

Africa Energy Reliability Project

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Project Stages

- Challenge
- Analysis
- Solution
- Results



Challenge

- Mining industry needs large amounts of energy for mill processing
- Energy supply and reliability are sometimes overlooked issues
- Unplanned energy outages occur at most inopportune time
- Inhibits efficient raw material processing
- Measuring unplanned power outages to determine opportunity cost of no power



Challenge

- Lesson 1: The mill / processing facility doesn't make money when it is down
- Lesson 2: We sometimes don't know what we don't know



Analysis

- Evaluate the frequency, length, and root cause of unplanned power outages
- Collaboration with manufacturing operations personnel essential
- Operating data indicated unplanned outages were 40-60 hours per year
- Don't know when those outages are going to occur



Analysis

- Lesson 3: You can't improve something you don't fully understand and measure
- Lesson 4: Leverage the experience and expertise of operating personal



Solution

- Generated opportunity cost through financial modeling for the life of the mine
- Opportunity cost hundreds of thousands of US\$ each day of power outage
- Different technologies to provide greater grid reliability
- With capex and annual revenue stream in hand, a project was born



Solution

- Lesson 5: Determine “pain” of outages; provides revenue stream to solve the problem
- Lesson 6: Get the buy-in of both site operating and financial management
- Lesson 7: Share all of the credit with teammates!



Results

- Multi-million US\$ transmission reliability improvement capital project
- Improve economics by several tens of millions US\$ over the life of mine
- Negotiated with national power transmission company
- **Project was delayed by carrier**



Results

- Lesson 8: Government entities, politics, and perception of mining companies can derail energy projects
- Lesson 9: All stakeholders are important
- Lesson 10: Keep prospecting for energy cost savings!
With analysis they are present



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