

NEGOTIATION TO OFFLOADING



AGENDA

NEGOTIATIONS

PETROLEUM CONTRACTS

EXPLORATION & LICENSE OBLIGATIONS

DEVELOPMENT PROJECT

PRODUCTION SYSTEMS

PRODUCTION OPERATIONS & OFFLOADING

QUESTIONS & ANSWERS



STARTING THE BUSINESS

PRELIMINARY AGREEMENTS (MOU / LOI)

JOINT BUSINESS AGREEMENT / MUTUAL INTEREST

DIRECT NEGOTIATION

CESSION & ACQUISITION

BIDDING / AUCTION

- Joint Study and Bidding Agreement
- Freedom of association / Forced Marriage



PETROLEUM CONTRACT MODELS

CONCESSION OR LICENSE AGREEMENTS

PRODUCTION-SHARING AGREEMENTS

SERVICE CONTRACTS

- Risk service contracts
- Pure service contracts
- Technical assistance contracts
- Buyback

JOINT VENTURES / CO-OPERATION



ASSOCIATION GOVERNANCE

OPERATING GROUP

- Operator definition / Selection
- Joint Operating & Lifting Agreements
- Approval Committees
- Civil Society

OTHER STAKEHOLDERS

- Concessionaire
- Regulators / State Authorities
- Civil Society



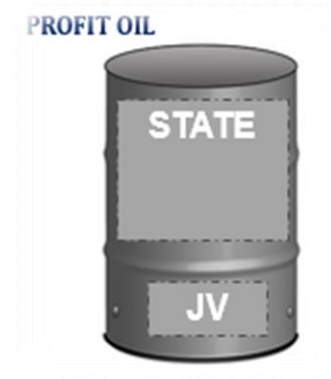
PSC: MAIN FEATURES (EX. ANGOLA)

HOST GOVERNMENT

- Grants or delegates Operating rights / Partner
- Owns facilities at contract term / Recovery
- Royalties, Taxes, Local Content and production share

CONTRACTOR / JV

- Exploration and development at own risk (incl. carry)
- Finance & Technology for petroleum operations
- Cost Recovery (Cost Oil) / Remuneration (profit oil)
- Tax Payment + other business obligations



IRR YEARLY (%)	JV SHARE (%)	STATE SHARE
<15	80	20
15 - 25	60	40
25 - 30	40	60
>30	20	80

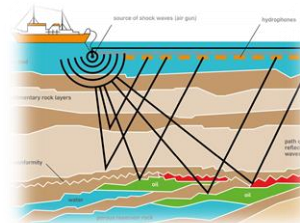
WORK PROGRAM & OBLIGATIONS

EXPLORATION PERIOD

- Contracted Area / Duration and terms
- Bonus & Rental Payments
- Minimum Work & Financial Obligations
- Conditions of Extension & Relinquishments
- Financing & Guarantees
- Information & Reporting / Commerciality
- Confidentiality Agreement

APPRAISAL PERIOD

- Appraisal Program & Duration
- Data Information & Reporting / Commerciality
- Confidentiality Agreement
- Development & Marketing Plan
- Decision Making Process
- Commitment to the Program

