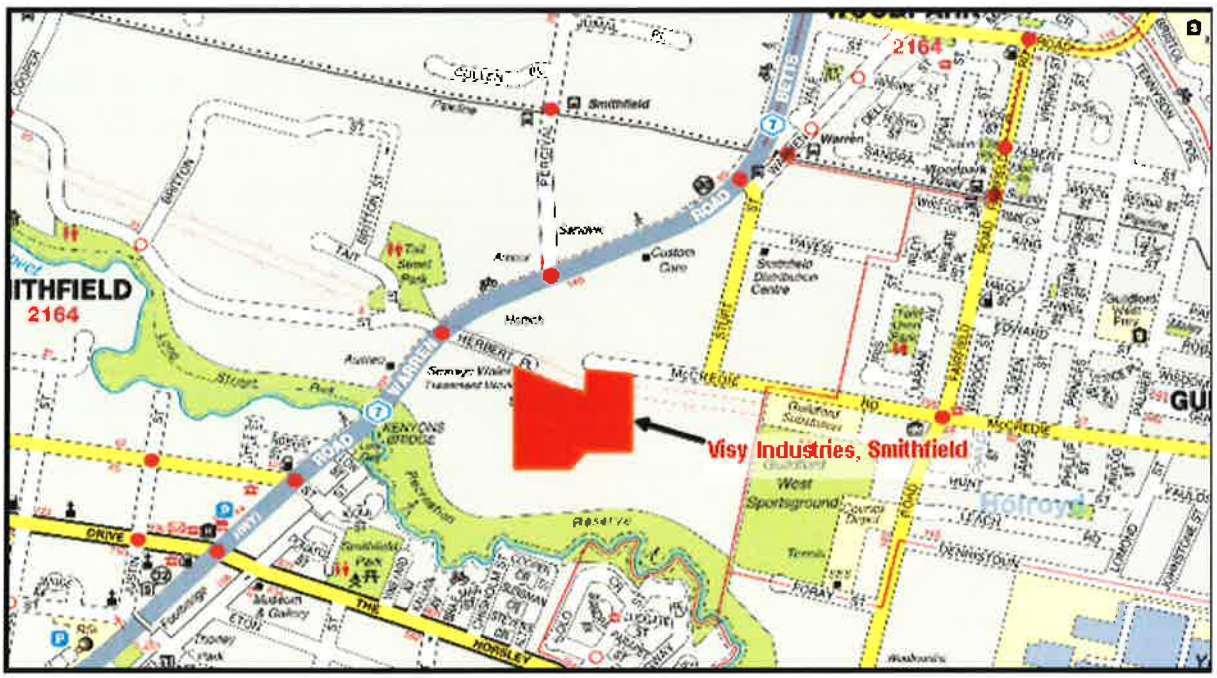


Figure 1: *Site context and surrounding areas*

The 1994 Ministerial consent originally approved:

- the expansion of the existing Visy Board Plant and additional paper recycling plants including a box making plant, linerboard plant and newsprint plant; and
- a cogeneration plant (also known as the Smithfield Energy Facility) to produce electricity for the national grid and process heat (in the form of steam) for use in the recycling plants.

The existing facility originally contained two gas-fired boilers (2 x 12.5 Megawatt (MW) boilers) to generate steam for the facility. However, as part of the expansion, the cogeneration plant replaced these boilers and supplied all the steam to the recycling operations. The gas-fired boilers were retained for back-up purposes only but were then relocated to another site.

Due to some uncertainty around the future operations of the cogeneration plant, the Applicant has identified, that in the event of a disruption to, or closure of the cogeneration plant, it would need to establish an alternative source of steam for continued operations. The Applicant now intends to reinstate the gas-fired boilers, albeit in a new location (see **Figure 2**).

The reinstatement of the gas-fired boilers is the subject of this modification and is described further below.

2. PROPOSED MODIFICATION

On 13 November 2014, the Applicant submitted a modification request (DA 13/94 MOD 7) and supporting Environmental Assessment (EA) prepared by Fifth Estate to reinstate the gas-fired boilers within the existing facility.

The proposed gas-fired boilers would be located in close proximity to the cogeneration plant and near the steam pipelines that carry the steam to the paper recycling machines as shown in **Figure 2** below. The facility also operates under an Environment Protection Licence (EPL) No. 4100 and if approved, the modification may necessitate amendments to be made to the EPL.

