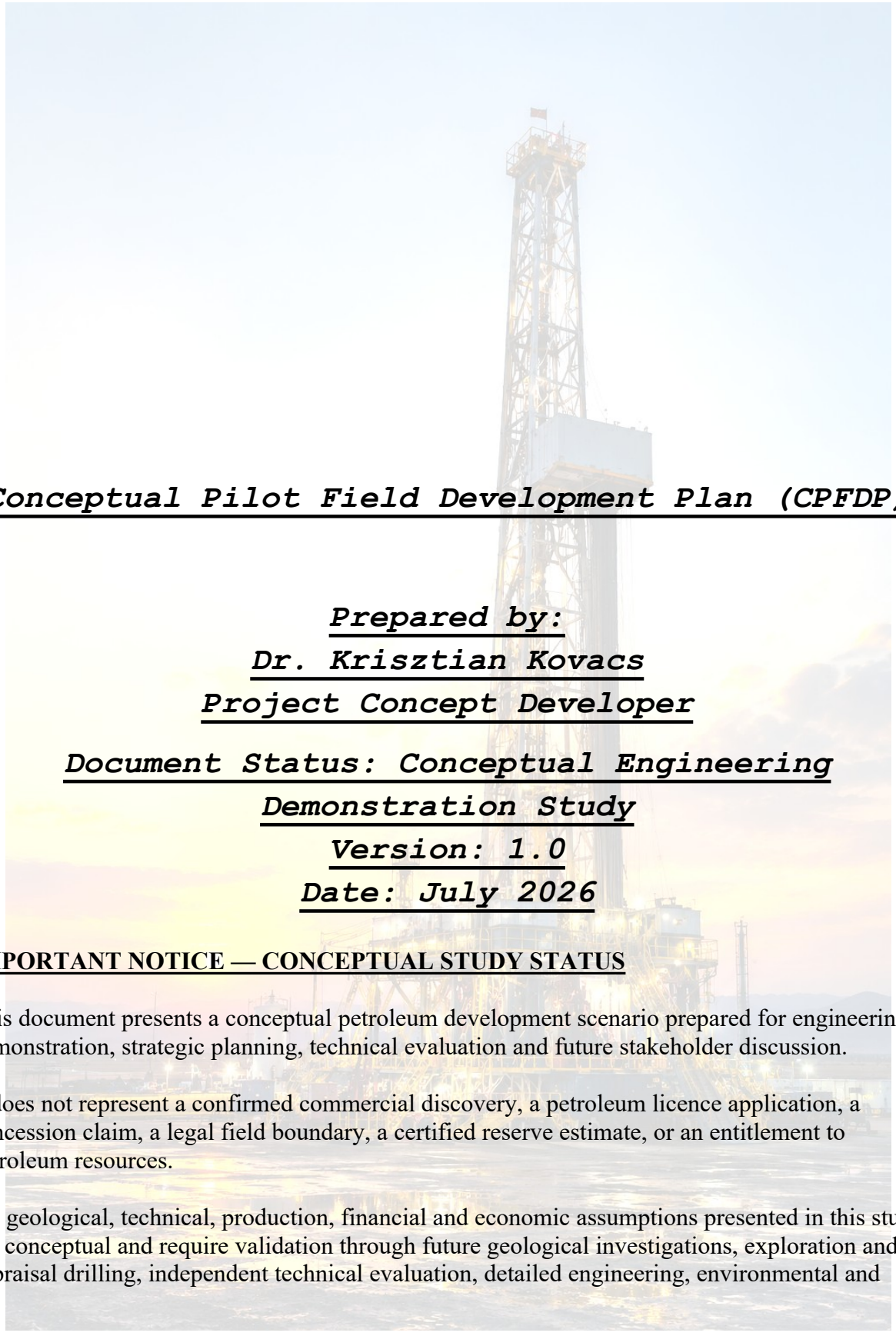


Conceptual Pilot Field Development Plan (CPFDP)

Prepared by:
Dr. Krisztian Kovacs
Project Concept Developer

Document Status: Conceptual Engineering Demonstration Study
Version: 1.0
Date: July 2026

IMPORTANT NOTICE — CONCEPTUAL STUDY STATUS

This document presents a conceptual petroleum development scenario prepared for engineering demonstration, strategic planning, technical evaluation and future stakeholder discussion.

It does not represent a confirmed commercial discovery, a petroleum licence application, a concession claim, a legal field boundary, a certified reserve estimate, or an entitlement to petroleum resources.

All geological, technical, production, financial and economic assumptions presented in this study are conceptual and require validation through future geological investigations, exploration and appraisal drilling, independent technical evaluation, detailed engineering, environmental and

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

social assessment, regulatory approval and applicable legal processes.

1. MANAGEMENT SUMMARY

1.1 Introduction

The **Conceptual Pilot Petroleum Field Development Plan (CPPFDP)** has been prepared to demonstrate a technically feasible and commercially structured petroleum field development concept within the Republic of Guinea-Bissau.
The document presents a comprehensive engineering and development framework covering an **approximately 50 square kilometre conceptual project area**, developed exclusively for demonstration, strategic planning, technical evaluation, governmental consultation, and investment discussion purposes.
This study illustrates a phased petroleum field development approach based on internationally recognized engineering practices commonly applied throughout the upstream oil and gas industry.
The proposed development concept integrates geological interpretation, reservoir engineering, drilling strategy, production facilities, transportation infrastructure, environmental management, operational philosophy, and economic assessment into a single conceptual development framework.

1.2 Purpose of the Project

The primary objective of this document is to demonstrate the technical feasibility of a phased petroleum field development concept that could serve as a reference model for future hydrocarbon developments within the Republic of Guinea-Bissau.
The project has been intentionally prepared as a **conceptual pilot development**, providing government authorities, investors, financial institutions, and strategic partners with a comprehensive overview of the engineering principles, infrastructure requirements, operational philosophy, and investment considerations associated with an integrated petroleum development project.
No exploration licence, production licence, development concession, or petroleum right is requested or implied by this document.

1.3 Demonstration Project Status

*This Field Development Plan represents a **conceptual engineering study** only.*

The proposed **50 km² Conceptual Development Area** has been selected exclusively for engineering demonstration and planning purposes and shall not be interpreted as defining any legal licence boundary, concession area, petroleum block, mineral title, or production entitlement.

Any future exploration, appraisal, development, drilling, construction, production, or commercial activities would remain subject to separate geological investigations, geophysical surveys, engineering studies, environmental and social impact assessments, economic evaluations, governmental approvals, and all applicable legislation of the Republic of Guinea-Bissau.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Accordingly, this document should be considered a strategic technical planning exercise illustrating one possible development scenario under assumed engineering conditions.

1.4 Development Philosophy

The Conceptual Pilot Petroleum Field Development Plan has been developed according to internationally accepted petroleum engineering principles, emphasizing technical simplicity, operational reliability, environmental stewardship, economic sustainability, and phased project implementation.

The proposed development philosophy is based upon the following strategic objectives:

- Safe and environmentally responsible petroleum operations.
- Modular infrastructure capable of phased expansion.
- Efficient reservoir management.
- Optimized drilling and production strategies.
- Reliable hydrocarbon processing and export systems.
- Long-term operational sustainability.
- Compliance with recognized international engineering standards.
- Capacity building and local content development within Guinea-Bissau.

1.5 Conceptual Development Area

The conceptual project covers an area of approximately **50 square kilometres**, representing a hypothetical petroleum development area selected solely for demonstration purposes.

Within this area, the conceptual development may include:

- Exploration and appraisal well locations.
- Production well pads.
- Central Processing Facility (CPF).
- Crude oil storage facilities.
- Produced water treatment systems.
- Gas handling facilities.
- Export pipeline corridor.
- Operations base.
- Power generation systems.
- Internal access roads.
- Utility infrastructure.
- Environmental protection zones.

The configuration presented throughout this document is illustrative and intended to demonstrate internationally recognized petroleum field development methodologies.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table 1-1 Project Information

Item	Description
Project Name	Conceptual Pilot Petroleum Field Development Plan
Country	Republic of Guinea-Bissau
Project Status	Conceptual Demonstration Study
Development Type	Onshore Petroleum Development
Conceptual Development Area	Approximately 50 km²
Surface Facilities	Conceptual
Development Philosophy	Phased Development
Author	**Dr. Krisztián Kovács**
Version	1.0
Date	July 2026

1.6 Vision Statement

The long-term vision of this Conceptual Pilot Petroleum Field Development Plan is to provide a technically credible reference framework for evaluating future petroleum development opportunities within Guinea-Bissau while promoting sustainable resource management, engineering excellence, responsible environmental practices, and long-term economic value creation.

2. PROJECT AREA, REGIONAL SETTING AND PETROLEUM GEOLOGY

2.1 Project Area

The proposed Conceptual Pilot Petroleum Field Development Project is situated within the Republic of Guinea-Bissau and covers an approximate conceptual development area of **50 square kilometres**.

The selected area represents a hypothetical petroleum development zone prepared exclusively for engineering demonstration purposes. The project area has been defined to illustrate a realistic petroleum field development scenario incorporating exploration, appraisal, production, processing, storage, utilities, and export infrastructure within an integrated development concept.

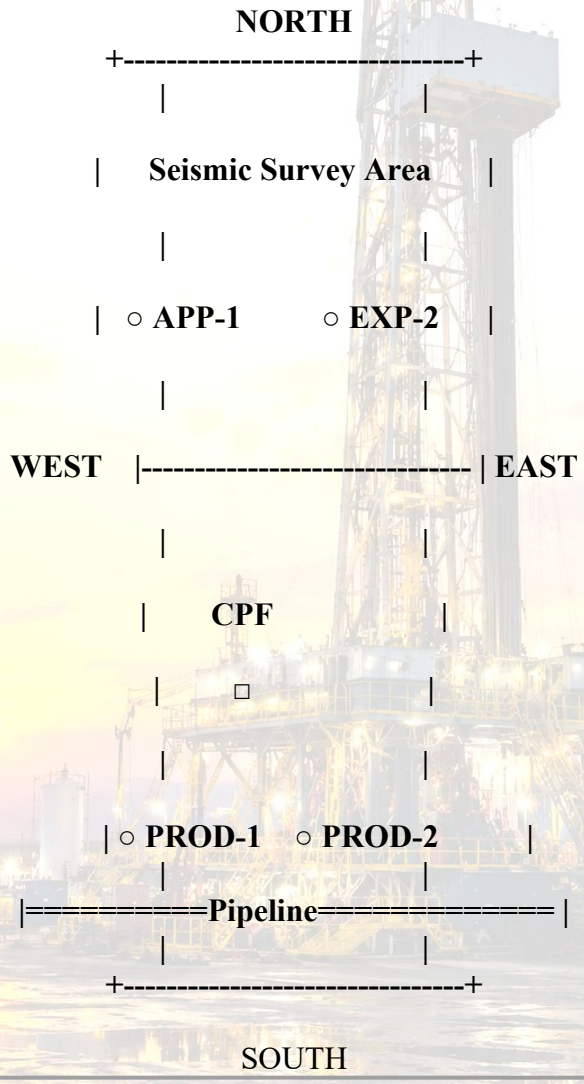
The selected project area is sufficiently large to accommodate the full lifecycle of a medium-sized onshore petroleum development while remaining appropriate for a phased pilot implementation strategy.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table 2-1 Project Area

Parameter	Value
Country	Republic of Guinea-Bissau
Development Type	Onshore Petroleum
Conceptual Area	50 km²
Development Philosophy	Phased
Initial Development	Pilot Phase
Expansion Potential	Yes

Figure 2-1 Conceptual Project Boundary



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

2.2 Regional Location

Guinea-Bissau is located along the West African Atlantic Margin, forming part of the extensive sedimentary systems developed during the opening of the South Atlantic Ocean.

The country's offshore and coastal sedimentary basins remain comparatively underexplored when compared with neighbouring petroleum provinces, presenting opportunities for additional geological investigation and future hydrocarbon evaluation.

The conceptual project has been developed assuming geological conditions representative of Atlantic passive-margin sedimentary basins.

2.3 Regional Geological Setting

The regional geological framework is characterized by thick sedimentary successions deposited during multiple tectonic phases associated with continental rifting and subsequent passive-margin development.

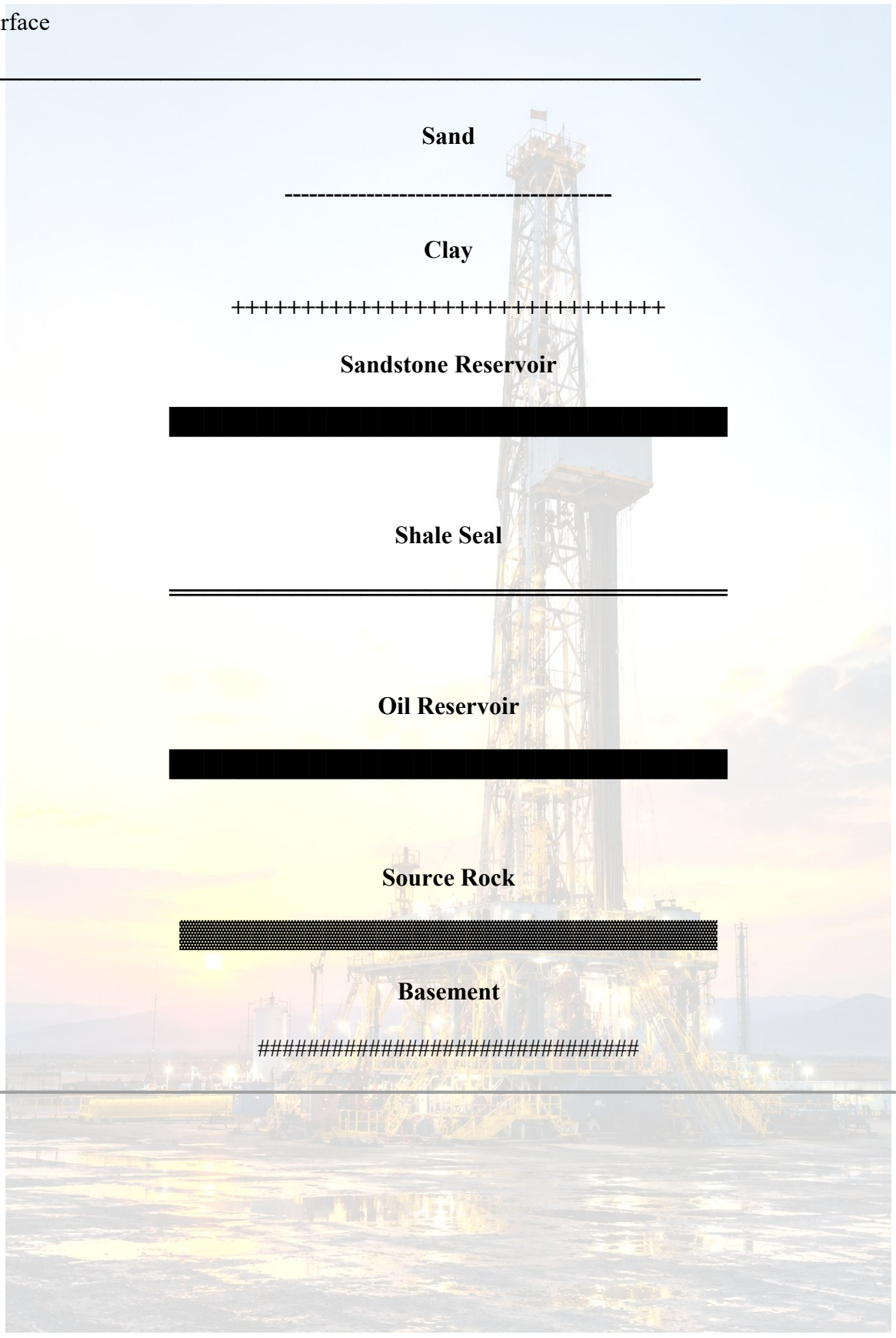
The principal geological units typically encountered include:

- Recent unconsolidated sediments
- Continental clastic deposits
- Marine sandstone formations
- Marine shale intervals
- Carbonate sequences
- Basement complex

These formations provide the essential geological elements required for a working petroleum system including source rocks, migration pathways, reservoir formations, sealing intervals and structural traps.

Figure 2-2 Simplified Regional Petroleum System

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

2.4 Petroleum System

For the purpose of this conceptual study, the petroleum system is assumed to consist of mature source rocks capable of generating liquid hydrocarbons and associated natural gas.

Hydrocarbon migration is interpreted to occur through fault systems and permeable carrier beds into structurally closed sandstone reservoirs overlain by competent regional sealing formations.

The conceptual petroleum system includes:

- Mature source intervals
- Migration pathways
- Structural closures
- Sandstone reservoir units
- Regional shale seals
- Hydrocarbon accumulations

Table 2-2 Petroleum System Elements

Component	Conceptual Status
Source Rock	Assumed Present
Reservoir	Sandstone
Seal	Marine Shale
Trap	Structural
Migration	Fault Assisted
Hydrocarbon Type	Crude Oil with Associated Gas

2.5 Reservoir Concept

The conceptual development assumes the presence of stacked sandstone reservoir intervals exhibiting favourable petrophysical characteristics suitable for conventional petroleum production.

For planning purposes, the following conceptual reservoir properties have been adopted.

Table 2-3 Preliminary Reservoir Parameters

Parameter	Assumed Value
Reservoir Depth	2,200–2,800 m TVD

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Parameter	Assumed Value
Reservoir Temperature	88–102 °C
Initial Pressure	3,800–4,500 psi
Net Pay	18–42 m
Average Porosity	20–24%
Water Saturation	22–30%
Oil API Gravity	34–38° API
Reservoir Drive	Water Drive

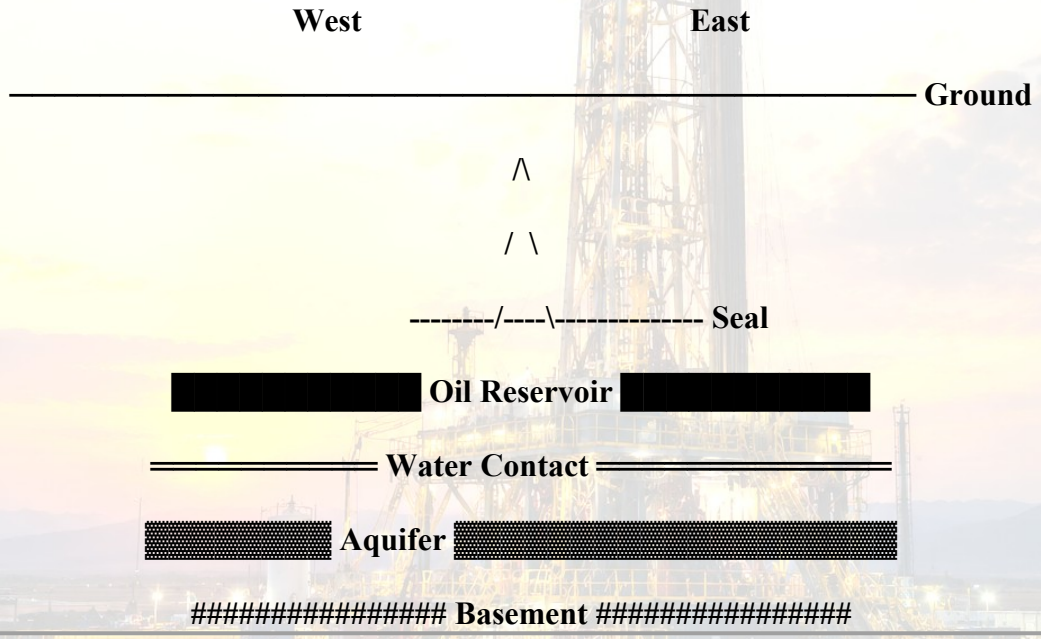
These values are conceptual engineering assumptions for demonstration purposes only.

2.6 Structural Interpretation

The conceptual field is interpreted as a fault-bounded structural closure with gentle dip angles and laterally continuous sandstone reservoir units.

Hydrocarbon accumulation is assumed to occur beneath a regional sealing interval providing effective containment throughout the productive area.

Figure 2-3 Conceptual Structural Cross Section



2.7 Exploration Concept

The initial exploration strategy consists of:

- 3D seismic acquisition
- Geological interpretation

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Prospect ranking
- Exploration drilling
- Wireline logging
- Formation testing
- Core acquisition
- Reservoir evaluation
- Resource estimation

Upon successful evaluation, the project would proceed to appraisal drilling followed by phased field development.

3. EXPLORATION HISTORY AND SEISMIC INTERPRETATION

3.1 Exploration Background

The Republic of Guinea-Bissau is located within the West African Atlantic Margin petroleum domain, an extensive geological province characterized by passive-margin sedimentary basin development associated with the separation of the African and South American continents.

Historically, petroleum exploration activities within the region have focused primarily on offshore acreage evaluation through regional geological studies, seismic acquisition campaigns, and exploratory drilling programs.

For the purpose of this Conceptual Pilot Petroleum Field Development Project, a hypothetical exploration history has been established to demonstrate the complete workflow from initial basin evaluation through exploration, appraisal, and development planning.

The conceptual exploration sequence follows international petroleum industry practices applied by major exploration and production companies.

3.2 Conceptual Exploration Workflow

The exploration program is structured into progressive technical phases:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Phase 1 – Regional Basin Evaluation

Activities:

- Regional geological studies
- Gravity and magnetic interpretation
- Existing geological data review
- Basin modelling
- Petroleum system assessment

Objective:

To identify prospective sedimentary environments capable of containing conventional hydrocarbon accumulations.

Phase 2 – Seismic Acquisition and Interpretation

Activities:

- 2D reconnaissance seismic survey
- 3D seismic acquisition
- Seismic processing
- Structural interpretation
- Stratigraphic analysis
- Prospect maturation

Objective:

To define potential hydrocarbon-bearing structures and optimize exploration well placement.

Phase 3 – Exploration Drilling

The conceptual exploration program includes:

Well ID	Purpose	Status
EXP-1	Initial exploration well	Planned
EXP-2	Secondary prospect evaluation	Planned
APP-1	Discovery appraisal	Planned

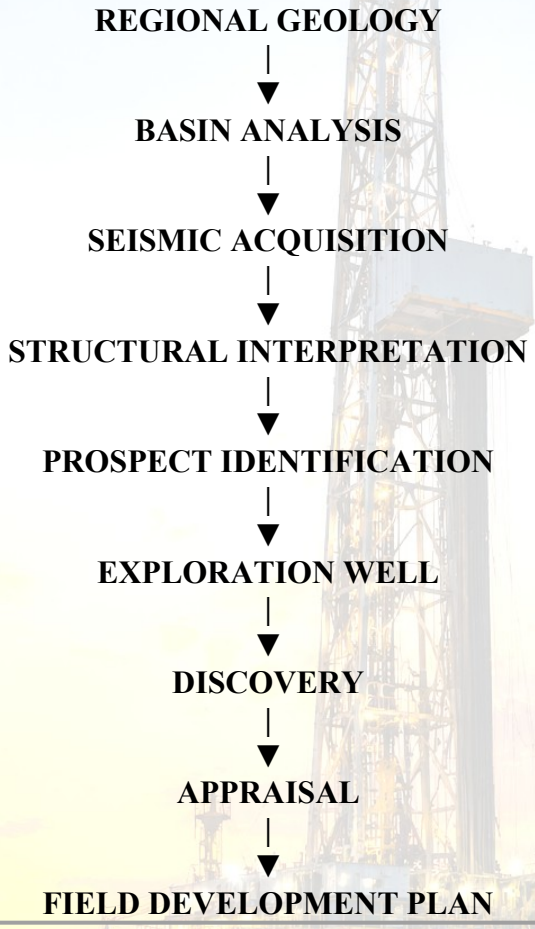
Exploration wells are designed to evaluate:

- Reservoir presence
- Hydrocarbon charge

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Fluid properties
- Pressure regime
- Commercial potential

Figure 3-1 Conceptual Exploration Workflow



3.3 Conceptual Seismic Interpretation

The conceptual seismic interpretation assumes the identification of a fault-controlled structural closure within a sedimentary basin environment.

