

ARNOT - GUMENI

CORRIDOR SELECTION REPORT



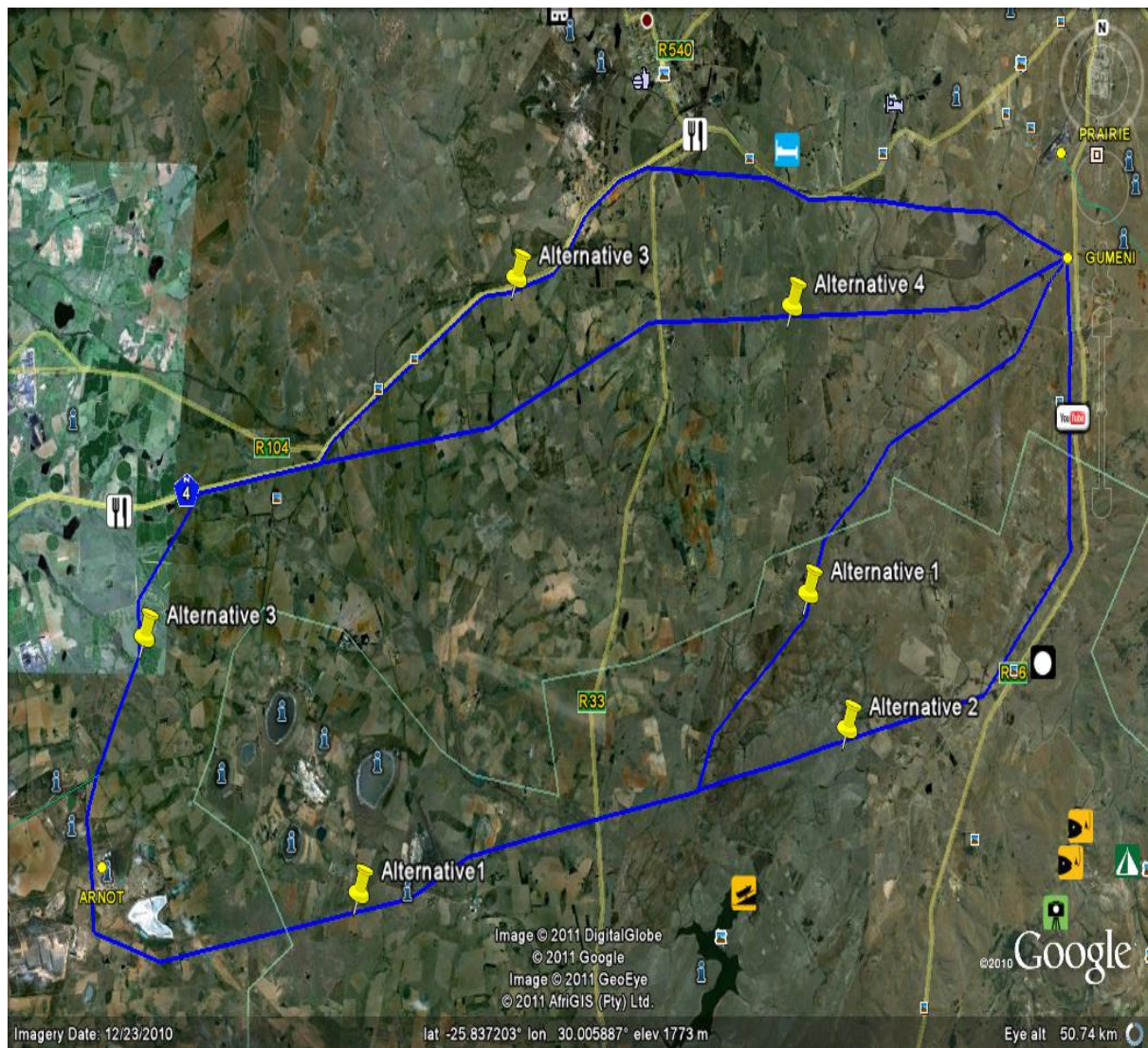
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Verified By: Route Selection Team

Date: 24 October 2011

ARNOT - GUMENI PROPOSED 400KV POWELINE CORRIDORS

Planning requires a 400kv powerline from the existing Arnot Substation to the proposed Gumeni Substation currently under construction. Planning recommend that the proposed powerline should be double circuit because of their future plans in that area. The corridors for the proposed powerline will be 2km wide.

