

14. SENSITIVE AREAS

14.1. The Addo Elephant National Park

The AENP was proclaimed in 1931 to protect the last remaining Eastern Cape elephants which were living in the Addo bush. The proclamation of the Park also protected the last remaining buffalo in the then, Cape Province. Currently, the elephants are confined to a 12 000 ha elephant camp within the Park. Other parts of the Park are closed to elephants as botanical reserves with the aim of protecting plant diversity.

14.1.1. Proposed Greater Addo National Park

Part of the AENP falls within the study area, and the majority of the southern portion of the study area is proposed to be incorporated into the proposed GANP in the long-term. This proposed Park involves the amalgamation and expansion of two large existing conservation areas (i.e. the AENP and the Woody Cape Provincial Nature Reserve). The proposed GANP will be approximately 400 000 ha in size and will form a continuous conservation area of more than 200 km in length, being approximately 30 km at its widest part and approximately 10 km at its narrowest. A main new entrance to the proposed GANP is planned to be off the N10, to the east of the existing AENP.

As part of the proposal for the GANP, it is proposed that additional tourism facilities be developed. Within this planning, two concession areas have been proposed. These include the Gorah Lodge development which is currently located within the main tourist section of the AENP, and the Nyati Concession which will be developed in the Buffelskuil area immediately north of the Addo/Paterson road and west of the N10. In addition, long-term planning includes the development of an additional concession area in the Olifantsplaats area in the southern section of the proposed Park, located to the north of the N2. These areas are foreseen as being tourism intensive areas, and visual impacts from outside developments would be considered undesirable.

Tourist activities, including rest camps, self-drive game-viewing facilities, lookout points and elephant waterholes, are currently focussed within the elephant camp area, and are planned to be expanded to the flatter terrain to the south and east of the current activities, as this area will be optimal for game viewing.

14.1.2. *Potential Impacts on the AENP (and the Proposed GANP) Associated with the Proposed 400 kV Transmission Line*

Currently two Transmission lines (i.e. 220 kV and 400 kV) traverse the northern arm of the AENP. The existing 220 kV and 400 kV Transmission lines have been erected since the 1970s, and the 1990s, respectively.

Corridor 1 is located to the immediate west of the existing 220 kV Transmission line through the AENP (and the proposed GANP). Eskom holds a registered vacant servitude within corridor 1 for a width of 26 m, which lies between the existing 220 kV and 400 kV Transmission lines. This proposed alignment traverses the existing AENP across its northern arm (for a distance of approximately 5 km), as well as the proposed GANP (for a total distance of approximately 20 km). As the existing servitude is narrower than the ideal width for the establishment of a 400 kV Transmission line, it would be required that the Transmission line towers for the section of the route through the AENP (and proposed GANP) be designed and constructed to fit within the registered servitude width (in accordance with the National Parks Act (No 57 of 1976)). This restriction would result in the new towers being constructed in-line with the existing 220 kV Transmission line towers in order to avoid technical difficulties.

Corridor 2 skirts the eastern boundary of the proposed GANP (following the N10), and the southern boundary of the AENP (following the N2), along a corridor not previously disturbed by Transmission line infrastructure. This corridor attempts to avoid the existing AENP through proposing its alignment to the coastal side of the N2. However, as the Transmission line cannot be fully accommodated within the Spoornet servitude south of the N2, the corridor will potentially traverse the southern portion of the AENP (for a distance of approximately 5 km). In addition, the corridor is unable to avoid crossing the proposed GANP development, as this is planned to extend southwards down to the coastline. For development within corridor 2, Eskom would require a new servitude (55 m in width). This will require the submission of an application to Parliament for the de-proclamation of those portions of the AENP (and potentially the proposed GANP) through which the Transmission line would pass, for the issuing of Eskom with servitude rights. This application requires a 2/3 majority in Parliament to be passed.

SANP have expressed concern with regards to the potential visual impact associated with the proposed new Transmission line, particularly in those areas planned as tourist-intensive areas

within the proposed GANP. In addition, SANP expressed concerns with regards to Eskom's long-term plans in the area, and the effect this would have on the proposed GANP.

a) *Potential Visual Impacts on the AENP (and Proposed GANP)*

- *Corridor 1:*

The existing 220 kV and 400 kV Transmission lines which pass through the northern arm of the AENP have an existing impact on views within the Park. Existing tourist facilities have been developed taking these lines into consideration. In addition, it will be required that the Transmission line for the section of the route through the AENP (and proposed GANP) be constructed to fit within the registered servitude and, therefore, the new towers would be required to be constructed in-line with the existing 220 kV Transmission line towers in order to avoid technical difficulties associated with Transmission lines being built in close proximity to one another. Therefore, it is anticipated that the construction of a new Transmission line along this corridor would not further significantly impact on the existing visual intrusiveness associated with the existing Transmission lines which pass through the area.

