Oil and Gas Project Economics for Decision-Makers

GExperts Learning Academy | EX-067 | EX | 3 days

Course overview

3 days EX programme focused on Oil and Gas Project Economics for Decision-Makers, using energy-sector cases and applied decisions.

Designed for: Learners appropriate to the stated programme level

Learning outcomes

- Explain core principles and terminology for Oil and Gas Project Economics for Decision-Makers.
- Interpret an applied case using evidence and stated assumptions.
- Identify risks, safeguards, role boundaries and escalation points.
- Prepare a clear recommendation for a multidisciplinary audience.

Course guide

Work through each module objective, lesson and teaching note, complete the applied activity and assessment, then use the separate Academy practice page for practice questions and answer feedback.

Separate practice questions:
https://www.globalexpertsconsultoria.com/training/academy/courses/questions/?course=EX-067

Academic and certification status

Draft learning resource for study and review. It does not confer accreditation, external certification, a regulated qualification, professional licence, safety-critical competence or site authorisation. Confirm approvals, current laws, standards, approved procedures and awarding-body requirements before delivery.

Module 1: CAPEX OPEX and estimating

Learning objectives

- Explain capex opex and estimating, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of CAPEX OPEX and estimating
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Oil and Gas Project Economics for Decision-Makers

Detailed teaching notes

Teaching notes

Core explanation. Capital estimates cover assets and development; operating estimates cover recurring delivery and support activities. Define scope, price basis, location, currency, schedule and exclusions before estimating. A number without its basis is difficult to review.

Decision logic. Use analogous, parametric and bottom-up methods according to data maturity. Separate base estimate, identified risk contingency and other reserves under the adopted governance. Avoid implying that contingency is spare money for scope additions.

Worked example. A fictional equipment package is 10 million and installation is estimated at 40% of equipment cost; subtotal is 14 million before other scope.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Write an estimate basis and identify five excluded cost items.

Model answer guide. Include logistics, commissioning, taxes, spares and owner costs where appropriate; state assumptions rather than silently adding them.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Write an estimate basis and identify five excluded cost items.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 2: Production profiles and sales revenue

Learning objectives

- Explain production profiles and sales revenue, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Production profiles and sales revenue
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Oil and Gas Project Economics for Decision-Makers

Detailed teaching notes

Teaching notes

Core explanation. Revenue depends on saleable volume, realised price, quality adjustments and contractual timing. Production at the reservoir is not identical to metered sales. Separate losses, own use, inventories and transfer points.

Decision logic. Keep price and production scenarios consistent with capacity and availability. Define whether prices are real or nominal and how exchange rates apply. Do not insert present market prices without a dated source; use synthetic classroom values.

Worked example. Fictional annual sales of 1 million barrels at USD 70/barrel produce USD 70 million gross revenue before adjustments.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Recalculate with 10% lower sales volume and a USD 3 quality discount.

Model answer guide. 0.9 million times 67 equals USD 60.3 million; explain both volume and price effects.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Recalculate with 10% lower sales volume and a USD 3 quality discount.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 3: NPV IRR and payback

Learning objectives

- Explain npv irr and payback, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of NPV IRR and payback
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Oil and Gas Project Economics for Decision-Makers

Detailed teaching notes

Teaching notes

Core explanation. Net present value discounts dated cash flows at a stated rate. Internal rate of return is a rate making NPV zero and may be ambiguous for unusual cash-flow patterns. Payback measures recovery timing and ignores some value effects.

Decision logic. Compare projects using consistent perspective, currency and risk assumptions. NPV scale and capital constraints matter; ranking by IRR alone can mislead. Real cash flows require a compatible real discount rate and nominal flows a compatible nominal rate.

Worked example. Minus 100 now and plus 121 after two years has zero NPV at 10% because 121 divided by 1.1 squared equals 100.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Calculate NPV at 5% and explain why the result changes.

Model answer guide. NPV is about 9.75; a lower discount rate increases the present value of the future receipt.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Calculate NPV at 5% and explain why the result changes.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 4: Breakeven price analysis

Learning objectives

- Explain breakeven price analysis, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Breakeven price analysis
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Oil and Gas Project Economics for Decision-Makers

Detailed teaching notes

Teaching notes

Core explanation. Breakeven price is the price satisfying a defined value condition, such as NPV zero at a chosen discount rate. It depends on production, cost, timing and fiscal assumptions. State whether the measure is project, operating or equity breakeven.

Decision logic. Use a controlled price iteration with a checked model. Include closure and relevant fiscal effects. A single breakeven number hides uncertainty and cannot substitute for a full investment assessment. Compare delay and cost escalation cases.

Worked example. With no discounting or fiscal effects, total cost 60 million divided by sales 1 million barrels gives USD 60/barrel breakeven.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Repeat for 0.8 million barrels and explain the sensitivity.