Figure 2: *Current site layout and proposed location of new gas-fired boilers*

The modification request and EA submitted to the Department provided details for the installation of three new 20 MW gas-fired boilers.

However, following lodgement of the modification request, the Applicant subsequently investigated an alternative boiler configuration involving two 30 MW gas-fired boilers, which it now considers may have significant technical and operational advantages over the boiler configuration described in the original modification request.

The Applicant has now asked the Department to consider the merits of both boiler options. If both are approved, the Applicant would then select only one of the boiler configurations following further costings.

On this basis, on 6 May 2015, the Applicant submitted a supplementary EA which included an assessment of noise, air quality and visual impacts for the second boiler design. The two boiler configurations are described further below.

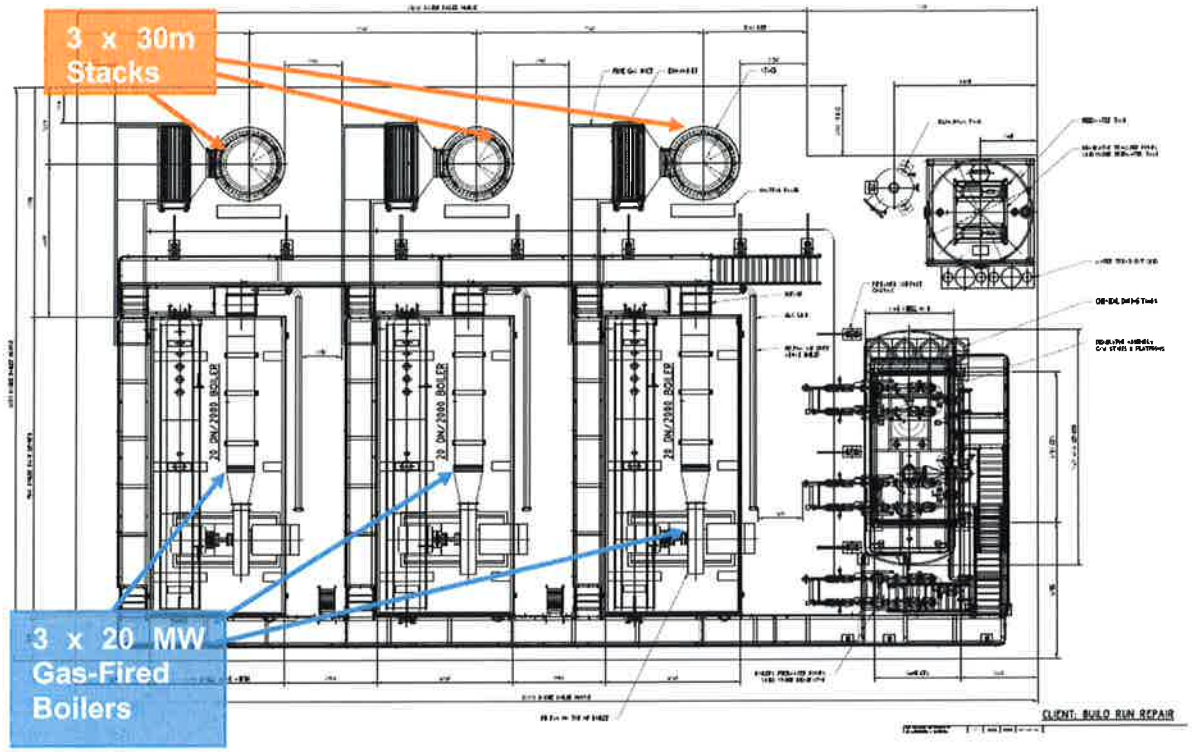
2.1 Boiler Design

The two boiler scenarios and supporting infrastructure are summarised in **Table 1** below and illustrated in **Figure 3**. The gas-fired boilers reflect the latest technology including fuel efficiency and emissions controls to ensure it meets the Group 6 emission standards under the *Protection of the Environment Operations (Clean Air) Regulation 2010* (Clean Air Regulation).