- *Corridor 2:*

Due to the presence of the existing 220 kV and 400 kV Transmission lines to the western side of the AENP, the construction of the proposed new Transmission line within this corridor would result in the AENP being visually impacted on to the west, east and south of the Park, and effectively being surrounded, or "boxed-in" by Transmission line developments.

The long-term visual intrusion is of greatest importance for this corridor. As the proposed GANP's tourist-intensive areas expand towards the eastern extremity of the proposed Park, so the critical views will be more greatly impacted on by the Transmission line structure. In addition, the establishment of a Transmission line within this corridor would impact on tourist views while entering the proposed GANP through the planned new main entrance (off the N10 to the east of the existing AENP).

b) *Alternatives to Accommodate Long-Term Planning through the AENP (and Proposed GANP):*

The use of double-circuit tower structures within the portion of corridor 1 which traverses the proposed GANP has been proposed by Eskom as an option which could be investigated in order to accommodate potential long-term planning difficulties within this area.

A double-circuit tower is a self-supporting tower which can accommodate two sets of conductors, one on either side of the structure. These towers require a servitude width of approximately 47 m. They cannot be accommodated within a narrower servitude as the footprint of their base is such so as to support their height (approximately 50 m). The height of the towers allows for the 3 conductors of each set to be strung one below the other (refer to Figure 14.1).

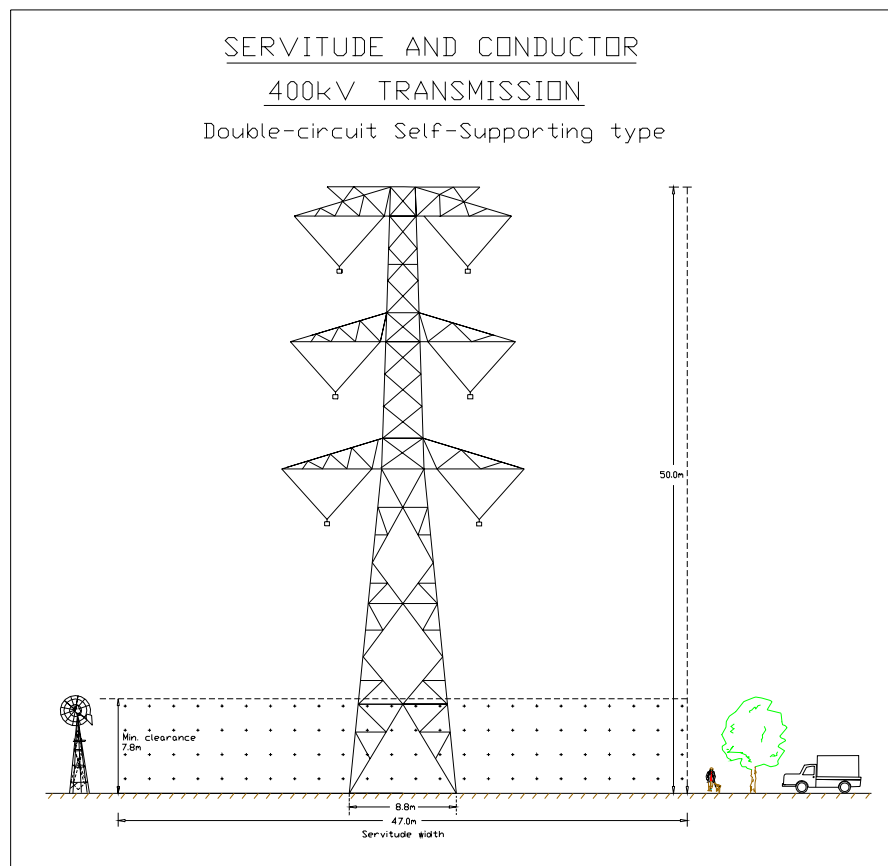


Figure 14.1: Schematic representation of a double-circuit tower indicating its relative height

Therefore, in order to accommodate these towers through the AENP (and proposed GANP) within corridor 1, it would be required that the existing 220 kV Transmission line servitude be recycled such that a 47 m wide servitude is available. These double-circuit towers could initially be strung with the replacement 220 kV conductors on one side, and the new 400 kV conductors on the other. In order to satisfy long-term demands, the 220 kV conductors could potentially, in the future, be re-strung as a 400 kV Transmission line in the event of the entire 220 kV Transmission line being replaced along its entire length. This would avoid the need for another servitude to be registered at this later stage. The viability (technical, economic and environmental) of this alternative would still require investigation.

A number of potential impacts are associated with this alternative have been preliminarily identified, and are discussed below:

- *Impacts associated with the dismantling of the existing 220 kV Transmission line:*

In order to recycle the 220 kV Transmission line servitude, it will be required that the existing 220 kV Transmission line be dismantled and removed along its length through the AENP (and proposed GANP). This would require the switching off of this line during this period. As the existing 400 kV Transmission line cannot support the demand alone, and the reliance on only one Transmission line for supply could compromise the reliability of the supply to the Greater Port Elizabeth area, it would be required that Eskom obtain an alternative electricity supply during the dismantling and reconstruction period.