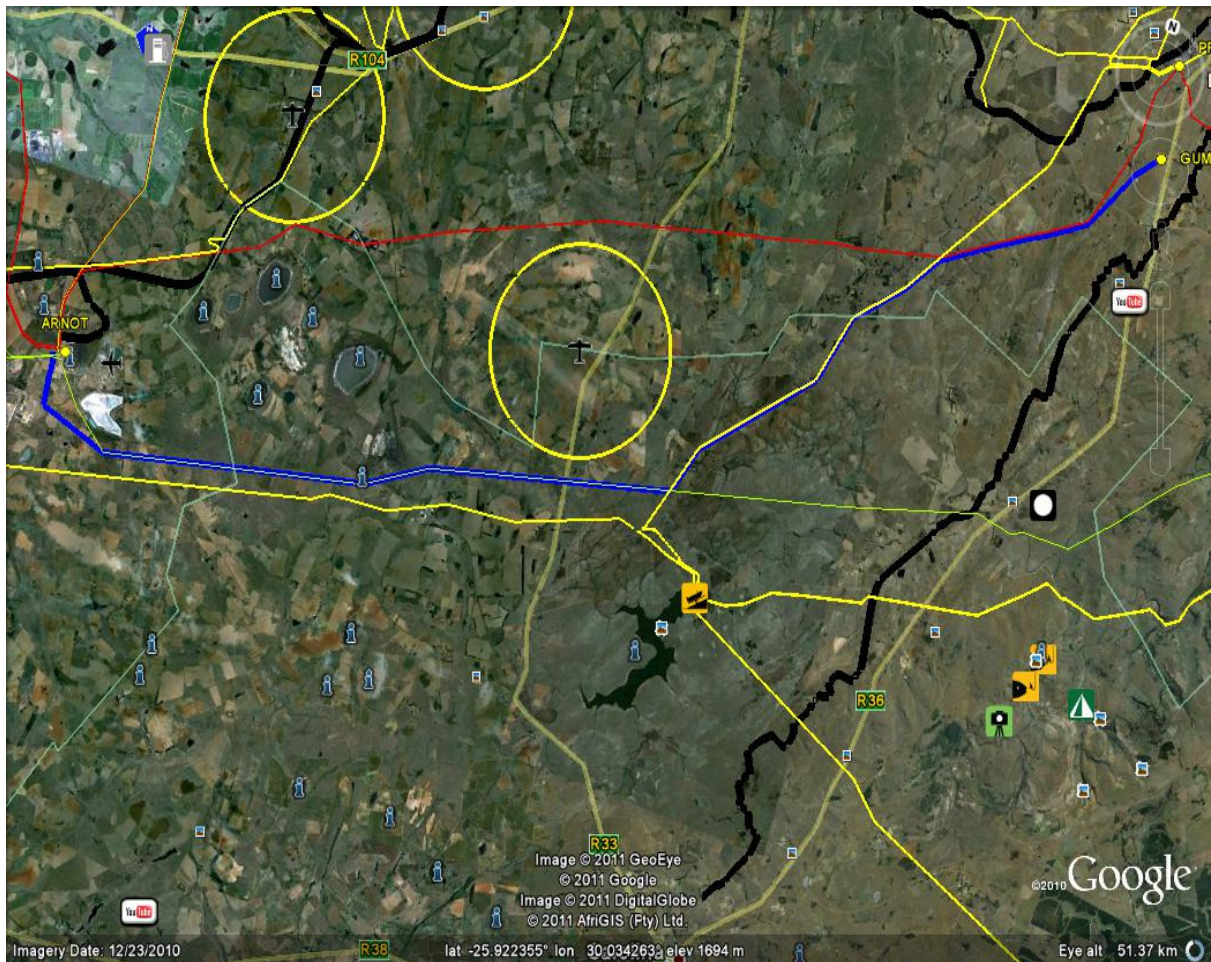


Alternative corridors from Arnot to Gumeni

There are four alternatives that were identified during the Route Selection Meeting. The alternatives are indicated on the picture above and labelled as such. The direct distance from existing ArnotSubstation to theGumeni Substation is approximately 50km.