The interpreted geological model indicates:

- Regional fault systems controlling migration pathways;
- Structural closures forming potential traps;

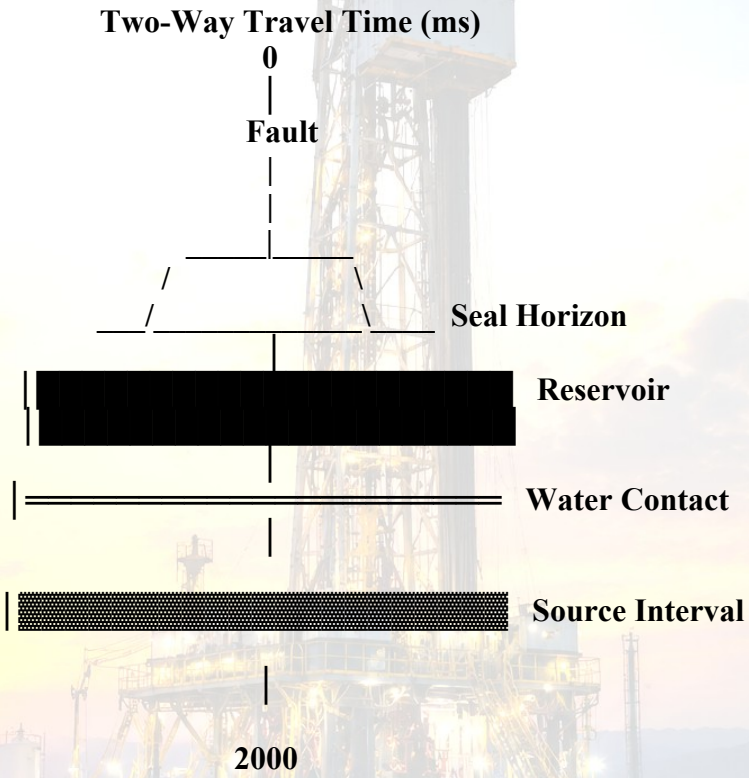
Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Continuous sandstone reservoir intervals;
- Regional shale formations providing sealing capacity.

The seismic interpretation workflow includes:

- Horizon picking;
- Fault mapping;
- Time-depth conversion;
- Structural modelling;
- Volume estimation;
- Well positioning optimization.

Figure 3-2 Conceptual Seismic Section



3.4 Prospect Identification

Based on the conceptual seismic interpretation, the project area contains several exploration targets suitable for evaluation.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

The primary conceptual prospects include:

Prospect A – Central Structural Closure

Characteristics:

- Fault-assisted trap
- Four-way structural closure
- Sandstone reservoir target
- Moderate exploration risk

Prospect B – Eastern Extension Prospect

Characteristics:

- Stratigraphic component
- Possible reservoir continuation
- Requires additional seismic evaluation

Prospect C – Northern Appraisal Area

Characteristics:

- Located adjacent to primary discovery area
- Intended for resource confirmation
- Potential future development expansion

Table 3-1 Conceptual Prospect Ranking

Prospect	Trap Type	Risk Level	Priority
Prospect A	Structural	Medium	High
Prospect B	Stratigraphic	Medium-High	Medium
Prospect C	Appraisal Extension	Low-Medium	High

3.5 Conceptual Well Location Plan

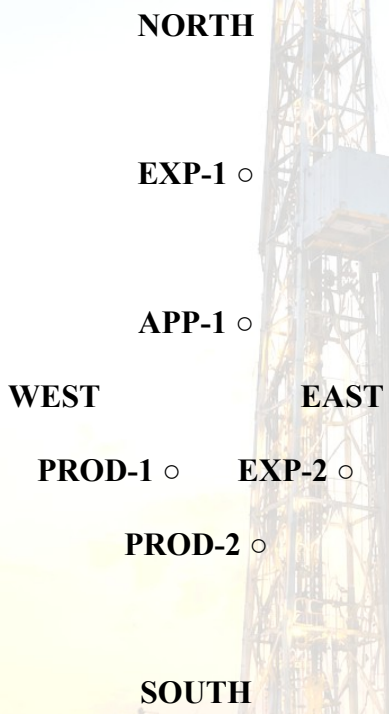
The initial development concept assumes the following well distribution:

Well	Function	Location
EXP-1	Exploration	Northern Sector
EXP-2	Exploration/Appraisal	Eastern Sector

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Well	Function	Location
APP-1	Appraisal	Central Structure
PROD-1	Production	Central Field Area
PROD-2	Production	Southern Reservoir Block

Figure 3-3 Conceptual Well Location Map



3.6 Stratigraphic Framework

The conceptual stratigraphic column is based on a passive-margin sedimentary basin model.

Figure 3-4 Conceptual Stratigraphic Column

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Young

QUATERNARY

Recent Sediments

TERTIARY

Marine Shales

Seal Formation

CRETACEOUS

Sandstone Reservoir

Oil Bearing Interval
CRETACEOUS

Source Rock Interval
BASEMENT

Crystalline Basement

Old

3.7 Exploration Risk Assessment

The conceptual exploration risk assessment considers the following petroleum system uncertainties:

Risk Element	Assessment
Source Rock Presence	Medium Confidence

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Risk Element	Assessment
Reservoir Quality	Medium-High Confidence
Trap Integrity	Medium Confidence
Seal Effectiveness	Medium-High Confidence
Hydrocarbon Charge	Medium Confidence

3.8 Exploration Success Criteria

The project would advance toward appraisal and development following confirmation of:

- Hydrocarbon presence;
- Commercial reservoir thickness;
- Acceptable flow characteristics;
- Sustainable production rates;
- Economically viable development concept.

End of Section 3

4. RESERVOIR DESCRIPTION AND RESOURCE EVALUATION

4.1 Reservoir Description

The conceptual pilot petroleum field development is based on the assumption of a conventional sandstone reservoir system located within a mature sedimentary basin environment.

The reservoir model represents a typical clastic petroleum accumulation characterized by:

- High-quality sandstone reservoir intervals;
- Regional shale sealing formations;
- Structural closure trapping mechanism;
- Associated aquifer support;
- Conventional oil production characteristics.

The reservoir architecture is interpreted as a vertically stacked sandstone system with multiple permeable intervals separated by thin shale barriers.

4.2 Reservoir Architecture

The conceptual reservoir consists of three main geological intervals:

Upper Reservoir Unit (UR-1)

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Characteristics:

- Shallowest producing interval;
- Higher permeability sandstone;
- Primary development target;
- Suitable for conventional production wells.

Middle Reservoir Unit (MR-1)

Characteristics:

- Secondary producing interval;
- Additional hydrocarbon accumulation;
- Potential future infill drilling target.

Lower Reservoir Unit (LR-1)

Characteristics:

- Deep reservoir section;
- Higher pressure environment;
- Considered for long-term field expansion.

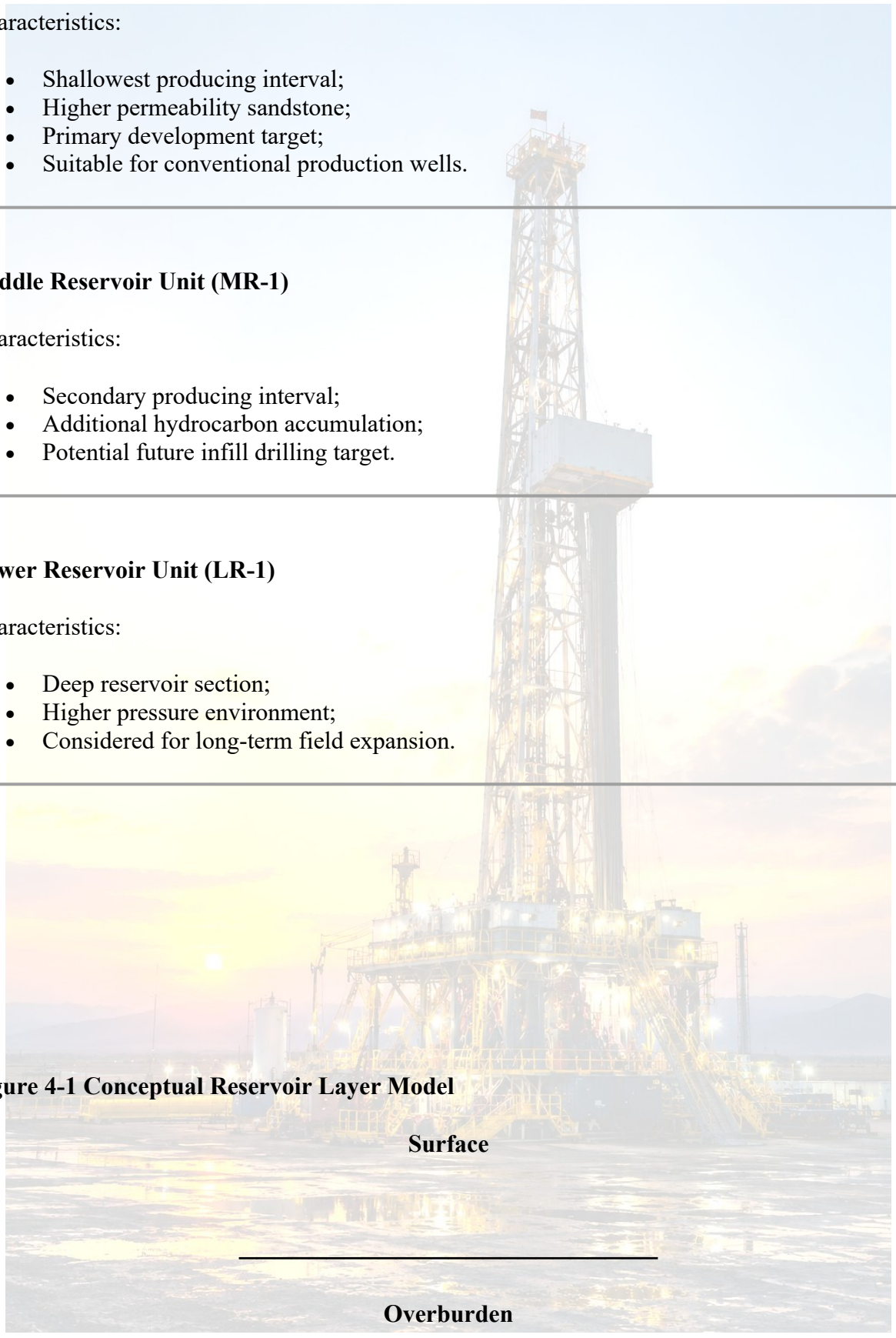
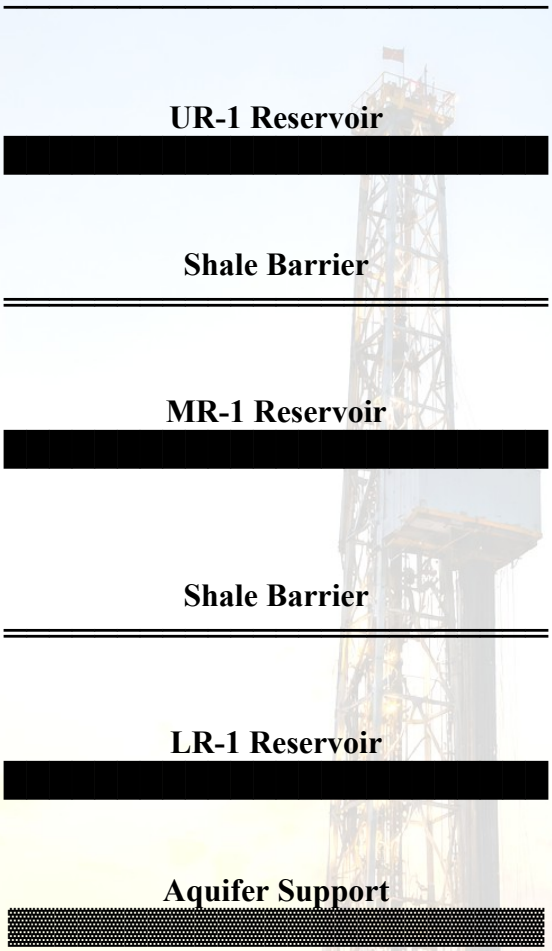


Figure 4-1 Conceptual Reservoir Layer Model

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



4.3 Reservoir Petrophysical Model

For conceptual engineering purposes, the following reservoir parameters have been adopted.

Table 4-1 Conceptual Reservoir Properties

Parameter	Assumed Value
Reservoir Type	Sandstone
Depth Range	2,200–2,800 m TVD
Gross Thickness	60–120 m

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Parameter	Assumed Value
Net Pay Thickness	18–42 m
Porosity	20–24 %
Permeability	150–600 mD
Initial Pressure	3,800–4,500 psi
Temperature	88–102 °C
Oil Gravity	34–38° API
Formation Water Salinity	25,000–45,000 ppm
Drive Mechanism	Water Drive

All parameters represent conceptual engineering assumptions prepared for demonstration purposes.

4.4 Reservoir Fluid Characterization

The conceptual reservoir fluid system is defined as a conventional light-to-medium crude oil accumulation with associated natural gas.

Expected fluid characteristics:

Property	Conceptual Value
Oil Type	Conventional Crude Oil
API Gravity	34–38° API
Gas-Oil Ratio	350–650 scf/bbl
Formation Volume Factor	1.15–1.30 RB/STB
Viscosity	2–5 cP

The assumed fluid characteristics indicate favourable mobility conditions suitable for conventional primary production.

4.5 Volumetric Resource Evaluation

The initial resource assessment is based on a conceptual volumetric model using standard petroleum engineering methodology.

The estimated volumes are derived from:

- Reservoir area;
- Net pay thickness;
- Porosity;
- Hydrocarbon saturation;

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Formation volume factor;
- Recovery efficiency.

4.6 Initial Hydrocarbon Volume Estimate

The conceptual development area covers approximately:

50 km²

The reservoir model assumes:

- Average net pay: 30 m;
- Average porosity: 22%;
- Average oil saturation: 75%;
- Recovery factor: 30%.

Table 4-2 Conceptual Resource Estimate

Category	Estimated Volume
Original Oil In Place (OOIP)	450–650 MMbbl
Recoverable Resources	135–195 MMbbl
Associated Gas Potential	250–450 Bscf

4.7 Resource Classification

The conceptual resource classification follows SPE petroleum resource management principles.

Table 4-3 Resource Classification

Category	Description	Status
3C Resource	High uncertainty case	Conceptual
2C Resource	Best technical estimate	Conceptual
1C Resource	Low uncertainty case	Conceptual

The current project stage is classified as:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Prospective / Conceptual Development Assessment

No commercial reserves are declared until confirmation through:

- Exploration drilling;
- Reservoir testing;
- Pressure analysis;
- Fluid sampling;
- Economic evaluation.

4.8 Development Recovery Concept

The conceptual recovery strategy is based on:

Primary Recovery Phase

Initial production through:

- Natural reservoir pressure;
- Aquifer support;
- Controlled drawdown management.

Expected recovery:

15–25% of OOIP

Secondary Recovery Phase

Potential future implementation:

- Water injection;
- Pressure maintenance;
- Production optimization.

Expected incremental recovery:

Additional 5–15%

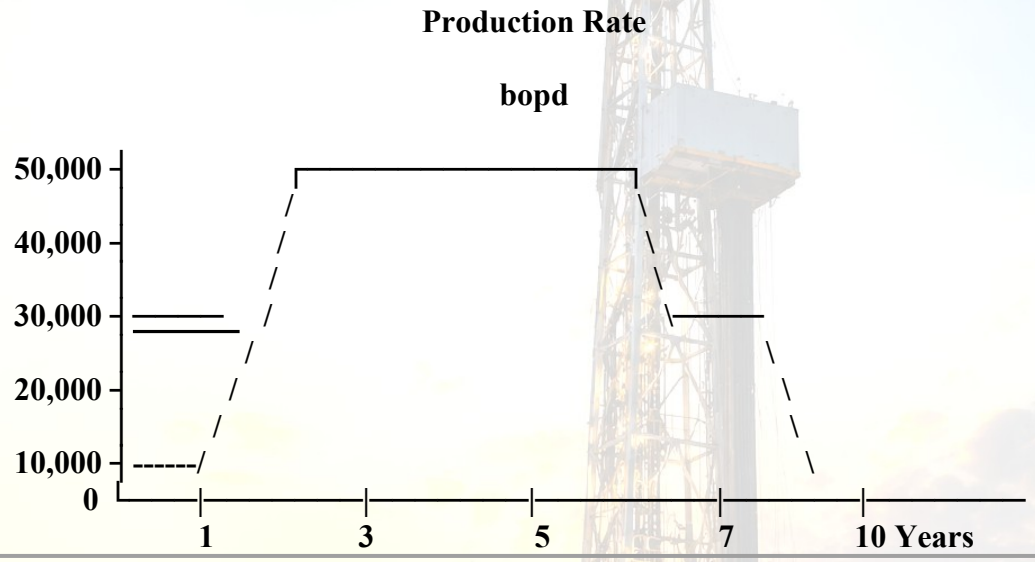
Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Enhanced Recovery Consideration

Long-term options:

- Gas injection;
- Advanced reservoir monitoring;
- Digital production optimization.

Figure 4-2 Conceptual Recovery Profile



4.9 Production Forecast

The pilot development concept assumes a phased production strategy.

Table 4-4 Conceptual Production Forecast

Year	Production Rate
Year 1	15,000 bopd
Year 2	35,000 bopd
Year 3	50,000 bopd
Year 4	50,000 bopd
Year 5	45,000 bopd
Year 6	40,000 bopd
Year 7	35,000 bopd

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Year	Production Rate
Year 8	30,000 bopd
Year 9	25,000 bopd
Year 10	20,000 bopd

4.10 Reservoir Management Philosophy

The reservoir management strategy will focus on:

- Maximizing hydrocarbon recovery;
- Maintaining reservoir pressure;
- Optimizing well productivity;
- Minimizing water production;
- Extending field economic life.

Key reservoir surveillance activities:

- Pressure monitoring;
- Production logging;
- Fluid sampling;
- Reservoir simulation updates;
- Well performance analysis.

4.11 Reservoir Uncertainty Management

Major uncertainties include:

Parameter	Impact
Reservoir Continuity	Production volume
Porosity Distribution	Recovery estimate
Oil Saturation	Resource volume
Fault Connectivity	Drainage efficiency
Aquifer Strength	Pressure maintenance

Uncertainty reduction will be achieved through:

- Additional seismic interpretation;
- Appraisal drilling;

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Formation testing;
- Dynamic reservoir modelling.

End of Section 4

5. FIELD DEVELOPMENT CONCEPT AND PRODUCTION STRATEGY

5.1 Development Philosophy

The conceptual field development strategy is based on a phased, scalable petroleum development approach designed to minimize initial capital exposure while allowing future production expansion.

The development concept follows international upstream petroleum project principles, integrating:

- Subsurface evaluation;
- Well development planning;
- Production facilities;
- Processing infrastructure;
- Storage and export systems;
- Operational support facilities.

The development philosophy is based on:
"Develop early production capability while preserving long-term reservoir value."

5.2 Development Phasing Strategy

The field development is divided into three principal phases:

Phase 1 – Pilot Development Phase

Objective:

To establish initial commercial production capability and validate reservoir performance.

Main activities:

- Drilling of initial production wells;
- Installation of early production facilities;

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Construction of gathering system;
- Installation of crude processing equipment;
- Establishment of storage capacity.

Expected duration:

24–36 months from Final Investment Decision (FID).

Phase 2 – Full Field Development Phase

Objective:

Expansion of production capacity following reservoir confirmation.

Activities:

- Additional production wells;
- Expansion of processing capacity;
- Additional flowlines;
- Increased storage capability;
- Export infrastructure optimization.

Phase 3 – Field Optimization Phase

Objective:

Maximize ultimate recovery and extend field economic life.

Activities:

- Water injection;
- Reservoir pressure management;
- Additional infill wells;
- Production optimization;
- Digital field monitoring.

Figure 5-1 Development Phasing Concept

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

DISCOVERY

|

▼

APPRAISAL

|

▼

PHASE 1
Pilot Production

|

▼

PHASE 2
Full Field Expansion

|

▼

PHASE 3

Optimization & Recovery Enhancement

==========

5.3 Conceptual Well Development Plan

The initial pilot development is designed around a combination of production and appraisal wells.

The conceptual well inventory includes:

Well ID	Type	Purpose
EXP-1	Exploration	Initial geological confirmation
EXP-2	Exploration/Appraisal	Reservoir extension evaluation
APP-1	Appraisal	Resource confirmation
PROD-1	Production	Primary oil production
PROD-2	Production	Reservoir drainage
PROD-3	Production	Production expansion
INJ-1	Injection	Future pressure maintenance

5.4 Production Well Concept

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

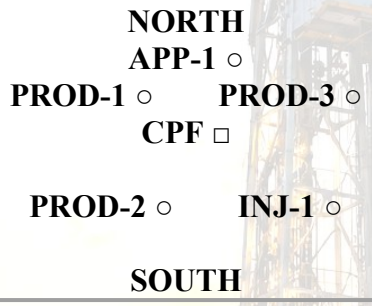
The production wells are designed as conventional vertical or deviated wells completed with:

- Production casing;
- Cement isolation;
- Sand control completion;
- Downhole pressure monitoring;
- Artificial lift capability if required.

Initial production strategy:

- Natural flow during early production;
- Artificial lift installation when reservoir pressure declines;
- Optimization through production surveillance.

Figure 5-2 Conceptual Well Arrangement



5.5 Production Forecast Philosophy

The pilot development target is designed to demonstrate a medium-scale petroleum operation.

Conceptual production targets:

Parameter	Value
Initial Production	15,000 bopd
Plateau Production	50,000 bopd
Plateau Duration	3–5 years
Initial Development Wells	3 producers
Future Expansion Wells	5–8 producers
Water Injection Wells	1–3

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

5.6 Surface Facilities Concept

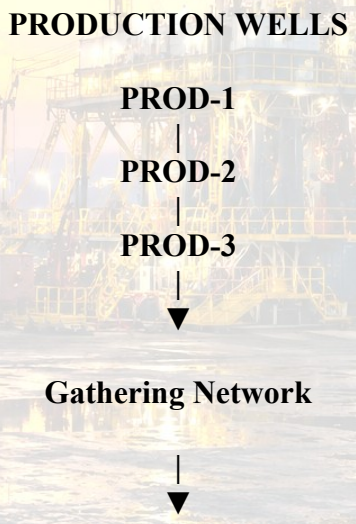
The field development includes a centralized processing facility.

