AMEP
Australia Mongolia Extractives Program

Australia Mongolia Extractives Program Phase 2 – AMEP 2

MONVAL TRAINING PRESENTATION

6 DECEMBER 2019

Steve Gemell

AMEP
Australia Mongolia Extractives Program

VALUATION

- Valuation is the estimation of the cash value that would be exchanged for an asset in a free market transaction
- Valuation is undertaken by specialists
- Valuation is undertaken using a number of approaches and methods, as selected by the specialist
- A valuation report is intended to reflect (not create) market value

AMEP
Australia Mongolia Extractives Program

VALUATION REPORT USE

- To determine the sale or purchase price of a mineral asset
- To compare alternative investment opportunities
- To advise investors on an asset transaction
- To assess the taxable component of a transaction
- To determine the base for value-related impost or taxes
- To quantify asset values in company balance sheets

AMEP
Australia Mongolia Extractives Program

VALUATION vs EVALUATION

- Evaluation is a process to decide the future of a project
- Evaluation is “A broad physical, technical, legal, economic and other assessment of a Mineral Property that is generally sought for an investment decision”, such as a scoping study, a prefeasibility study and a feasibility study.
- Evaluation is distinct from Valuation

AMEP
Australia Mongolia Extractives Program

PRINCIPLES OF VALUATION

- Competence
- Materiality
- Transparency
- Objectivity (where appropriate)
- Independence (where appropriate)
- Reasonableness (where appropriate)

AMEP
Australia Mongolia Extractives Program

COMPATABILITY WITH INTERNATIONAL BEST PRACTICE

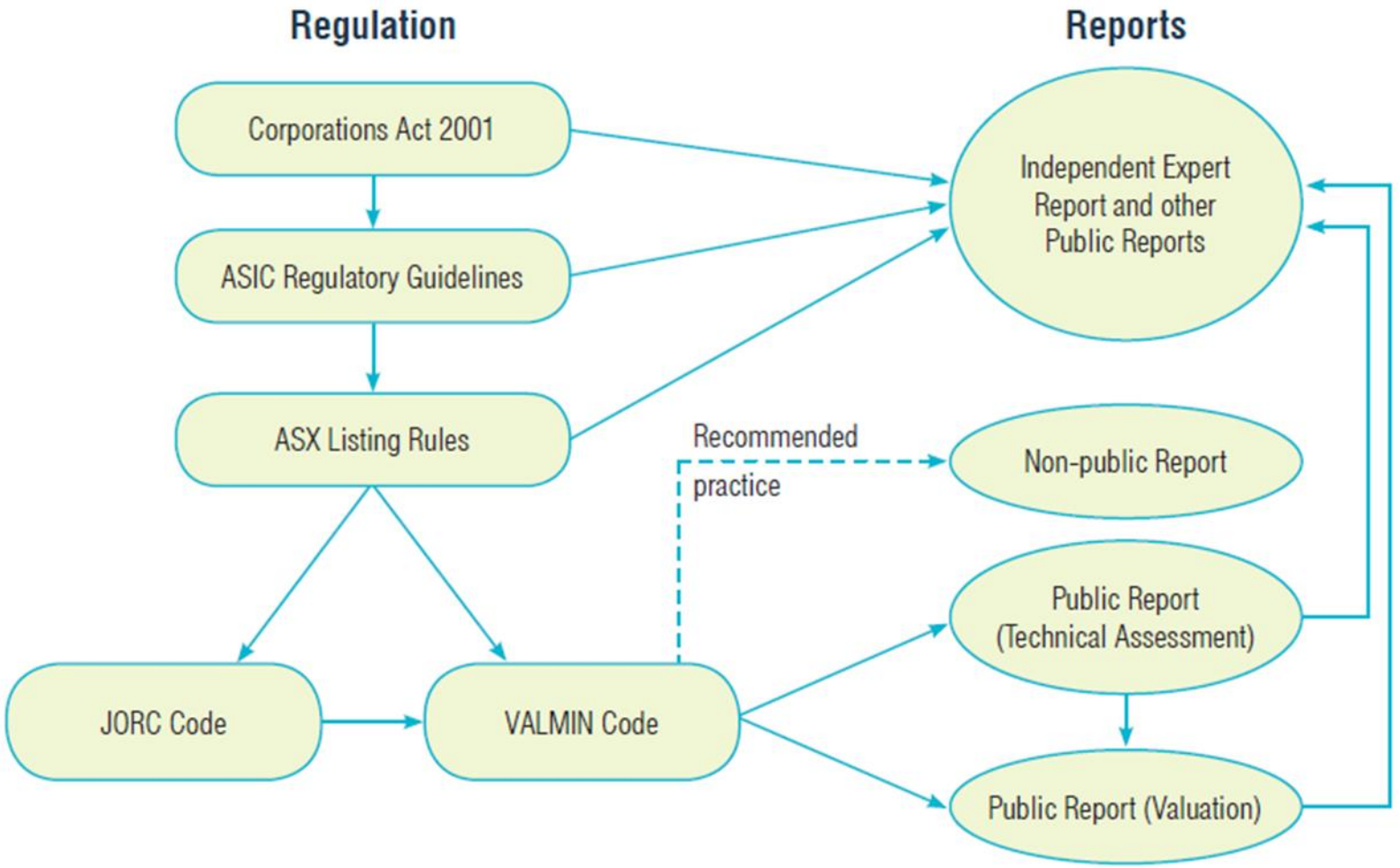
- Improves confidence in the reliability of the report findings
- Enables report transfer across jurisdictions
- Permits national company users better access to international markets
- Encourages foreign investment in the Mongolian market

