Gas Project Economics and Risk Analysis

An Application in midstream and downstream projects

Course outline

Current low commodity price has made many gas projects were delayed while waiting for the situation strengthen. An analysis on operating and investment costs is therefore very crucial task. Any mistake in Project Development and operation together with weak control in costs will lead a profit reduction or even more a loss for the company.

Many people in the oil and gas industry are concerned that their organizations may be destroying value by making systematic errors in investment evaluation and decision. Some common problems include: undervaluing long-lived assets and overbuilding production facilities

In a challenging oil and gas industry, it is very important to identify the uncertain variables and explore ways to minimize the downside risk and to maximize the upside potential. The economics analysis using probabilistic model is essential to understand the influences and dynamics of project economics with respect to the oil and gas industry becoming imperative for anyone undertaking the development of a new project.

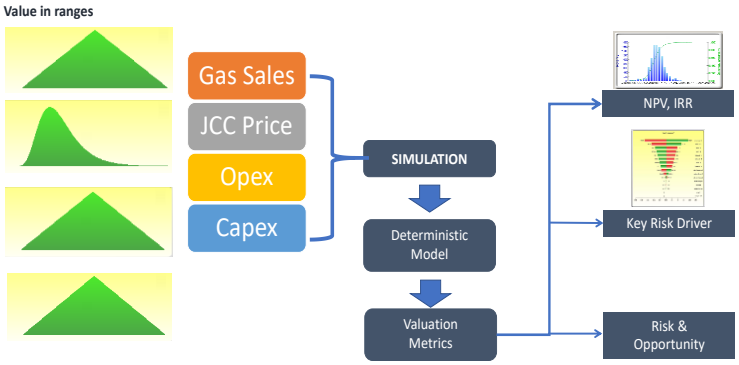
This specially designed 3-day cutting edge course aims to provide a solid understanding how to evaluate of gas projects using conventional to advance approach.

Course objective

This course will :

- Learn the basic of evaluation techniques as well as the practical the implementation of these techniques to gas projects include midstream and downstream gas project
- Enable participants to identify and quantifying risk using three stage of risk analysis
- Bring participants up to date on recent development in project modeling and evaluation using advance valuation techniques.

Project Economic Modeling flow chart



Key Benefit

At the end of the course participants will:

- Have acquired the knowledge of best practice of investment strategy in gas project
- Have acquired the skills to identify, model and evaluate a project using deterministic and probabilistic approach

Who should attend this course

This three-day online course is designed for professional or investor who wants to learn investment evaluation in midstream and downstream gas project and to improve their skills in evaluating techniques including risk quantification.

Delivery Format

This course is conducted as 3 x 2-hour online sessions on three consecutive days with 10 min copy break. At the end of each topic, a 10 minute question-answer session is held where the instructor gives individual assistance.

During the course live, instructor will show how to apply each topic by simulating in excel. Participants will follow this simulation by comparing with the final result.

Course facilitator

NUZULUL HAQ

Education:

- S1: Mining Metallurgy - ITB (1996)
- S2: Financial Management – UI (2002)

Work Experience:

- Metallurgist in Newmont Mesel (1997-1999)
- Process Engineer in Newcrest Gosowong (1999-2000)
- Planning and Economics – Medco Energi (2002-2017)
- Independent Consultant (2018 – present)
  - Founder of Decisive Value Consulting that specialize in advance project economics using modern valuation techniques for improved investment decision.
  - Author for several books related to Modeling valuation risk decision in resource-based industry

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Moving from the static approach to dynamic approach framework
for improved investment decision making in gas project

Outline Day One – Basic Project Economics

1. Overview of Gas Business

- Upstream business (PSC vs Gross Split)
- Midstream/Downstream business

2. Fundamental of Project Economics

- Undiscounted Cash Flow Analysis (IRR, POT)
- Discounted Cash Flow Analysis (NPV, PI)

Workshop 1: Calculating gas toll fee

3. Integrated gas project economics

- Value chain of gas business
- commercial contract

Workshop 2: Integrated gas project economics (upstream – midstream – downstream)

Outline Day Three – Decision and Real Options

6. Introduction to Real Options

- Birth and intuition behind Real Options
- Conventional DCF vs Real Options (RO)

Workshop 6:
Fundamental difference between DCF vs RO

7. The Use of Market information

- Futures market
- Forward Price model

Workshop 7:
develop dynamic stochastic forward price model and integrated to economic model

Outline Day Two – Risk Analysis

4. Project Risk Analysis

- Identifying sources of uncertainty
- Three stages of Risk analysis (scenario, sensitivity and monte carlo simulation)
- Scenario analysis

Workshop 3:
Building scenario model – petrochemical/LNG project

- Sensitivity analysis

Workshop 4:
Building sensitivity model (spider and tornado chart)

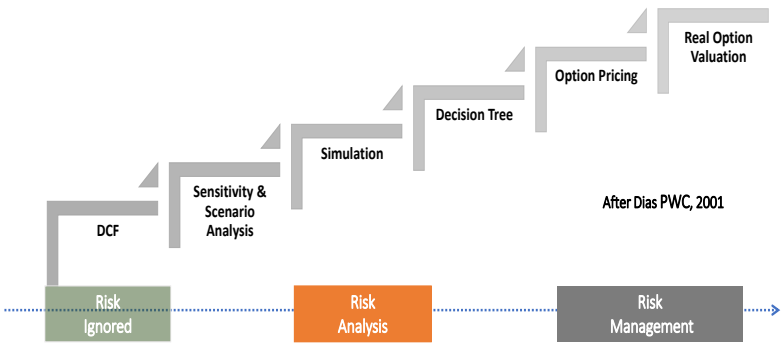
- Monte Carlo Simulation

5. Introduction to probabilistic risk

- Key features of a probabilistic model
- Key parameter of probability distribution
- Schematic process of monte carlo simulation
- Quantifying variable uncertainty in gas project using simulations techniques
- Assessing the effect of variable uncertainty on project's NPV
- Step by step how to use SIPmath software

Workshop 5:
Building a Monte Carlo simulation model

Evaluation of Valuation Techniques



Course material

1. Extensive course notes and excel spreadsheets
2. Free SIPmath Monte Carlo simulation software
3. Free book " modelling valuation decision risk in Oil and Gas projects " by Nuzulul Haq (max 30 ex)

Decisive Value
Finance Consulting Boutique