Central Processing Facility (CPF)

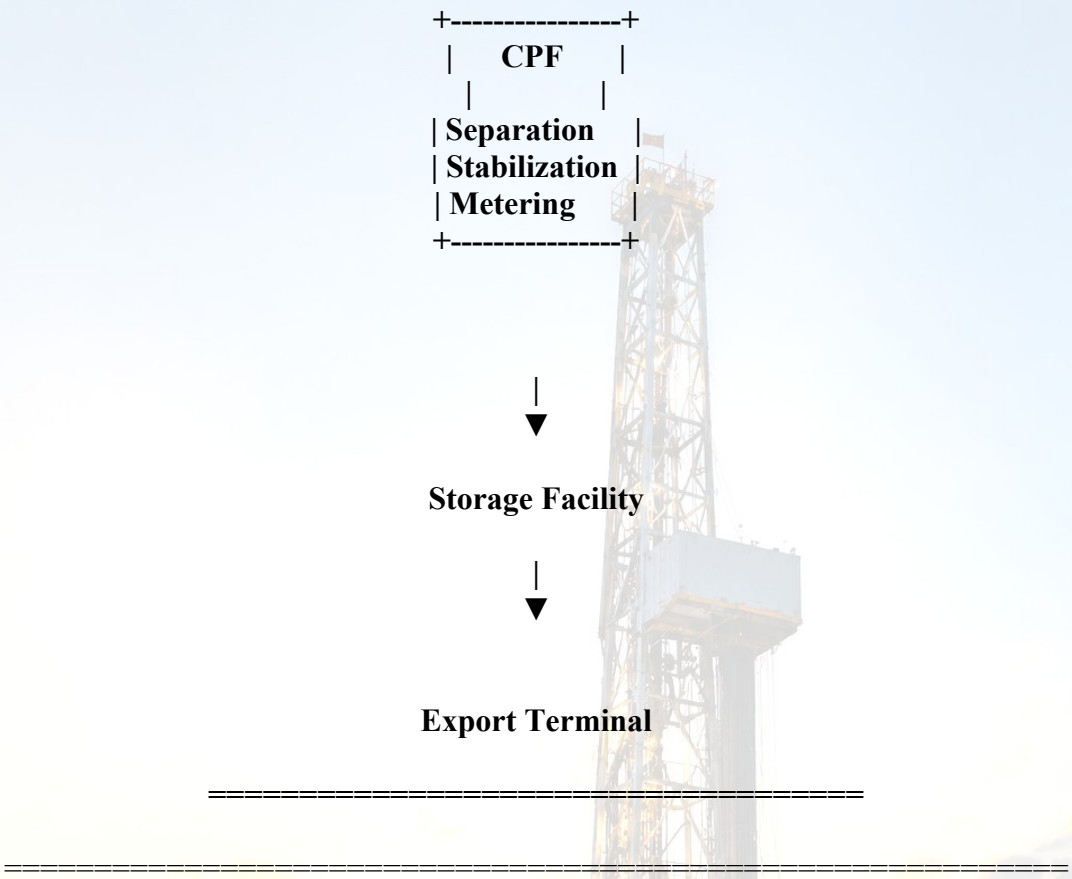
The CPF will perform:

- Three-phase separation;
- Crude stabilization;
- Gas treatment;
- Produced water treatment;
- Metering;
- Export preparation.

Figure 5-3 Conceptual Production System



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



5.7 Central Processing Facility Design Basis

Table 5-1 CPF Conceptual Capacity

Parameter	Design Basis
Oil Processing Capacity	50,000 bopd
Gas Handling Capacity	50–80 MMSCFD
Produced Water Handling	20,000 bwpd
Availability Target	95%
Operating Life	20 years

5.8 Crude Oil Processing Concept

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

The processing sequence includes:

Separation Stage

Three-phase separation of:

- Crude oil;
- Associated gas;
- Produced water.

Stabilization Stage

Purpose:

- Remove light hydrocarbons;
- Achieve export specifications;
- Reduce vapour pressure.

Metering Stage

Includes:

- Fiscal metering;
- Quality measurement;
- Production accounting.

5.9 Storage and Export Concept

The project assumes an integrated crude oil storage and export system.

Storage options considered:

- Onshore storage tanks;
- Floating storage unit (FSU);
- Floating production storage and offloading vessel (FPSO) concept.

For this conceptual onshore development, the preferred option is:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table 5-2 Storage Concept

Parameter	Design Value
Storage Capacity	500,000–1,000,000 barrels
Storage Type	Atmospheric Tank Farm
Loading System	Marine Export Terminal
Product	Stabilized Crude Oil

5.10 Export Infrastructure Concept

The export system consists of:

- Crude oil export pipeline;
- Metering station;
- Marine loading facility;
- Tanker loading system.

Conceptual export configuration:

CPF
|
| Export Pipeline
▼
Storage Terminal
▼
Marine Loading Facility
▼
Crude Oil Tanker

5.11 Power Generation Concept

The field facilities require independent power generation.

Power sources considered:
Primary:

- Associated gas-fired generation.

Backup:

- Diesel generator systems.

Future option:

- Renewable hybrid power integration.

5.12 Utilities and Supporting Infrastructure

The development includes:

- Water treatment system;
- Fire protection system;
- Instrument air system;
- Chemical storage;
- Workshop facilities;
- Warehouse;
- Communications infrastructure;
- Control room.

5.13 Health, Safety and Environment (HSE) Philosophy

The project will apply internationally recognized HSE principles.

Key objectives:

- Zero fatality target;
- Environmental protection;
- Emergency preparedness;
- Spill prevention;
- Occupational safety management.

End of Section 5

6. DRILLING AND WELL ENGINEERING PROGRAM

6.1 Drilling Philosophy

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

The conceptual drilling program has been developed to support the phased field development strategy and provide a structured approach for exploration, appraisal, and production well delivery.

The drilling philosophy is based on:

- Safe and efficient well construction;
- Reservoir protection;
- Cost-effective drilling operations;
- Application of international oilfield standards;
- Future field expansion capability.

The drilling campaign is designed to progressively reduce subsurface uncertainty while establishing sustainable production capacity.

6.2 Drilling Program Overview

The conceptual drilling sequence consists of three main stages:

Stage 1 – Exploration Drilling

Purpose:

To confirm the presence of hydrocarbons and evaluate reservoir characteristics.

Activities:

- Exploration well drilling;
- Geological sampling;
- Wireline logging;
- Formation evaluation;
- Pressure measurement;
- Fluid sampling.

Stage 2 – Appraisal Drilling

Purpose:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

To determine reservoir extent and commercial development potential.

Activities:

- Delineation wells;
- Reservoir pressure analysis;
- Production testing;
- Core acquisition;
- Static reservoir modelling update.

Stage 3 – Development Drilling

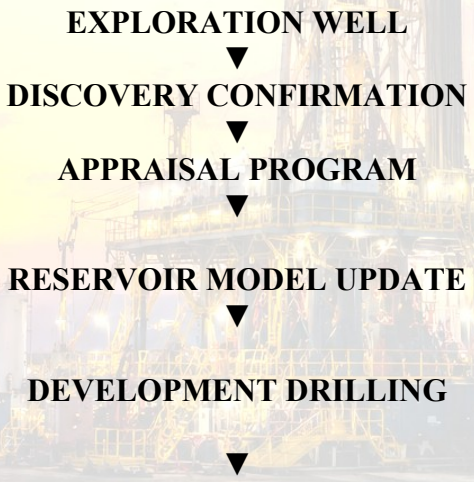
Purpose:

To establish production capacity.

Activities:

- Production wells;
- Injection wells;
- Completion installation;
- Well commissioning.

Figure 6-1 Conceptual Drilling Sequence



6.3 Conceptual Well Inventory

The initial development drilling program includes:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Well ID	Classification	Objective
EXP-1	Exploration	Initial discovery target
EXP-2	Exploration/Appraisal	Reservoir extension
APP-1	Appraisal	Resource confirmation
PROD-1	Producer	Initial production
PROD-2	Producer	Reservoir drainage
PROD-3	Producer	Production expansion
INJ-1	Injector	Pressure maintenance

6.4 Well Design Basis

The conceptual wells are designed for conventional onshore petroleum operations.

Table 6-1 Well Design Parameters

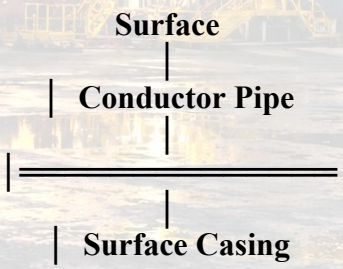
Parameter	Design Basis
Well Type	Vertical / Deviated
Target Depth	2,500–3,000 m MD
Reservoir Interval	Sandstone Formation
Completion Type	Cased Hole Completion
Production Method	Natural Flow / Artificial Lift
Well Life	20+ years

6.5 Conceptual Well Architecture

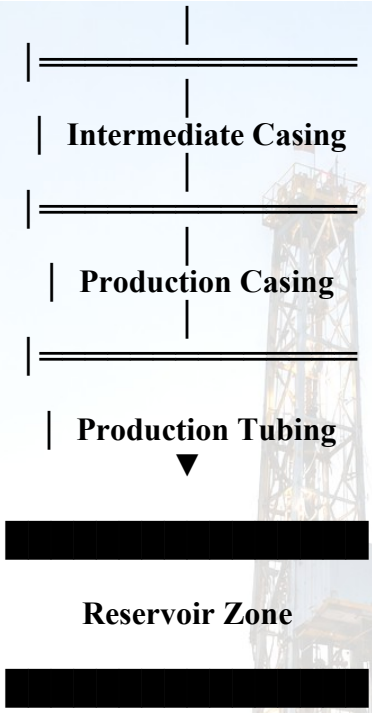
A typical production well consists of:

- Conductor casing;
- Surface casing;
- Intermediate casing;
- Production casing;
- Production tubing;
- Downhole completion equipment.

Figure 6-2 Conceptual Well Construction



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



6.6 Casing Program Concept

Table 6-2 Typical Casing Scheme

Section	Diameter	Purpose
Conductor	20"	Surface stability
Surface Casing	13⅜"	Freshwater protection
Intermediate Casing	9⅝"	Pressure control
Production Casing	7"	Reservoir isolation
Tubing	3½"–4½"	Hydrocarbon production

6.7 Drilling Fluid System

The drilling fluid program will be designed to provide:

- Wellbore stability;
- Pressure control;
- Cuttings transport;
- Reservoir protection.

Conceptual mud systems:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Surface Sections

Water-based mud system.

Reservoir Section

Low-solids or synthetic-based drilling fluid where required. **6.8 Formation Evaluation Program**

Each exploration and appraisal well will include:

Logging Program

- Gamma ray logging;
- Resistivity logging;
- Density-neutron logging;
- Sonic logging;
- Formation pressure testing.

Sampling Program

- Sidewall cores;
- Conventional cores where required;
- Reservoir fluid samples.

Testing Program

- Drill stem testing (DST);
- Pressure transient analysis;
- Flow evaluation.

6.9 Well Completion Philosophy

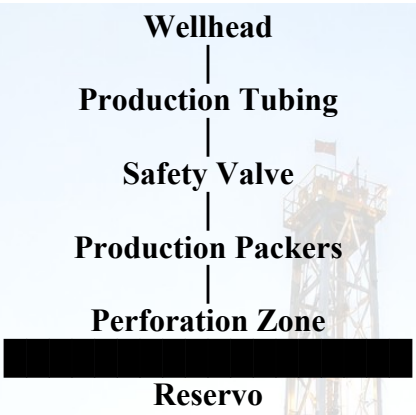
The completion design aims to maximize production while maintaining reservoir integrity.

Conceptual completion includes:

- Perforated production intervals;
- Sand control measures;
- Downhole safety valve;
- Production tubing;
- Wellhead assembly.

Figure 6-3 Production Completion Concept

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



6.10 Artificial Lift Strategy

The initial reservoir conditions are expected to allow natural production.

Future artificial lift options:

- Electrical Submersible Pump (ESP);
- Gas lift system;
- Rod pump (where applicable).

Selection will depend on:

- Reservoir pressure decline;
- Water production;
- Production optimization requirements.

6.11 Well Control Philosophy

The drilling program will implement internationally recognized well control practices.

Key elements:

- Blowout prevention system (BOP);
- Pressure monitoring;
- Kick detection;
- Emergency response procedures;
- Well control training.

6.12 Drilling Rig Requirements

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

The conceptual drilling campaign requires a modern land drilling unit.

Table 6-3 Rig Specification Concept

Parameter	Requirement
Rig Type	Land Drilling Rig
Depth Capability	3,500 m+
Hook Load	300–450 ton
Mud System	Closed circulation
Power System	Diesel-electric
Safety Standard	International Oilfield Standard

6.13 Conceptual Drilling Schedule

Table 6-4 Indicative Drilling Timeline

Activity	Duration
Exploration Well	90–120 days
Appraisal Well	75–100 days
Development Well	60–90 days
Completion Operations	10–20 days
Well Testing	15–30 days

6.14 Drilling Cost Framework

The following values represent conceptual budgeting assumptions only.

Table 6-5 Indicative Well Cost

Well Type	Estimated Cost Range
Exploration Well	USD 15–25 million
Appraisal Well	USD 12–20 million
Production Well	USD 10–18 million
Injection Well	USD 10–15 million

6.15 Drilling Risk Management

Key drilling risks:

Risk	Mitigation
Pressure uncertainty	Real-time monitoring
Lost circulation	Mud optimization

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Risk	Mitigation
Wellbore instability	Casing design
HSE incidents	Safety management system
Equipment failure	Preventive maintenance

End of Section 6

7. SURFACE FACILITIES, PROCESSING AND EXPORT INFRASTRUCTURE

7.1 Surface Development Philosophy

The surface facilities concept has been developed to support the phased development of the conceptual petroleum field and provide a reliable, expandable production system.

The facilities design philosophy is based on:

- Safe hydrocarbon handling;
- Modular expansion capability;
- Operational reliability;
- Environmental protection;
- Integration with future field growth.
-

The initial facilities are designed to support the pilot production phase while maintaining sufficient flexibility for future capacity expansion.

7.2 Surface Facilities Overview

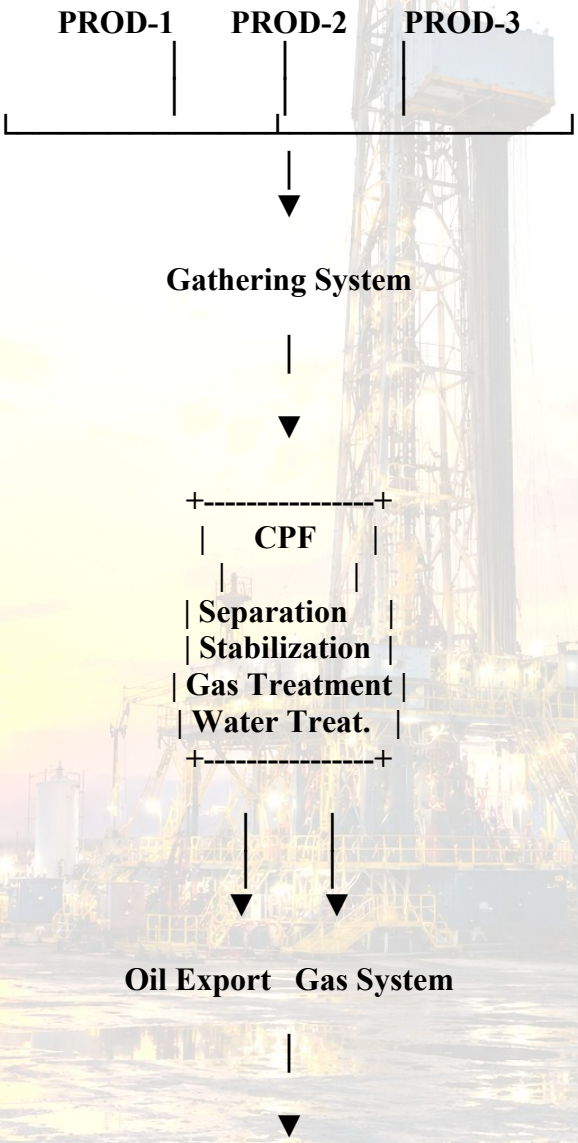
The conceptual development consists of the following major facilities:

1. Well pads and production manifolds;
2. Flowline gathering system;
3. Central Processing Facility (CPF);
4. Oil storage facilities;
5. Gas handling system;
6. Produced water treatment;
7. Power generation facilities;

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

8. Export pipeline system;
9. Marine export terminal;
10. Operations and maintenance infrastructure.

Figure 7-1 Integrated Field Facilities Concept



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Storage Terminal

▼

Export Tanker

==========

7.3 Well Pad and Gathering System

The production wells will be connected through a centralized gathering network.
The gathering system includes:

- Wellhead assemblies;
- Production manifolds;
- Flowlines;
- Isolation valves;
- Metering equipment;
- Pigging facilities.

Table 7-1 Gathering System Design Basis

Parameter	Conceptual Value
System Type	Onshore Flowline Network
Fluid	Oil / Gas / Water Mixture
Operating Pressure	500–1,500 psi
Pipeline Material	Carbon Steel
Flow Control	Automated Valves

7.4 Central Processing Facility (CPF)

The CPF represents the primary processing hub of the field.

The facility performs:

- Bulk separation;
- Crude stabilization;
- Gas treatment;
- Produced water handling;
- Measurement and export preparation.

7.5 CPF Process Description

Stage 1 – Inlet Reception

Production fluids from wells enter the CPF through the inlet manifold.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Functions:

- Flow distribution;
- Pressure reduction;
- Initial separation preparation.

Stage 2 – Three Phase Separation

The separator removes:

- Crude oil;
- Associated gas;
- Produced water.

Stage 3 – Crude Stabilization

The stabilization unit:

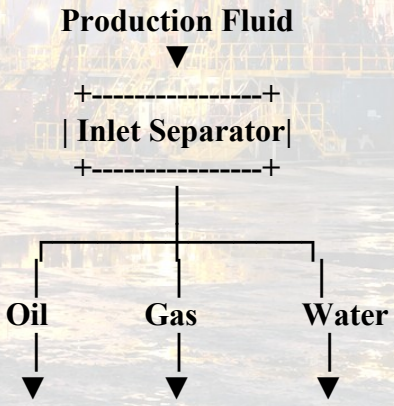
- Removes dissolved light hydrocarbons;
- Controls vapour pressure;
- Produces export-quality crude.

Stage 4 – Export Metering

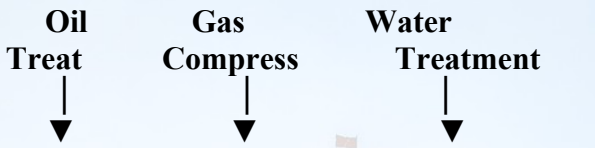
Final crude measurement includes:

- Flow measurement;
- Density measurement;
- Quality monitoring;
- Custody transfer preparation.

Figure 7-2 CPF Process Flow Diagram



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



7.6 Crude Oil Processing Capacity

The conceptual CPF has been sized for the anticipated plateau production phase.

Table 7-2 CPF Capacity Basis

Parameter	Design Capacity
Oil Processing	50,000 barrels per day
Gas Handling	80 MMSCFD
Produced Water	20,000 barrels per day
Facility Availability	95%
Design Life	20 years

7.7 Gas Handling System

Associated gas management options include:

Option 1 – Gas Utilization

Preferred option:

- Power generation;
- Fuel gas supply;
- Future gas commercialization.

Option 2 – Gas Export

Future possibility:

- Gas pipeline connection;
- Regional gas market supply.

Option 3 – Controlled Flare System

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Emergency and operational flaring only.

7.8 Flare System Concept

The flare system provides safe disposal of hydrocarbons during:

- Emergency shutdown;
- Start-up;
- Maintenance operations;
- Process upset conditions.

Components:

- Flare knockout drum;
- Flare stack;
- Ignition system;
- Monitoring equipment.

7.9 Produced Water Management

Produced water treatment will comply with environmental requirements.

Treatment stages:

1. Oil-water separation;
2. Filtration;
3. Hydrocarbon removal;
4. Quality monitoring.

Final disposal options:

- Reinjection;
- Approved discharge;
- Treatment-based disposal.

7.10 Storage Facilities

The development includes a dedicated crude oil storage system.

The storage facility provides:

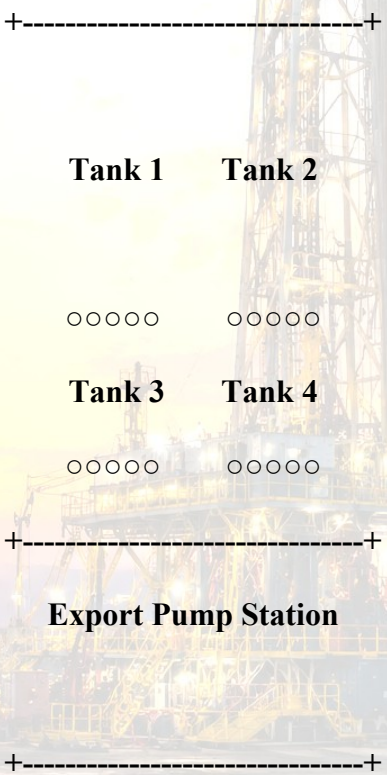
Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Production buffering;
- Export flexibility;
- Tanker loading preparation.

Table 7-3 Storage Facility Concept

Parameter	Design Basis
Storage Capacity	500,000–1,000,000 barrels
Tank Type	Floating Roof Storage Tanks
Number of Tanks	2–4 Units
Service	Stabilized Crude Oil

Figure 7-3 Conceptual Tank Farm Layout



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

7.11 Export Pipeline System

The export system connects the processing facilities with the marine terminal.

The pipeline system includes:

- Main export pipeline;
- Pump stations;
- Pressure monitoring;
- Leak detection;
- Isolation systems.

Table 7-4 Export Pipeline Concept

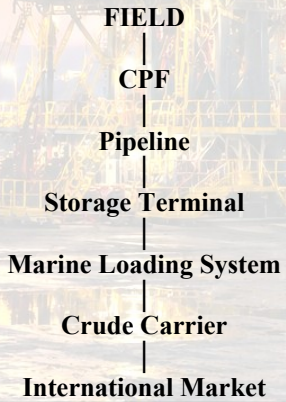
Parameter	Conceptual Value
Pipeline Type	Crude Oil Export Pipeline
Diameter	12–18 inches
Length	20–60 km
Capacity	50,000+ bopd
Operation	Continuous

7.12 Marine Export Terminal Concept

The export terminal enables shipment of crude oil to international markets.
Infrastructure includes:

- Marine loading platform;
- Offshore loading point;
- Navigation aids;
- Tanker connection system.

Figure 7-4 Export Chain



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

7.13 Operations and Maintenance Facilities

The project includes:

- Administration building;
- Maintenance workshop;
- Warehouse;
- Control room;
- Laboratory;
- Emergency response facilities.

7.14 Automation and Control System

The facility will incorporate:

- Distributed Control System (DCS);
- Supervisory Control and Data Acquisition (SCADA);
- Emergency Shutdown System (ESD);
- Fire and Gas Detection System.

7.15 Facilities Expansion Capability

The design allows future expansion through:

- Additional production trains;
- Additional storage capacity;
- Additional wells;
- Increased export capacity.

End of Section 7

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

8. PROJECT EXECUTION PLAN, EPC STRATEGY AND IMPLEMENTATION SCHEDULE

8.1 Project Execution Philosophy

The project execution strategy has been developed to provide a structured pathway from conceptual development through engineering, construction, commissioning, and production start-up.

The execution philosophy follows internationally recognized upstream petroleum project practices applied by major operators, engineering companies, and EPC contractors.

The key objectives are:

- Safe project delivery;
- Schedule control;
- Capital efficiency;
- Quality assurance;
- Local capability development;
- Long-term operational reliability.