AMEP
Australia Mongolia Extractives Program

WHY HAVE A MINERAL VALUATION CODE?

- It indicates Mongolia's commitment to achieving best practice
- It assists in providing the advantages listed under the previous slide [Compatibility with International Best Practice]
- It assists to expand the market for Mongolian mineral valuation services
- It inhibits manipulation of the valuation process
- It fits neatly into a regulatory framework (see next slide on the Australian experience)

AMEP
Australia Mongolia Extractives Program



AMEP
Australia Mongolia Extractives Program

IMVAL

- IMVAL is the International Mineral Valuation Committee
- Its members include Australia (VALMIN), Canada (CIMVAL), South Africa (SAMVAL), USA (SME and IIMA) and (currently as an observer, China (CAMRA)
- IMVAL assists in harmonising the various national codes
- IMVAL provides an international forum to raise issues relating to national codes for public reporting of value
- IMVAL encourages and assists the development of appropriate codes in new jurisdictions

AMEP
Australia Mongolia Extractives Program

IMVAL TEMPLATE

- Common set of minimum requirements for national codes and standards
- Principles-based
- Consensus of current good practices
- Expected to be updated from time to time
- Outlines requirements, guidelines and definitions
- Intended to align with International Valuation Standards (IVS), 2017 Edition

AMEP
Australia Mongolia Extractives Program

PRINCIPLES

- The fundamental principles are Competence, Materiality and Transparency
- The fundamental principles apply in all accepted IMVAL-member codes
- Additional principles are Objectivity, Independence and Reasonableness
- The additional principles apply in some accepted IMVAL-member codes

AMEP
Australia Mongolia Extractives Program

COMPETENCE DEFINITION

- Competence or competent “applies to a suitably qualified and experienced person who is a member of a Professional Organisation with an enforceable code of ethics and rules of conduct that include the ability to discipline and expel a member”
- It requires “appropriate technical skills, experience and knowledge of the subject of the valuation, the markets in which the mineral property trades and the purpose of the valuation”

AMEP
Australia Mongolia Extractives Program

COMPETENCE

- Competence is the sum of qualifications, experience – and judgement
- The Valuer must be able to demonstrate competence
- Valuers should assess their competence regarding the mineral property, the market in which the property trades, and the purpose of the valuation
- A Valuer who is not personally competent in all aspects of the valuation must seek assistance from an expert
- Some jurisdictions set a minimum number of years' experience (see Australian requirements on next slide)

