



## Resource Generation South Africa Limited

ResGen Engineering & Transport Studies



### Background

**Project Value: Various Values | Duration: Various Periods**

RCE Consultants have been providing various transport system studies related to the requirements for coal-on-rail loadout from the new ResGen Ledjadja coal mining development in the Waterberg.

Studies have been conducted at different levels of detail

over a period of more than five years. The application of cutting-edge train technologies contributed greatly to the study outcomes.

What commenced with concept route determination has eventually developed into a full transport logistics solution.

### Key Features

The key feature of the various studies is the advancement of engineering concepts, route determination and train designs from the original base case to the current offering. New technologies have impacted greatly on train design and system capacity.

What started off as a 6Mtpa project, has developed into an integrated concept model with a potential annual

tonnage greater than 100 million tons. The complexity and depth of these studies span the entire range of Engineering disciplines involved.

These include Civil, Electrical (OHE and Bulk Power), Structural, Mechanical (rolling stock), Train Handling, Simulation and Capacity Determination as well as Financial Modelling and Risk and Environmental inputs.

### Services Provided

The following services were provided:

- + Capacity and logistics studies confirming the export and domestic channels capable of accommodating Ledjadja coal output;
- + A concept 26t axle load study, including new strategic links, aimed at 100 wagon train operations;

- + An upgraded and integrated TFR network / new links capacity, infrastructure and rolling stock heavy haul study aimed at 200 wagon, DP traction operations to achieve capacity around 100Mtpa.

### Outcome

Challenges extend way beyond designing and planning for the Boikarabelo Mine's output in isolation. The quest evolved into ground-breaking work in devising a heavy haul, 26t axle, 200 wagon train service operating with multi-traction Distributed Power technology, with network capacity greater

than 100Mtpa, including the possibility of links into Botswana.

The outcome of the studies can rightfully lay claim to the first definitive rail transport solution opening up the Waterberg coalfields to domestic and export markets.