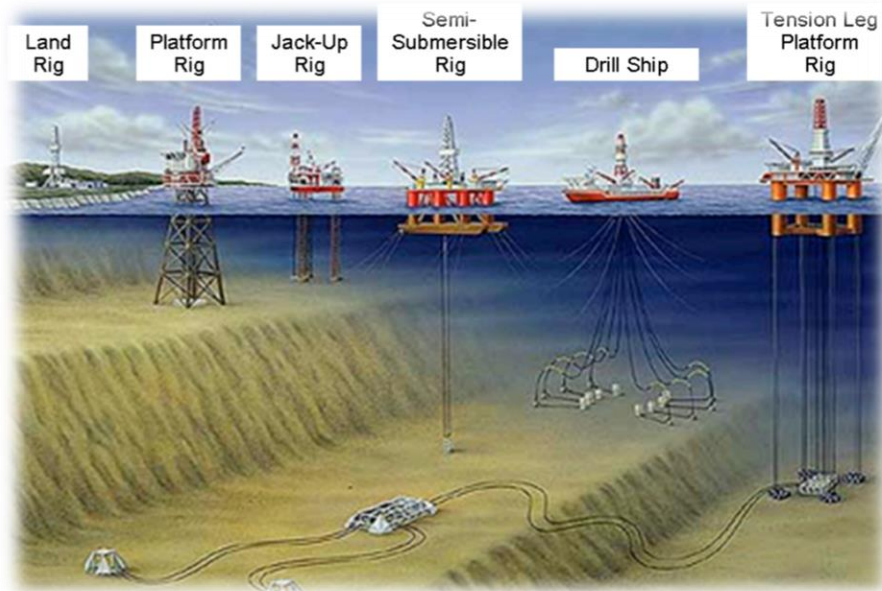


- SEISMIC, GEOLOGY & GEOPHYSICS
- RESERVOIR & DRILLING

DRILLING & COMPLETION

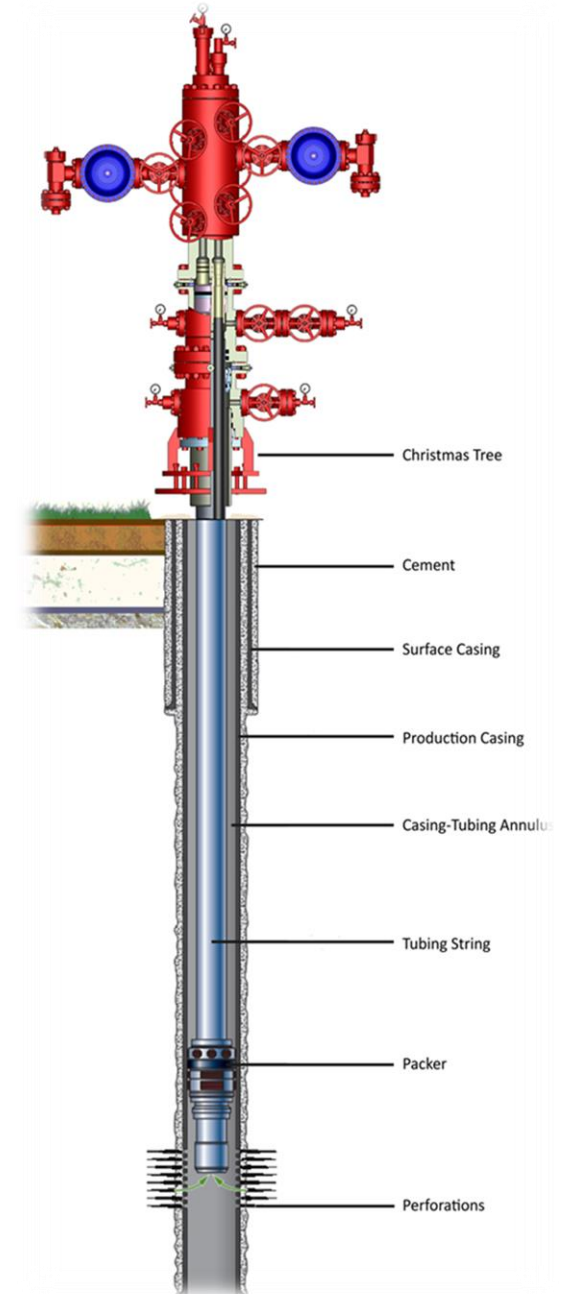
WELL OBJECTIVES

- Communication with reservoir
- Safe Flowing path upwards & downwards
- Exploration / Delineation / Development
- Production / Injection / Disposal



WELL BASIS OF DESIGN

- Tubing diameter
- Casing type
- Formation Mechanics & Lithology
- Well orientation (vert / dev / horiz)
- The depth to reach
- Safety & environment rules
- Specifications & Legislation
- Technology Limitations



