



## A New Era of Project Economics and Risk Analysis An Application of Gross Split vs PSC Economics – a hands on excel base course –

September 11th - 13th 2019, Royal Ambarukmo Hotel Yogyakarta

Moving from the static approach to probabilistic and dynamic approach framework  
for improved investment decision making in upstream project

A Three Day Comprehensive Petroleum Economics Course

### Who should attend this course?

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

### Key Benefit

At the end of the course participants will:

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

This course will:

- Learn the basic of evaluation techniques as well as the practical the implementation of these techniques to upstream project using both PSC and Gross split calculation
- Enable participants to identify and quantifying risk using probabilistic Monte Carlo Simulation
- Learn how to assess the value of information in managing the uncertainty of the upstream project using decision tree analysis
- Bring participants up to date on recent development in project modeling and evaluation using advance valuation techniques.

### Training Detail

The course/workshop comprises 12 chapters with respective workshops where the attendee will apply the theory in a real upstream project data set. To achieve this, the attendee will use the free SIPMath add in excel for probabilistic risk analysis, and excel spreadsheet for real options analysis.

#### Day 1: Conventional Analysis

1. Upstream Petroleum Contracts: Gross Split vs Production Sharing Contract
2. Fundamental of Upstream Project Economics and Key Valuation Measure:
  - Undiscounted Cash Flow Analysis (IRR, Pay Out Time)
  - Discounted Cash Flow Analysis (NPV, PI)

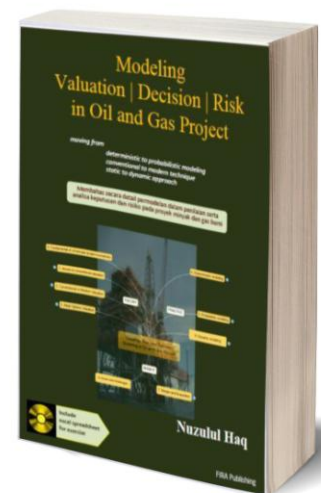
*Workshop 1: Building a PSC and Gross Split cash flow model*

3. Identifying sources of uncertainty – Sensitivity analysis (spider and tornado charts)

*Workshop 2: Building a sensitivity model using data table function*

4. Building economic analysis for different reserve and development scenario

*Workshop 3: Building a scenario model using index match function*



## Day 2: Probabilistic and Decision Tree Analysis

5. Introduction to uncertainty and risk – Monte Carlo simulation;

*Workshop 4: Building a quantitative Monte Carlo model using SIPMath tools.*

6. Quantifying variable uncertainty in upstream project using simulations techniques

*Workshop 5: Assessing the effect of variable uncertainty on project's NPV.*

7. Introduction to decision tree scenario analysis.

*Workshop 6: Building a decision tree analysis for Exploration drilling decision.*

8. Quantifying Value of Information (VOI) in appraisal drilling or seismic activity;

*Workshop 7: Assessing VOI in appraisal drilling prior to Final Development Decision (FID).*

*Harvard Business Case Study: Penzoil vs Texaco*



Please visit <http://explorealoptions.id> for more information related to course outline

## Day 3: Modern Real Option Analysis

9. Introduction to real options analysis – Birth and institution behind Real Options

10. Conventional vs Modern Valuation

*Workshop 8: Fundamental difference between DCF vs Modern*

11. Market Comparable – Modern Valuation techniques (Paddock Siegel and Smith model)

*Workshop 10: Valuation undeveloped reserve*

12. Implementing Real Options in merger and acquisition process

*Workshop 11: Case Study In Indonesia:*

- 1. Acquisition of Hess Assets in Indonesia*
- 2. Pertamina vs Shell in Semai V tender*
- 3. Acquisition of PSC block in East Java*

## COMPUTER REQUIREMENTS

As the course is Excel-Based, it would be highly desirable if participants could bring with them their own laptop computer

## TRAINING MATERIAL

1. Extensive set of course notes detailing valuation concepts, numerical calculations and practical valuation examples.
2. Excel Spreadsheets Model .
3. Free SIPMath software for Monte Carlo Simulation
4. Free book “Valuation Decision Risk in Oil and Gas projects” written by Nuzulul Haq

## COURSE FEE

IDR 10.000.000,-/participant (Exclude accommodation) + 10% VAT, Total IDR 11.000.000,-/participant

The Class will be held with minimum 5 Participants.

## REGISTRATION INFO

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## Facilitator

**Nuzulul Haq**, is a practitioner in project economics for more than 20 years with the latest position as Manager of Corporate Planning and Investment department in Medco Energy. He was graduated from Bandung Institute of Technology (ITB) in 1996. His career started as process engineer in Newmont and Newcrest. After he completed a master degree in financial management in Faculty of Economics, University of Indonesia in 2001, he started a career as a Planning and Economic analyst. His expertise focus on project economics, valuation modeling, econometric forecasting, risk analysis, real options/market based valuation, and asset portfolio management. His technical papers had been presented in International Conference such as International Energy Economics Conference in Perth (2008), Berlin (2006) and Zurich (2004). He is a creator of <http://explorealoptions.id> to promote Real Options methodology for better project investment decision.