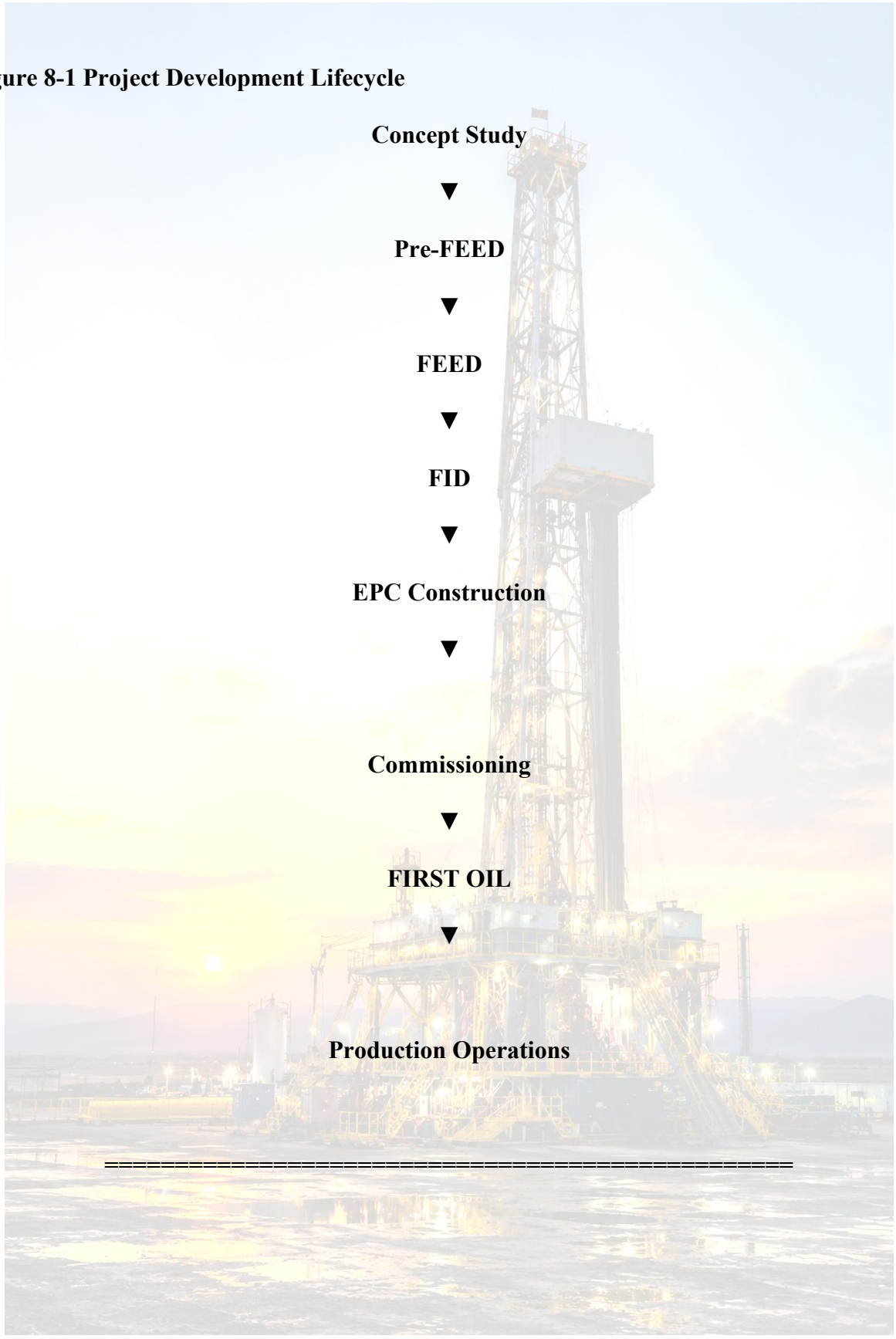
8.2 Project Development Lifecycle

The conceptual project lifecycle consists of the following stages:

Phase	Description
Phase 1	Concept Selection
Phase 2	Pre-FEED Engineering
Phase 3	FEED Engineering
Phase 4	Final Investment Decision (FID)
Phase 5	EPC Execution
Phase 6	Commissioning
Phase 7	First Oil
Phase 8	Operations

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Figure 8-1 Project Development Lifecycle



==========

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

8.3 Engineering Strategy

The engineering development will be executed through progressive technical definition.

Concept Phase

Objectives:

- Define development options;
- Evaluate technical feasibility;
- Estimate capital requirements;
- Identify major risks.

Deliverables:

- Conceptual Development Plan;
- Initial facility design;
- Preliminary cost estimate.

Pre-FEED Phase

Objectives:

- Select preferred development concept;
- Establish design basis;
- Define facility requirements.

Deliverables:

- Process design basis;
- Equipment specifications;
- Layout studies;
- Project execution plan.

FEED Phase

The Front-End Engineering Design phase will establish the technical foundation for EPC execution.

Major FEED deliverables:

- Process Flow Diagrams (PFD);
- Piping and Instrumentation Diagrams (P&ID);
- Equipment datasheets;
- Civil design basis;
- Electrical design basis;
- HSE studies;
- Cost estimate.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

8.4 EPC Execution Strategy

The project may be executed using an integrated EPC delivery model.

EPC Scope

Engineering

Includes:

- Process engineering;
- Mechanical engineering;
- Civil engineering;
- Electrical engineering;
- Instrumentation engineering.

Procurement

Includes:

- Long-lead equipment;
- Processing units;
- Pumps and compressors;
- Electrical systems;
- Control systems.

Construction

Includes:

- Civil works;
- Structural installation;
- Mechanical installation;
- Pipeline construction;
- Electrical installation.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

8.5 Major Contractor Packages

The project execution may be divided into specialized packages.

Package 1 – Drilling Services

Scope:

- Rig services;
- Well construction;
- Completion operations;
- Well testing.

Package 2 – Surface Facilities EPC

Scope:

- CPF construction;
- Processing equipment;
- Utilities;
- Control systems.

Package 3 – Pipeline Infrastructure

Scope:

- Gathering network;
- Export pipeline;
- Pump stations.

Package 4 – Export Terminal

Scope:

- Marine loading system;
- Storage facilities;
- Offshore connection infrastructure.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table 8-1 Major Project Packages

Package	Responsible Contractor Type
Drilling	International Drilling Contractor
CPF	EPC Contractor
Pipeline	Pipeline Contractor
Marine Terminal	Offshore Engineering Contractor
Operations Support	O&M Contractor

8.6 Indicative Project Schedule

The conceptual implementation timeline assumes successful project approvals and financing.

Table 8-2 Development Schedule

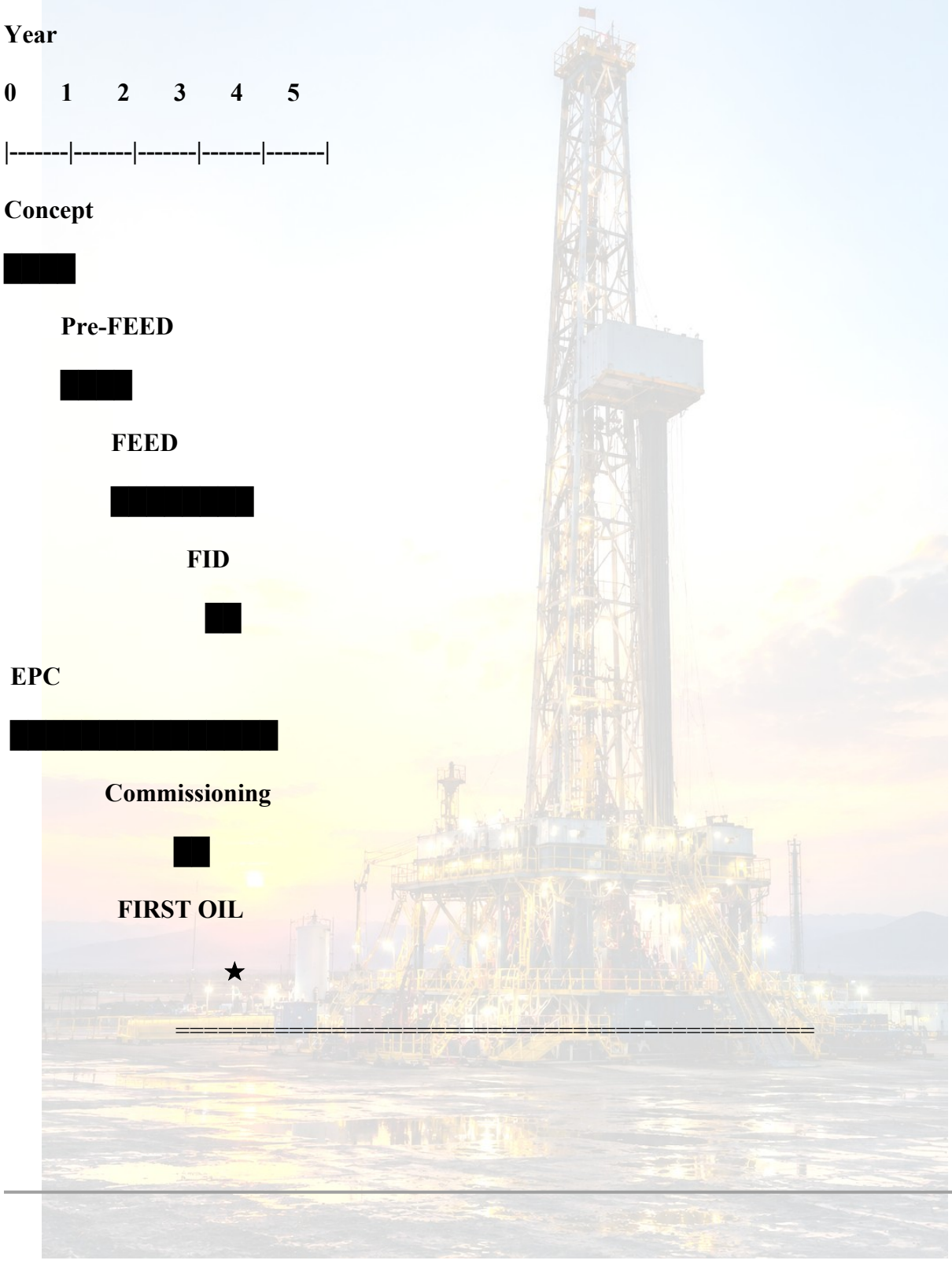
Activity	Duration
Concept Selection	6 months
Pre-FEED	6 months
FEED	12 months
FID Approval	3 months
EPC Construction	30–36 months
Commissioning	3–6 months
First Oil	Month 60–66

==========

==========

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Figure 8-2 Conceptual Project Timeline



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

8.7 Project Milestones

Table 8-3 Key Milestones

Milestone	Target
Concept Approval	Month 0
Pre-FEED Completion	Month 12
FEED Completion	Month 24
FID	Month 27
Construction Start	Month 30
First Production	Month 60–66

8.8 Quality Management System

The project will apply a structured quality management framework.

Key elements:

- Engineering quality control;
- Vendor qualification;
- Material inspection;
- Construction surveillance;
- Commissioning verification.

8.9 Commissioning and Start-Up Strategy

Commissioning activities include:

Mechanical Completion

Verification of:

- Equipment installation;
- Piping completion;
- Electrical systems;
- Instrumentation.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Pre-Commissioning

Activities:

- Pressure testing;
- Flushing;
- Calibration;
- System verification.

Start-Up

Activities:

- Hydrocarbon introduction;
- Process stabilization;
- Production ramp-up.

Figure 8-3 Commissioning Sequence

Construction Complete

▼

Mechanical Completion

▼

Pre-Commissioning

▼

Commissioning

▼

Hydrocarbon Introduction

▼

FIRST OIL

8.10 Local Content Development Strategy

The project will incorporate local participation through:

- Employment opportunities;
- Technical training;
- Local supplier development;
- Support services;
- Knowledge transfer.

Potential local participation areas:

- Civil works;
- Logistics;
- Security;
- Catering;
- Maintenance support;
- Environmental services.

8.11 Project Governance Structure

The project governance model consists of:

Operator / Project Owner

Responsibilities:

- Strategic decisions;
- Investment approval;
- Regulatory engagement.

Project Management Team

Responsibilities:

- Schedule control;
- Cost management;
- Risk management.

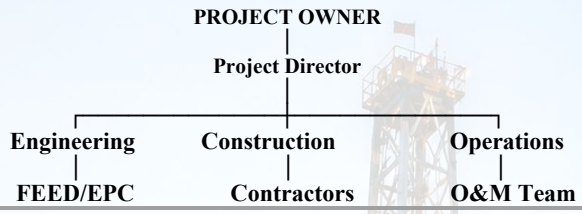
EPC Contractor

Responsibilities:

- Engineering;
- Procurement;
- Construction delivery.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Figure 8-4 Project Organization Structure



End of Section 8

9. CAPITAL COST ESTIMATE (CAPEX), OPERATING COST (OPEX) AND ECONOMIC EVALUATION

9.1 Economic Evaluation Philosophy

The economic evaluation has been prepared to demonstrate the commercial framework of the conceptual pilot petroleum development project.

The financial model follows standard upstream petroleum project evaluation methodology, incorporating:

- Initial capital investment;
- Drilling expenditure;
- Surface facility investment;
- Operating costs;
- Production assumptions;
- Revenue generation;
- Project profitability indicators.

All economic values presented in this section are **conceptual engineering estimates for demonstration purposes only** and require confirmation through detailed feasibility studies, reservoir certification, market analysis, and commercial agreements.

9.2 Economic Model Assumptions

The conceptual economic model is based on the following assumptions:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table 9-1 Economic Input Parameters

Parameter	Assumption
Development Type	Onshore Oil Field
Initial Production	15,000 bopd
Plateau Production	50,000 bopd
Plateau Period	5 years
Field Life	20 years
Oil Price Assumption	USD 70/bbl
Recovery Factor	30%
Discount Rate	10%
Fiscal Framework	To be defined

9.3 Capital Expenditure (CAPEX)

The initial development investment includes all major facilities required to achieve first oil.

Major CAPEX categories:

- Exploration and appraisal drilling;
- Development wells;
- Central Processing Facility;
- Gathering system;
- Export pipeline;
- Storage facilities;
- Marine export infrastructure;
- Utilities;
- Project management.

Table 9-2 Conceptual CAPEX Estimate

Cost Category	Estimated Cost
Exploration & Appraisal Drilling	USD 80–120 million
Development Wells	USD 250–350 million
Central Processing Facility	USD 400–600 million
Gathering System	USD 100–150 million
Export Pipeline	USD 200–350 million
Storage Facilities	USD 150–250 million
Marine Export Terminal	USD 250–450 million
Power & Utilities	USD 100–150 million
Engineering & Project Management	USD 150–250 million

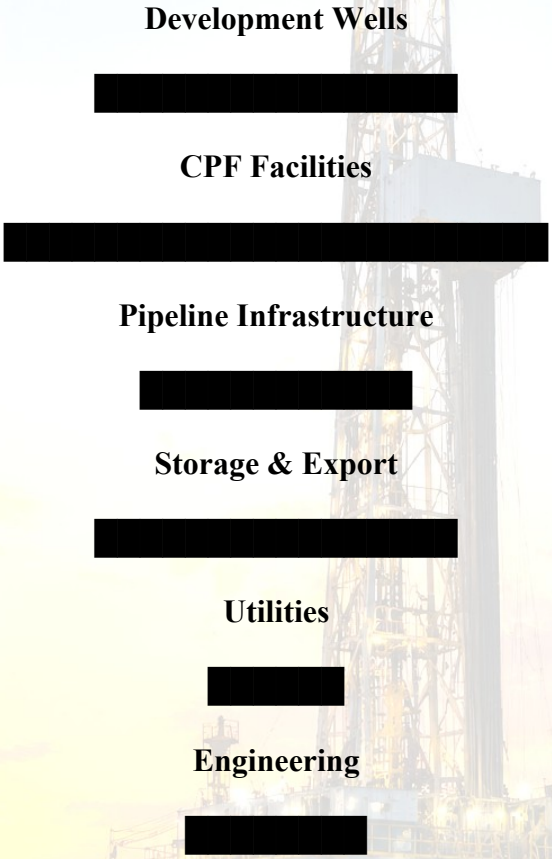
Estimated Initial Development CAPEX:

USD 1.7 – 2.7 Billion

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

9.4 CAPEX Distribution

Figure 9-1 Conceptual CAPEX Allocation



9.5 Operating Expenditure (OPEX)

Annual operating costs include:

- Production operations;
- Maintenance;

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Personnel;
- Logistics;
- Chemicals;
- Energy consumption;
- Environmental monitoring;
- Integrity management.

Table 9-3 Annual OPEX Estimate

Category	Annual Cost
Field Operations	USD 40–60 million
Maintenance	USD 30–50 million
Logistics & Marine Support	USD 20–40 million
Personnel & Administration	USD 15–25 million
Utilities & Energy	USD 20–35 million
HSE & Environmental Management	USD 10–20 million

Estimated Annual OPEX:

USD 135–230 Million / Year

9.6 Production Revenue Model

The conceptual revenue model is based on stabilized crude oil production.

Formula:

Annual Revenue = Production Volume × Oil Price

Example Plateau Production Case:

Production:

50,000 barrels/day

Annual production:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

18.25 million barrels/year

Oil price assumption:

USD 70/barrel

Estimated gross annual revenue:

USD 1.28 Billion / Year

9.7 Production Profile

Table 9-4 Conceptual Production Forecast

Year	Production Rate	Annual Production
1	15,000 bopd	5.5 MMbbl
2	35,000 bopd	12.8 MMbbl
3	50,000 bopd	18.3 MMbbl
4	50,000 bopd	18.3 MMbbl
5	50,000 bopd	18.3 MMbbl
6	45,000 bopd	16.4 MMbbl
7	40,000 bopd	14.6 MMbbl
8	35,000 bopd	12.8 MMbbl
9	30,000 bopd	11.0 MMbbl
10	25,000 bopd	9.1 MMbbl

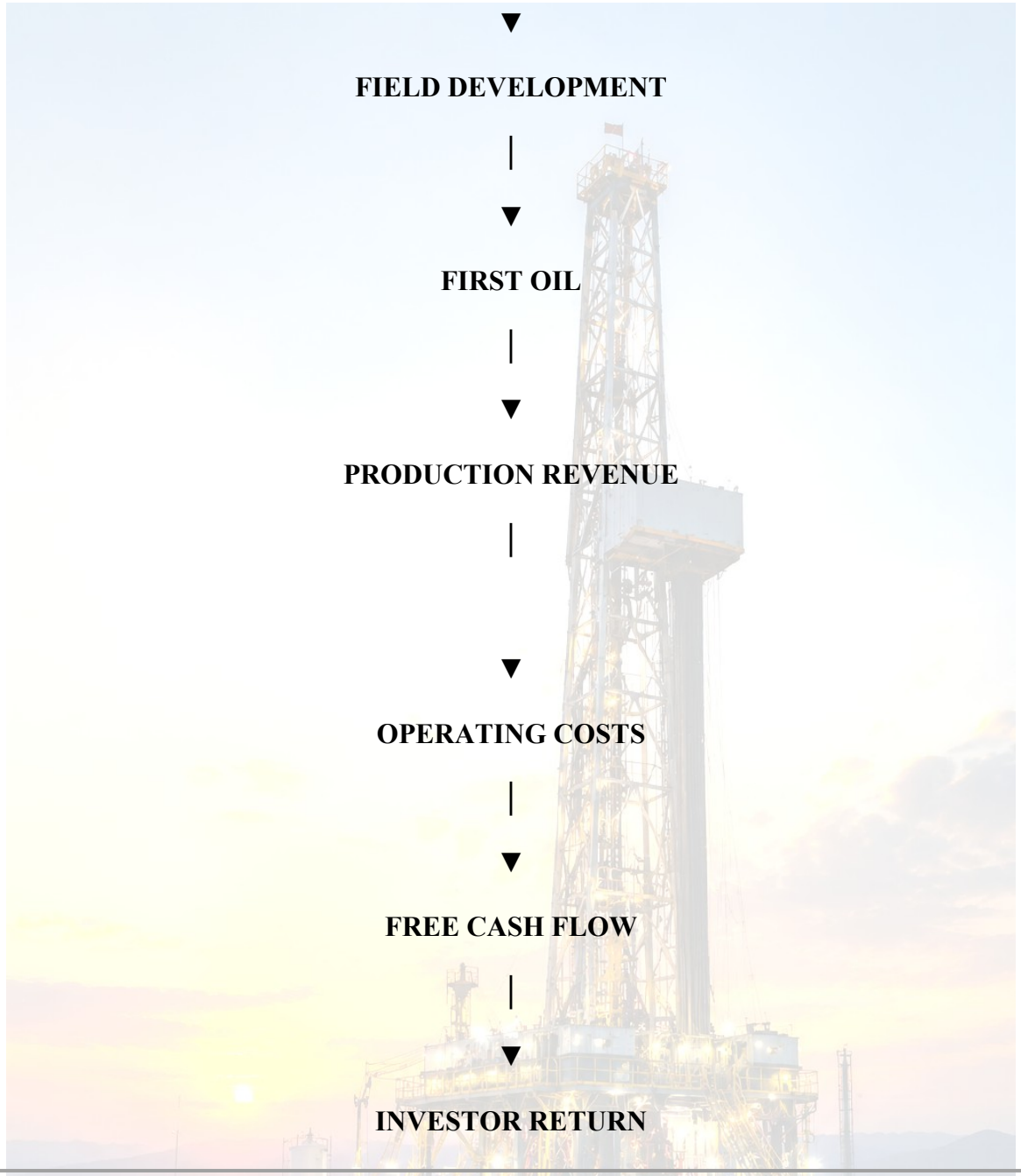
9.8 Project Cash Flow Concept

The conceptual cash flow structure:

CAPEX INVESTMENT

|

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



9.9 Economic Indicators

Based on the conceptual assumptions:

Table 9-5 Indicative Economic Results

Indicator	Estimated Value
Project Life	20 years

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Indicator	Estimated Value
Gross Recoverable Oil	135–195 MMbbl
Revenue Potential	USD 9–14 Billion
CAPEX	USD 1.7–2.7 Billion
Payback Period	3–5 years after First Oil
Project IRR	Conceptually 20–35%
NPV @10%	Positive

9.10 Sensitivity Analysis

The project economics are primarily influenced by:

- Oil price;
- Reservoir performance;
- CAPEX level;
- Production plateau;
- Operating costs.

Table 9-6 Sensitivity Scenarios

Scenario	Impact
Higher Oil Price	Increased project value
Lower Oil Price	Reduced profitability
Higher Reservoir Recovery	Increased reserves
Higher CAPEX	Reduced returns
Production Delay	Negative cash flow impact

9.11 Economic Risk Management

Key economic risks:

Risk	Mitigation
Oil price volatility	Long-term marketing strategy
Cost escalation	EPC contract control
Schedule delays	Project management system
Reservoir uncertainty	Appraisal drilling

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Risk	Mitigation
Financing risk	Structured investment approach

9.12 Potential Investment Structure

The conceptual project financing structure may include:

- Project equity investment;
- Strategic energy partners;
- Development finance institutions;
- Export credit support;
- Commercial lending facilities.

9.13 Commercial Development Considerations

Prior to investment approval, the following studies are required:

- Certified resource assessment;
- Environmental and Social Impact Assessment (ESIA);
- Detailed feasibility study;
- Fiscal regime evaluation;
- Offtake agreements;
- Financing structure.

End of Section 9

10. HEALTH, SAFETY, ENVIRONMENT (HSE), ESG AND LOCAL CONTENT STRATEGY

10.1 HSE Management Philosophy

The Conceptual Pilot Petroleum Field Development Project is designed around the principle that safe operations, environmental protection, and responsible community engagement are fundamental requirements for sustainable petroleum development.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

The project will implement a structured Health, Safety and Environmental Management System (HSE-MS) aligned with internationally recognized oil and gas industry practices.

The primary objectives are:

- Prevention of major accidents;
- Protection of personnel and communities;
- Minimization of environmental impact;
- Responsible management of natural resources;
- Continuous improvement of operational performance.

10.2 HSE Management System Framework

The HSE management system will be based on the following elements:

Element	Description
Leadership Commitment	Management responsibility for safety performance
Risk Management	Identification and mitigation of operational risks
Procedures & Standards	Controlled operating procedures
Training & Competency	Workforce qualification programs
Emergency Preparedness	Response planning and exercises
Monitoring & Improvement	Performance measurement and corrective actions

Figure 10-1 HSE Management Cycle

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

10.3 Occupational Health and Safety Management

The project will apply a proactive safety culture focused on preventing incidents before occurrence.

Key safety programs include:

- Permit to Work (PTW) system;
- Lock Out / Tag Out (LOTO);
- Job Safety Analysis (JSA);
- Toolbox meetings;
- Personal Protective Equipment (PPE);
- Safety observation programs.

10.4 Major Accident Hazard Management

Potential major hazards include:

- Hydrocarbon release;
- Fire and explosion;
- Well control incidents;
- Pressure equipment failure;
- Transportation incidents.

Risk reduction measures:

- Process safety management;
- Safety Instrumented Systems (SIS);
- Emergency Shutdown Systems (ESD);
- Fire and Gas Detection Systems;
- Pressure relief systems.

10.5 Emergency Response Plan

The project will establish an integrated emergency response framework.

Emergency scenarios considered:

Hydrocarbon Release

Response:

- Source isolation;
- Area evacuation;
- Containment;
- Environmental protection.