KEY WORDS & CONCEPTS

WATER DEPTH

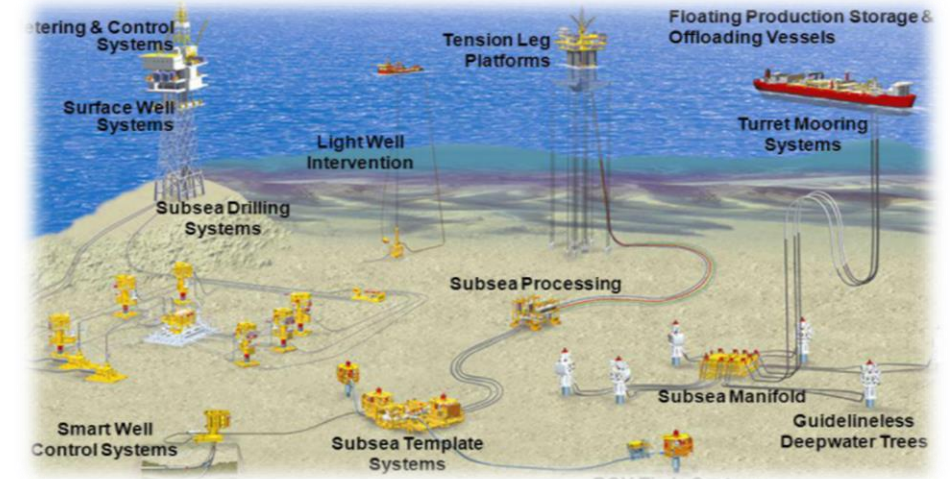
PRODUCTION SYSTEM

PRODUCTION RECOVERY MODE

- Primary or natural drive
- Secondary or artificial lift (WI, GI, GL, pumps)
- Tertiary / Enhanced (Steam, polymers, Detergents)