AMEP
Australia Mongolia Extractives Program

Competence requirements

JORC (2012) & VALMIN (2015)

Membership

Member or Fellow of:
- AusIMM
- AIG
- Recognised Professional Organisation with an 'enforceable code of ethics'

Experience

Minimum 5 years experience in:
- style of mineralisation or type of deposit under consideration, and
- activity which that person is undertaking

+ VALMIN (2015)

Experience

Technical Assessment:
Minimum 5 years experience in Technical Assessment

Valuation:
Minimum additional 5 years (i.e. ten years in total) experience in valuation of mineral assets

Familiarity

VALMIN & JORC Codes, Corps Act, ASIC/ASX policy & court decisions

AMEP
Australia Mongolia Extractives Program

MATERIALITY

- Material is defined as “all relevant information that investors and their professional advisors would reasonably require, and reasonably expect to find in a valuation report for the purpose of making a reasoned and balanced judgement regarding the valuation”
- A valuation must address all material information
- Materiality applies to the nature of the items assessed and their influence on the quantum of a valuation
- The valuer must clearly set out all material assumptions regarding the input parameters, risks, limitations, and the associated effects in the valuation report

AMEP
Australia Mongolia Extractives Program

GUIDANCE ON MATERIALITY (1)

- Determination of materiality depends on both qualitative and quantitative factors
- Qualitative factors include such items as country risk
- General test: Would omission or misstatement of the information influence the decisions of the intended users of the valuation report
- A quantitative test may be expressed as percentage change
- Insufficiency of data must be stated, and may result in inability to express a value opinion, or the use of disclosed special assumptions

AMEP
Australia Mongolia Extractives Program

GUIDANCE ON MATERIALITY (2) – SPECIAL ASSUMPTIONS

- “Where assumed facts differ from those existing at the date of valuation, it is referred to as a ‘special assumption.’”
- It “reflects a view that would not be taken by participants generally on the valuation date”

AMEP
Australia Mongolia Extractives Program

TRANSPARENCY

- Transparency is “a clear and unambiguous presentation of the valuation in the valuation report, which includes all material information on which the valuation is based, such that the reader can understand the valuation and not be misled”
- Requires clear and concise writing, supplemented by helpful and legible tables, graphs, maps and photographs
- Where it is not possible to be concise, the material information should be clear and prominent
- The interaction of key assumptions should be disclosed, as should relevant data and information, and the analysis thereof
- Factors to be addressed include Mineral Resources and Reserves, issues relating to extraction, processing and product realization, valuation approaches and valuation methods

AMEP
Australia Mongolia Extractives Program

OBJECTIVITY

- Objective is to “act impartially and without bias in preparing a valuation and a valuation report”
- This occurs in an appraisal which is supported by data and minimizes the influence of subjective factors, such as the valuer’s personal bias, on the valuation process
- Judgement used in a valuation must be applied objectively
- It is a fundamental expectation that appropriate controls and procedures are in place to ensure objectivity in the valuation process

AMEP
Australia Mongolia Extractives Program

INDEPENDENCE

- Independent means that “the valuer must have no pecuniary or beneficial interest, either present or contingent, in the commissioning entity, the mineral property being valued, other parties involved in a transaction on the mineral property, or the outcome of the valuation, other than professional fees and disbursements related to the valuation assignment”
- Independence is required in certain jurisdictions or certain circumstances
- Independence is not necessary in all cases, but valuers must still exercise judgement objectively, whether independent or not

AMEP
Australia Mongolia Extractives Program

REASONABLENESS

- Reasonableness “means that other qualified and experienced valuers with access to the same information for the same valuation date and basis of value as the valuer of a mineral property would consider the valuer’s estimate of value to be within a reasonable range of values”
- The valuation, assumptions applied and any method relied upon, should be reasonable within the context of the purpose of the valuation and the basis of value
- A method applied should be within the expected capability and consideration of an assumed likely buyer