Table 1: *Boiler scenarios*

	Scenario 1	**Scenario 2**
Boiler	• Three (3) 20 MW gas-fired package boilers	• Two (2) 30 MW gas-fired package boilers
Stacks	• Three stacks at a height of 30m each	• One stack at a height of 30m
Boiler House Footprint	The boiler house structures for both scenarios would be the same. The structures would be approximately 8m x 19.5m, with a height of 8m (excluding the stacks)	
Gas supply	Both boiler scenarios would be supplied with natural gas from the local Jemena gas supply network.	
Connection and Supporting Infrastructure	The connection and supporting infrastructure for both scenarios would be the same and would include a feedwater plant and steam pipes.	

Scenario 1 – 3 x 20 MW gas-fired boilers (3 x 30m stacks)



Scenario 2 – 2 x 30 MW gas-fired boilers (1 x 30m stack)

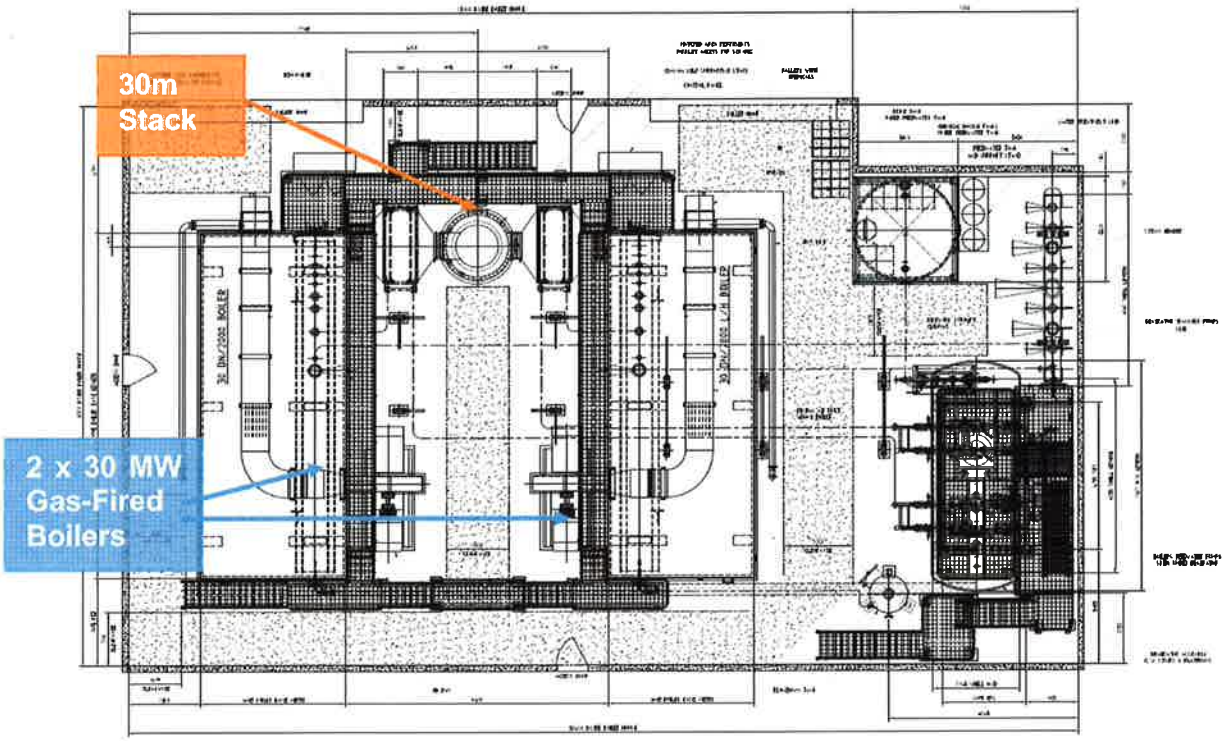


Figure 3: *Indicative boiler layout for Scenario 1 and 2*

3. STATUTORY CONTEXT

3.1 Approval Authority

Under Clause 8J(8) of the *Environmental Planning and Assessment Regulation 2000*, this consent is taken to be an approval under Part 3A of the Act and can be modified under section 75W of the Act.

The Minister for Planning delegated responsibility for the determination of section 75W modification requests to Directors and Managers who report to the Executive Director, Infrastructure and Industry Assessments where:

- the relevant local council has not made an objection; and
- a political disclosure statement has not been made; and
- there are no public submissions in the nature of objections.