The activities which would be required during the dismantling of the existing 220 kV Transmission line will involve the dismantling of existing towers and the breaking up and removal of foundations. This could impact negatively on the surrounding environment, as the foundations are firmly cemented into the ground, and removal of these foundations by helicopter would not be feasible. Therefore, disturbance of the surrounding areas may result from foundation removal.

- *Visual impacts associated with double-circuit towers:*

Double-circuit towers are approximately 20 m taller than the existing 220 kV and 400 kV Transmission line towers which pass through the area, extending to approximately 50 m in elevation. These towers are stand-alone towers, and are potentially the most visually intrusive towers.

- *Costs associated with the erection of double-circuit towers:*

Construction costs associated with the dismantling of an older line, as well as the erection of a new double-circuit line are estimated to be more than double the cost of erecting a regular Transmission line. The cost of erecting the double-circuit towers is estimated at R1 700 000 per kilometre. In addition, the cost of dismantling the 220 kV Transmission line is estimated at R75 000 per kilometre. Therefore, the total cost per kilometre is estimated at R1 775 000. For a distance of 20 km across the proposed GANP, the total cost, therefore, amounts to R35 500 000. In comparison, the cost of erecting the 400 kV self-supporting towers in-line with the existing 220 kV towers is estimated to amount to R10 840 000 (i.e. approximately R542 000 per kilometre).

- *Opportunity costs to SANP:*

The calculation of the potential loss of opportunity costs, and in turn loss of revenue through a reduction in tourist potential, for SANP with the introduction of a new 400 kV Transmission line needs to take the following into consideration:

 - * The opportunity costs associated with the existing Transmission line infrastructure which traverse a portion of the existing Park.
 - * The anticipated scale of impact to be associated with the development of a new line on either:
 - a) the western extremity of the Park (corridor 1), or
 - b) the eastern extremity of the Park (corridor 2).
 - * The loss of revenue from eco-tourism sales as a result of the introduction of a new Transmission line into the area (either corridor 1 or 2).

Quantification of these costs is required from the SANP, and was not available at the time of finalising this report.

14.2. Residential Areas

The major towns and centres which can be found within the study area include:

- Cookhouse in the north (closest to the Poseidon Substation),
- Middleton in the Golden Valley area,
- the farming area of Kommadagga and Ann's Villa,
- the town of Nomathanisanqa,

- the town of Addo within the Zuurberg mountains,
- the farming town of Paterson to the east of the proposed GANP on the N10,
- the small resort town of Colchester, Sundays River and Cannonvale on the coastal plain to the west of Grassridge, and
- the small town of Coega near the Grassridge Substation.

Corridor 1 passes in close proximity to Middelton, Kommadagga, Nomathanisanqa and Addo. The presence of the existing 220 kV and 400 kV Transmission lines close to these towns has an existing impact within these areas, particularly in terms of visual intrusiveness and impacts on critical views. The construction of a new Transmission line along this corridor can, therefore, not be considered as a new visual intrusion, but may increase the magnitude of the impact on a local scale.

Corridor 2 passes in close proximity to the towns of Middelton, Kommadagga, Paterson, Colchester, Sundays River and Cannonvale. The towns within the southern section of this corridor, including Paterson, are not currently impacted on by Transmission line infrastructure, and therefore the construction of a new Transmission line would impact negatively on the character and quality of the existing view within these areas. This is considered to be of particular significance in those centres (such as Colchester and Sundays River), which are within the coastal zone and have tourism and recreational value.

14.3. Citrus Farms

Citrus farming has been identified as the major agricultural activity currently being undertaken in the area surrounding Addo, and within the Sundays River Valley. The primary concern to local citrus farmers relates to the presence of overhead lines, which restrict the height of windbreaks, which reduce wind exposure of citrus orchards) required for protecting citrus orchards. The construction of a new Transmission line across citrus farms could result in the limitation of the height of the trees planted for windbreaking purposes, should these be in the corridor of the proposed line. This will impact significantly on the productivity of the citrus farm, and alternative solutions may need to be sought.

14.4. Game Farms and Resorts

Several small-scale game farming and recreational areas occur within the study area. These include, *inter alia*, Zuurberg Inn, Riverbend, and Sundays River.

Being typically small-scale, if these farms on which these developments occur are traversed by a Transmission line development, the visual impact may potentially have a negative impact on their tourist potential.

Those developments in close proximity to the existing 220 kV and 400 kV Transmission lines have developed around these lines, taking the existing visual impact into account. However, with the occurrence of other powerlines (such as traction lines and distribution lines) occurring on a more local scale, the visual impact in some areas can only be mitigated through the consolidation of such linear infrastructure.