AMEP
Australia Mongolia Extractives Program

IDENTIFICATION OF THE PROPERTY AND INTEREST BEING VALUED

- Must be described in adequate detail to identify the property or interest being valued
- Must be described in adequate detail to identify the physical, legal and economic characteristics of the property or interest
- The economic interdependence of the property with other properties must be described, including the assumption as to whether that interdependence will remain available
- Maps, photographs and diagrams can aid the description
- Fractional interests and exclusions to the valuation must be described

AMEP
Australia Mongolia Extractives Program

SCOPE OF WORK

- Should be determined between the valuer and the commissioning entity
- The commissioning entity must be identified, unless confidential
- The scope of work can vary considerably, depending on the mineral property, the purpose of the valuation, the basis of value, the valuation date and the intended use of the valuation
- A scope of work section must be included in the valuation report, describing the extent and limitations of investigations

AMEP
Australia Mongolia Extractives Program

INTENDED USE AND INTENDED USERS

- Must be clearly disclosed unless confidential
- The commissioning entity must be identified, unless confidential

AMEP
Australia Mongolia Extractives Program

HIGHEST AND BEST USE

- Where applicable, value must be estimated with consideration to highest and best use on the valuation date
- Highest and best use generally reflects the property's stage of development
- The stage is the use that is (in order) (1) legally permissible, (2) physically possible, (3) financially feasible on the valuation date
- Highest and best use may be the same as the current use, may be a modification of the current use, or may be a different use
- Highest and best use may change if the property is being valued as part of a group rather than in isolation.

AMEP
Australia Mongolia Extractives Program

BASIS OF VALUE (1)

- Bases of value “describe the fundamental premises on which the reported values will be based”
- Commonly refers to Market Value, but can also refer to other bases such as Fair Value, Fair Market Value, Investment Value, Special Value, or Synergistic Value
- Market Value “is the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.”

AMEP
Australia Mongolia Extractives Program

BASIS OF VALUE (2)

- Fair Value definitions vary between jurisdictions, but is used by many legal/statutory authorities where valuations are not applicable to financial reporting
- For financial reporting, IFRS define Fair Value as “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date”.
- Fair Market Value definition varies, and is not used in some jurisdictions.
- Investment Value is “the value of an asset to a particular owner or prospective owner for individual investment or operational objectives”

AMEP
Australia Mongolia Extractives Program

BASIS OF VALUE (3)

- Special Value is “an amount that reflects particular attributes of an asset that are only of value to a Special Purchaser”
- Special Purchaser is “a particular buyer for whom a particular asset has Special Value because of advantages arising from its ownership that would not be available to other buyers in the market”
- Synergistic Value is “the result of a combination of two or more assets or interests where the combined value is more than the sum of the separate values”
- The valuation report must clearly state the Basis of Value, its definition, and the source of its definition

AMEP
Australia Mongolia Extractives Program

VALUATION APPROACHES

- A Valuation Approach is “a group of valuation methods for which there is a common underlying rationale or basis”
- A Valuation Method is “a particular or systematic procedure used to estimate value”
- More than one valuation approach must be applied in the valuation, if practicable, and unless constrained by the Scope of Work
- The resulting valuation estimates should be reconciled
- If only one approach is used, the Valuer must explain in the report why more than one is not used

AMEP
Australia Mongolia Extractives Program

THE VALUER

- A valuer is also known as a valuator or appraiser in some jurisdictions
- (a) is a professional with demonstrated experience and Competence in the valuation of mineral properties
- (b) has experience relevant to the subject mineral property, or has relied on an Expert with experience relevant to the subject mineral property
- (c) is regulated by or is a member in good standing of a professional organisation