The proposal complies with the terms of the delegation as Holroyd City Council (Council) does not object to the proposal, a political disclosure statement has not been made in relation to the application, and no public submissions were received in the nature of objections. Accordingly, the Director, Industry Assessments may determine the request in accordance with the Minister's delegation.

3.2 Modification

The Department is satisfied that the request can properly be characterised as a modification to the original development consent, and can therefore be assessed and determined under Section 75W of the Act.

The Department notes that there are no changes to the processes that occur on site, however with the reinstatement of new gas-fired boilers, there may be some minor changes to the environmental impacts that affect the surrounding environment.

3.3 Consultation

The Department made the request publicly available on its website and consulted with the Environment Protection Authority (EPA) and Council. A summary of the issues raised in their submissions are provided below and provided in Appendix C.

Wider consultation with other agencies and the community was considered to be unnecessary because the modification would only result in minor changes to the environmental impacts to the surrounding environment.

Council did not object to the proposal and was satisfied with the findings of the air quality and noise impact assessments.

The **EPA** did not object to either of the boiler configurations, but advised that due to ongoing operational noise issues at the site, it will continue to monitor the site closely for any changes in the operational noise environment.

No **public submissions** were received.

4. ASSESSMENT

In assessing the merits of the modification, the Department has considered the:

- Environmental Assessment (EA) and supplementary EA prepared in support of the modification request (see **Appendix B**);
- Assessment reports for the original development application and previous modifications;
- existing development consent, as modified;
- EPA and Council submissions (see **Appendix C**);
- relevant environmental planning instruments, policies and guidelines; and
- requirements of the Act, including the objects of the Act.

The Department considers the key issues associated with the proposed modification (DA 13/94 MOD 7) relate to noise impacts and visual amenity. These issues are discussed in detail below. All other issues are considered in **Table 3**.

4.1 Noise

The site has a history of noise complaints associated with the current operation of the facility. The site is currently operating under an existing EPL and development consent that sets noise limits for the operation of the whole site at different receptor locations as shown in **Figure 4** and **Table 2** below.

