Grinding Optimization **CASE STUDY**

THE **CHALLENGE**

- Due to the lack of knowledge on incoming mill feeds, operators struggles to determine optimum control parameters leading to decreased mill throughput because of
  - ⟶ frequent mill overloads and consequent frequent mill stoppages
  - ⟶ Inability to run mill at designed capacity

THE **SOLUTION**

- The implementation of the grinding app solved the underlaying cause for the challenges – the lack of insight into ball charges and liner wear – because it gives knowledge of incoming mill feeds
- The app enables operations to schedule and predict maintenance for ball charges and liner material
- The mill prediction of 20 minutes into the future allow for optimum settings of mill control, preventing overload events
- Recommendation of optimum mill control variables, stabilizes feed and maximizes throughput

THE **RESULTS**

- Increased throughput leading to a reduction of energy consumption Overload events reduced by leading to optimized throughput
- Reduced downtime by through prediction of liner wear and ball charge maintenance

Higher Recovery

Lower Energy Consumption

Cost Savings

Lower Chemical Usage

Emission Reduction

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* Assumptions for energy savings: energy consumption for SW RO desalination plant is 4.4 kWh/m³ of water produced; energy savings due to less pumping of water is calculated with U_pot = mass of water x g x Height; the assumed efficiency of the pumps is 80%