AMEP
Australia Mongolia Extractives Program

PROFESSIONAL ORGANISATION

- A self-regulating organization (such as engineers, geoscientists, mineral valuers) that
- (a) is accepted and recognized as reputable by the professional community, or has been given authority or recognition by statute
- (b) admits members on the basis of their academic qualifications and professional experience
- (c) requires compliance with professional standards of expertise and behaviour according to a code of ethics established by the association
- (d) requires compliance with specified continuing education
- (e) has enforceable disciplinary powers

AMEP
Australia Mongolia Extractives Program

RESPONSIBILITIES OF THE VALUER (1)

- A valuer is responsible for the valuation and the overall valuation report, including the following:
- Selecting valuation approaches and methods
- Ensuring that assisting Experts are properly qualified and experienced; that their assistance is disclosed; and that their consents are obtained
- Adhering to the requirements of the applicable code, and to other principles as applicable

AMEP
Australia Mongolia Extractives Program

RESPONSIBILITIES OF THE VALUER (2)

- Assessing the reasonableness of the relevant information, interpretations, discussions and conclusions, forecasts, and parameters used in the valuation
- Adhering to the legal and regulatory requirements applicable to valuations and valuation reports in the relevant jurisdictions
- Including a statement that the named valuer is responsible for the valuation and the valuation report

AMEP
Australia Mongolia Extractives Program

LEVELS OF VALUATION

- The level of valuation research depends on the extent of work conducted in accordance with the scope of work
- The level of valuation reporting depends on the thoroughness of the documentation
- The undertaken levels of valuation research and reporting should be stated in the report in association with the scope of work

AMEP
Australia Mongolia Extractives Program

VALUATION APPROACHES AND METHODS

AMEP
Australia Mongolia Extractives Program

THE VALUATION APPROACHES

- Market Approach
- Income Approach
- Cost Approach
- Each Approach contains several Methods, some of which may be more appropriate than others
- The valuer is required, where practicable, to use two of these approaches, and to select an appropriate method, or appropriate methods, in each

AMEP
Australia Mongolia Extractives Program

THE MARKET APPROACH

- “The market approach provides an indication of value by comparing the asset with identical or comparable (that is similar) assets for which price information is available.” (IVS 105 Valuation Approaches and Methods, Section 20)
- The Market Approach is also known as the “Sales Comparison Approach”
- Methods include: Comparable Transactions, Option Agreement Terms

AMEP
Australia Mongolia Extractives Program

THE INCOME APPROACH

- The Income Approach “provides an indication of value by converting future cash flows to a single current capital value.” (IVS 105 Valuation Approaches and Methods, Section 40)
- Methods include: Discounted Cash Flow; Real Options

AMEP
Australia Mongolia Extractives Program

THE COST APPROACH

- The Cost Approach “provides an indication of value by using the economic principle that a buyer will pay no more for an asset than the cost to obtain an asset of equal utility, whether by purchase or construction.” (IVS 105 Valuation Approaches and Methods, Section 60)
- This approach includes methods based on expenditures
- Methods include: Appraised Value, Geoscience Factor

AMEP
Australia Mongolia Extractives Program

Valuation Approach	Valuation Method	Development Properties	Marginal Development Properties	Exploration Properties
Income	Discounted Cash Flow	Yes	Maybe	No
	Real Options	Yes	Yes	No
Cost	Appraised Value	No	Yes	Yes
	Geoscience Factor	No	Maybe	Yes
Market	Comparable Transactions	Yes	Yes	Yes
	Option Agreement Terms	Yes	Yes	Yes

AMEP
Australia Mongolia Extractives Program

DISCOUNTED CASH FLOW METHOD

- Real or Nominal Tugriks
- Valuation date as commencement of schedules
- Matched physical, cost and revenue schedules
- Discount rate selection using Capital Asset Pricing Model

AMEP
Australia Mongolia Extractives Program

CAPITAL ASSET PRICING MODEL

- $R = Rf + \beta (Rm-Rf)$, where
- R = required rate of return
- Rf = risk-free rate of return
- β = measure of relative risk. Beta is measured by estimating the co-variance of the returns of the company against the index returns. Note that using beta assumes that future risks will be the same as historical risks.
- Rm = average rate of return of a well diversified portfolio

