

GREEN ROUTE TO PROGRESS IN CERES

An increase in the electrical power supply to Ceres in the Western Cape is vital for the economic survival and growth of this area, but the only viable transmission corridor presented engineering challenges and threats to a highly sensitive environment; however, working closely with their client, leading scientists SRK Consulting found a way through.

According to Matthew Law, principal environmental economist and management consultant in SRK's Cape Town office, the firm's environmental impact assessment (EIA) had established that the natural and cultural environment in the Michell's Pass valley, the corridor selected by the client after a feasibility analysis, was incredibly sensitive.

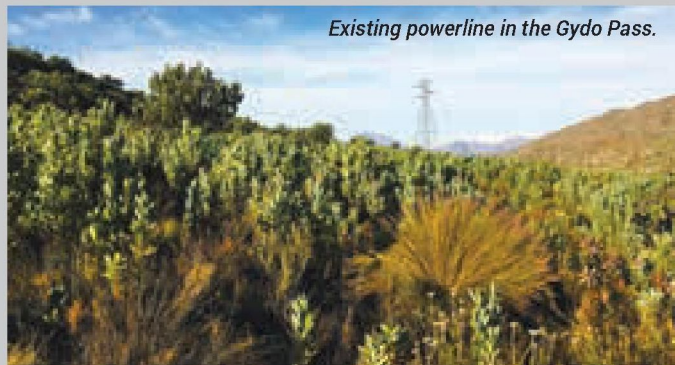
"The powerline project required about 7 km of access roads and over 60 new pylons for the 17 km of double-circuit 66/132 kV powerline," said Law. "The challenge was that a large portion of the valley is formally protected due to its environmental importance, and there are numerous terrestrial and freshwater Critical Biodiversity Areas, including pristine wetlands and seeps, as well as threatened vegetation types."

In addition, the powerline corridor traverses a provincial heritage site – the 'Old Toll House' – where tolls were collected from users of the pass along the route, built by Johan Mostert around 1765. As well as intact remnants of the original pass, Stone Age rock paintings and Boer War redoubts are also present. Furthermore, the pass is classified as a 'scenic route', and the natural beauty of the area makes it an important tourist attraction, including steam railway tours through the valley.

"Given the sensitivity and extent of the site, as well as the complexity of the receiving environment, it was crucial to conduct a dedicated assessment of individual pylons, powerline spans and access roads," he said. A method had to be devised to assess the impacts and plan for the management of each of the 60 pylons through a single EIA.

"To do this, we assembled a team of socio-economic, visual, heritage and terrestrial and freshwater ecology experts," he said. "Their initial role was to map the sensitivity of a 300 – metre wide powerline corridor based on desktop sources and a ground – truthing exercise." The outcomes of this specialist mapping exercise allowed SRK to 'negatively map' environmentally sensitivity No-Go areas, and to overlay the client's preferred development alternative on this map, thereby identifying areas of particular biophysical and cultural concern. "The EIA team – together with the client's engineers and environmental managers – then hiked the route on foot visiting each area of concern," said Law. "This allowed SRK and the client's engineers to 'micro-site' the access roads and pylons outside the exceptionally sensitive areas we had identified."

Specialised GPS equipment facilitated the exact identification of the optimal locations "Negative mapping, and in-field collaborative



project planning turned out to be a particularly valuable exercise, in which we could demonstrate to the engineers precisely what we were trying to achieve, and why," he said. "This approach allowed environmental constraints to feed directly and effectively into project design." To deal with residual environmental impacts, SRK developed a detailed Environmental Management Programme (EMPr) that addressed specific environmental management requirements for each of the project sites separately.

"Specific environmental management measures ranged from helicopter access where the environmental impact of access roads would not be acceptable, to restrictions on blasting at sites in close proximity to a pair of nesting Verreaux's eagles," said Law. In the final plan, about 50 000 m² of vegetation needs to be cleared for the project, but only 800 m² of this in threatened vegetation types.

"This limited biophysical impact was a remarkable achievement for a project of this scale in such a sensitive environment," he said. "Furthermore, no archaeological artefacts would be disturbed; however, the visual impact could not be fully mitigated, and was found to be of high significance in this scenic valley."

He emphasised, however, that the EIA also recognised the socio-economic challenges facing the local community, and that these challenges are exacerbated by electrical supply constraints. "Ultimately the authorities determined that the economic and social benefit of the powerline outweighed residual ecological and visual impacts," said Law.

The project took 18 months from appointment to submission, and the Department of Environmental Affairs issued Environmental Authorisation in less time than allocated by legislation – a significant accomplishment for a project of such complexity. ■