Fire Emergency

Response:

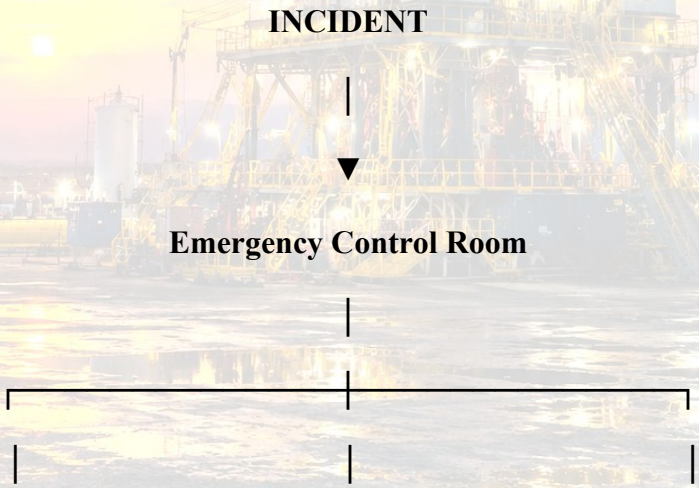
- Fire detection;
- Alarm activation;
- Fire suppression;
- Emergency response team mobilization.

Medical Emergency

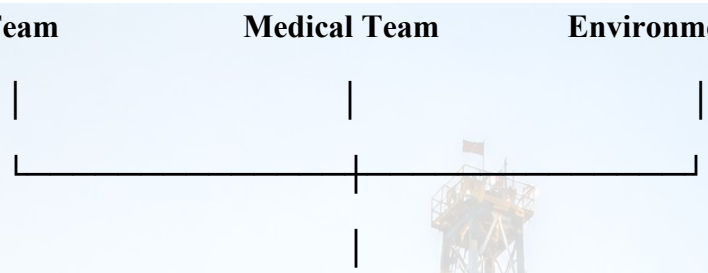
Response:

- First aid facilities;
- Medical evacuation capability;
- Emergency transportation arrangements.

Figure 10-2 Emergency Response Structure



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



10.6 Environmental Management Strategy

The project will incorporate environmental protection measures throughout the project lifecycle.

Environmental management areas:

- Land disturbance control;
- Water protection;
- Waste management;
- Air emissions control;
- Biodiversity protection;
- Spill prevention.

10.7 Environmental Impact Assessment (ESIA)

Prior to development approval, a comprehensive Environmental and Social Impact Assessment will be conducted.

The ESIA will evaluate:

- Baseline environmental conditions;
- Potential project impacts;
- Mitigation measures;
- Monitoring programs;
- Community impacts.

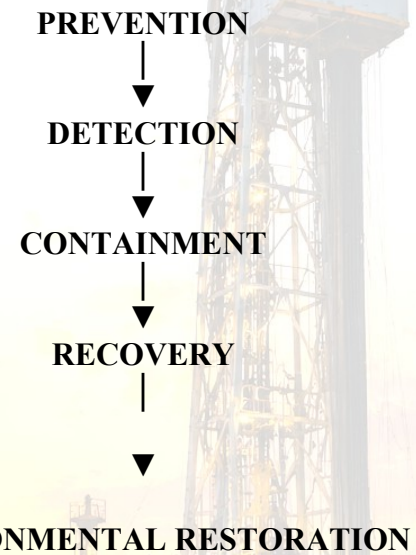
10.8 Spill Prevention and Response

The project will implement a comprehensive oil spill prevention strategy.

Key measures:

- Double containment systems;
- Pipeline integrity monitoring;
- Leak detection systems;
- Emergency spill response equipment;
- Regular inspection programs.

Figure 10-3 Spill Management Process



10.9 Emissions Management

The project will aim to minimize greenhouse gas emissions through:

- Associated gas utilization;
- Reduced routine flaring;
- Energy efficiency measures;
- Equipment optimization.

Potential emission sources:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Source	Control Measure
Gas Flaring	Gas utilization strategy
Power Generation	Efficient fuel systems
Vehicles	Maintenance programs
Equipment	Emission monitoring

10.10 Waste Management Strategy

Waste streams include:

- Drilling waste;
- Produced water;
- Industrial waste;
- Domestic waste;
- Hazardous materials.

Management principles:

- Reduce;
- Reuse;
- Recycle;
- Recover;
- Responsible disposal.

10.11 ESG Framework

The project will incorporate Environmental, Social and Governance principles.

Environmental

Objectives:

- Minimize ecological impact;
- Protect water resources;
- Reduce emissions;
- Maintain biodiversity.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Social
Objectives:

- Create employment;
- Support local communities;
- Develop skills;
- Maintain transparent communication.

Governance
Objectives:

- Ethical business practices;
- Regulatory compliance;
- Transparency;
- Responsible project management.

10.12 Local Content Development Strategy

The project recognizes local participation as an important component of long-term economic development.

The local content strategy focuses on:

- Employment generation;
- Technical training;
- Supplier development;
- Knowledge transfer.

Table 10-1 Local Content Opportunities

Area	Potential Local Participation
Construction Support	Civil works and services
Logistics	Transport and supply chain
Operations Support	Maintenance assistance
Administration	Local services
Training	Technical development programs

10.13 Workforce Development Program

The project will establish training initiatives including:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Petroleum operations training;
- Safety certification;
- Technical apprenticeships;
- Engineering development;
- Management training.

10.14 Community Engagement Strategy

The project will maintain structured communication with affected communities.

Engagement activities:

- Community consultation;
- Employment information programs;
- Social investment initiatives;
- Grievance management mechanism.

10.15 Social Investment Concept

Potential community development programs:

- Technical education support;
- Health initiatives;
- Infrastructure support;
- Water access improvement;
- Local enterprise development.

10.16 HSE Performance Indicators

The project will monitor:

Indicator	Target
Fatalities	Zero
Major Environmental Incidents	Zero
Lost Time Injury Rate	Minimum achievable
Spill Events	Zero significant spills
Regulatory Compliance	100%

End of Section 10

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

11. REGULATORY FRAMEWORK, GOVERNMENT ENGAGEMENT AND PROJECT APPROVAL PATHWAY

11.1 Regulatory Philosophy

The Conceptual Pilot Petroleum Field Development Project recognizes that successful petroleum development requires full alignment with national legislation, regulatory requirements, environmental obligations, and government development objectives.

The regulatory approach is based on:

- Compliance with applicable petroleum legislation;
- Transparent government engagement;
- Environmental and social responsibility;
- Technical approval processes;
- Long-term cooperation with national authorities.

This conceptual development framework is structured to demonstrate the pathway that a future petroleum project would follow from evaluation through potential development authorization.

11.2 Government Stakeholder Engagement

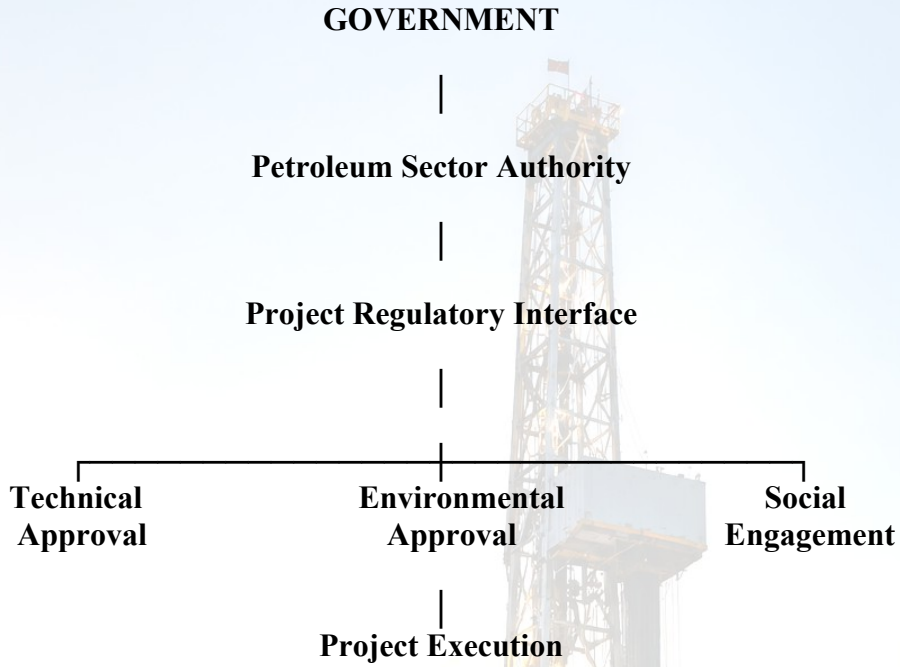
A petroleum development project requires coordinated engagement with relevant government institutions.

Key stakeholder categories include:

Stakeholder	Responsibility
Petroleum Regulatory Authority	Petroleum sector oversight
Ministry Responsible for Energy/Petroleum	Policy direction and approvals
Environmental Authorities	Environmental compliance
Maritime Authorities	Marine operations and export activities
Local Government Institutions	Community coordination
National Development Agencies	Economic integration

Figure 11-1 Government Engagement Structure

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



11.3 Petroleum Project Approval Pathway

The conceptual approval process follows a structured development sequence.

Stage 1 – Conceptual Evaluation

Activities:

- Technical assessment;
- Geological evaluation;
- Preliminary development concept;
- Initial stakeholder discussions.

Stage 2 – Exploration Authorization

Requirements may include:

- Exploration program;
- Geological work plan;

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Environmental screening;
- Regulatory submissions.

Stage 3 – Appraisal and Development Planning

Activities:

- Reservoir evaluation;
- Development concept selection;
- Commercial assessment;
- Field Development Plan preparation.

Stage 4 – Development Approval

Required documentation:

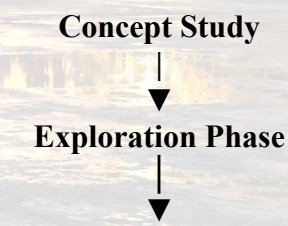
- Final Field Development Plan;
- Environmental Impact Assessment;
- Development program;
- Safety management plan;
- Local content plan.

Stage 5 – Production Authorization

Activities:

- Facility certification;
- Operational readiness review;
- Production approval.

Figure 11-2 Approval Roadmap



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

11.4 Petroleum Contract and Commercial Framework

The final commercial structure would be established according to applicable national petroleum regulations.

Potential contractual frameworks internationally include:

- Production Sharing Contract (PSC);
- Concession Agreement;
- Risk Service Contract;
- Joint Venture Development Agreement.

The final structure would depend on:

- Government policy;
- Petroleum legislation;
- Investor requirements;

- Project economics.

11.5 Government Participation Concept

Many petroleum-producing jurisdictions incorporate government participation mechanisms.

Potential models include:

- National petroleum company participation;
- Carried interest arrangements;
- Revenue sharing mechanisms;
- Local economic participation.

The specific structure would be subject to government negotiation and applicable law.

11.6 Environmental Approval Requirements

Before project development, environmental approvals would typically require:

Environmental and Social Impact Assessment (ESIA)

Including:

- Baseline environmental studies;
- Impact assessment;
- Mitigation measures;
- Monitoring program;
- Stakeholder consultation.

11.7 Regulatory Compliance Management

The project will maintain a compliance management system covering:

Area	Compliance Requirement
Petroleum Operations	Applicable petroleum regulations
Environment	Environmental permits
Safety	Occupational safety standards
Marine Operations	Maritime requirements
Labour	Employment legislation
Local Content	National participation requirements

11.8 Legal and Contract Management

The project will establish a dedicated legal and commercial management structure.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Responsibilities:

- Contract review;
- Supplier agreements;
- EPC contracts;
- Service agreements;
- Regulatory documentation;
- Commercial negotiations.

11.9 Data Management and Reporting

The project will maintain transparent technical reporting systems.

Reporting areas:

- Geological data;
- Drilling results;
- Production performance;
- HSE statistics;
- Environmental monitoring;
- Financial reporting.

11.10 Government Reporting Framework

Regular reporting may include:

Technical Reports

- Exploration progress;
- Drilling results;
- Reservoir evaluation.

Operational Reports

- Production volumes;
- Equipment performance;
- Maintenance activities.

HSE Reports

- Safety performance;
- Environmental monitoring;

- Incident reporting.

11.11 Local Economic Development Alignment

The project development concept supports national economic objectives through:

- Energy sector development;
- Employment creation;
- Industrial capability development;
- Infrastructure improvement;
- Technology transfer.

11.12 Transparency and Governance Principles

The project will promote:

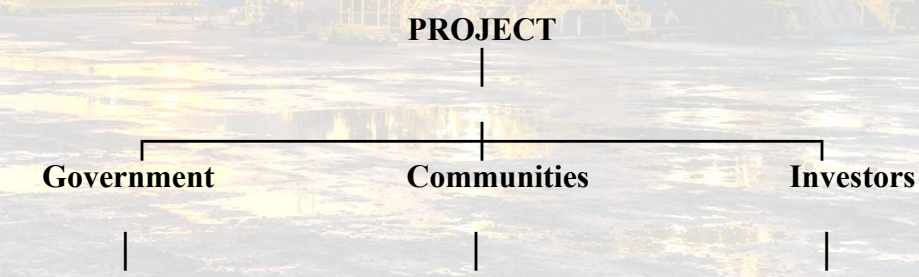
- Responsible investment practices;
- Anti-corruption compliance;
- Transparent procurement;
- Ethical business conduct;
- International reporting standards.

11.13 Stakeholder Management Plan

Stakeholder groups:

Group	Engagement Objective
Government	Regulatory alignment
Communities	Social acceptance
Investors	Commercial confidence
Contractors	Project execution
Environmental Organizations	Environmental responsibility

Figure 11-3 Stakeholder Engagement Model



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

11.14 Project Approval Readiness Criteria

Before final investment approval, the project should demonstrate:

- Confirmed resource potential;
- Technical feasibility;
- Environmental compliance;
- Economic viability;
- Regulatory approval pathway;
- Financing strategy;
- Execution capability.

End of Section 11

12. PROJECT FINANCING STRUCTURE, INVESTMENT MODEL AND COMMERCIAL STRATEGY

12.1 Financing Philosophy

The financing strategy for the Conceptual Pilot Petroleum Field Development Project is designed to demonstrate a structured investment framework suitable for a large-scale upstream energy development.

The financing concept is based on the principle of combining:

- Strategic equity investment;
- Project finance mechanisms;
- Industry partnerships;
- Long-term commercial agreements;
- Responsible capital allocation.

The objective is to create a financing structure capable of supporting exploration, development, infrastructure construction, and long-term production operations.

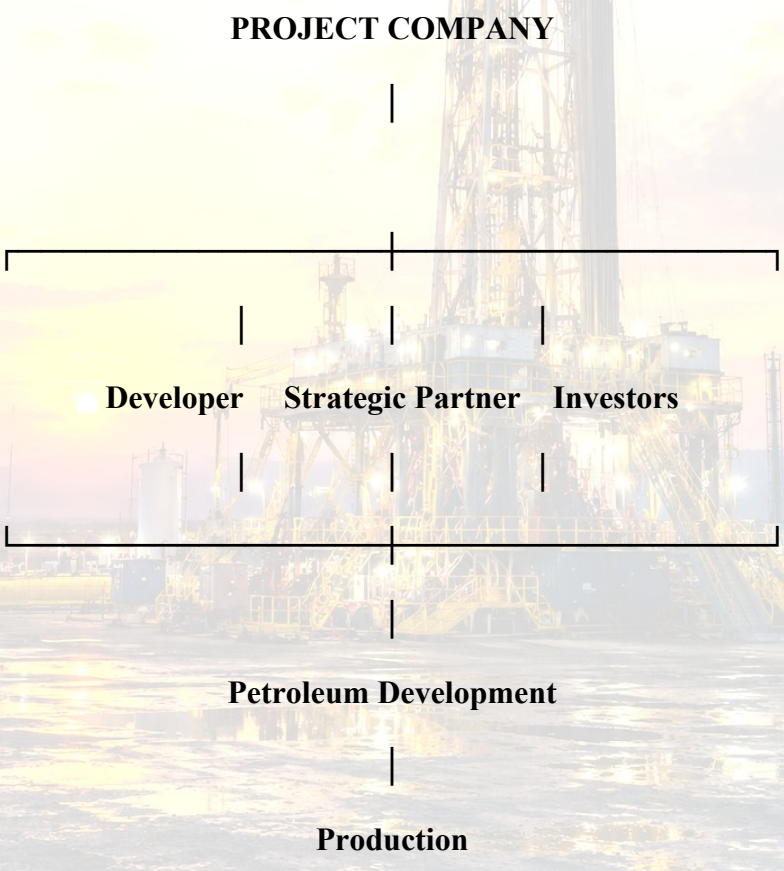
Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

12.2 Potential Investment Structure

A conceptual project ownership structure may include:

Participant	Role
Project Developer	Project origination and management
Strategic Energy Partner	Technical and financial participation
National Stakeholder	Government participation where applicable
Financial Investors	Equity capital contribution
Lenders	Debt financing

Figure 12-1 Conceptual Ownership Structure



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

12.3 Project Finance Model

The conceptual financing model follows international energy project finance principles.

Typical structure:

Equity Component

Purpose:

- Early-stage development;
- Engineering studies;
- Regulatory processes;
- Initial capital commitment.

Debt Component

Purpose:

- Infrastructure construction;
- Equipment procurement;
- Development expenditure.

Potential financing sources:

- Commercial banks;
- Development finance institutions;
- Export credit agencies;
- Energy infrastructure funds.

Table 12-1 Conceptual Financing Mix

Source	Indicative Share
Sponsor Equity	30–40%
Strategic Partner Equity	10–30%

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Source	Indicative Share
Project Debt	40–60%

12.4 Financing Development Phases

The financing approach changes throughout the project lifecycle.

Phase 1 – Exploration Financing

Funding requirements:

- Geological studies;
- Seismic acquisition;
- Exploration drilling;
- Technical evaluation.

Typical funding source:

- Sponsor capital;
- Strategic investors.

Phase 2 – Development Financing

Funding requirements:

- Production wells;
- CPF construction;
- Export infrastructure.

Typical funding source:

- Project finance;
- Institutional investors;
- Energy partners.

Phase 3 – Production Financing

Funding supported by:

- Operating cash flow;
- Offtake agreements;
- Reserve-backed financing.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

12.5 Bankability Requirements

For financing approval, lenders would typically require:

Technical Requirements

- Independent reservoir evaluation;
- Certified resource assessment;
- Development plan;
- Production forecast.

Commercial Requirements

- Crude oil marketing strategy;
- Offtake arrangements;
- Price assumptions;
- Contract structure.

Legal Requirements

- Petroleum rights;
- Government approvals;
- Environmental permits;
- Contract framework.

12.6 Offtake and Crude Marketing Strategy

The project requires a structured crude oil marketing strategy.

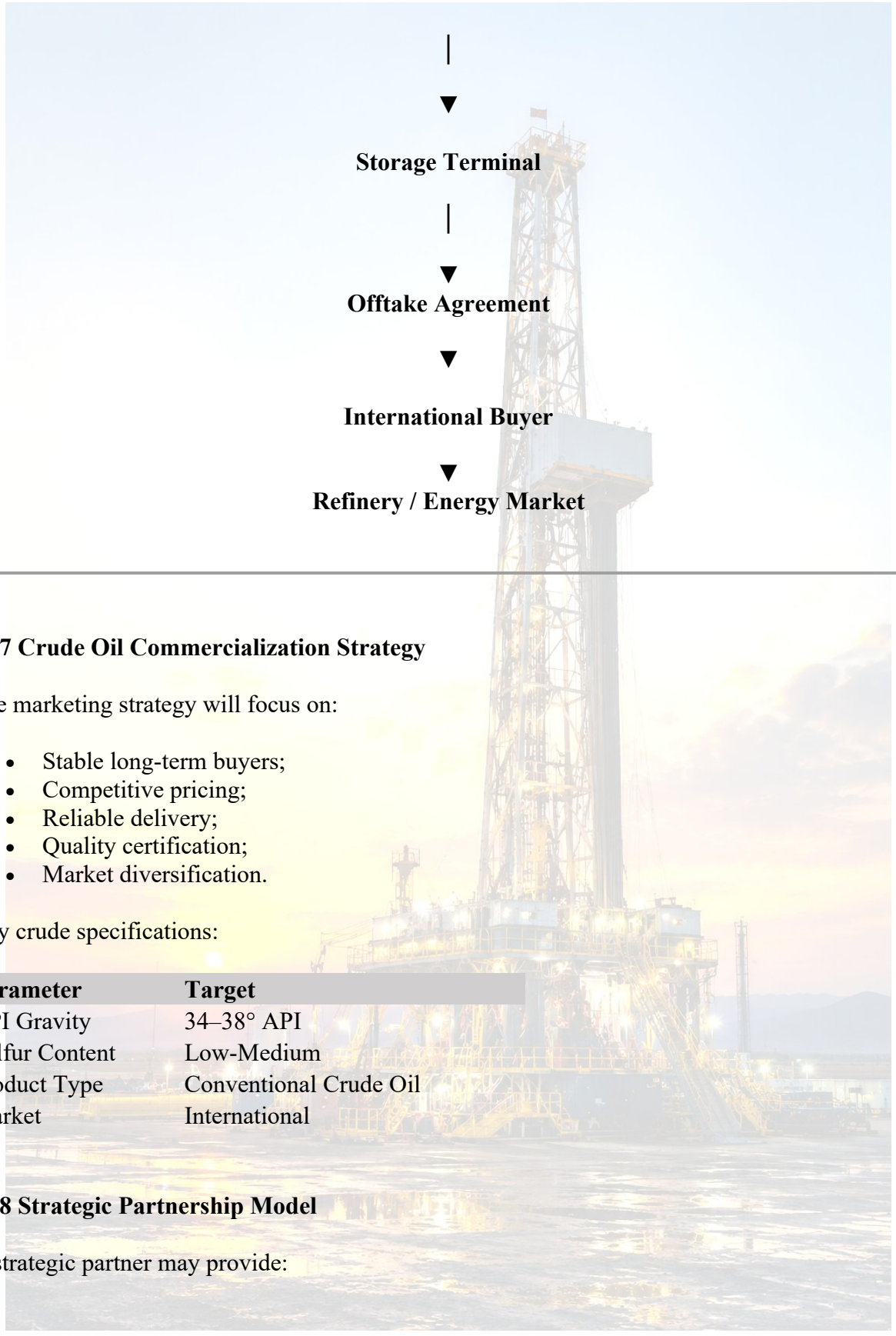
Potential buyers:

- International oil trading companies;
- Refining companies;
- Regional energy companies.

Conceptual Offtake Structure

FIELD PRODUCTION

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



12.7 Crude Oil Commercialization Strategy

The marketing strategy will focus on:

- Stable long-term buyers;
- Competitive pricing;
- Reliable delivery;
- Quality certification;
- Market diversification.

Key crude specifications:

Parameter	Target
API Gravity	34–38° API
Sulfur Content	Low-Medium
Product Type	Conventional Crude Oil
Market	International

12.8 Strategic Partnership Model

A strategic partner may provide:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Technical Contribution:

- Reservoir expertise;
- Operational capability;
- Engineering support.

Financial Contribution:

- Development capital;
- Project guarantees;
- Financing access.

Commercial Contribution:

- Crude marketing;
- Market access;
- Trading capability.

12.9 Risk Allocation Framework

A bankable project requires appropriate risk allocation.

Table 12-2 Risk Allocation

Risk	Responsible Party
Geological Risk	Project Developer / Partners
Construction Risk	EPC Contractor
Operational Risk	Operator
Market Risk	Offtaker / Project Company
Financing Risk	Investors / Lenders
Regulatory Risk	Managed through Government Framework

12.10 Investment Decision Framework

Before committing major capital, investors will evaluate:

Technical Assessment

- Reservoir quality;
- Production forecast;
- Development concept.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Economic Assessment

- CAPEX;
- OPEX;
- Revenue;
- Return indicators.

Strategic Assessment

- Regional energy opportunity;
- Market access;
- Long-term growth potential.

Figure 12-2 Investment Decision Process

12.11 Investor Return Concept

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

The project return profile is expected to be generated through:

- Crude oil sales;
- Long-term production;
- Infrastructure value;
- Potential field expansion.

Primary investor return mechanisms:

- Dividends;
- Production entitlement;
- Equity appreciation;
- Strategic asset value.