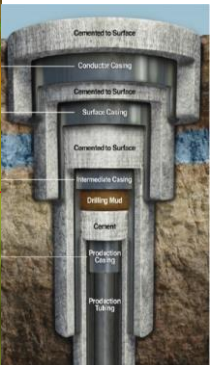
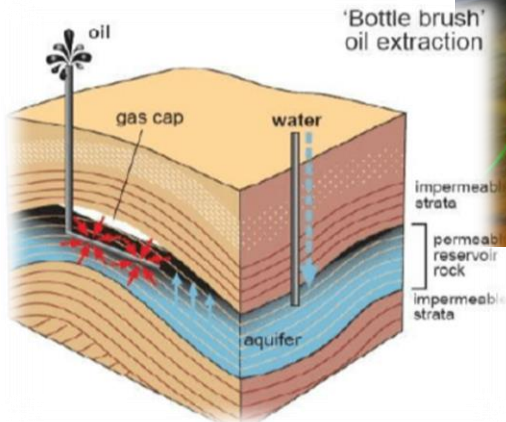
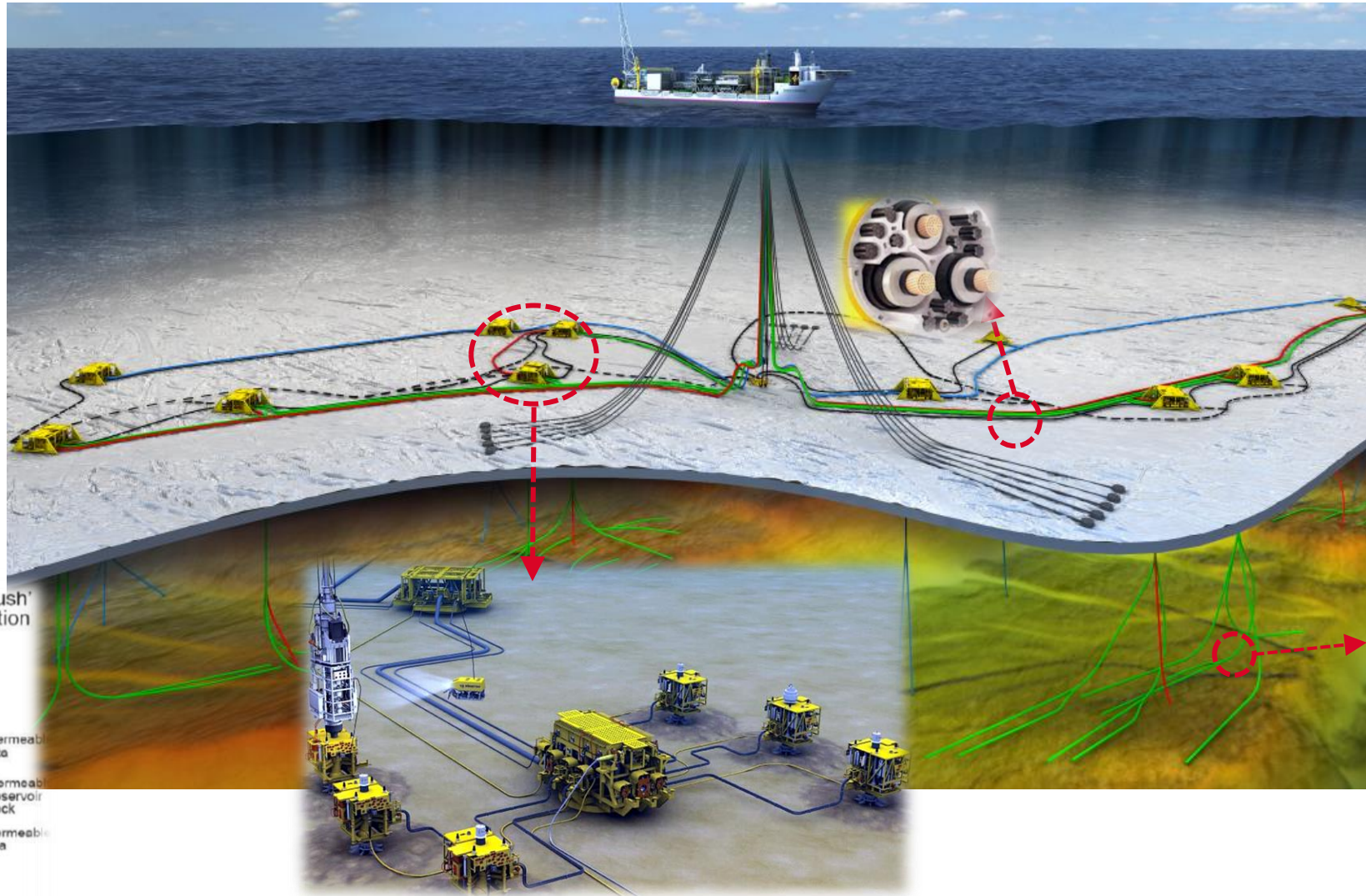
PRODUCTION / PROCESSING / OFFLOADING