ALTERNATIVE 1

Alternative 1 exit the Arnot substation and follows the Arnot Maputo line. The proposed corridor is approximately 57km long with 15 bend points. The proposed corridor runs parallel to the Arnot - Maputo powerline for about 25km, parallel to other Distribution HV lines for approximately 15km and parallel to Hendrina- Gumeni for about 10km

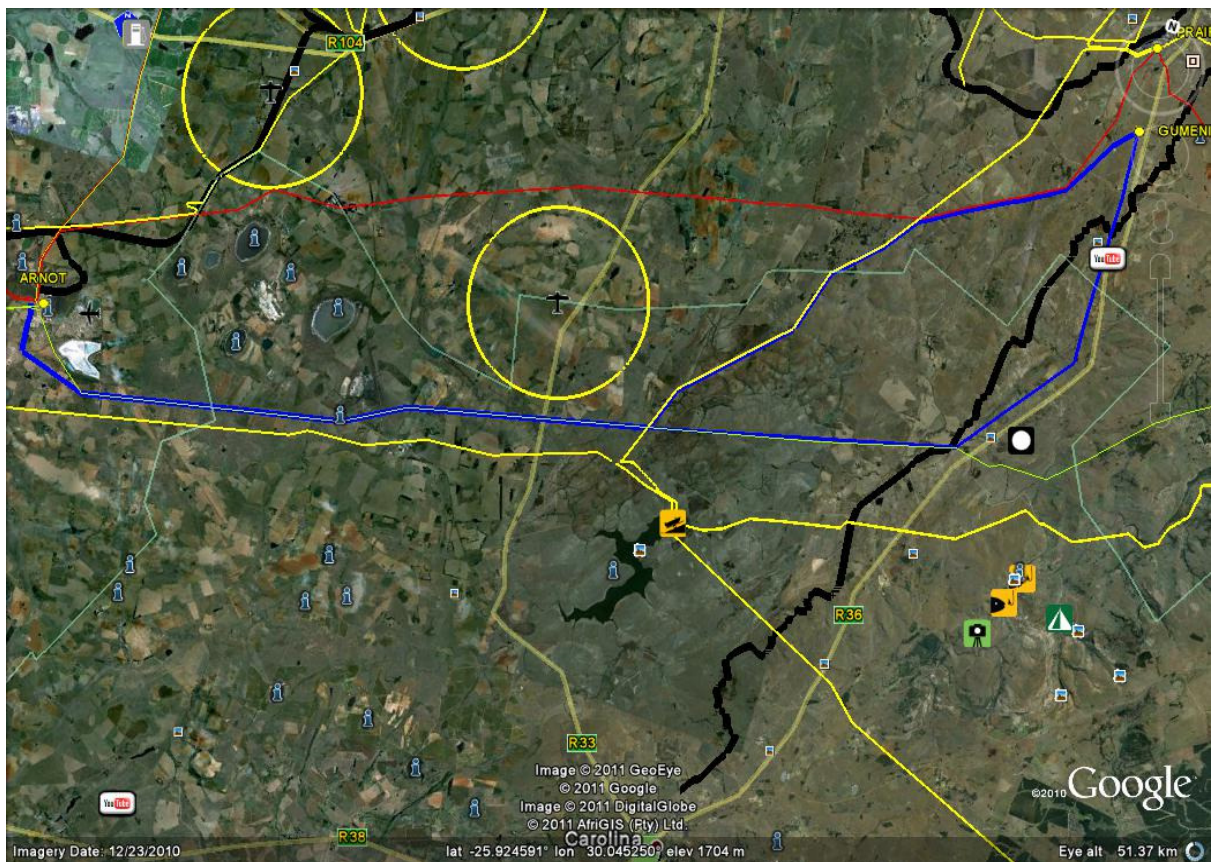


Alternative 1

There is a Strathrae Colliery mine within the 2km corridor. There is only one airfield which is slightly affected by the corridor. The terrain is flat for 60% of the proposed corridor and mountainous for approximately 40% of the corridor. This corridor will have approximately three transmission crossings and two Distribution crossings.