AMEP
Australia Mongolia Extractives Program

IMPACT OF FINANCIAL LEVERAGE

- $\beta l = \beta u (Eu / El)$
- βl = the leveraged beta
- βu = the beta of an equivalent all equity firm
- Eu = the value of the firm if all equity
- El = the value of equity in the firm when leveraged
- $Vl = El + D = Eu + t \times D$
- Where “classical” tax: $\beta u = \beta l / (1 + [1 – t] D/El)$
- Where dividend imputation: $\beta u = \beta l (1 + D/El)$

AMEP
Australia Mongolia Extractives Program

WEIGHTED AVERAGE COST OF CAPITAL

- WACC = (E/V)Rsl + (D/V)Rd(1-t)
- E = market value of equity
- D = market value of debt
- V = D + E
- Rs = cost of equity capital
- Rsl = required yield on equity once leveraged (calculated by re-leveraging the unleveraged betas, then reapplying the CAPM model)
- Rd = market yield on debt
- t = company tax rate

AMEP
Australia Mongolia Extractives Program

DISCOUNTED CASH FLOW VARIANTS

- The use of probable outcomes
- Real option theory – incorporates management decisions in valuation results
- Binomial analysis
- Tail margin analysis
- Simulation analysis

AMEP
Australia Mongolia Extractives Program

COST APPROACH METHODS

- Multiples of Exploration Expenditure (MEE) – effective expenditure multiplied by exploration ‘success’ factor: Prospectivity Enhancement Multiplier – usual range 0 to 3, sometimes 0 to 5.
- Geoscience Method
- Historical Costs (not a preferred method)
- Yardstick – percentage of contained commodity gross value (not a preferred method). For example: 1 to 2% of Indicated Resources, 0.5 to 1% of Inferred Resources, 0.1 to 0.3% of Exploration Targets

AMEP
Australia Mongolia Extractives Program

MARKET APPROACH METHODS

- Real Transactions
- Option Agreement Terms
- Comparable Transactions (₮ per ounce, per tonne, per hectare)
- Issues with comparable transactions – sample size and representivity, changes since comparable transactions occurred, ‘normalisation’,
- Option Agreement Terms

AMEP
Australia Mongolia Extractives Program

COMPONENTS OF THE STUDY

AMEP
Australia Mongolia Extractives Program

THE VALUATION REPORT – MINIMUM REQUIREMENTS (1)

- Mineral property identification
- Intended use and intended users of the valuation
- Purpose of the valuation
- Basis of value
- Report date and valuation date, stated together for clarity
- Highest and best use as of the valuation date (where applicable)
- Scope of Work

AMEP
Australia Mongolia Extractives Program

MINIMUM REQUIREMENTS (2)

- Technical description of the mineral property, including status at valuation date
- Assumptions, risk and limitations
- Valuation Approaches and Methods used, and value estimates derived from each
- Value opinion
- Prior valuations of the mineral property over past 3 years, with explanation of material differences
- Sources of information, and verification applied
- Statement relating to site visit, including date of visit

AMEP
Australia Mongolia Extractives Program

MINIMUM REQUIREMENTS (3)

- Statement of compliance with the current edition of the relevant national code or standard, or specifications of deviation from the code
- Identity, qualifications, and experience of the valuer and any experts, and the areas of the report for which each is responsible
- Statement of independence or non-independence of the valuer and any experts
- Declaration of the valuer’s competence, including any disclosure of personal interest or potential interest in the mineral property

AMEP
Australia Mongolia Extractives Program

ADDITIONAL REQUIREMENTS

- Instruction from Commissioning Entity
- Technical Report – can be included in or additional to the valuation report
- Indemnity for data provision

AMEP
Australia Mongolia Extractives Program

COMMON VALUATION ISSUES

- Ranges and Preferred Values
- Summation of value components
- Interface with company (or securities) valuation
- Matching “bottom-up” and “top-down” valuations