FACILITIES & CONTRACTING STRATEGY



ZOOM ON PRODUCTION SYSTEM

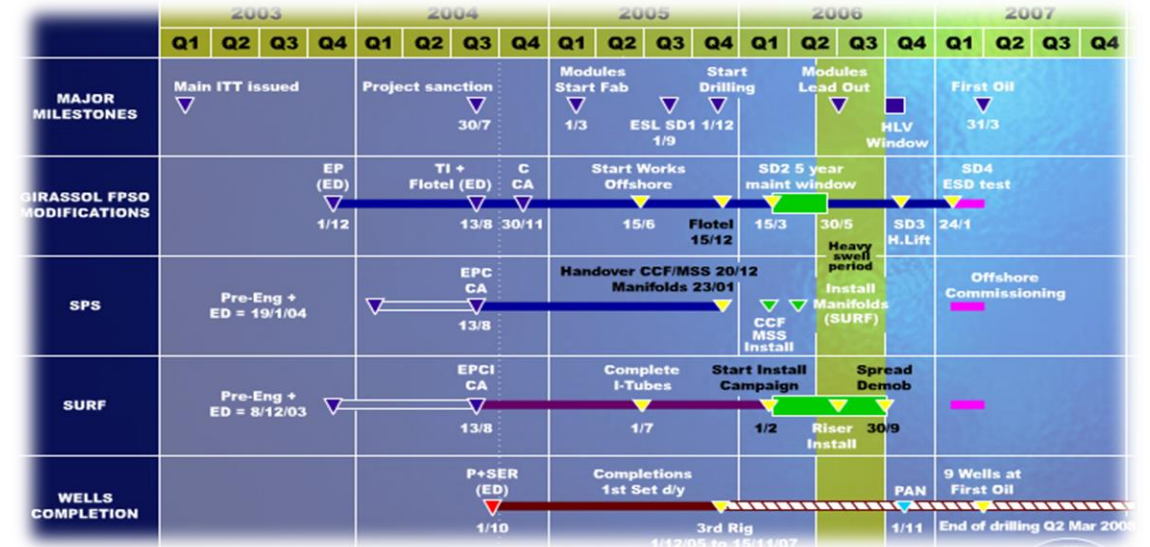
- Reservoir
- Well
- X-Tree
- Manifolds
- Flowlines / Risers
- Umbilical
- Topsides Facilities



DEVELOPMENT PROJECT

ENGINEERING PHASE

- Screening & Conceptual Engineering
- Pre-project / Field Architecture
- Project Planning
- Basic Engineering / CCFT
- Development Plan/ Investment Decision
- Detail Engineering / Construction plans



CONSTRUCTION

- Construction & Assembly
- Pre-Commissioning & Towing
- Hook up & Commissioning
- Plant start up & Performance Test

