

Appendix M: Need and desirability

1.1.1 Introduction

The EIA Regulations require that an EIA application investigates the “need and desirability” of a development proposal. This relates to how sustainable the proposed new land use will be if the development proposal goes ahead.

According to the Department of Environmental Affairs and Development Planning’s *March Guideline on Need and Desirability*, the “need” for a facility relates to whether the facility is needed at this point; whilst the desirability of the facility relates to the location or the receiving environment in which the facility is situated; i.e. “is this the right time and is it the right place for locating the type of land-use/activity being proposed” (2013, p. 11)?

To investigate the need and desirability of the proposed new woodburn-off plant, reference has been made to the City of Cape Town (CoCT)’s Development Management Scheme, as a part of the Municipal Planning By-Law (2015, as amended), and the City’s Spatial Development Plan and Environmental Management Framework contained in the Blaauwberg District Plan, 2012.

Specialist input obtained to date, as well as the EAP’s professional opinion based on experience with similar projects, has also informed the investigation. This section attempts to address all of the issues raised in the DEA&DP’s 2013 Guideline on Need and Desirability. In so doing, this section addresses how the development complies with the principles set out in Section 2 of NEMA and meets the requirements of sustainable development.

1.2 Approved land use and zoning:

Erf 299 are zoned for Risk Industry in terms of the City’s Development Management Scheme, as a part of the Municipal Planning By-Law (2015, as amended). According to Chapter 10, Part 2 of the Development Management Scheme, Risk Industry is industrial zoning which allows for “those industries which are noxious in terms of smell, product, waste or other objectionable consequence of their operation, or which carry a high risk in the event of fire or accident”.

The woodchip burner has the potential to have combustion and particulate emissions from the diesel burners, wood burnoff and the diesel generator. Dust emissions is produced from materials handling the processes. Therefore the pilot plant would fall under the definition of a noxious industry - where the consequences of an operation could be objectionable.

Further to the appropriate zoning of the site, Atlantis Industria lies about 8km northeast of the Koeberg nuclear power plant, and therefore within the Koeberg Restriction Area Overlay Zone. The development does not, however, entail any proposed change to the approved land use rights in terms of the City’s Development Management Scheme; will not increase the population within the Overlay Zone; and will not overburden the disaster management

infrastructure. Therefore, the development is considered to align with the restrictions of the Overlay Zone.

1.3 Ecological integrity and biodiversity:

The woodchip burn-off pilot plant is situated on Erf 299 in Atlantis Industria. Erf 299 was undeveloped and vegetated before the clearing of the entire area of the erf.

According to the City of Cape Town's 2017 Biodiversity Network fine-scale biodiversity plan, Erf 307 is situated in an area categorised as "Other Natural Area". The site is not situated in a Critical Biodiversity Area or Ecological Support Area.

1.3.1 Terrestrial biodiversity:

A Biodiversity Assessment was conducted by Nick Helme Botanical Surveys. Please see Appendix H. According to the Biodiversity Assessment, Erf 299 falls within two vegetation types namely Cape Flats Dune Strandveld to the north and Atlantis Sand Fynbos to the south.

According to the assessment, the northern 75% of the site was found to be heavily disturbed and is of low ecological sensitivity. The southern 25 % was less disturbed and of was of medium ecological sensitivity. The section is dominated by alien invasive herbs and grasses.

The less disturbed 90% of the site has moderate to low indigenous plant diversity. There is a medium-density of alien invasive vegetation (about 15%), comprising Port Jackson. The assessment notes that "biocontrol fungus has infected most of the Port Jackson, and is reducing seed set and even killing some of the plants". This area of the site was found to be of medium ecological sensitivity.

The Biodiversity Assessment found that no loss of mapped CBA's will occur; that there will be a loss of a small area of habitat, which will be of low significance; and a minor loss of ecological connectivity and minor habitat fragmentation will occur in the area.

In terms of cumulative impacts, the Biodiversity Assessment found that indigenous vegetation on the site is not regionally significant "in that it is a very small site, partly degraded, representative of a type that is still fairly extensive in the region, adjacent to the development and does not support any significant populations of plant or vertebrate Species of Conservation Concerns".

The cumulative impact of the loss of vegetation and faunal habitat was not found to be significant. No positive impacts on biodiversity associated with the proposal were identified in the Biodiversity Assessment.

Overall ecological significance of loss of this site is low and it was recommended that no special mitigation is required.

1.3.2 Aquatic biodiversity

Erf 299 are situated some 500 m south of identified depression wetlands. The site, therefore, falls within the “regulated area” of a watercourse in terms of the National Water Act, Act No. 36 of 1998, and a freshwater risk assessment in terms of Section 21 (i) and (c) was undertaken. Please see Appendix H.

