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## Equalizer Turbo - Benefiting a 16MW Gold Mine Facility in Africa

Due to constant power disruptions a 16MW gold mine industrial facility in Africa, suffers severe losses in production in excess of 35,000 ounces of gold p.a. The mine receives its power from a hydroelectric power utility, via a high voltage line. The national network is strained due to its significant reliance on hydroelectric power. Furthermore, low maintenance, record heat and drought conditions have further deteriorated the condition of the grid.

Taken the enormous financial losses of tens of millions of dollars p.a., the mine installed backup diesel generators to compensate for the power outages. The diesel generators supplies power to the 16MW loads during high predicted disturbance periods totaling 6 hours per day. During the remaining 18 hours per day, the mine suffers less frequent disturbances leaving the enormous diesel expenses unjustified. The application of the diesel generators is based on a comprehensive cost/performance analysis.

The mine approached Elspec to analyze and solve the ongoing disturbances. Elspec's power quality specialists analyzed a survey which included 1360 sag and swell malfunctions over a period of 4 months. The analysis showed that an Equalizer Turbo system would assist maintaining power on desired level of  $\pm 10\%$  from the nominal voltage, at a success rate of 90%.

### Equalizer Turbo Meeting Your Needs

The unique capabilities of the Equalizer Turbo are tailored to suit the needs and requirements of almost any business and application. You can definitely benefit from the Equalizer Turbo in instances where the reliability of your power connection is questionable.

1. Facilities which are connected to utility power and suffer production stoppages and plant gear wear due to power outages, can increase their production and avoid substantial backup expenses.
2. Facilities which are completely disconnected from utility power (due to unreliability of power supply) and generate their power independently may significantly reduce their diesel and lease/maintenance expenses.
3. Facilities which had disconnected their critical loads from utility power and generate their power independently may significantly reduce their diesel and lease/maintenance expenses.



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## Equalizer Turbo - System Attributes

- § Obtain full compensation within 1-2 network cycles
- § Up to 2 seconds of full sag compensation using residual voltage as low as 30% of nominal voltage, with voltage target range between 0.9Un and 1.1Un
- § Unlimited swell compensation period
- § Independent compensation for each phase
- § Parallel connection to network without power consumption during normal conditions [standby mode]
- § Can be applied in any industrial applications
- § Proven industrial technology

## Customer Benefits

- § Return On Investment [ROI] period can be as low as several months up to one year, due to reduction in local power generation & higher production capabilities
- § Very high energy efficiency - no power consumption due to parallel connection and operation during the event only
- § The Equalizer TURBO has a long lifetime

## Solution Design Process

1. Assessment of power quality financial impact on client's profitability
2. Client site data transfer - facility power consumption, transformers and generators etc.
3. Measurements are taken on site and analyzed
4. Simulations are made using Elspec's unique proprietary simulation tools
5. Success rate is calculated for each solution alternative
6. Electrical and mechanical diagrams are supplied
7. Quote is sent to the client

If an Equalizer Turbo may be of your interest, please contact our solution team:

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