

# CAPEX

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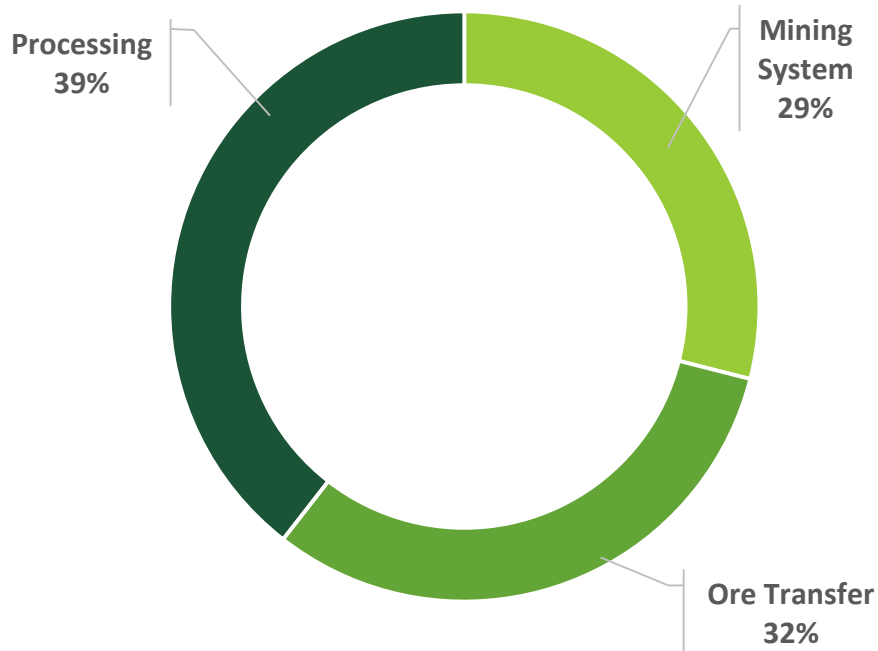
PAYMENT REGIME WORKSHOP

LONDON, UK

1-2 DECEMBER 2016

# Capital Expenditures

## CAPEX



## ASSUMPTIONS

- 3 MT dry polymetallic nodules year at 5 kg/m<sup>2</sup> cut-off abundance
- 20 year duration of production
- Four (4) metal processing
- Mining system includes Collectors, Riser and Lift System and Mining Platform
- Ore Transfer includes 3 transport/bulkers
- Processing includes power requirements
- Pre-feasibility cost not denoted

## UNKNOWNNS

- ISA regulatory impacts to contractor CAPEX
  - Sensors
  - On board Ship Berths and space requirements
  - Processing Plant Nodule Inspection Teams
  - Home Office Space Requirements

# Typical CAPEX Subcomponents

## Mining System Category

Subsea Mining Equipment (Collectors)

Riser and Lift System (RALS)

Mining Ship

Support and Survey Vessel

High Speed Vessel

Detailed Engineering

Project Management

Prototype Development

Prototype Collector/RALS @ Sea Trials

Spares Collector/RALS

## Ore Transfer

Ore Transfer Vessel(s) if owned

At Sea and On-board Material Handling

Shore Based Material Transfer Systems if Owned

Detailed Engineering

Project Management

At Sea Transfer System Trials

On Board Spares

## Processing

Processing Plant(s)

Power Plant

Detailed Engineering (Pilot Processing & Power Plants)

Project Management (Including Permits)

# Capital Cost Estimating

*The following is a list of estimate classes which are prepared during the project definition/pre-implementation and implementation phases*

## Definition of Estimates

- 1 Order of Magnitude**-These estimates are expected to be +/- 35% accurate with an 85% probability of achieving the reported capital cost after the application of project contingency  
**Intent:** To provide an early assessment of capital cost with a minimum effort, so that the economic evaluations can be produced to assess project viability.
- 2 Pre-Feasibility-Accuracy**-These estimates are expected to be +/- 25% accurate with a 85% probability  
**Intent:** May be used to provide the first indications of economic viability. Commonly used as a cost effective method of evaluating alternative concepts. Also used in making bid and/or acquisition decisions and to justify additional drilling or other project investigations.
- 3 Feasibility**-These estimates are expected to be +/- 15% accurate with a probability of 85% probability.  
**Intent:** To provide a high level of accuracy with defined and managed risks. These estimates can be used to support the final economic viability assessment and decision and secure project funding.
- 4 Detailed**-These estimates may be known as “budget” or “control” and are expected to be +/- 10% with an 85% probability of achieving the reported capital cost.  
**Intent:** Usually there not enough detail in certain areas (piping, low voltage electrical estimation) at feasibility level, as detailed engineering progresses, estimates may be developed to fill in those gaps.