ALTERNATIVE 2

Alternative 2 is a deviation from alternative 1. It is approximately 60km long with 10 bend points. It is parallel to the Arnot – Maputo line for approximately 40km and parallel to the R36 road for about 16km. Alternative 2 has the same terrain, same number of regional road crossings, same number of transmission crossings and same number of distribution crossings. This alternative has a railway crossing as compared to alternative 1 which does not have a railway crossing



Alternative 1 and 2

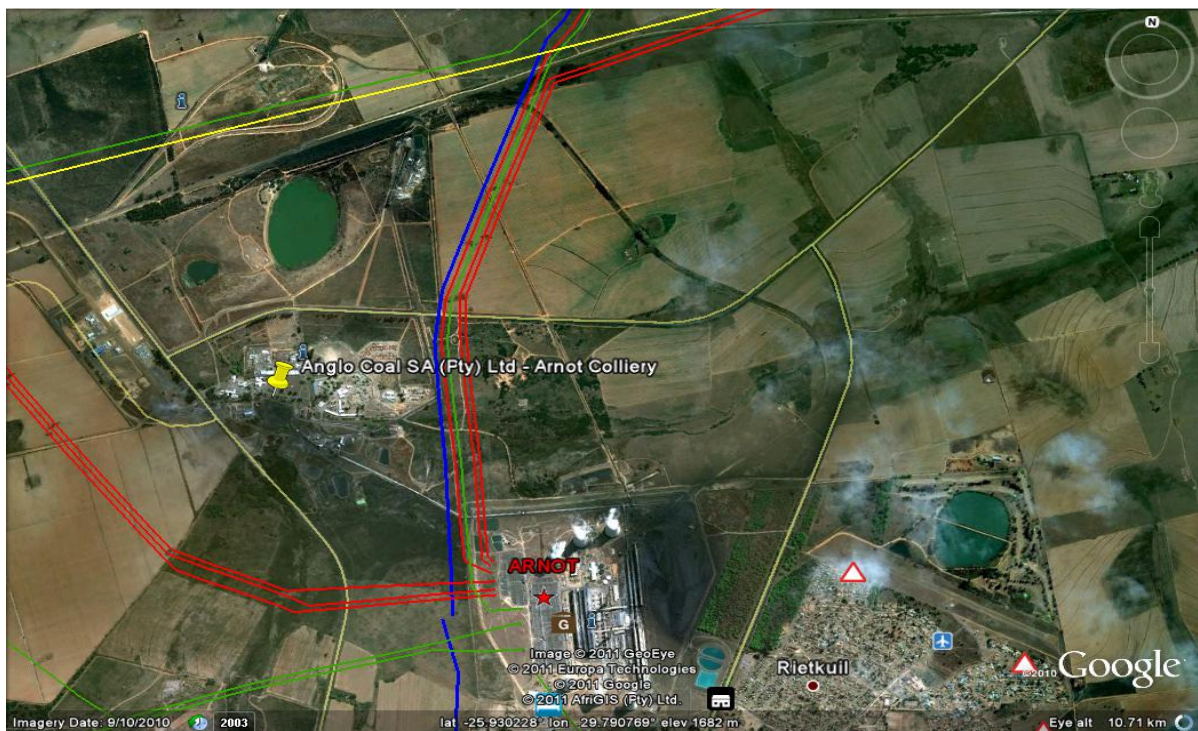
ALTERNATIVE 3

The proposed corridor is approximately 60km long with 23 bend points. The proposed corridor runs parallel to Arnot – Simpron powerline for approximately 10km and parallel to N4 for about 35km.



Alternative 3

The corridor exit Arnot Substation from the western side going to the North affecting the property of Anglo Coal SA (Pty) Ltd – Arnot Colliery.