12.12 Financing Risk Mitigation

Risk reduction measures:

- Independent technical certification;
- Phased investment approach;
- EPC contracting strategy;
- Long-term offtake arrangements;
- Insurance coverage;
- Strong governance structure.

12.13 Commercial Readiness Requirements

Prior to financial close, the project should complete:

- Final reservoir assessment;
- Updated FDP;
- ESIA approval;
- Government agreements;
- EPC contract framework;
- Financing agreements;
- Offtake arrangements.

End of Section 12

13. PROJECT RISK MANAGEMENT, INSURANCE STRATEGY AND OPERATIONAL RESILIENCE

13.1 Risk Management Philosophy

The Conceptual Pilot Petroleum Field Development Project applies a structured risk management framework designed to identify, evaluate, mitigate, and continuously monitor risks throughout the project lifecycle.

The objective of the risk management system is to:

- Protect project value;
- Improve investment confidence;
- Reduce operational uncertainty;
- Support financing requirements;
- Ensure safe and reliable project execution.

Risk management will be integrated into:

- Engineering;
- Procurement;
- Construction;
- Operations;
- Commercial activities;
- Regulatory engagement.

13.2 Project Risk Management Framework

The project risk management process follows four main steps:

1. Risk Identification;
2. Risk Assessment;
3. Risk Mitigation;
4. Continuous Monitoring.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Figure 13-1 Risk Management Cycle

13.3 Project Risk Categories

The principal risk categories include:

Risk Category	Description
Geological Risk	Reservoir uncertainty
Drilling Risk	Well delivery challenges
Construction Risk	EPC execution issues
Operational Risk	Production reliability
Environmental Risk	Ecological impact
Regulatory Risk	Government approval requirements
Financial Risk	Cost and funding exposure
Market Risk	Oil price volatility
Security Risk	Regional operating conditions

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

13.4 Subsurface Risk Management

Subsurface uncertainty represents one of the primary risks during petroleum development.

Potential uncertainties:

- Reservoir size;
- Reservoir continuity;
- Fluid characteristics;
- Pressure behaviour;
- Recovery efficiency.

Risk mitigation measures:

- Additional seismic interpretation;
- Appraisal drilling;
- Reservoir simulation;
- Production testing;
- Continuous reservoir monitoring.

13.5 Drilling Risk Management

Potential drilling risks:

Risk	Mitigation
Loss of circulation	Optimized drilling fluids
Formation pressure uncertainty	Real-time pressure monitoring
Wellbore instability	Engineering design
Equipment failure	Preventive maintenance
Well control event	BOP and training

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

13.6 Construction and EPC Risk Management

Major EPC risks:

- Schedule delays;
- Cost escalation;
- Material shortages;
- Contractor performance.

Mitigation measures:

- Qualified EPC contractors;
- Detailed FEED studies;
- Contract management;
- Progress monitoring;
- Quality assurance programs.

13.7 Operational Risk Management

Operational reliability will be supported through:

- Preventive maintenance;
- Asset integrity management;
- Reliability engineering;
- Spare parts management;
- Operator training.
-

13.8 Environmental and Social Risk Management

Environmental risks:

- Oil spills;
- Emissions;
- Waste generation;
- Land disturbance.

Mitigation:

- Environmental management plan;
- Monitoring systems;
- Emergency response capability;
- Restoration programs.

13.9 Political and Regulatory Risk

Potential risks:

- Regulatory changes;
- Approval delays;
- Fiscal framework changes;
- Government policy changes.

Mitigation strategies:

- Transparent government engagement;
- Legal compliance;
- Stable contractual framework;
- International investment standards.

13.10 Insurance Strategy

A comprehensive insurance program will be developed to protect project assets, personnel, and financial stakeholders.

The insurance strategy will follow international energy industry practices.

13.11 Construction Phase Insurance Coverage

During development and construction, expected insurance categories include:

Construction All Risks (CAR)

Coverage:

- Construction damage;
- Equipment installation risks;
- Contractor works.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Delay in Start-Up (DSU)

Coverage:

- Financial losses caused by insured construction delays.

Marine Cargo Insurance

Coverage:

- Transportation of equipment;
- Offshore/marine shipments;
- Heavy machinery movements.

13.12 Operational Insurance Coverage

Following production start-up, the operational insurance program may include:

Property Damage Insurance

Coverage:

- CPF facilities;
- Storage systems;
- Pipelines;
- Production equipment.

Business Interruption Insurance

Coverage:

- Loss of production revenue;
- Extended shutdown events.

Liability Insurance

Coverage:

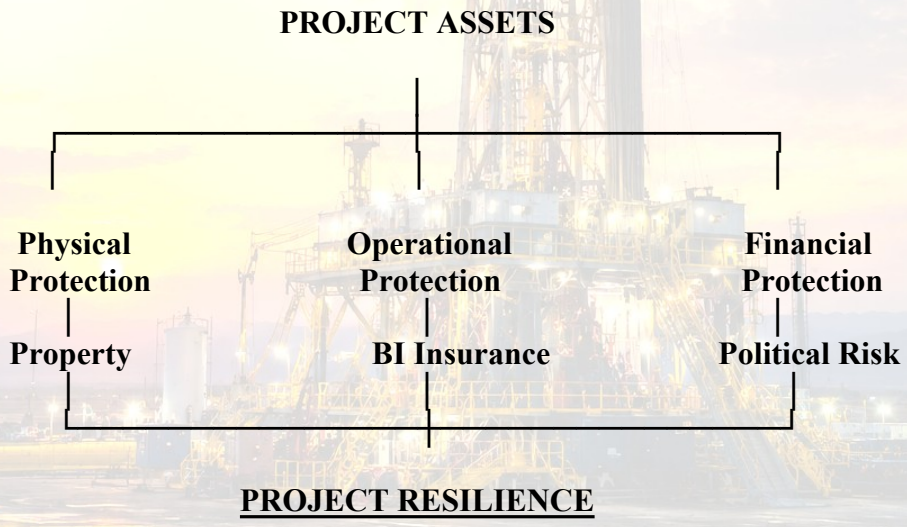
- Third-party liability;
- Environmental liability;
- Operational liability.

13.13 Energy Industry Insurance Programme

Conceptual insurance structure:

Coverage	Purpose
Property Damage	Asset protection
Business Interruption	Revenue protection
General Liability	Third-party protection
Environmental Liability	Pollution risk protection
Marine Insurance	Export and transportation risks
Control of Well Insurance	Drilling risk protection
Political Risk Insurance	Investment protection

Figure 13-2 Insurance Protection Framework



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

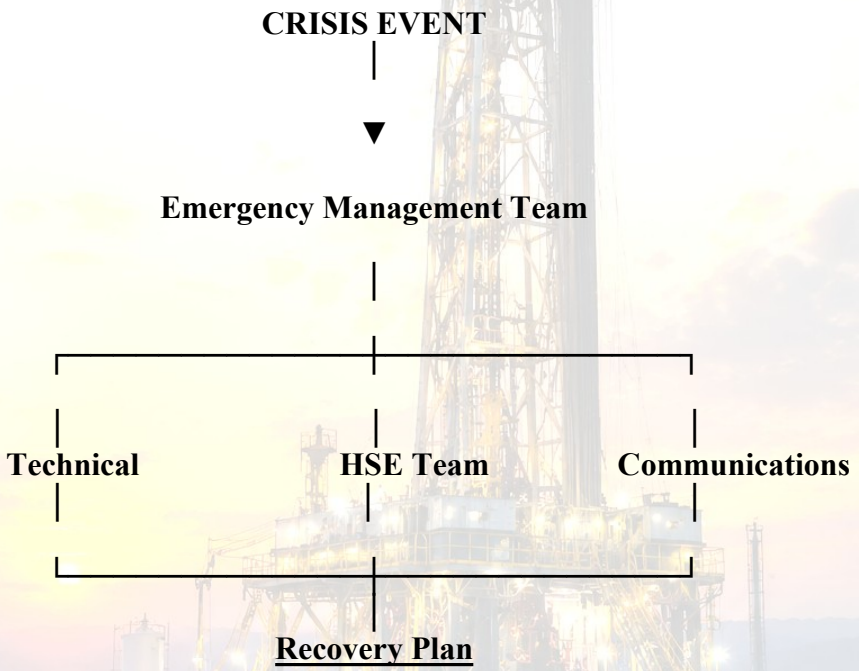
13.14 Crisis Management Framework

The project will maintain a structured crisis response system.

Potential crisis scenarios:

- Major accident;
- Environmental incident;
- Production interruption;
- Security event;
- Natural disaster.

Figure 13-3 Crisis Response Structure



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

13.15 Business Continuity Strategy

Business continuity measures include:

- Critical equipment redundancy;
- Spare parts strategy;
- Alternative logistics routes;
- Emergency power generation;
- Data backup systems.

13.16 Risk Register Summary

Table 13-1 Conceptual Project Risk Register

Risk	Probability	Impact	Mitigation
Reservoir Underperformance	Medium	High	Appraisal Program
Cost Overrun	Medium	High	EPC Controls
Schedule Delay	Medium	Medium	Project Monitoring
Oil Price Decline	Medium	High	Commercial Strategy
Environmental Incident	Low	High	HSE Management
Regulatory Delay	Medium	Medium	Government Engagement

13.17 Project Resilience Objectives

The project aims to achieve:

- Safe operations;
- Financial sustainability;
- Environmental responsibility;
- Long-term production reliability;
- Investor confidence.

End of Section 13

14. PROJECT IMPLEMENTATION ROADMAP, CONCLUSION AND STRATEGIC RECOMMENDATIONS

14.1 Project Implementation Philosophy

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

The Conceptual Pilot Petroleum Field Development Project has been structured as a phased and scalable petroleum development initiative designed to demonstrate the complete lifecycle of a modern upstream oil development.
The implementation approach provides a controlled pathway from conceptual evaluation through exploration, appraisal, development, production, and long-term field optimization.

The project philosophy is based on:

- Technical discipline;
- Responsible resource development;
- Sustainable investment;
- International engineering standards;
- Government and stakeholder alignment.

14.2 Implementation Roadmap

The project roadmap consists of sequential development stages.

Stage 1 – Concept Validation

Duration:

0–12 months

Primary objectives:

- Technical review;
- Geological concept validation;
- Preliminary economic assessment;
- Stakeholder engagement.

Key deliverables:

- Concept Development Report;
- Initial resource assessment;
- Development options analysis.

Stage 2 – Exploration and Appraisal

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Duration: **12–36 months**

Primary objectives:

- Confirm petroleum system;
- Evaluate reservoir quality;
- Reduce geological uncertainty.

Activities:

- Seismic acquisition;
- Exploration drilling;
- Well testing;
- Reservoir evaluation.

Deliverables:

- Confirmed geological model;
- Updated resource estimate;
- Appraisal report.

Stage 3 – Development Preparation

Duration:

36–48 months

Primary objectives:

- Finalize development concept;
- Secure approvals;
- Prepare financing.

Activities:

- FEED engineering;
- ESIA completion;
- EPC tendering;
- Financing arrangements.

Deliverables:

- Final Field Development Plan;
- Investment decision package.

Stage 4 – Field Development and Construction

Duration: **48–66 months**

Activities:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Production drilling;
- CPF construction;
- Pipeline installation;
- Storage construction;
- Export infrastructure development.

Deliverable: **First Oil**

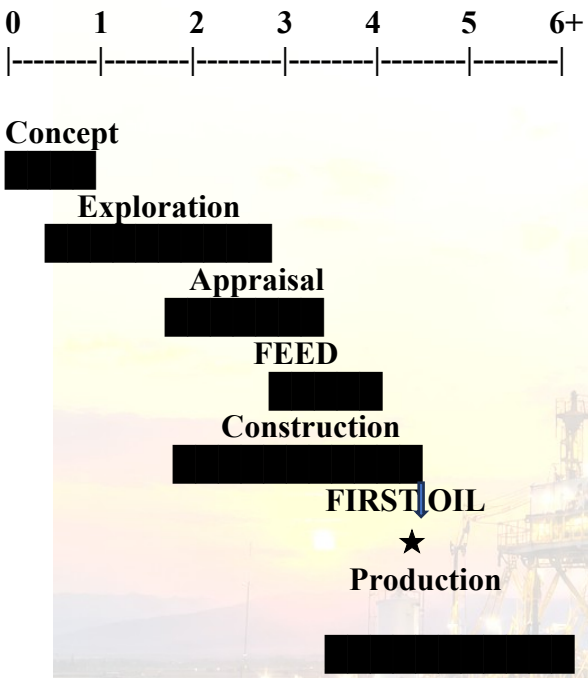
Stage 5 – Production Operations

Duration: **Year 6 onward**

Activities:

- Production optimization;
- Reservoir management;
- Expansion drilling;
- Recovery enhancement.

Figure 14-1 Overall Project Roadmap



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

14.3 Key Project Milestones

Table 14-1 Development Milestones

Milestone	Target
Concept Approval	Month 0
Geological Evaluation Complete	Month 12
Exploration Campaign Complete	Month 30
Appraisal Completed	Month 36
FEED Completion	Month 48
Final Investment Decision	Month 50
Construction Start	Month 52
First Oil	Month 60–66

14.4 Strategic Importance of the Project

The conceptual petroleum development represents a potential opportunity to establish a foundation for future energy sector development.

Potential strategic benefits include:

Energy Sector Development

The project may contribute to:

- Domestic energy capability;
- Regional energy integration;
- Improved energy security.

Economic Development

Potential economic benefits:

- Foreign direct investment;
- Government revenues;
- Industrial development;
- Infrastructure improvement.
-

Employment and Skills Development

Potential opportunities:

- Technical employment;

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Training programs;
- Local supplier participation;
- Knowledge transfer.

14.5 Strategic Development Principles

The project should be developed according to the following principles:

Principle 1 – Responsible Resource Development

Hydrocarbon resources should be developed with:

- Environmental responsibility;
- Safety priority;
- Long-term value creation.

Principle 2 – International Technical Standards

Project execution should follow:

- Recognized engineering practices;
- Quality management systems;
- Industry safety standards.

Principle 3 – Local Economic Participation

The project should maximize:

- Local workforce participation;
- Supplier development;
- Technical capability building.

Principle 4 – Transparent Governance

The project should maintain:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Regulatory compliance;
- Ethical business practices;
- Transparent reporting.

14.6 Recommended Next Steps

The following activities are recommended for advancement of the conceptual project:

Technical Studies

Required:

- Basin evaluation;
- Seismic interpretation;
- Geological modelling;
- Reservoir simulation.

Commercial Studies

Required:

- Market assessment;
- Fiscal evaluation;
- Investment structure;
- Offtake strategy.

Regulatory Engagement

Required:

- Government consultation;
- Regulatory pathway confirmation;
- Environmental requirements review.

Partnership Development

Required:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Technical partner identification;
- Investor engagement;
- EPC contractor assessment.

14.7 Final Development Strategy Summary

The conceptual development model represents an integrated petroleum project incorporating:

- Exploration activities;
- Reservoir evaluation;
- Production wells;
- Processing facilities;
- Storage infrastructure;
- Export capability;
- Environmental management;
- Investment strategy.

The project has been structured as a scalable development concept capable of progressing from a pilot demonstration phase toward a larger integrated petroleum operation.

14.8 Executive Conclusion

The Conceptual Pilot Petroleum Field Development Project demonstrates a technically integrated approach to evaluating and developing a conventional petroleum resource within the Republic of Guinea-Bissau.

The proposed development concept incorporates internationally recognized petroleum engineering principles covering:

- Subsurface evaluation;
- Drilling strategy;
- Production systems;
- Surface facilities;
- Project execution;
- Financing;
- Risk management;
- Sustainable development.

The project framework provides a basis for further technical evaluation, regulatory engagement, and potential future investment consideration.

All resource estimates, production profiles, technical assumptions, and economic indicators contained within this conceptual document require confirmation through detailed exploration, appraisal drilling, engineering studies, and formal regulatory approval processes.

*****END OF CONCEPTUAL PILOT PETROLEUM FIELD DEVELOPMENT PLAN*****

DOCUMENT STATUS

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Document Type: Conceptual Field Development Plan (FDP)
Project Classification: Engineering Demonstration Study
Development Concept: Onshore Conventional Petroleum Development
Country: Republic of Guinea-Bissau
Conceptual Development Area: 50 km²
Development Phase: Pre-Exploration / Concept Evaluation

APPENDIX - A

CONCEPTUAL FIELD LAYOUT AND DEVELOPMENT SCHEMATIC

A.1 Field Layout Philosophy

The conceptual field layout has been developed to demonstrate an integrated onshore petroleum development configuration within the proposed 50 km² conceptual project area.

The layout incorporates all primary upstream development components:

- Production wells;
- Appraisal wells;
- Central Processing Facility (CPF);
- Gathering system;
- Storage facilities;
- Export pipeline;
- Supporting infrastructure.

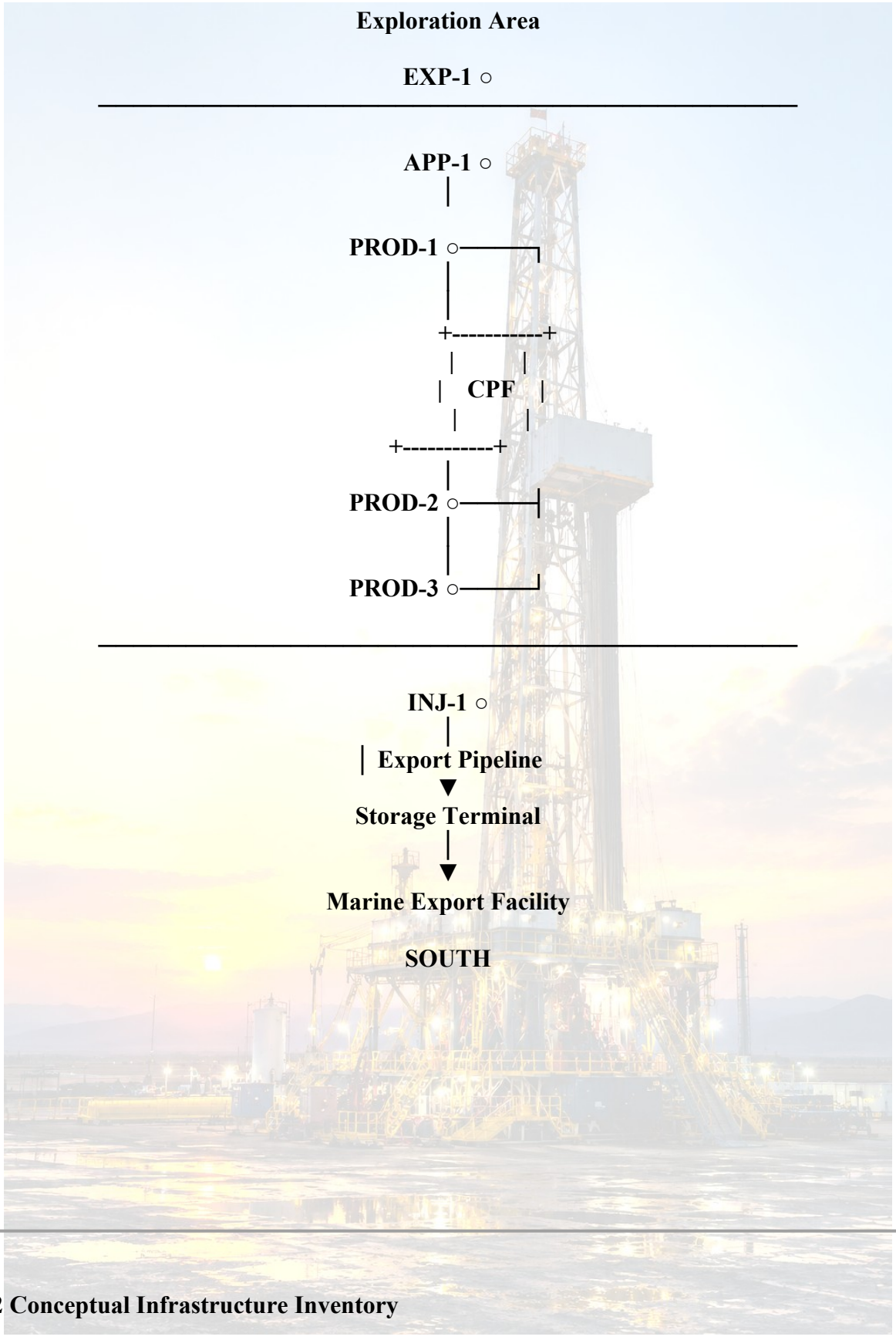
The field arrangement follows standard petroleum engineering principles with consideration given to:

- Operational efficiency;
- Safety separation distances;
- Future expansion capability;
- Maintenance accessibility.

Figure A-1 Conceptual Field Development Layout

NORTH

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



A.2 Conceptual Infrastructure Inventory

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table A-1 Main Facilities

Facility	Function
Production Wells	Hydrocarbon production
Appraisal Wells	Reservoir evaluation
Injection Wells	Pressure maintenance
CPF	Processing and separation
Gathering Network	Well fluid transportation
Storage Terminal	Crude oil storage
Export System	International shipment
Utility Area	Power and support systems

A.3 Conceptual Well Distribution

The initial development concept includes:

Well ID	Type	Purpose
EXP-1	Exploration	Petroleum system confirmation
EXP-2	Exploration/Appraisal	Reservoir extension
APP-1	Appraisal	Resource definition
PROD-1	Production	Initial production
PROD-2	Production	Reservoir drainage
PROD-3	Production	Production expansion
INJ-1	Injection	Pressure support

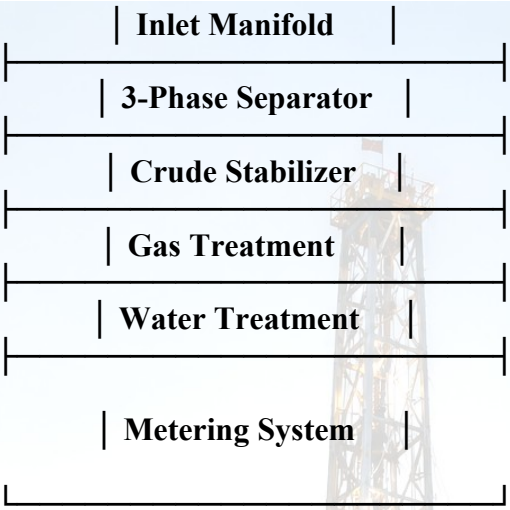
A.4 Central Processing Facility Arrangement

The CPF represents the central operational hub.

Main process units:

CPF

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



A.5 Expansion Philosophy

The conceptual layout allows future expansion through:

- Additional production wells;
- Additional processing trains;
- Increased storage capacity;
- Additional export capacity.

The initial pilot development is therefore designed as the foundation for a potential larger petroleum development.

APPENDIX A – END

APPENDIX B

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

GEOLOGICAL & PETROLEUM SYSTEM DIAGRAMS

B.1 Geological Framework Overview

The conceptual petroleum development area is interpreted within the geological setting of the West African Atlantic Margin, characterized by passive-margin basin development associated with long-term sedimentary accumulation.