No watercourses were identified on Erf 299. And due to the distance from the wetlands as well as the flat topography, which will prevent common water quality and erosion impacts associated with new developments, the risk was determined to be low to negligible. Additionally, the Department of Water and Sanitation (DWS) has also confirmed that the proposed activity will not entail the need to obtain a Water Use Licence (WULA).

1.4 Global responsibilities for protecting the environment:

The development complies with global responsibilities relating to terrestrial and aquatic vegetation and biodiversity conservation.

In terms of global responsibilities relating to cultural and historical resources, a heritage specialist has completed a Notice of Intent to Develop for this project. The NID states that “no significant impact on heritage resources [is] anticipated”, and that “no specialist studies [are] required”. Please see the NID attached in Appendix H.

In terms of global responsibilities relating to air quality and climate change, the following is applicable:

The woodchip burn-off plant will require an Atmospheric Emissions Licence in terms of the NEMAQA. In terms of the AEL, the plant will need to meet the statutory Minimum Emissions Standards for thermal treatment of general and hazardous waste activities. These standards are premised on the need to protect ambient air quality and reduce climate change impacts.

Similarly, the AEL will stipulate general management measures for reducing impacts on air quality from all aspects of the woodchip burn-off operation, also to protect air quality and reduce climate change impacts.

Global responsibilities relating to waste management are discussed under Item 1.7.

1.5 Use of and impact on natural resources; dematerialised growth:

1.5.1 Use of natural resources:

Wood-chip

The wood chip burn-off pilot plant will form part of an ore recovery value chain. It produces an intermediate product which is returned to mines for processing in order to extract any metal that may be present. The proposed development will thus benefit the circular economy by diverting waste from landfills.

Fuel

The woodchip burn-off plant uses diesel to heat the rotary kiln. As regards the possibility of replacing diesel with a biofuel in the future, LCOA have indicated that, provided quality, performance, competitive cost and security of supply can be assured, biofuels can be utilized.

1.6 Identified environmental attributes and management proposals from the City's Spatial Development Framework and Environmental Management Framework:

A review of the City's Spatial Development Plan and Environmental Management Framework contained in the Blaauwberg District Plan, 2012, found as follows with regards to the Atlantis Industria area where Erf 299 are situated:

- The Urban Uses and Utilities Zone map shows the site and Atlantis Industria as industrial land usage. The site is directly adjacent to an electricity powerline. The site is situated within the urban edge.
- On the Coastal Protection Zone and Dunes map, Atlantis Industria is shown to be beyond the coastal dune area.
- The Hydrological Zone map shows Atlantis Industria falling within a "moderately productive" aquifer area. No rivers are situated nearby. Some wetlands are situated about 300m north of the site.
- The Conservation and Biodiversity Zone map, based on the City's fine-scale biodiversity plan, shows the area to be within an "Other Natural Area" zone.
- The Cultural and Recreational Zones map shows Atlantis Industria to be outside of the Mamre and Pella Heritage Zone, the Blaauwberg Heritage Area and the Koeberg Farms Cultural Landscape. No provincial heritage sites are situated anywhere near the site. Entrance into the Atlantis area can be via R304 road. This road is marked as a scenic route but is not close to Atlantis Industria.
- The New Development Areas Zone map shows Atlantis Industria as earmarked for new industrial development. The map shows that Atlantis and Atlantis Industria are linked to Cape Town via the Integrated Rapid Transport bus system.

Volume 1 of the Blaauwberg District Plan states that "The settlement of Atlantis is dislocated from the rest of the district, which has resulted in higher unemployment and a lack of access to social services and facilities in this area (p.69)".

Therefore, connecting Atlantis to the rest of the City via upgrades to the transport network is listed as a management priority; as well as intensifying land use and developing new infill residential and industrial areas within the urban edge, including in Atlantis (p. 69 & 70).

A management priority for the City in terms of waste and pollution management is monitoring and enforcing the industry's compliance with air pollution standards (p. 71).

Volume 2 of the Blaauwberg District Plan highlights a key spatial strategy is the management of urban growth and the creation of a balance between urban development and environmental protection.

Based on a review of the City's SDP and EMF, the development of the site for industrial purposes is supported by the City's regional planning policies. Developing a potentially noxious industry in an area that is zoned for such land use, is the environmentally responsible option. Compliance with legislated emissions standards and dust fall limits will ensure that the facility aligns with the City's management priorities. And economic and social benefits in terms of mineral beneficiation in support of the construction and manufacturing industries, and terms of investment in Atlantis, are associated with this development, but not at the expense of the receiving environment.

1.7 Pollution of the natural environment:

The following aspects of the woodchip burn-off operation could pollute the environment:

- Fuel storage and handling - tank and line failure and incorrect tank and diesel burner refuelling and fuel handling procedures could lead to soil and groundwater contamination, including contamination of the sensitive Atlantis Aquifer.
- Fuel combustion – criteria pollutants such as particulate matter, sulphur dioxide, nitrogen dioxide and VOCs are emitted during combustion.
- Material handling – transport, stockpiling, milling, conveyance and bagging the of raw material and intermediate product has the potential for significant dust emissions if not managed appropriately.

