

Australia Mongolia Extractives Program Phase 2 – AMEP 2

FEASIBILITY STUDIES COMPARISON

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INTERNATIONAL STANDARD FEASIBILITY STUDIES

- Feasibility Studies are designed to facilitate project finance
- Study content and format has evolved to conform with lenders and investors' requirements
- Government and regulators do not set standards for, or approve, Feasibility Studies
- However, Feasibility Studies are used in some jurisdictions as evidence that work is sufficiently advanced to apply for a Mining Licence

INTERNATIONAL STUDY FORMAT

- Over time, report format has tended to standardize for feasibility studies, but less so for prefeasibility and scoping studies
- Similarly, both the expected content (breadth) and precision (depth) of feasibility studies have increased and standardized
- American Association of Cost Engineers (AACE) classification for study breadth and depth are widely accepted
- Format and content are modified to suit project characteristics, so that risk remains adequately addressed

AACE CLASSIFICATIONS

- Class 5 – Scoping Studies. Deliverables estimated ‘assumed’ to ‘outlined’
- Class 4 – Prefeasibility Studies. Deliverables estimated ‘approximate’ to ‘preliminary’
- Class 3 – Feasibility Studies. Deliverables estimated ‘defined’ to ‘complete’
- Class 2 – Definitive Engineering. Deliverables estimated to ‘complete’
- Class 1 – ‘As Built’ cost estimates for asset register

LEVELS OF ACCURACY

- Scoping Studies: +/- 30 to 35%
- Prefeasibility Studies: +/- 20 to 25%
- Feasibility Studies: +/- 10 to 15%
- Definitive Engineering: +/- 5 to 10%

CONTINGENCY

- Scoping Studies: 25 to 35% of total costs (assessed or factorized for whole project)
- Prefeasibility Studies: 15 to 25% of total costs (calculated or detailed by area)
- Feasibility Studies: 10 to 15% of total costs (detailed by trade and area)
- Definitive Engineering: 5 to 10% of total costs (final by trade and area)
- Additions: project in existing operation (up to 5%), new technology (up to 5%)

MONGOLIAN SITUATION

- Basis of comparison and limitation of this review
- Purpose of a Feasibility Study: funding, or regulatory approval?
- Government as regulator or (part-) owner, or both?
- Breadth and depth of the report
- Lifespan of Feasibility Study is limited
- Use of Mine Operating Plans

FEASIBILITY STUDY ISSUES

- Content must support required levels of accuracy
- Comprehensive risk analysis is mandatory
- Physical, revenue and cost schedules must be detailed to appropriate time periods
- Cash flows must be sophisticated
- Cost estimation must be detailed to obtain the required level of accuracy
- Supporting documents providing cost inputs to the Feasibility Study must be evidenced