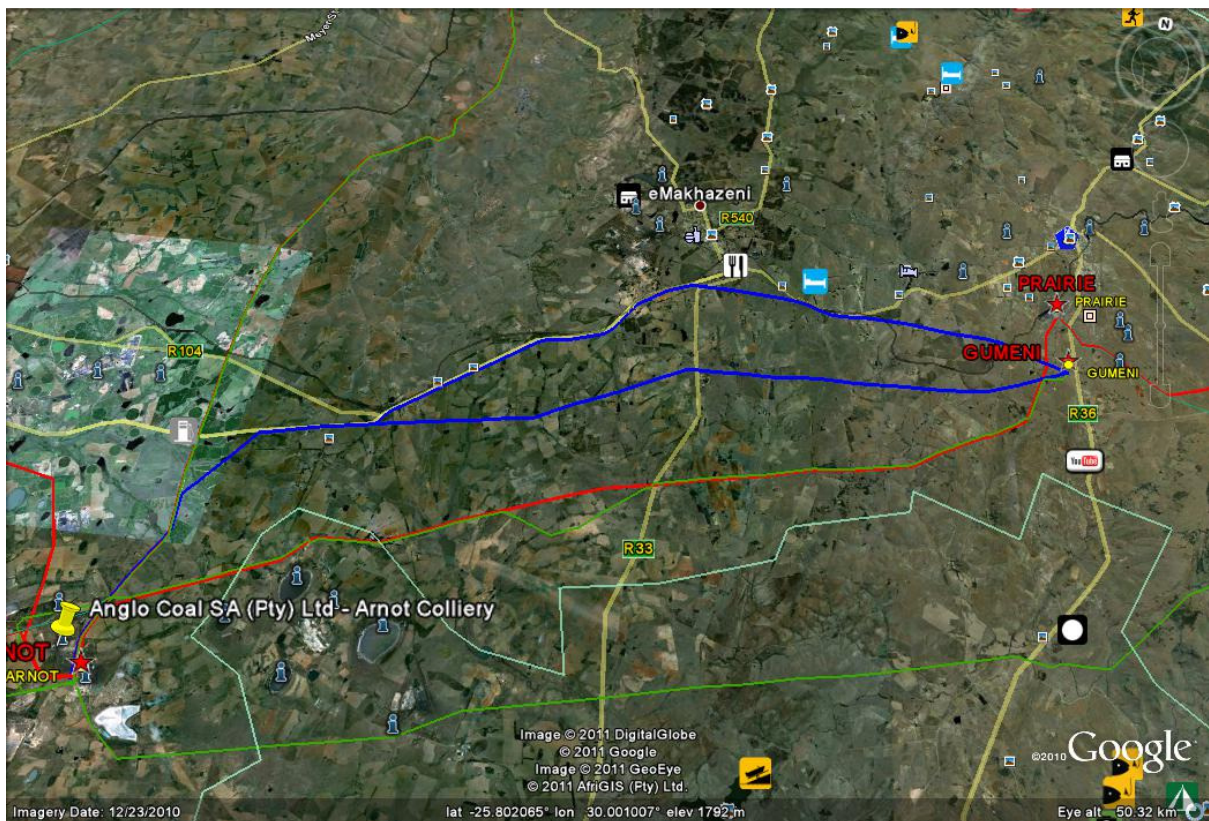


Anglo Coal SA (Pty) Ltd

There are two airfields in the close proximity of the corridor and there is a sign of Bergendal Monument approximately 13km away from Gumeni Substation. There are about five railway lines to be traversed, eight Transmission powerlines, four distribution powerlines and one R33 Regional Road crossing.

ALTERNATIVE 4

This proposed corridor is a deviation from Alternative 3. Alternative 3 remains unchanged from Arnot Substation and starts running parallel to the N4 for approximately 5km and then starts deviating away from alternative 3.



Alternative 3 and 4

This alternative is crossing in the middle of the farms and access will be a challenge. The proposed alternative is approximately 55km long with 13 bend points. The effect on infrastructures like powerlines, roads and railway lines is the same as that of alternative 3.

SUMMARY TABLE

	Alt 1	Alt 2	At 3	Alt 4
Total Length	57	60	60	55
Number of Bends	15	10	23	13
Parallel to Existing Lines	90%	60%	18%	18%
TxCrossings	3	3	8	8
DxCrosings	2	2	4	4
Railway Crossings	0	1	5	5
National Rd Crossings	0	0	0	0
Regional Rd Crossings	1	1	1	1
Airfields	1	1	2	2
Mines	1	1	1	1
Terrain	Fair	Fair	Fair	Fair
Dominant Land Use	Agricultural	Agricultural	Agricultural	Agricultural
Access	Good	Good	Good	Challenging
Rating	1	2	3	4

The Surveyors have indicated their order of preference based on the results indicated on the above table. The recommended alternative from the Survey point of view is Alternative 1.