



Simulation model of the Dalrymple Bay Coal Terminal (DBCT)

Optimizing Terminal Operations

Ausenco created a dynamic simulation model to determine the practical capacity of the Dalrymple Bay Coal Terminal at its existing infrastructure as well as at several expansion steps.

The model consisted of 2,400 km of rail, 52 trains, 24 coal mines producing 49 different coal grades, and three dedicated coal export terminals.

Ausenco used the calibrated model to the latest terminal performance data to test different expansion scenarios and identify the sequence of improvements necessary to achieve DBCT's throughput targets.

Terminal operations were modeled in a high degree of detail, including:

- Extensive rail network to ensure realistic train arrival sequence.
- Dedicated zonal yard management strategy.
- Remnant management to reduce the number of orphaned piles.
- Optimized pile placement to maximize dual-reclaiming time.
- Equipment interactions, conflicts, breakdowns, and maintenance.
- Variable ship arrival schedule.

The simulation results assisted DBCT Management in determining the optimal yard management strategy and in determining the terminal capacity under specific scenarios.

Project
DBCT Simulation Study

Location
Queensland, Australia

Business line
Process Infrastructure

Client
Dalrymple Bay Coal Terminal Management Ltd.

Timeframe
2015

Scope
Modelling of existing infrastructure and expansion scenarios

Services
Simulation modelling