

Pipeline Pumping Optimization CASE STUDY

THE CHALLENGE

- The customer is pumping process water from sea level to the production plant at 2.000 meters leading to very high energy consumption
- A poor pumping control strategy across 4 pumping stations leading to fluctuating water volumes and even higher energy consumption

THE SOLUTION

- The pumping app now provides a pump schedule optimized based on water demand of the operating plant's storage tank, allowing pumps to run evenly with the required volume
- A Digital Twin of the pipeline now enable operators to run what-if scenarios before implanting process changes



THE RESULTS

- Reduction in energy consumption by 8%
- 50% reduction in pump switches
- Improved pipeline stability thanks to steady water flow
- Reduction of pump maintenance costs thanks for to more even pumping operations

BASF Intelligent Mine helped a large copper mine in Chile to reduce energy consumption by 8% and pump switches by 50%.

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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 $U_{pot} = \text{mass of water} \times g \times \text{Height}$, the assumed efficiency of the pumps is 80%



Efficient Water Usage



Emission Reduction



Cost Savings



Lower Energy Consumption

