

MOTIVATION IN TERMS OF SECTION 27 OF THE NWA

PAARDEVLEI SOLAR PV DEVELOPMENT ON THE REMAINDER OF FARM 792, THE REMAINDER OF PORTION 38 OF FARM 794, PORTION 10 OF FARM 787, PORTION 11 OF FARM 787 AND PORTION 37 OF FARM 794

Section 27 of the NWA, 1998 (Act No. 36 of 1998) sets out factors that should be considered by the Department of Water and Sanitation before issuing water use licenses. This section of the report will describe in detail the relevancy of the above-mentioned factors in relation to the water uses that are applied for and how City of Cape Town will comply with them.

SECTION 27 (A) EXISTING LAWFUL USE

There is an existing WUL associated with the Paardevlei Stormwater Masterplan.

SECTION 27 (B) REDRESSING THE RESULTS OF PAST DISCRIMINATION

Section 27(B) of the NWA requires information regarding the contribution that will be made to rectify the results of past racial and gender discrimination.

The Paardevlei PV Solar site is located the Helderberg Planning District (PD), which is one of 8 planning districts that make up the City of Cape Town. At a ward level the site located in Ward 15.

The official unemployment rate in Ward 15 in 2011 was 6.10%. The highest unemployment level was amongst Coloureds (11.49%) and Black Africans (11.19%). The unemployment rate for Ward 15 was significantly lower than the rate for the Western Cape (21.6%) and City of Cape Town (25.9%). This is reflected the low dependency ratio and high household income and education levels for Ward 15. However, the unemployment figures are likely to have been affected by the Covid-19 pandemic.

In terms of household income, the 2011 Census indicated that 12.7% of the population of Ward 15 had no formal income, 2.9% earned between 1 and R1 600, and 3.4% earn between R 1 601 and R 3 200 per month. Based on the poverty gap indicator produced by the World Bank Development Research Group, which measures poverty using information from household per capita income/consumption, households that earn R 3 200 per month or less are regarded as falling below the poverty line⁵. Based on this measurement 19% of households in Ward 15 therefore fall below and or are close to the poverty line.

Most of the vulnerable households in Ward 15 were Black African and Coloured households. According to the 2011 Census, an estimated 47% of the CoCT's households had a formal income of less than R3 200 per month. The figure for Ward 15 is therefore significantly lower than the figure for the City of Cape and reflects the higher education levels.

The construction phase will result in the availability of temporary employment opportunities for skilled, semi-skilled and unskilled labour force. The operation phase will also result in the creation of some employment during maintenance. A portion of the employment opportunities will be made available to historically disadvantaged individuals.

SECTION 27 (C) EFFICIENT AND BENEFICIAL USE OF WATER IN THE PUBLIC INTEREST

The Paardevlei solar project aims to fulfil the following objectives:

- Current loadshedding mitigation.
- Climate change mitigation.
- Increase the City of Cape Town's self-sufficiency and resilience regarding energy (electricity) supply.

Solar PV is considered as one of the most cost competitive Renewable Energy (RE) technology, with reduced greenhouse gas (GHG) emission benefits. Solar PV can also contribute in mitigating the South African electricity crisis, increase the existing generation capacity, whilst providing a clean renewable energy source for the City of Cape Town.

The development of renewable energy (i.e. Paardevlei Solar & BESS project) is strongly supported at a national, provincial, and local level. At a national level development of and investment in renewable energy is supported by the National Development Plan (NDP), New Growth Path Framework and National Infrastructure Plan, which all refer to and support renewable energy. At a local level the development of renewable energy is supported by the City of Cape Town IDP and SDF.

The proposed development also enables the City of Cape Town to improve energy security, reduce the impact of loadshedding on the local economy and communities, and supplement its current energy needs with clean, renewable energy. Given the economic and social impacts of loadshedding and the negative environmental and socio-economic impacts associated with a coal-based energy economy, this represents a significant positive social benefit for society as a whole.

SECTION 27 (D) SOCIO-ECONOMIC IMPACT OF THE PROPOSED WATER USE

The construction phase will result in the availability of temporary employment opportunities for skilled, semi-skilled and unskilled labour force.

The construction phase of the development may be an opportunity for skills transfer and capacity building by skilled and experienced workers for the unskilled and upcoming workers.

SECTION 27 (E) APPLICABLE CATCHMENT MANAGEMENT STRATEGY

The Department of Water and Sanitation is responsible for the National Water Resource Strategy for South Africa. According to the NWA, 1998 (Act No. 36 of 1998), a Catchment Management Agency should be established for each water management area. The Catchment Management Agency will then be responsible for the Catchment Management Strategy for each water management area. The aim of the Catchment Management Strategy is to set principles for allocating water to existing and prospective water users, taking into account the protection, use, development, conservation, management and control of water resources. The site falls within quaternary catchment G22J. The DWS is responsible for this catchment.

SECTION 27 (F) IMPACT OF THE ACTIVITY ON WATER RESOURCE AND WATER USERS

The following freshwater impacts have been identified for the development proposal:

Impacts on Freshwater Features During Planning Phase

- **Loss of Wetland Habitat:** The development will lead to the loss of wetland depressions and pans, reducing habitat quality due to shading from solar panels and restricted access for wildlife. Despite being degraded, these wetlands provide rare seasonal habitats, making the impact medium to high significance.
- **Interruption of Ecological Connectivity:** The development encroaches on ecological corridors required by the Paardevlei Stormwater Masterplan, disrupting essential connectivity, which is of high significance.
- **Wetland Degradation from Eucalyptus Clearing:** Clearing eucalyptus trees could increase surface water during the wet season, leading to potential erosion, flooding, and groundwater contamination. This impact is uncertain and requires further assessment, with mitigation focused on risk identification.