FPSO OUTLINES & FUNCTIONS

Dimensions / Mooring System

Total Dry / Wet Weight

Power Generation: 3 X 25 Mw

Oil / Gas / Water Process Capacity

Oil Storage / Offloading

Accommodation / Emergency Evacuation



Oil / Gas / Water Processing

Oil Storage & Offloading

Gas Process & Injection/Export

Water Process & Reinjection

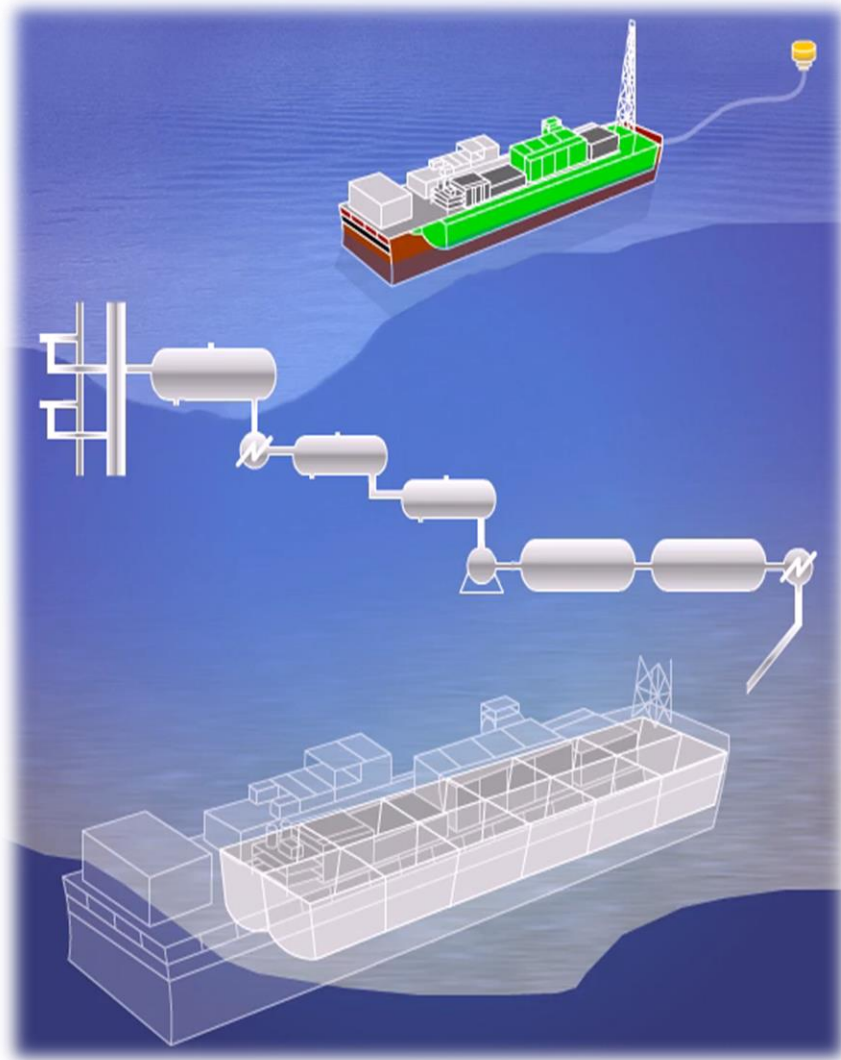
Sea Water Process & Injection

Ballasting / Vessel Stability

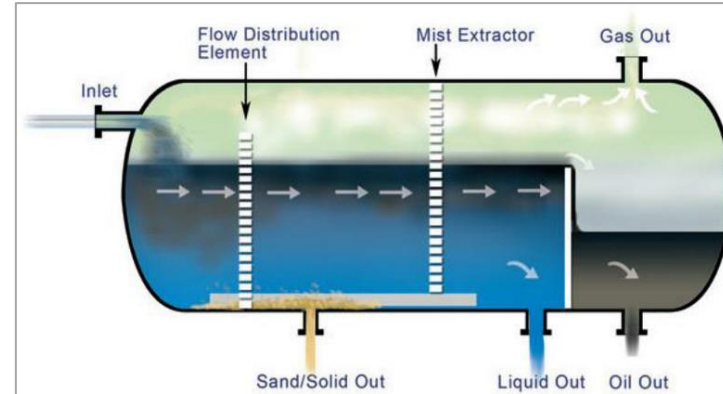