Standard best practice operating procedures, impact management measures and infrastructure design and maintenance is required to minimise the possibility of such pollution occurring. The burn-off plant is readily be able to implement such measures and these have been included in the environmental management programme for the project.

1.8 Waste management:

The woodchip burn-off plant operation are considered to be part of the waste-to-value chain, and to entail waste management activities. The activity itself is a general waste (fine ore) recovery activity. Impacts associated with this waste recovery process have been discussed elsewhere and entail mainly air emissions and health and safety risks. These can be readily minimised by implementing fit-for-purpose emissions abatement and best practice health and safety operating protocols.

1.9 Environmental rights:

The rights of people to an environment that is not harmful to their health or wellbeing, and equal access to that environment and its resources, are enshrined in the NEMA Preamble. The preamble goes on to state that development should be sustainable, i.e. that for both present and future generations, pollution and ecological degradation should be prevented, conservation should be promoted, and that development and use of natural resources should be ecologically sustainable whilst promoting justifiable economic and social development.

The pilot woodchip burn-off plant will take place on an appropriately zoned site in a heavy industrial area. The proposal does not entail any associated environmental impacts that cannot be adequately managed with standard best practice design and operational measures. And the proposal is aimed at mineral beneficiation to meet the demand of the construction and manufacturing industries.

Therefore, no aspects of the development proposal infringe on others' environmental rights.

1.10 Socio-economic, cultural and historical impacts of the development:

1.10.1 Cultural and historical:

A heritage Notice of Intent to Develop has been submitted to Heritage Western Cape for this development proposal. Please see the NID attached in Appendix H. The NID included a review of archaeological and palaeontological resources in the area; of buildings, structures and equipment of cultural significance; of places significant in terms of oral traditions; of historical settlements or townscapes; of geological resources of scientific or cultural importance; of sites significant to the history of slavery in South Africa; of Khoisan human remains and of burial grounds.

The heritage specialist found that the site is not sensitive, and so it follows that the pilot woodburn-off plant has not impacted negatively on heritage, cultural or historic aspects of the area.

1.10.2 Socio-economic:

- In 2018, Atlantis was designated a Special Economic Zone. This means that all levels of government recognise and support industrial development in this zone. Investment in the zone is attracted through a range of incentives, and investors are supported in their development applications by the Atlantis SEZ.

Atlantis is a zone earmarked in particular for development associated with renewable energy and green technology: it is a "Special Greentech Economic Zone".

Industrial development in this area has therefore been recognised as beneficial for the region's economy.

- The wood burn-off plant will only entail the creation of four additional jobs at LCOA. However, it is noted under Item 1.6 that the Atlantis area is dislocated from the rest of the City, with resultant high unemployment rates and lack of access to services. Industrial development in the Atlantis area and its downstream benefits, such as rates and taxes for the City, can therefore be considered a social benefit.

1.11 Best Practicable Environmental Option:

The NEMA defines the Best Practicable Environmental Option as: "the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long-term as well as in the short-term".

From the information contained in Items 1.1 to 1.9, it is evident that the development of the woodchip burn-off plant does not entail any significant negative environmental impacts. All associated impacts can readily be minimised and managed with the application of industrial best practices in the equipment choice and in the operation of the plant, and by compliance with applicable legislation.

The benefit which the plant represents in terms of investment in the Atlantis area, which is a designated Special Economic Zone, is not significant due to the small scale of the plant. But a benefit will be realised, in line with the strategic economic goals for the area.

Given the approved land use of the site, as well as the biodiversity planning and economic planning goals relevant to the area, the woodburn-off plant could be considered as the BPEO for the site.

1.12 The positive and negative cumulative ecological/biophysical impacts of the development:

- Any impacts associated with the woodchip burn-off plant are considered cumulative impacts, i.e. adding to impacts already occurring in the Atlantis Industria area associated with new and existing industrial activities; and
- It is not expected that the burn-off plant will entail any unacceptable negative impacts on the receiving environment, i.e. where ecological processes will be severely disrupted, where ecological resources will be significantly damaged, where irreplaceable natural resources will be lost, where heritage-related resources will be lost, where pollution of the environment will exceed statutory limits and be unmitigable, etc.

Positive impacts are not expected to be significant, but will occur: the plant is small scale and will contribute to some extent to the metal ore industry, as well as to much-needed investment in Atlantis. The plant will also benefit LCOA and its employees by meeting market demand and increasing the profitability and sustainability of the company. The facility is a waste-to-value operation and will promote the circular economy. Forming part of the metal recovery process, the facility represents a lower carbon footprint than mining of virgin ore, as well as diversion of waste from landfill, thereby saving valuable and scarce landfill airspace.