Model answer guide. USD 75/barrel under the simplified assumptions; lower volume spreads cost across fewer barrels.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Repeat for 0.8 million barrels and explain the sensitivity.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 5: Risked value and decision trees

Learning objectives

- Explain risked value and decision trees, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Risked value and decision trees
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Oil and Gas Project Economics for Decision-Makers

Detailed teaching notes

Teaching notes

Core explanation. Expected monetary value weights defined outcomes by probabilities that sum to one. It supports comparisons but does not capture every strategic, distributional or catastrophic consequence. Teach chance nodes separately from decision nodes.

Decision logic. Value of information depends on whether new evidence can improve a decision. An expensive study has little decision value if the same choice follows every possible result. Explain probability calibration and dependencies before presenting a precise number.

Worked example. Success gives plus 200 with probability 0.3 and failure minus 50 with probability 0.7; EMV is 25 in the same money units.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Draw the tree and compare with a certain value of 20, noting risk preferences.

Model answer guide. EMV favours 25 versus 20, but downside exposure and constraints may change the choice.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Draw the tree and compare with a certain value of 20, noting risk preferences.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 6: Oil and Gas Project Economics for Decision-Makers: Data and Perf

Learning objectives

- Explain oil and gas project economics for decision-makers: data and performance, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Oil and Gas Project Economics for Decision-Makers: Data and Performance
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Oil and Gas Project Economics for Decision-Makers

Detailed teaching notes

Teaching notes

Core explanation. Oil and Gas Project Economics for Decision-Makers: Data and Performance describes a practical part of Oil and Gas Project Economics for Decision-Makers. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for oil and gas project economics for decision-makers: data and performance. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans oil and gas project economics for decision-makers: data and performance while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for oil and gas project economics for decision-makers: data and performance: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for oil and gas project economics for decision-makers: data and performance: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 7: Oil and Gas Project Economics for Decision-Makers: Applied Case

Learning objectives

- Explain oil and gas project economics for decision-makers: applied case, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Oil and Gas Project Economics for Decision-Makers: Applied Case
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Oil and Gas Project Economics for Decision-Makers

Detailed teaching notes

Teaching notes

Core explanation. Oil and Gas Project Economics for Decision-Makers: Applied Case describes a practical part of Oil and Gas Project Economics for Decision-Makers. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for oil and gas project economics for decision-makers: applied case. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans oil and gas project economics for decision-makers: applied case while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for oil and gas project economics for decision-makers: applied case: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for oil and gas project economics for decision-makers: applied case: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 8: Oil and Gas Project Economics for Decision-Makers: Communicati

Learning objectives

- Explain oil and gas project economics for decision-makers: communication and escalation, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Oil and Gas Project Economics for Decision-Makers: Communication and Escalation
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Oil and Gas Project Economics for Decision-Makers

Detailed teaching notes

Teaching notes

Core explanation. Oil and Gas Project Economics for Decision-Makers: Communication and Escalation describes a practical part of Oil and Gas Project Economics for Decision-Makers. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for oil and gas project economics for decision-makers: communication and escalation. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans oil and gas project economics for decision-makers: communication and escalation while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for oil and gas project economics for decision-makers: communication and escalation: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for oil and gas project economics for decision-makers: communication and escalation: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 9: Oil and Gas Project Economics for Decision-Makers: Knowledge C

Learning objectives

- Explain oil and gas project economics for decision-makers: knowledge check, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Oil and Gas Project Economics for Decision-Makers: Knowledge Check
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Oil and Gas Project Economics for Decision-Makers

Detailed teaching notes

Teaching notes

Core explanation. Oil and Gas Project Economics for Decision-Makers: Knowledge Check describes a practical part of Oil and Gas Project Economics for Decision-Makers. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for oil and gas project economics for decision-makers: knowledge check. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans oil and gas project economics for decision-makers: knowledge check while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for oil and gas project economics for decision-makers: knowledge check: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for oil and gas project economics for decision-makers: knowledge check: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 10: Oil and Gas Project Economics for Decision-Makers: Competence

Learning objectives

- Explain oil and gas project economics for decision-makers: competence review, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Oil and Gas Project Economics for Decision-Makers: Competence Review
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Oil and Gas Project Economics for Decision-Makers

Detailed teaching notes

Teaching notes

Core explanation. Oil and Gas Project Economics for Decision-Makers: Competence Review describes a practical part of Oil and Gas Project Economics for Decision-Makers. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for oil and gas project economics for decision-makers: competence review. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans oil and gas project economics for decision-makers: competence review while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for oil and gas project economics for decision-makers: competence review: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for oil and gas project economics for decision-makers: competence review: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Facilitator close-out and resources

Facilitator close-out

Record attendance, assessment evidence, learner support needs, incidents and improvement actions according to approved provider processes. Do not sign learners off for regulated or safety-critical work without the authorised assessment and certification route.

Resources and references

- Supplied GExperts/IUM reference materials; verify reuse rights and currentness.
- Current applicable Namibian legislation, standards and approved site procedures supplied by the provider.
- Case worksheet and instructor slides must be produced and reviewed before course release.