Impacts During Construction Phase

- **Physical Disturbance to Wetlands:** Construction activities may further degrade wetlands, particularly during the wet season. This could have long-term effects on wetland recovery, with a medium to high significance.
- **Pollution of Wetlands and Channels:** The risk of sediment and waste contamination during construction is low but poses a potential threat to aquatic habitats.

Impacts During Operation Phase

- **Degradation from Hydrology Changes and Water Quality:** Increased stormwater runoff from hardened surfaces and solar panel wash-down may cause erosion and water quality issues in wetlands, with a medium negative significance.
- **Physical Disturbance from Maintenance:** Maintenance activities could cause localized but low-intensity disturbances to wetlands, assessed as low significance.

The freshwater specialist has provided acceptable mitigation measures for the identified impacts. The proposed mitigation measures focus on preserving and enhancing wetland ecosystems during the development, construction, and operational phases. Key actions include pulling back development to maintain a 50m ecological corridor, creating additional aquatic corridors, and ensuring stormwater management aligns with the master plan. Eucalyptus clearing and subsequent increased water flows require specialist input and monitoring. During construction, wetland areas are to be protected with no-go zones, minimal disturbance, and rehabilitation overseen by a wetland ecologist. Operationally, the use of detergents in wash water should be avoided, with wastewater managed to prevent contamination. Maintenance should prioritize wetland restoration to pre-disturbance conditions or better.

SECTION 27 (G) CLASS AND RESOURCE QUALITY OBJECTIVES OF THE WATER RESOURCE

The South African Water Quality Guidelines are used for the Water Quality Objectives. The Minister of DWS is required to establish a classification system, and to determine the class and resource quality objectives for all or part of the resources considered to be significant. The determination of the preliminary class or resource quality objectives is the competency of the DWS. The table below gives a summary of information related to the water resource which may be impacted by the proposed activity.

Wetland type	Ecosystem services	PES	EIS	Conservation importance
Wetland flats (“alluvial wetlands”)	Grazing; flood attenuation; sediment trapping; potential for water quality amelioration; No amenity or recreational value at present – but could be important in a development context. Very low biodiversity outside of identified nodes (included below) May play some role in buffering other systems	Category E (seriously modified from natural) as per Day 2014 and Day 2018)	Moderate	Low – mostly highly degraded

Wetland pans in wetland mosaic	Grazing; flood attenuation; No amenity or recreational value at present – but could be important in a development context. Low biodiversity importance; Provides limited ecological connectivity / links to downstream sites via drainage channels	Category E (seriously modified from natural) as per Day 2014 and Day 2018)	Low	Low to moderate – degraded but probably restorable and can act as buffers and stormwater attenuation areas
Wetland depressions in wetland mosaic	Grazing; flood attenuation; sediment trapping; No amenity or recreational value at present – but could be important in a development context. Low to moderate biodiversity importance, amplified in context of surrounding disturbance and degradation; Provides ecological connectivity (shelter, seasonally inundated aquatic habitat) through the site, linking to downstream systems (e.g. Langvlei wetland) via the drainage channels	Category E (seriously modified from natural) as per Day 2014 and Day 2018)	Moderate	Moderate – provides ecologically significant wetland habit types, albeit degraded and modified; provides connectivity between and within the site
Drainage channels	Wholly artificial but do provide longitudinal connectivity with up- and downstream aquatic ecosystems and many (including the Magazine Drain) are included among the key hydrological and ecological corridors through the site, in the greater Paardevlei storm water master plan (Bau-afrika 2014 and Day 2014).	N/A (artificial)	Low / marginal	Moderate – important role as corridors through site; limited provision of aquatic habitat; important roles in conveyance, polishing and attenuation of storm water flows

SECTION 27 (H) INVESTMENT ALREADY MADE

Investment in the region of R350 000 has already been made in terms of the planning and design phase for consultant fees.

SECTION 27 (I) STRATEGIC IMPORTANCE OF THE WATER USE TO BE AUTHORISED

Load-shedding (due to lack of generation capacity) has been a daily occurrence in South Africa and has a negative impact on households and businesses. This is the main factor contributing to the electricity crisis, with supply not being able to meet demand, impacting the everyday life of South Africans. The occurrence has forced many businesses to function at reduced capacity, leading to a decline in productivity and impacting South Africa's economy.

The development of renewable energy (i.e. Paardevlei Solar & BESS project) is strongly supported at a national, provincial, and local level. At a national level development of and investment in renewable energy is supported by the National Development Plan (NDP), New Growth Path Framework and

National Infrastructure Plan, which all refer to and support renewable energy. At a local level the development of renewable energy is supported by the City of Cape Town IDP and SDF.

Therefore, it can be strongly considered that the water use is of strategic importance.

SECTION 27 (J) WATER RESOURCE QUALITY REQUIREMENTS FOR THE RESERVE

Should the mitigation measures be implemented the construction activities will not result in degradation of the water resource according to the Aquatic Impact Assessment.

SECTION 27 (K) PROBABLE DURATION OF ANY UNDERTAKING FOR WHICH A WATER USE IS TO BE AUTHORISED

It is recommended that this WULA be issued for the maximum allowed period in terms of the National Water Act, 1998.