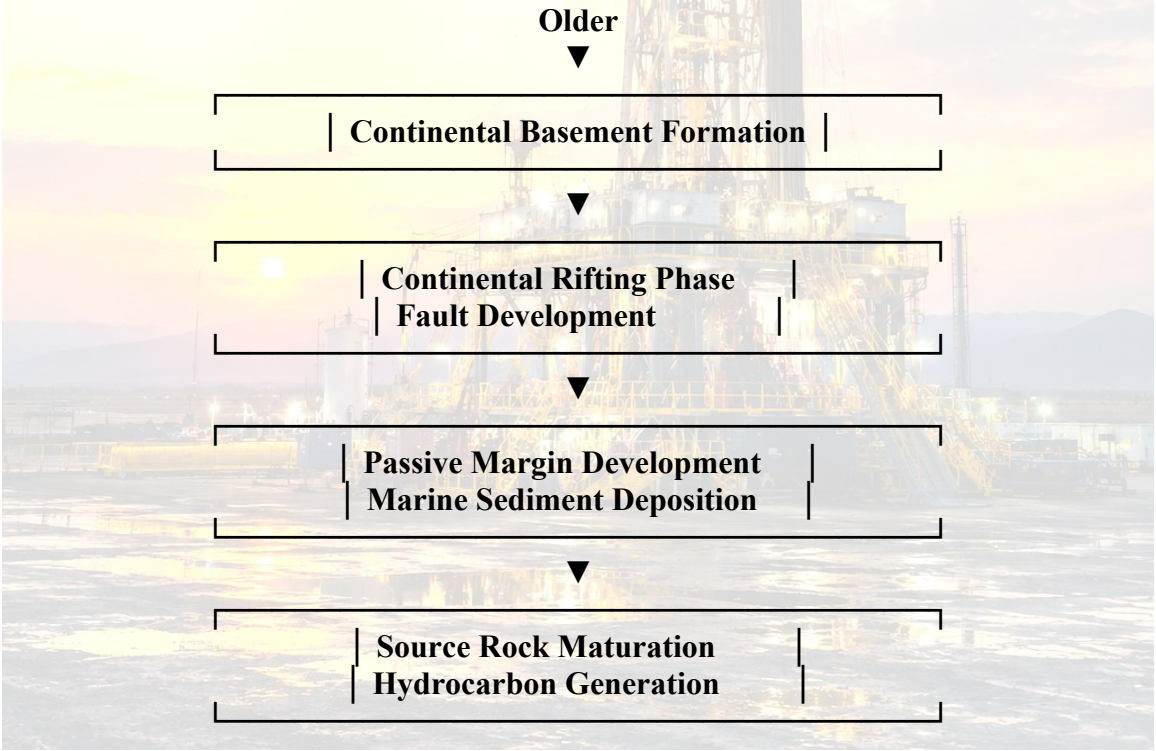
The conceptual geological model assumes the presence of the fundamental elements required for a conventional petroleum system:

- Mature source rocks;
- Hydrocarbon migration pathways;
- Reservoir-quality sandstone formations;
- Effective sealing formations;
- Structural and stratigraphic trapping mechanisms.

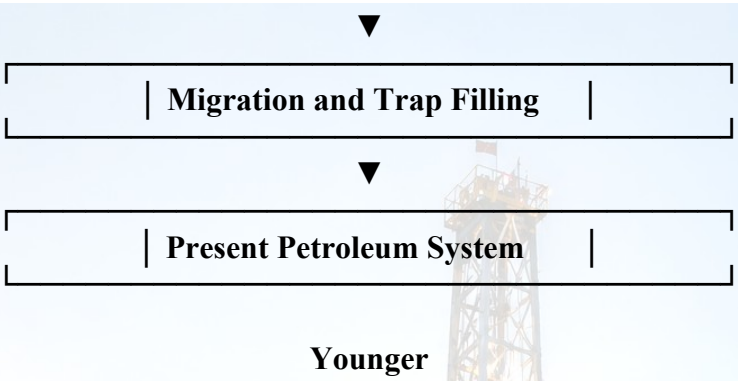
B.2 Conceptual Basin Evolution Timeline

The petroleum system evolution is interpreted through several geological phases.

Figure B-1 Basin Evolution Model



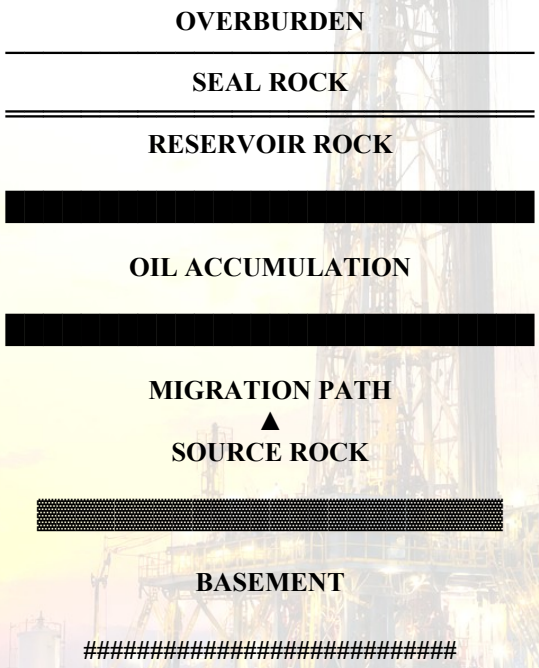
Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



B.3 Petroleum System Elements

A conventional petroleum system requires the interaction of five critical elements.

Figure B-2 Petroleum System Model



B.4 Petroleum System Components

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

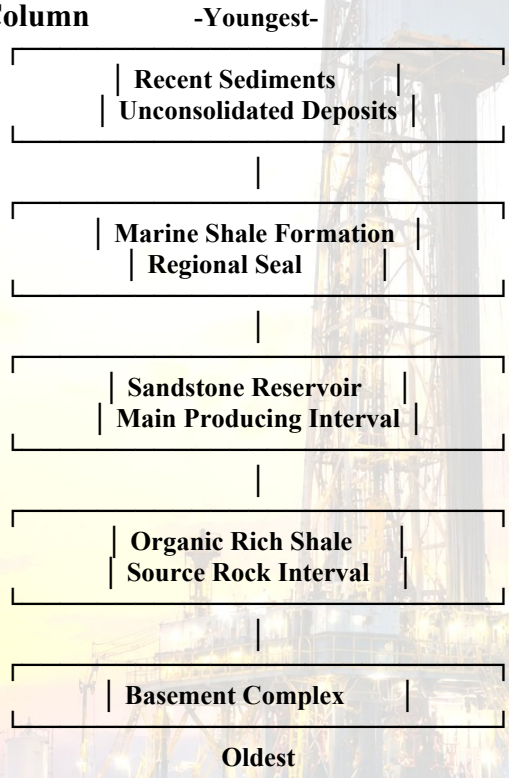
Table B-1 Petroleum System Assessment

Element	Conceptual Description
Source Rock	Organic-rich marine sediment
Generation	Thermal maturation of hydrocarbons
Migration	Fault-assisted and carrier-bed migration
Reservoir	Porous sandstone formation
Seal	Regional marine shale
Trap	Structural closure

B.5 Conceptual Stratigraphic Column

The conceptual stratigraphy represents a typical passive-margin sedimentary sequence.

Figure B-3 Stratigraphic Column



B.6 Structural Trap Concept

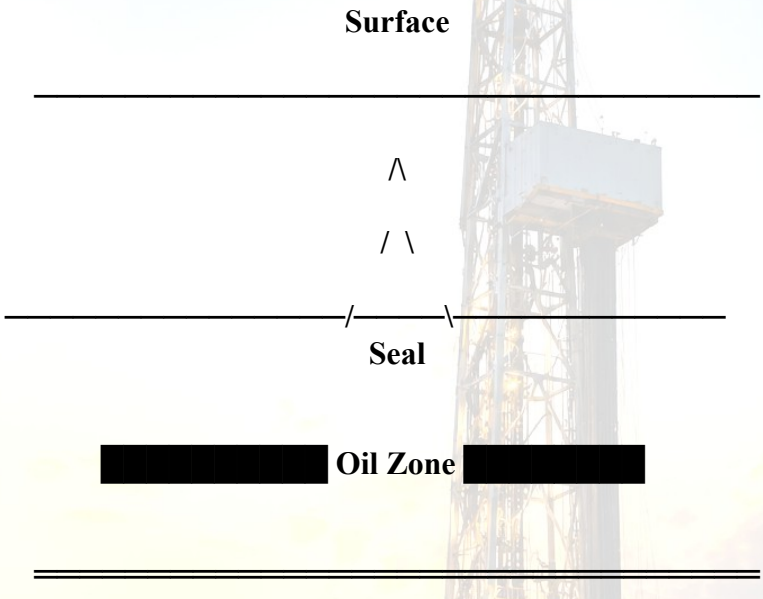
The conceptual accumulation is interpreted as a fault-controlled structural trap.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

The trap configuration includes:

- Fault boundary;
- Reservoir closure;
- Hydrocarbon column;
- Regional sealing interval.

Figure B-4 Structural Trap Model

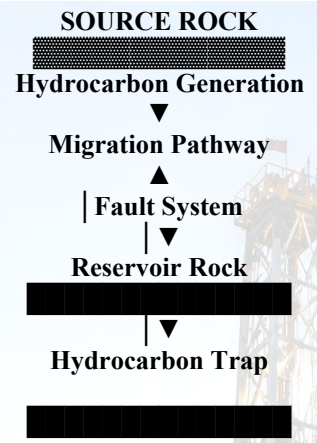


B.7 Hydrocarbon Migration Model

The conceptual migration pathway is illustrated below.

Figure B-5 Hydrocarbon Migration System

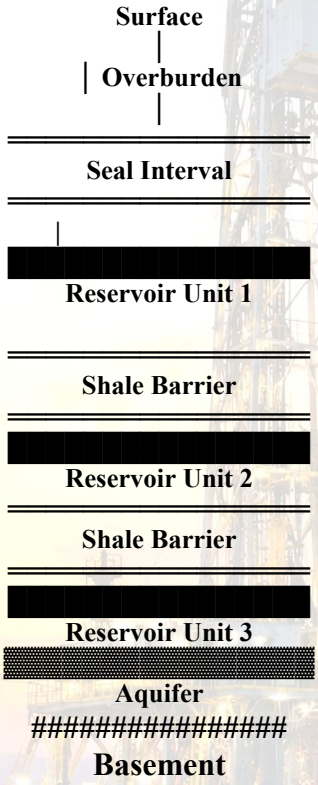
Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



B.8 Reservoir Distribution Concept

The reservoir model assumes vertically stacked sandstone intervals.

Figure B-6 Reservoir Architecture



B.9 Geological Risk Assessment

The conceptual geological uncertainty assessment is summarized below.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table B-2 Geological Risk Matrix

Element	Confidence Level
Basin Presence	High
Reservoir Presence	Medium-High
Source Rock Quality	Medium
Seal Effectiveness	Medium-High
Trap Definition	Medium
Hydrocarbon Charge	Medium

B.10 Required Future Geological Work

Prior to any commercial development decision, the following activities would be required:

- Regional seismic interpretation;
- Detailed 3D seismic acquisition;
- Basin modelling;
- Exploration drilling;
- Core analysis;
- Formation testing;
- Reservoir characterization.

APPENDIX B – END

APPENDIX C

WELL DESIGN SUMMARY

C.1 Well Engineering Philosophy

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

The conceptual well design has been developed to support the exploration, appraisal, and production objectives of the Conceptual Pilot Petroleum Field Development Project.

The well engineering philosophy is based on:

- Safe well construction;
- Reservoir protection;
- Operational reliability;
- Long-term production capability;
- Future field expansion.

All well designs presented in this appendix are conceptual engineering models intended for demonstration purposes and require validation through detailed engineering studies.

C.2 Conceptual Well Categories

The project incorporates three primary well categories:

Well Type	Purpose
Exploration Well	Petroleum system confirmation
Appraisal Well	Reservoir definition
Production Well	Hydrocarbon recovery

Future development may include:

Well Type	Purpose
Injection Well	Pressure maintenance
Monitoring Well	Reservoir surveillance

C.3 Exploration Well Design Concept

Well Objective

The exploration well is designed to evaluate:

- Reservoir presence;
- Hydrocarbon charge;
- Fluid properties;

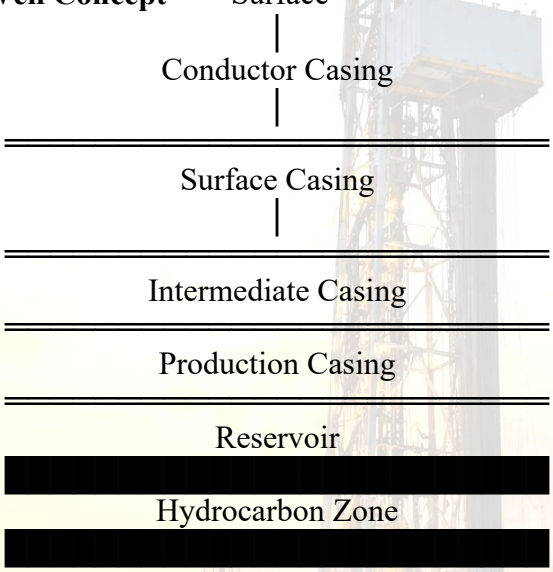
Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Pressure regime;
- Commercial potential.

Table C-1 Exploration Well Parameters

Parameter	Conceptual Design
Well Type	Vertical Exploration Well
Target Depth	2,800–3,000 m MD
Target Formation	Sandstone Reservoir
Hole Type	Conventional Drilling
Logging Program	Full Wireline Suite
Testing	Formation Testing / DST

Figure C-1 Exploration Well Concept



C.4 Appraisal Well Design Concept

Well Objective

The appraisal well is intended to reduce reservoir uncertainty by evaluating:

- Reservoir continuity;
- Thickness variation;
- Pressure communication;
- Fluid distribution.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table C-2 Appraisal Well Parameters

Parameter	Conceptual Design
Well Type	Vertical / Deviated
Depth	2,500–3,000 m MD
Main Objective	Reservoir Delineation
Data Acquisition	Logs + Pressure Data
Testing	Extended Well Test

C.5 Production Well Design Concept

The production well design is optimized for long-term hydrocarbon recovery.

Table C-3 Production Well Parameters

Parameter	Conceptual Design
Well Type	Vertical / Deviated Producer
Depth	2,500–2,800 m MD
Completion	Cased Hole Completion
Production Tubing	3½"–4½"
Initial Production	Natural Flow
Future Lift	ESP / Gas Lift

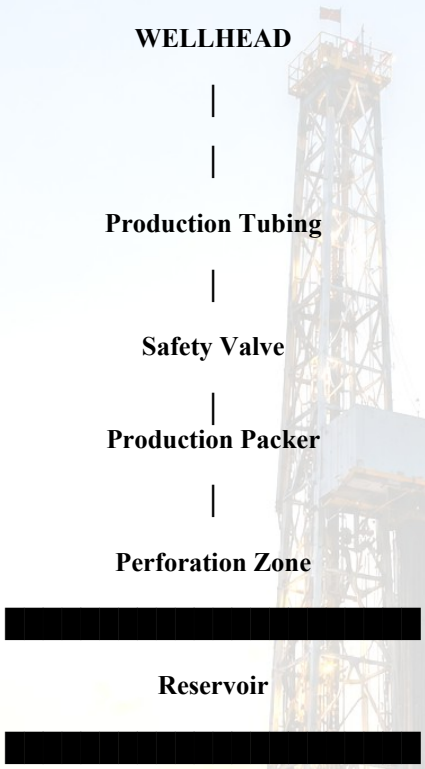
C.6 Production Well Completion Philosophy

The completion system includes:

- Production casing;
- Cement isolation;
- Perforated intervals;
- Production tubing;
- Downhole safety valve;
- Wellhead equipment.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Figure C-2 Production Completion Concept



C.7 Conceptual Casing Program

The casing design provides:

- Wellbore stability;
- Pressure isolation;
- Environmental protection.

Table C-4 Casing Program

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Section	Size	Function
Conductor	**20"**	Surface stability
Surface Casing	**13⅜"**	Shallow formation protection
Intermediate Casing	**9⅝"**	Pressure control
Production Casing	**7"**	Reservoir isolation
Production Tubing	**3½"–4½"**	Hydrocarbon production

C.8 Well Barrier Philosophy

The project will apply a dual-barrier well control philosophy.

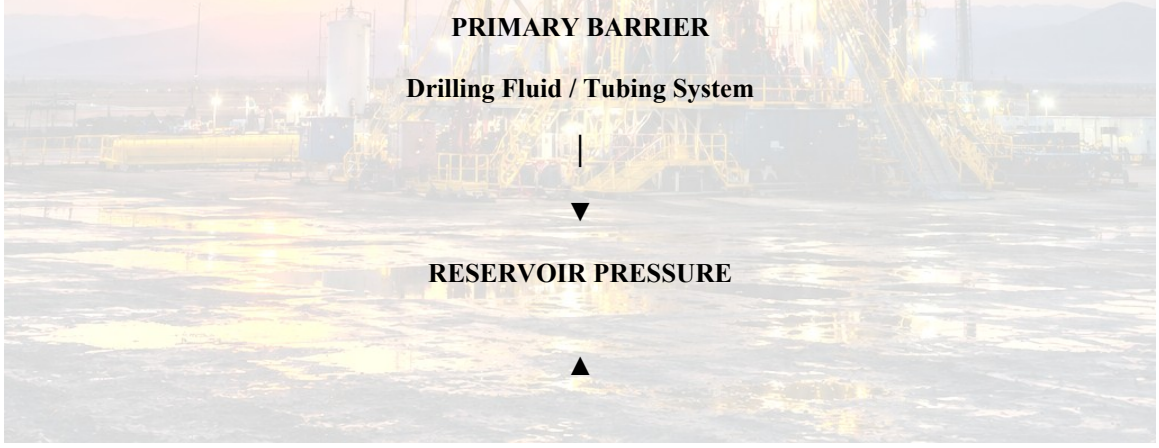
Primary barriers:

- Hydrostatic pressure control;
- Completion equipment;
- Production tubing.

Secondary barriers:

- Wellhead valves;
- Safety valves;
- Blowout prevention equipment.

Figure C-3 Well Barrier Concept



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

C.9 Drilling Fluid Concept

The drilling fluid program will be selected according to formation conditions.

Surface Sections

Purpose:

- Hole cleaning;
- Formation stability;
- Safe drilling.

Fluid:

Water-based drilling mud.

Reservoir Section

Purpose:

- Reservoir protection;
- Minimizing formation damage.

Fluid:

Low-solids / reservoir-compatible drilling fluid.

C.10 Well Testing Program

The evaluation program includes:

Formation Testing

Objectives:

- Measure pressure;
- Determine permeability;
- Obtain fluid samples.

Production Testing

Objectives:

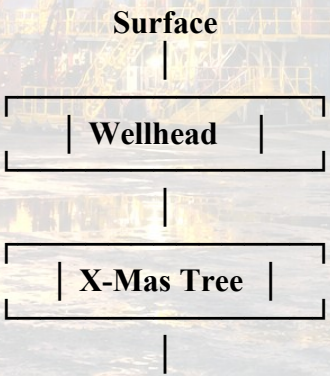
- Determine flow capability;
- Evaluate productivity;
- Confirm reservoir behaviour.

C.11 Wellhead and Tree System

Production wells will include:

- Surface wellhead;
- Christmas tree;
- Pressure monitoring;
- Flow control valves.

Figure C-4 Wellhead System



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

C.12 Well Delivery Schedule

Table C-5 Indicative Well Delivery

Activity	Duration
Well Planning	2–3 months
Drilling	60–120 days
Logging	5–10 days
Completion	10–20 days
Testing	15–30 days

C.13 Well Cost Summary

Table C-6 Conceptual Well Cost

Well Type	Estimated Cost
Exploration Well	USD 15–25 million
Appraisal Well	USD 12–20 million
Production Well	USD 10–18 million
Injection Well	USD 10–15 million

C.14 Future Well Expansion Concept

Future drilling campaigns may include:

- Additional producers;
- Infill wells;
- Water injection wells;
- Reservoir monitoring wells.

Expansion decisions will depend on:

- Reservoir performance;
- Production history;

- Economic optimization.

APPENDIX C – END

APPENDIX D

PRODUCTION FORECAST TABLES AND RESERVOIR PERFORMANCE MODEL

D.1 Production Forecast Philosophy

The conceptual production forecast has been developed to demonstrate the expected production behaviour of a conventional petroleum field during its lifecycle.

The production profile represents a phased development approach consisting of:

- Initial production start-up;
- Ramp-up period;
- Plateau production;
- Natural decline phase;
- Late-life production optimization.

The forecast is based on conceptual reservoir assumptions and does not represent a certified reserve estimate.

D.2 Development Production Concept

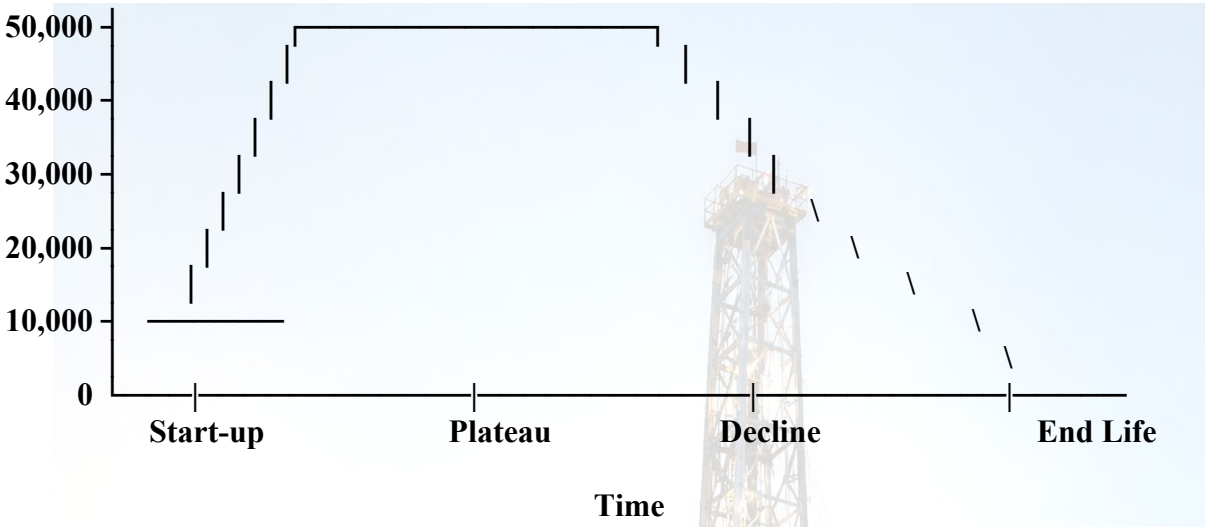
The production strategy is designed around:

- Controlled reservoir depletion;
- Efficient well placement;
- Production optimization;
- Pressure monitoring;
- Potential future recovery enhancement.

Figure D-1 Production Lifecycle Concept

Production Rate

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services



D.3 Base Case Production Forecast

Table D-1 Annual Oil Production Forecast

Year	Average Production Rate	Annual Oil Production
Year 1	15,000 bopd	5.5 MMbbl
Year 2	35,000 bopd	12.8 MMbbl
Year 3	50,000 bopd	18.3 MMbbl
Year 4	50,000 bopd	18.3 MMbbl
Year 5	50,000 bopd	18.3 MMbbl
Year 6	45,000 bopd	16.4 MMbbl
Year 7	40,000 bopd	14.6 MMbbl
Year 8	35,000 bopd	12.8 MMbbl
Year 9	30,000 bopd	11.0 MMbbl
Year 10	25,000 bopd	9.1 MMbbl
Year 11	22,000 bopd	8.0 MMbbl
Year 12	19,000 bopd	6.9 MMbbl
Year 13	16,000 bopd	5.8 MMbbl
Year 14	13,000 bopd	4.7 MMbbl
Year 15	10,000 bopd	3.7 MMbbl
Year 16	8,000 bopd	2.9 MMbbl
Year 17	6,000 bopd	2.2 MMbbl
Year 18	4,500 bopd	1.6 MMbbl
Year 19	3,000 bopd	1.1 MMbbl
Year 20	2,000 bopd	0.7 MMbbl

D.4 Cumulative Production Forecast

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table D-2 Cumulative Oil Production

Year	Cumulative Production
Year 1	5.5 MMbbl
Year 3	36.6 MMbbl
Year 5	73.2 MMbbl
Year 10	137.1 MMbbl
Year 15	166.5 MMbbl
Year 20	176.0 MMbbl

D.5 Production Profile Summary

Table D-3 Key Production Indicators

Parameter	Value
First Oil	Year 5–6
Initial Production	15,000 bopd
Plateau Production	50,000 bopd
Plateau Duration	Approximately 3 years
Field Life	20 years
Estimated Recovery	170–180 MMbbl

D.6 Gas Production Concept

Associated natural gas production is assumed to occur during oil production.

