

Client Reference

Local Government | Hydro Power Station Spare Parts Optimisation

The project delivered far more than optimised spares — it gave the client clarity, confidence, and measurable financial returns that will benefit their operations for years to come.

Internal Rate of Return

34%

If the minimum recommendation is implemented

144%

If a subset of the recommendations is implemented

Your key challenges

- Unlike most clients, this organisation maintained exceptionally accurate and comprehensive data spanning 23 years.
- Determining actual demand required filtering and combining multiple datasets to derive accurate usage trends.
- The anticipated challenge of linking store items to their respective equipment and functional locations proved easier than expected, as most spares were already stored per equipment or clearly labelled with their corresponding assets.

Our approach

- Pragma applies a value-based methodology to determine optimal store levels, considering factors such as holding costs, transaction costs, spare part value, demand, lead times, and the consequences of stock-outs.
- Required data is gathered through a structured process that includes data harvesting, workshops, and field verification to ensure accuracy and completeness.
- The validated data is then processed through OptiKey, Pragma's optimisation tool, which calculates the optimal stock levels to balance cost, availability, and risk.

The value add

- A recommendation of max and re-order points, based on value.
- A predicted internal rate of return (IRR) of over 34% with absolute minimal changes, and an IRR well in excess of 144% if but a component of the full set of recommendations are followed.
- The client got more than just optimised spares levels, as they also gained great insight into their vulnerability to certain areas within their plant.
- The client were fed back more accurate lead times.
- The client could now link their assets and equipment, and subsequently came away from the project with a long list of obsolete spares.
- Because equipment could now be linked to spares, the organisation were not critically dependant on staff with institutional knowledge any more, especially significant as most of the knowledge was on the verge of retiring.

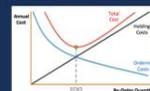
Client background

The client is a local government entity responsible for operating a hydro power station, along with several other power generation facilities. Electricity produced is supplied for local consumption and exported to SADC countries through the Southern African Power Pool (SAPP). With decades of operational experience, the client is a mature organisation managing over 5,000 spare parts valued at more than R20 million.

A. Demand Prediction Model

B. Spares Optimisation Model

- a) Optimum order quantity (value driven)



- b) Optimum Service Level (value driven)