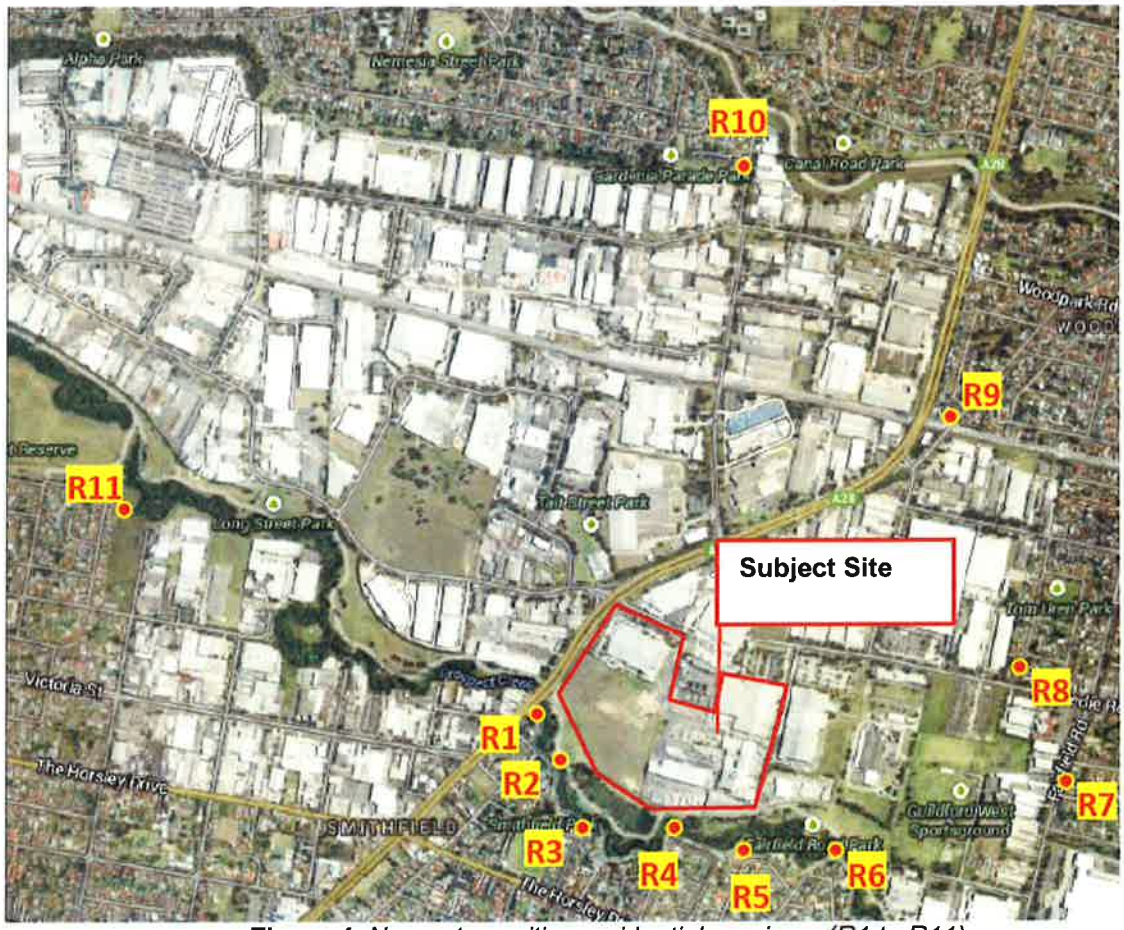


Figure 4: *Nearest sensitive residential receivers (R1 to R11)*

Table 2: *EPL and consent noise limits and proposed noise criteria for the proposed gas-fired boilers*

Receptors	Noise Criteria as per EPL and Consent		Proposed Noise Criteria for gas-fired boilers	
	LA10 (15 min)		LA10 (15 min)	
	Day and Evening	Night	Day and Evening	Night
R1, R2 and R3	51	41	41	31
R4, R5, R6, R7, R8, R9, R10 and R11	53	43	43	33
Western Boundary	70	65	60	55

The EA prepared in support of the modification request included two separate noise impact assessments (NIA) which modelled the potential operational noise impacts of Boiler Scenario 1 and 2, respectively. The noisy components of both boiler scenarios include the fan casings, stack outlet, in-ducts and feedwater pumps.

The EA stated that if either boiler scenario could be shown to operate at 10 dB(A) or more below the existing noise criteria for the site, it would not increase the overall noise levels from the site. The Department considers that this approach is acceptable as this will ensure that in operation, noise from the gas-fired boilers would not contribute to an increase in noise from the entire facility at the nearest residential receivers.

The proposed noise criteria for the gas-fired boilers in order to manage any potential increase in overall noise impacts from the site are given in **Table 2** (i.e 10 dB(A) below the existing consent and EPL noise levels for the site). The NIA stated that a 10 dB(A) reduction in the noise coming from the gas-fired boilers could be achieved using noise controls including a silencer at the stack inlet and noise enclosures for the casing.

The NIA predicted that in a worst case scenario, noise levels for Boiler Scenario 1 and 2 (with noise controls in place) would be between 15 dB(A) to 31 dB(A) and 15 dB(A) to 30 dB(A) during day-time, evening and night-time periods at the nearest sensitive receivers. These noise levels are predicted to be at least 10 dB(A) or more below the noise limits outlined in **Table 2**. As such, the Applicant has committed to installing noise controls for the preferred boiler scenario to ensure a minimum 10 dB(A) reduction in noise levels.

Council raised no concerns with the NIAs. The EPA required the Applicant to include an assessment of wind effects. This issue was subsequently addressed in a revised assessment to the satisfaction of the EPA. Based on this revised assessment, the EPA stated it was satisfied that overall noise outputs from the facility would not increase from the operation of the boilers (under either Scenario 1 or 2).

Notwithstanding, the EPA considered that the modification request had not considered opportunities to address the issue of overall noise emissions from the site. In this event, it is likely that the EPA would impose a Pollution Reduction Program (PRP) on the EPL to progressively reduce noise emissions in the event that noise complaints are received.