Potential gas management options:

- Fuel gas utilization;
- Power generation;
- Gas reinjection;
- Future commercialization.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table D-4 Associated Gas Concept

Parameter	Assumption
Gas Type	Associated Gas
Management	Utilization Preferred
Flaring Policy	Minimized
Future Option	Gas Commercialization

D.7 Water Production Forecast

As reservoir pressure declines, produced water is expected to increase.

Table D-5 Water Production Trend

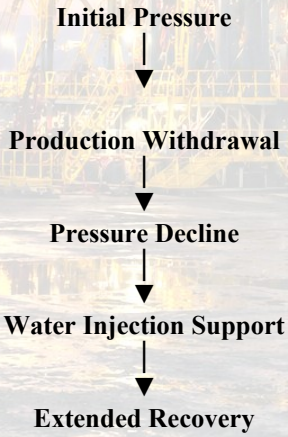
Production Phase	Water Behaviour
Early Production	Low Water Cut
Plateau Period	Moderate Water Production
Decline Phase	Increasing Water Cut
Late Life	High Water Management Requirement

D.8 Reservoir Pressure Management

The reservoir development strategy may include:

- Pressure surveillance;
- Production optimization;
- Water injection.

Figure D-2 Reservoir Management Concept



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

D.9 Recovery Enhancement Strategy

Potential enhanced recovery measures:

Water Injection

Purpose:

- Maintain reservoir pressure;
- Improve sweep efficiency.

Production Optimization

Includes:

- Choke management;
- Well intervention;
- Artificial lift.

Reservoir Monitoring

Includes:

- Pressure surveys;
- Production logging;
- Reservoir simulation updates.

D.10 Production Uncertainty Scenarios

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Table D-6 Sensitivity Cases

Case	Production Outcome
Low Case	Lower reservoir performance
Base Case	Expected development scenario
High Case	Improved reservoir behaviour

D.11 Production Assurance Strategy

Production reliability will be maintained through:

- Preventive maintenance;
- Flow assurance studies;
- Pipeline monitoring;
- Equipment redundancy;
- Operational optimization.

D.12 Long-Term Field Optimization

During mature field life, optimization activities may include:

- Additional infill wells;
- Reservoir modelling updates;
- Artificial lift installation;
- Facility debottlenecking.

APPENDIX D – END

APPENDIX E

CAPEX / OPEX FINANCIAL MODEL AND ECONOMIC SUMMARY

E.1 Financial Model Purpose

The conceptual financial model has been prepared to demonstrate the economic structure of the proposed petroleum development project.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

The model provides an indicative evaluation framework covering:

- Initial capital investment;
- Development expenditure;
- Operating costs;
- Production revenue;
- Cash flow generation;
- Investment return indicators.

All financial values are conceptual assumptions prepared for engineering demonstration purposes only and require validation through detailed feasibility studies.

E.2 Financial Modelling Assumptions

Table E-1 Base Case Economic Assumptions

Parameter	Assumption
Development Type	Conventional Onshore Oil Field
Field Life	20 years
Plateau Production	50,000 bopd
Recoverable Oil	~176 MMbbl
Oil Price Assumption	USD 70/bbl
Discount Rate	10%
Currency	USD
Economic Evaluation	Pre-tax conceptual model

E.3 Capital Expenditure Model (CAPEX)

The initial development investment includes:

- Exploration;
- Appraisal;
- Drilling;
- Surface facilities;
- Export infrastructure;
- Project execution.

Table E-2 Initial Development CAPEX

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Cost Category	Estimated Cost
Geological & Geophysical Studies	USD 50 million
Exploration Drilling	USD 80 million
Appraisal Programme	USD 70 million
Production Wells	USD 300 million
Central Processing Facility	USD 500 million
Gathering System	USD 125 million
Storage Facilities	USD 200 million
Export Pipeline	USD 275 million
Marine Export Infrastructure	USD 350 million
Utilities & Power Systems	USD 125 million
Engineering & Project Management	USD 200 million

Total Estimated Initial CAPEX:

USD 2.275 Billion

E.4 CAPEX Development Schedule

Table E-3 Capital Deployment

Project Phase	CAPEX Allocation
Exploration Phase	USD 130 million
Appraisal Phase	USD 70 million
FEED & Engineering	USD 200 million
Development Drilling	USD 300 million
Facility Construction	USD 1.200 billion
Commissioning	USD 375 million

Figure E-1 CAPEX Spending Profile

Investment Level
Year 1 [redacted]

Year 2 [redacted]

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Year 3 [redacted]

Year 4 [redacted]

Year 5 [redacted]

Year 6 [redacted]

Construction Peak

FIRST OIL

E.5 Operating Expenditure Model (OPEX)

Annual operating expenditure includes:

- Field operations;
- Maintenance;
- Logistics;
- Personnel;
- HSE;
- Environmental management.

Table E-4 Annual OPEX Estimate

Category	Annual Cost
Field Operations	USD 55 million
Maintenance & Integrity	USD 45 million
Logistics & Supply Chain	USD 35 million
Personnel & Administration	USD 20 million
Utilities & Energy	USD 30 million
HSE & Environmental	USD 15 million

Total Annual OPEX:

USD 200 Million / Year

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

E.6 Revenue Model

Revenue calculation:

Annual Revenue = Annual Oil Production × Oil Price

Plateau Production Case:

Production:
50,000 barrels/day

Annual production:
18.25 million barrels/year

Oil price:
USD 70/barrel

Gross Annual Revenue:

USD 1.28 Billion / Year

E.7 Indicative Cash Flow Model

Table E-5 Simplified Project Cash Flow

Project Year	Production	Revenue	Operating Cost	Cash Flow
Year 1	0	0	0	Negative CAPEX
Year 2	0	0	0	Negative CAPEX
Year 3	Start-up	Partial Revenue	OPEX	Negative/Neutral
Year 4	Ramp-up	USD 895M	USD 200M	Positive
Year 5	Plateau	USD 1.28B	USD 200M	Strong Positive
Year 6+	Decline	Variable	Variable	Positive

E.8 Economic Indicators

Table E-6 Indicative Project Economics

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Indicator	Estimate
Initial CAPEX	USD 2.275 Billion
Gross Revenue Potential	USD 12+ Billion
Average Annual OPEX	USD 200 Million
Payback Period	4–5 Years After First Oil
Project IRR	20–30%
NPV @10%	Positive

E.9 Sensitivity Analysis

The project value is sensitive to:

- Oil price;
- Production volume;
- Capital cost;
- Reservoir recovery.

Table E-7 Oil Price Sensitivity

Oil Price	Project Impact
USD 50/bbl	Reduced profitability
USD 70/bbl	Base case
USD 90/bbl	Increased project value

Table E-8 CAPEX Sensitivity

CAPEX Change	Impact
-20%	Improved economics
Base Case	Acceptable return
+20%	Reduced returns

E.10 Financing Capacity Concept

A project of this scale may potentially support:

- Reserve-backed lending;
- Infrastructure financing;
- Strategic investment;
- Energy project finance.

Financing availability would depend on:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Certified reserves;
- Government approvals;
- Offtake contracts;
- Technical validation.

E.11 Bankability Assessment Criteria

A lender review would typically evaluate:

Technical

- Reservoir quality;
- Production forecast;
- Facility design.

Commercial

- Oil marketing;
- Contract structure;
- Price assumptions.

Financial

- Debt repayment capability;
- Cash flow stability;
- Sponsor strength.

Regulatory

- Petroleum rights;
- Government approvals;
- Environmental compliance.

E.12 Financial Risk Mitigation

Measures include:

- Phased investment approach;
- Independent technical review;
- Long-term sales agreements;
- Cost control systems;
- Insurance programme.

E.13 Investment Summary

The conceptual project demonstrates the potential characteristics of a medium-scale petroleum development capable of supporting:

- International investment participation;
- Strategic energy partnerships;
- Infrastructure development;
- Long-term economic value creation

APPENDIX E – END

APPENDIX F

HSE MANAGEMENT SUMMARY, ESG FRAMEWORK AND SUSTAINABILITY PLAN

F.1 HSE Management Statement

The Conceptual Pilot Petroleum Field Development Project recognizes Health, Safety, Environmental and Social responsibility as a fundamental requirement for successful petroleum operations.

The project will establish a comprehensive HSE Management System designed to:

- Protect employees and contractors;

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Prevent major accidents;
- Minimize environmental impact;
- Maintain regulatory compliance;
- Support sustainable development.
-

The HSE approach follows internationally recognized oil and gas industry principles.

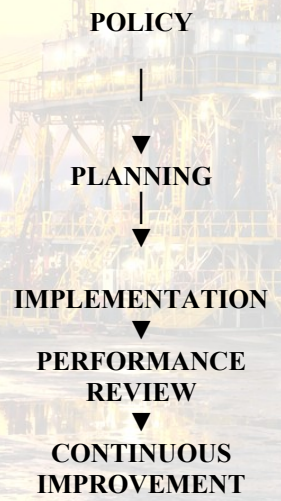
F.2 HSE Management System Framework

The HSE Management System is structured around the following elements:

Table F-1 HSE Management Elements

Element	Description
Leadership	Management commitment to safety
Risk Assessment	Identification and control of hazards
Procedures	Standard operating practices
Competence	Training and qualification
Emergency Response	Preparedness and incident control
Monitoring	Performance measurement
Improvement	Corrective actions and learning

Figure F-1 HSE Management Cycle



Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

F.3 Health and Safety Management

The project will implement a proactive safety culture based on prevention rather than reaction.

Core Safety Programs

Permit to Work System (PTW)

Applicable activities:

- Hot work;
- Confined space entry;
- Electrical work;
- Excavation;
- Lifting operations.

Job Safety Analysis (JSA)

Required before:

- Critical maintenance;
- Construction activities;
- Drilling operations.

Personal Protective Equipment (PPE)

Mandatory protection includes:

- Safety helmet;
- Protective footwear;
- Eye protection;
- Flame-resistant clothing;
- Hearing protection.

F.4 Process Safety Management

Process safety is critical for preventing major hydrocarbon incidents.
The project will apply:

- Hazard Identification (HAZID);
- Hazard and Operability Studies (HAZOP);
- Safety Integrity Level (SIL) assessments;

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

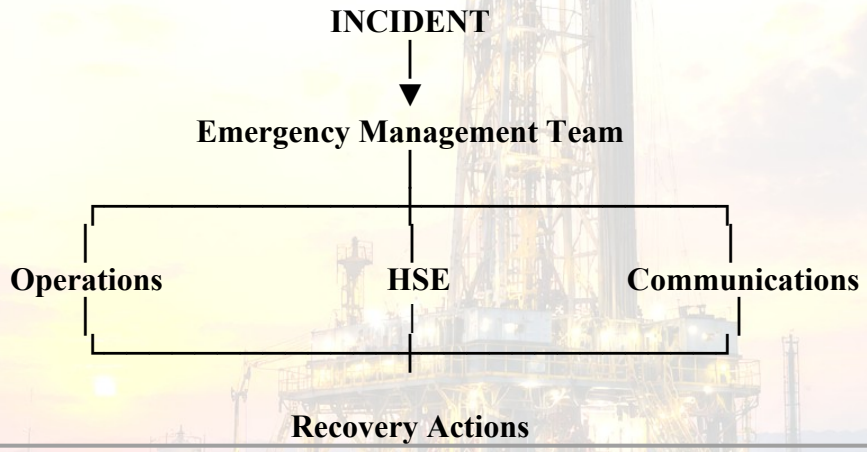
- Emergency Shutdown Systems;
- Fire and Gas Detection.

F.5 Emergency Response Management

The project will maintain an Emergency Response Plan covering:

- Fire;
- Explosion;
- Hydrocarbon release;
- Medical emergency;
- Environmental incident;
- Security event.

Figure F-2 Emergency Response Structure



F.6 Environmental Management Plan

The environmental management strategy focuses on preventing, controlling, and minimizing project impacts.

Main environmental management areas:

- Land use;
- Water resources;
- Air emissions;

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

- Waste management;
- Biodiversity;
- Spill prevention.

F.7 Environmental Protection Measures

Spill Prevention

Measures:

- Secondary containment;
- Pipeline monitoring;
- Leak detection;
- Emergency response capability.

Produced Water Management

Management options:

- Treatment before disposal;
- Reinjection;
- Monitoring.

Waste Management

Waste hierarchy:

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

F.8 Emissions Management Strategy

The project aims to minimize greenhouse gas emissions through:

- Associated gas utilization;
- Reduced routine flaring;
- Energy efficiency;
- Equipment optimization.

Table F-2 Emission Control Measures

Source	Control Strategy
Flaring	Gas recovery/utilization
Power Generation	Efficient systems
Vehicles	Maintenance programs
Equipment	Emission monitoring

F.9 ESG Framework

The project incorporates Environmental, Social and Governance principles.

Environmental Objectives

Commitments:

- Minimize ecological impact;
- Protect natural resources;
- Reduce emissions;
- Maintain environmental monitoring.

Social Objectives

Commitments:

- Local employment;
- Community engagement;
- Skills development;

- Social investment.

Governance Objectives

Commitments:

- Transparent management;
- Ethical business conduct;
- Regulatory compliance;
- Responsible procurement.

F.10 Local Content Strategy

The project recognizes local participation as a key element of long-term value creation.

Table F-3 Local Participation Opportunities

Sector	Opportunity
Civil Works	Local contractors
Logistics	Transportation services
Supply Chain	Local suppliers
Operations	Support services
Training	Workforce development

F.11 Workforce Development Programme

The project may establish:

- Technical training centres;
- Safety certification programmes;
- Apprenticeship opportunities;
- Engineering development programmes.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

F.12 Community Engagement Framework

The project will maintain structured communication with local communities.

Engagement principles:

- Transparency;
- Consultation;
- Respect;
- Mutual benefit.

Figure F-3 Community Engagement Process

F.13 HSE Performance Indicators

Table F-4 HSE KPIs

Indicator	Target
Fatal Accidents	Zero
Major Environmental Incidents	Zero
Regulatory Compliance	100%
Safety Training Completion	100%
Emergency Exercises	Regular

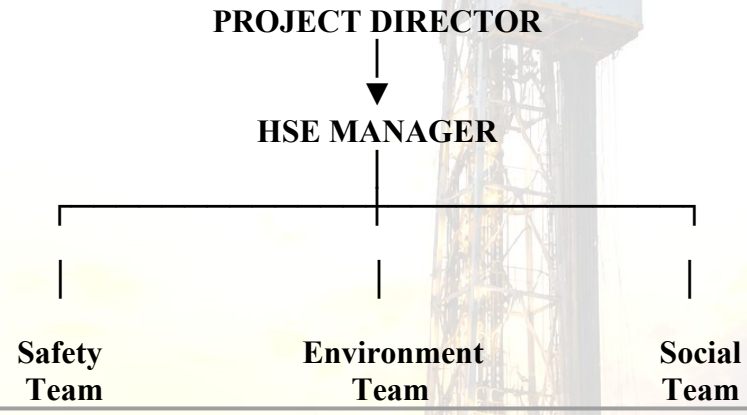
Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

F.14 Sustainability Commitments

The project development approach supports:

- Responsible energy production;
- Environmental protection;
- Economic development;
- Local capability building.

F.15 HSE Governance Structure



APPENDIX F – END

APPENDIX G

PROJECT EXECUTION SCHEDULE AND MASTER IMPLEMENTATION PLAN

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

G.1 Project Execution Philosophy

The Conceptual Pilot Petroleum Field Development Project will be executed through a structured phased implementation strategy designed to control technical, financial, regulatory, and operational risks.

The execution methodology follows the principles of major international energy projects:

- Front-End Engineering Design (FEED);
- Engineering, Procurement and Construction (EPC);
- Drilling campaign management;
- Commissioning and start-up;
- Operational readiness assurance.

The objective is to achieve safe, reliable and efficient delivery of first production.

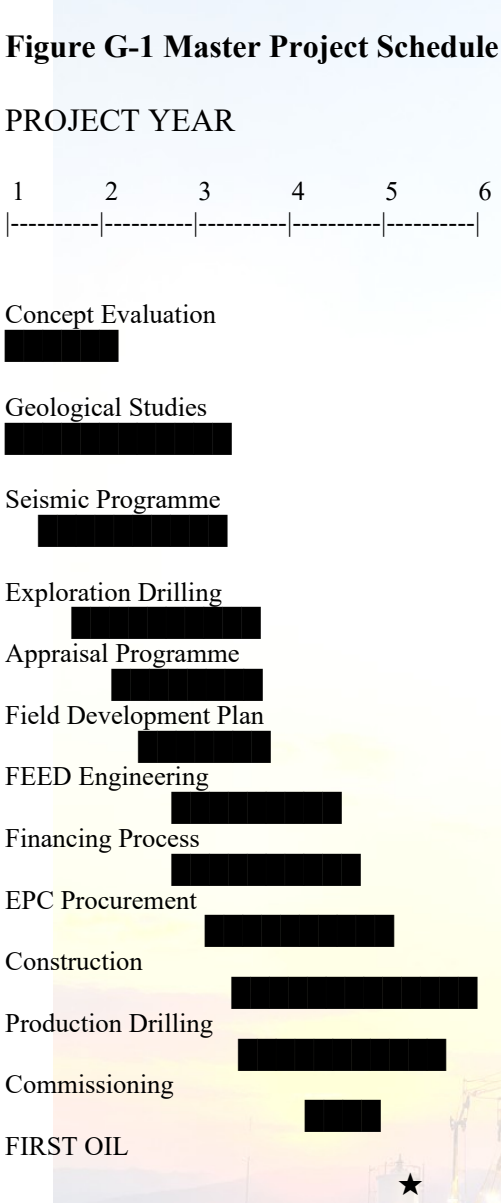
G.2 Overall Project Development Timeline

The conceptual project duration from initial evaluation to first oil is estimated at approximately:

5–6 Years

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Figure G-1 Master Project Schedule



G.3 Phase 1 – Concept Evaluation

Duration:

0–12 Months

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Objectives

- Validate development concept;
- Establish technical basis;
- Define project requirements.

Main Activities

- Geological screening;
- Preliminary reservoir evaluation;
- Infrastructure assessment;
- Economic modelling;
- Stakeholder engagement.

Deliverables

Deliverable	Status
Concept Development Report	Required
Initial Economic Model	Required
Development Options Study	Required

G.4 Phase 2 – Exploration and Appraisal Campaign

Duration: Year 1–3

Objectives

- Confirm petroleum system;
- Reduce subsurface uncertainty;
- Establish commercial resource potential.

Activities
Seismic Acquisition
Scope:

- 2D/3D seismic surveys;
- Structural interpretation;
- Prospect mapping.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Exploration Drilling

Activities:

- Well planning;
- Drilling;
- Logging;
- Formation testing.

Appraisal Programme

Activities:

- Delineation wells;
- Pressure analysis;
- Reservoir modelling.

G.5 Phase 3 – Field Development Planning

Duration: Year 3–4

Activities

- Reservoir modelling;
- Production forecasting;
- Facility design;
- Environmental assessment;
- Regulatory submissions.

Engineering Deliverables

- Field Development Plan;
- Basis of Design;
- Process Design;
- Facility Layout;
- Cost Estimate.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

G.6 Phase 4 – FEED and Financing

Duration:

Year 4–5

FEED Activities

Engineering scope:

- Process engineering;
- Mechanical design;
- Pipeline engineering;
- Electrical systems;
- Instrumentation.

Commercial Activities

- Investor engagement;
- Financing negotiations;
- EPC contracting;
- Offtake discussions.

G.7 Phase 5 – Construction and Development

Duration: Year 5–6

Major Construction Activities

Central Processing Facility

Includes:

- Separation systems;
- Treatment facilities;
- Utilities;
- Control systems.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

Pipeline Construction

Includes:

- Route preparation;
- Installation;
- Testing;
- Commissioning.

Storage Facilities

Includes:

- Tank installation;
- Metering systems;
- Export preparation.

G.8 Phase 6 – Drilling Campaign

Production Well Programme

Initial development:

- 3–6 production wells;
- 1 injection well;
- Additional wells based on reservoir performance.
-

Figure G-2 Development Well Sequence

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

G.9 Commissioning and Start-Up

Before production begins, the project will complete:

Mechanical Completion

Verification of:

- Equipment installation;
- Structural completion;
- System integrity.

Pre-Commissioning

Activities:

- Pressure testing;
- Cleaning;
- Calibration;
- Electrical testing

Commissioning

Activities:

- System start-up;
- Process testing;
- Performance verification.

G.10 Operational Readiness Review (ORR)

Prior to first oil, the project will confirm:

Area	Requirement
Personnel	Trained operators
Equipment	Operational systems
HSE	Emergency readiness
Maintenance	Reliability systems
Logistics	Supply chain readiness

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

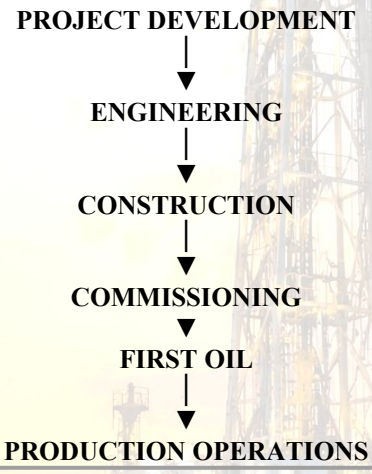
G.11 First Oil Milestone

The first oil milestone represents the transition from project execution to operational phase.

Requirements:

- Government authorization;
- Facility acceptance;
- Safety approval;
- Production readiness.

Figure G-3 Project Lifecycle Transition



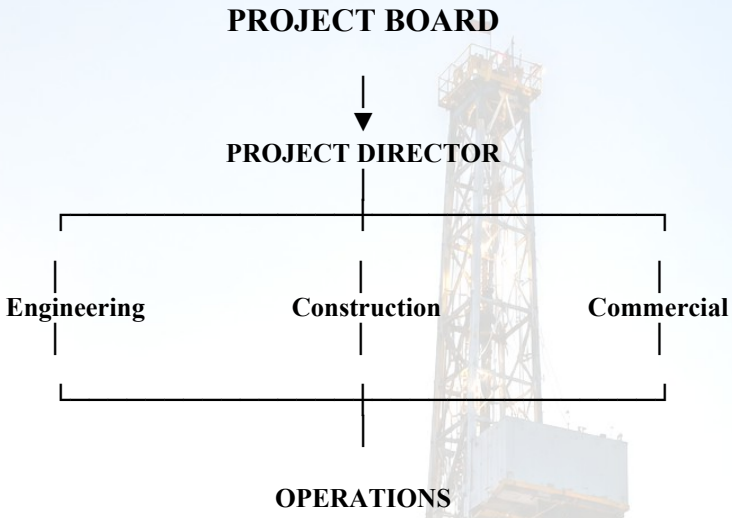
G.12 Long-Term Operations Strategy

Following start-up, the operational strategy focuses on:

- Production optimization;
- Reservoir management;
- Facility reliability;
- Cost efficiency;
- Continuous improvement.

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

G.13 Project Governance Structure



G.14 Final Implementation Summary

The Conceptual Pilot Petroleum Field Development Project represents a structured pathway from early technical evaluation to potential commercial petroleum production.

The implementation strategy provides:

- Controlled project progression;
- Investment decision points;
- Risk reduction;
- Regulatory alignment;
- Sustainable development approach.

END OF APPENDIX G

COMPLETE DOCUMENT PACKAGE SUMMARY

CONCEPTUAL PILOT PETROLEUM FIELD DEVELOPMENT PLAN
Country: Republic of Guinea-Bissau
Development Concept: Onshore Conventional Petroleum Field
Conceptual Area: 50 km²
Project Phase: Concept Evaluation / Demonstration Study

Dr. Krisztian Kovacs –Email: executive@mol.services Tel: +245/956-998-423 https://mol.services

DOCUMENT CONTENTS

Main FDP Sections

Appendices

PROJECT DEVELOPMENT AND CORPORATE REPRESENTATIVES

Dr. Krisztián Kovács
Founder & Project Development Lead

Conceptual Petroleum Field Development Study
Guinea-Bissau