The Department concurs with the EPA and considers that the operation of the preferred gas-fired boiler design at 10 dB(A) below the noise criteria would not contribute significantly to higher noise levels from the site. The Department understands that the EPA may implement a PRP for the site in the future to address the current operational noise issues at the site. In addition, if noise reductions from the overall site are achieved in the future, the Department is satisfied that the gas-fired boilers would not impede the Applicant's ability to progressively lower noise levels from existing plant and equipment to achieve lower overall noise levels at the site.

To verify the predictions in the EA, the Department recommends that the Applicant undertake noise monitoring within three months of commissioning the preferred boiler configuration. In the event of any non-compliances, the Applicant would be required to implement additional mitigation measures to the satisfaction of the Secretary. The Department also considers that the Applicant's Noise Management Plan should be updated to include the management measures proposed for the gas-fired boilers. The EPA concurs and supports this approach.

The Department is satisfied that the noise impacts associated with either boiler scenario (1 or 2) would be insignificant, provided the Applicant complies with the following recommended modifying conditions:

- the preferred boiler option shall be designed so that it is at least 10 dB(A) below current noise limits;
- the preferred boiler option shall incorporate a silencer and noise enclosures;
- within three months of commissioning the preferred boiler option, the Applicant is required to demonstrate compliance with the existing noise limits for the facility;
- if compliance is not demonstrated, then the Applicant must undertake works to ensure that overall noise levels from the site are reduced by at least the amount of the non-compliance; and
- the noise management plan shall be updated to include the reasonable and feasible noise mitigation measures to minimise noise from the gas-fired boilers.

Overall, the Department's assessment concludes that the noise impacts associated with the proposed gas-fired boilers are acceptable and can be appropriately managed by the existing and proposed modifying conditions and the site's EPL.

4.2 Visual Amenity

The facility is surrounded by existing industrial buildings including the cogeneration plant, which has three stacks at a height of 30m each (See **Figure 5**, top image).

Boiler scenarios 1 and 2 present two different boiler configurations, particularly in the number of stacks required, which could potentially impact on the visual amenity of nearby sensitive receivers.

Boiler Scenario 1

The boiler configuration for Scenario 1 comprises of three gas-fired boilers and three emission stacks with a height of 30m each. The EA notes that the boilers would be located at the centre of the site and the stacks may be visible when travelling along the Cumberland Highway for a distance of up to 1.6 kilometres north-northeast of the site as shown in **Figure 5**.

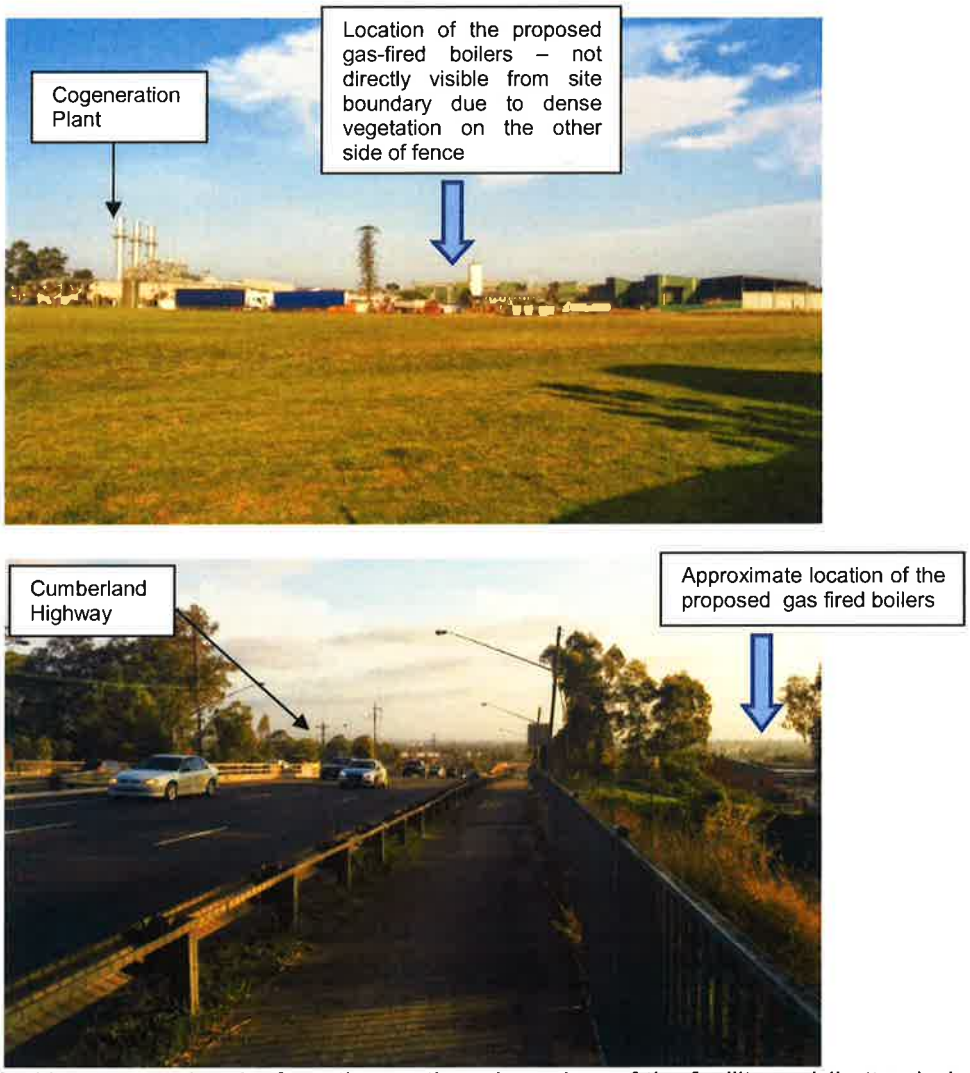


Figure 5: *(top) looking east to the site from the southern boundary of the facility and (bottom) view of the site 1.6km north-northeast of the facility on Cumberland Highway*

The Applicant considers that potential impacts on visual amenity at the closest sensitive receivers to the south of the site would be insignificant due to dense vegetation surrounding the site and existing surrounding industrial buildings. In addition, the Applicant also

confirmed that visible emissions from the stacks such as steam would be minimal and intermittent.

Council did not raise any issues in relation to visual impacts. The Department has reviewed the site photos and aerial maps of the site and agrees with the Applicant that the visual impacts to nearby sensitive receivers would be minimal, given that the gas boilers would be located away from any nearby receivers in the centre of the site and would be surrounded by existing industrial buildings. The Department also understands that the original gas fired boilers approved as part of the original development also included stacks of a similar height to the stacks proposed for the modification.

The Department considers that the stacks would not be visible from the closest residential receivers south of the site due to mature and dense vegetation surrounding the site and Prospect Creek. However, the stacks may be visible 1.6km away on the Cumberland Highway but the Department considers that the visual impacts would be minor as the surrounding environment is already built up and vehicles travelling on the Cumberland Highway would only be temporarily impacted.

The Department's assessment concludes that the visual impact of Boiler Scenario 1 would be insignificant and that no additional conditions would be required.

Boiler Scenario 2
The boiler configuration for Scenario 2 is comprised of two gas boilers with one single 30m stack. The EA concluded that the visual impacts for Scenario 2 would be minimal but noted that having one stack would be less aesthetically intrusive than three stacks under Scenario 1. As with Scenario 1, visible emissions from the stack would be minimal.

The Department considers that the visual impacts to nearby receivers would be negligible given the height of the stack and the reduction in the number of stacks from three to one. The Department's assessment concludes that the visual impact of Scenario 2 would be insignificant and that no additional conditions are required.

4.2 Other Issues
The Department's assessment of other issues is provided in **Table 3**.

***Table 3**: Assessment of modification*

Issue	Consideration	Recommendation
Air Quality	• An Air Quality Impact Assessment (AQIA) was undertaken by Benbow Environmental for Boiler Scenarios 1 and 2, respectively. • The two boiler options would be configured with burners that generate low concentrations of NOx to meet the Group 6 emissions standards under the *Protection of the Environment (Clean Air) Regulation 2010*. • There would be no differences in the amount of gas consumed or flue gases produced by either boiler scenario. • Under a worst case scenario, the air dispersion modelling undertaken for Scenario 1 and 2, predicted no exceedances to the referenced air quality limits for NOx (being 246 µg/m^3) at any of the receptor locations. • The NOx emissions for each scenario are predicted to be lower than the emissions from the original gas-fired boilers due to improvements in boiler technology. • The AQIA concluded that neither boiler scenario would result in any exceedances to the referenced air quality limits and that no further air emission reduction controls are required. • The EPA considered the AQIA to be conservative, however requested additional meteorological data to ensure that the modelling adequately represented the	No additional conditions required

Issue	Consideration	Recommendation
	site. • The EPA upon reviewing a revised AQIA, was satisfied that the emissions proposed and modelled could be appropriately managed through the site's EPL. • Council did not object to the proposal and agreed that the gas-fired boilers would comply with the requirements of the site's EPL. • The Department concurs with the EPA and Council and considers that as the boiler technology is cleaner and designed to meet the air quality limits and would meet emission criteria in the EPL, it is satisfied that any air quality impacts would be minimal and can be managed through the site's EPL. • As such, no recommended conditions are required.	
Hazards and Risk	• The consent contains conditions to identify and manage the hazards and risks on site. • The proposed modification would require boiler feed water chemicals to be stored in the boiler room and natural gas to be supplied to the gas-fired boilers. • The amount of natural gas and boiler feed water chemicals required would be similar under both scenarios. • The Department sought clarification on the quantity of dangerous goods to be stored on site, particularly natural gas, as it may exceed the threshold quantities outlined in the *State Environmental Planning Policy No. 33 Hazardous and Offensive Development* (SEPP 33). • The Applicant confirmed that SEPP 33 does not apply as the quantities of natural gas and the boiler water treatment chemicals to be stored on site do not exceed the threshold quantities under SEPP 33. • The Applicant further added that the boiler water treatment chemicals would be stored in a bunded area in the boiler room and that the supply of natural gas to the boilers would come from a nearby existing gas pipeline that would be re-routed to the site. • The Department considers that the modification is unlikely to cause a significant offsite hazard impact and would be appropriately managed by the Applicant. • As such, the Applicant is not required to undertake any further hazard analysis and no updates are required to the site's fire safety study or safety management systems. • The Department's assessment concludes that the quantities of dangerous goods to be stored on site are within the SEPP 33 threshold and can be managed under the existing conditions. No additional conditions are required.	No additional approval conditions required
Greenhouse Gas	• Both boiler scenarios are predicted to produce a similar amount of greenhouse gas emissions during operation (approximately 107,736.7 tonnes CO_2-e per annum under Scenario 1 and 107,067.9 tonnes CO_2-e per annum under Scenario 2). • Under a worst case scenario where the replacement boilers and the cogeneration plant are operating concurrently, the EA found that greenhouse gas emissions would be 1.8% higher than current levels. • The Applicant confirmed that this is unlikely to occur and that the gas-fired boilers would only be operational when the cogeneration plant is not in operation. • The Department considers this increase to be marginal and is satisfied that the impacts are insignificant particularly as the boilers would be operating independently of the cogeneration plant. • The EPA and Council did not raise any issues. • The Department's assessment concludes that greenhouse gas impacts are negligible and as such, no	No additional approval conditions required.

Issue	Consideration	Recommendation
	additional conditions are required.	

5. CONCLUSION

The Department's assessment has found that the proposed boiler reinstatement can be carried out with minimal additional environmental impact. The boilers are primarily intended to serve as a back up to the cogeneration plant in the event of a disruption to, or closure of the cogeneration plant.

The existing suite of consent conditions include requirements for ongoing impact mitigation relating to air quality, noise, hazards and risks and stormwater, and these requirements would apply to the proposed modification. The EPA advised that the modification may require changes to the Applicant's EPL in relation to noise impacts but all other issues can be managed through the site's EPL. There were no objections from Council or the public.

The Department has identified the need for additional conditions for noise emissions to ensure that the noise emissions coming from the gas-fired boilers do not contribute to the overall noise levels from the site.

Consequentially, the Department is satisfied that the proposed modification to reinstate the gas-fired boilers is acceptable and should be approved, subject to these conditions.

6. RECOMMENDATION

It is RECOMMENDED that the Director, Industry Assessments:

- **consider** the findings of this report;
- **approve** of the proposed modification (DA 13/94 MOD 7) under Section 75W of the EP&A Act; and
- **sign** the attached instrument (Tab A).

Pamela Morales
Planning Officer

Endorsed:

Chris Ritchie 23/7/15
Director
Industry Assessments