Utilities

Accommodation / Logistic Hub

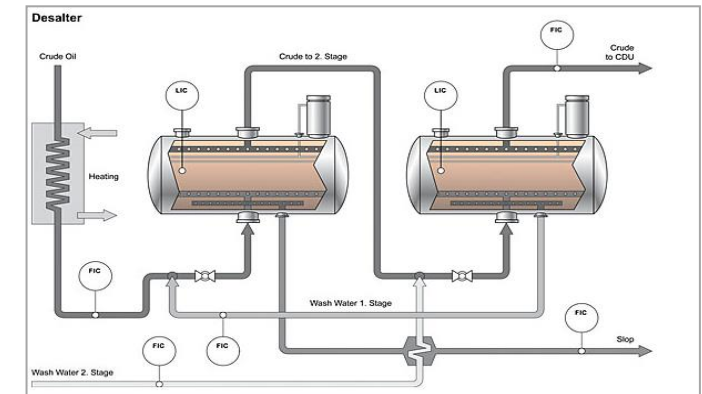
CRUDE OIL PROCESSING



SEPARATION



DEHYDRATION / DESALTING

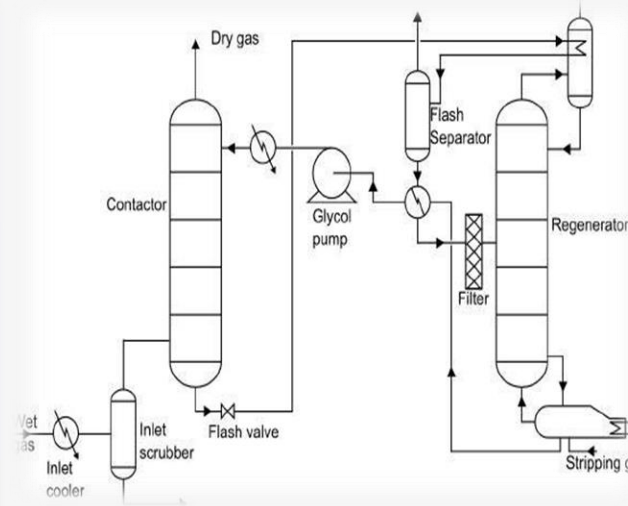
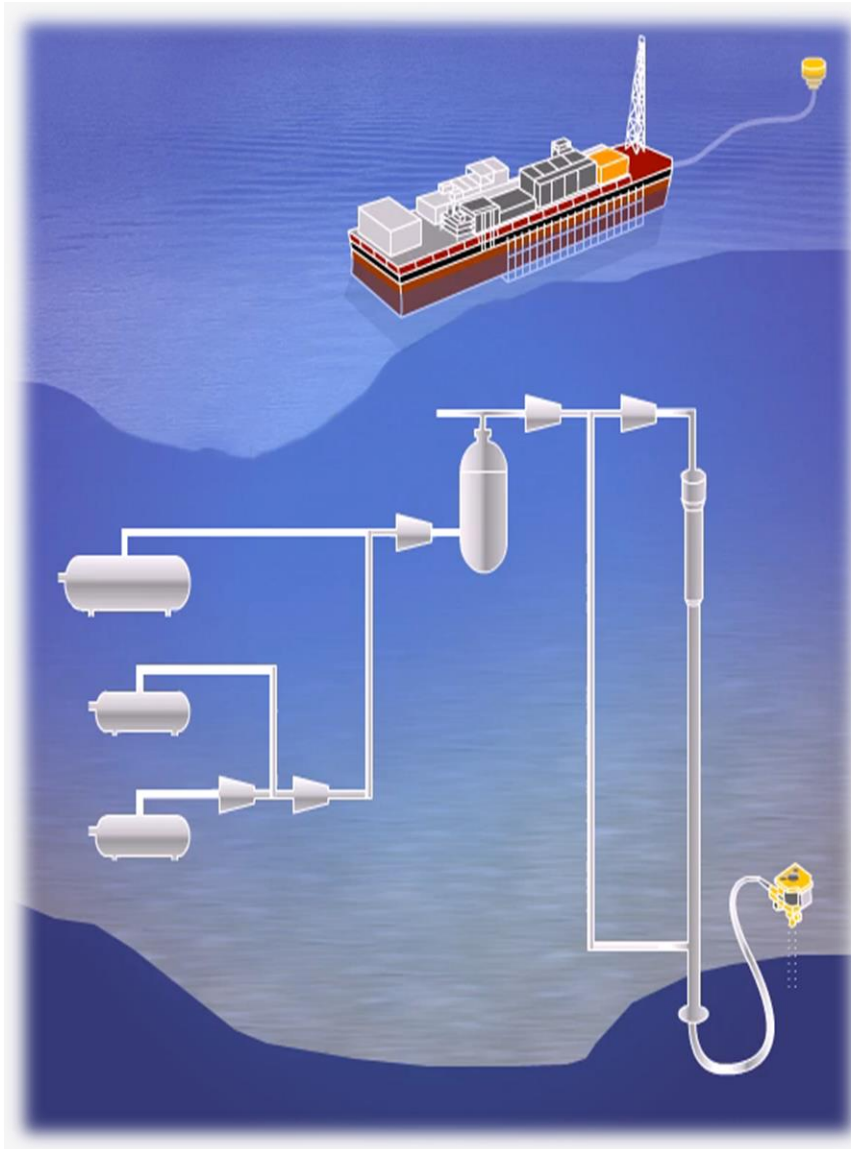


MEETING COMMERCIAL SPECIFICATIONS

- Fluid Control And Distribution
- Crude Oil Separation (2 – 3 Phases)
- Crude Oil Washing / Desalting
- Crude Oil Stabilisation (RVP) & Storage



GAS PROCESSING



GAS PROCESSING END - FUNCTIONS

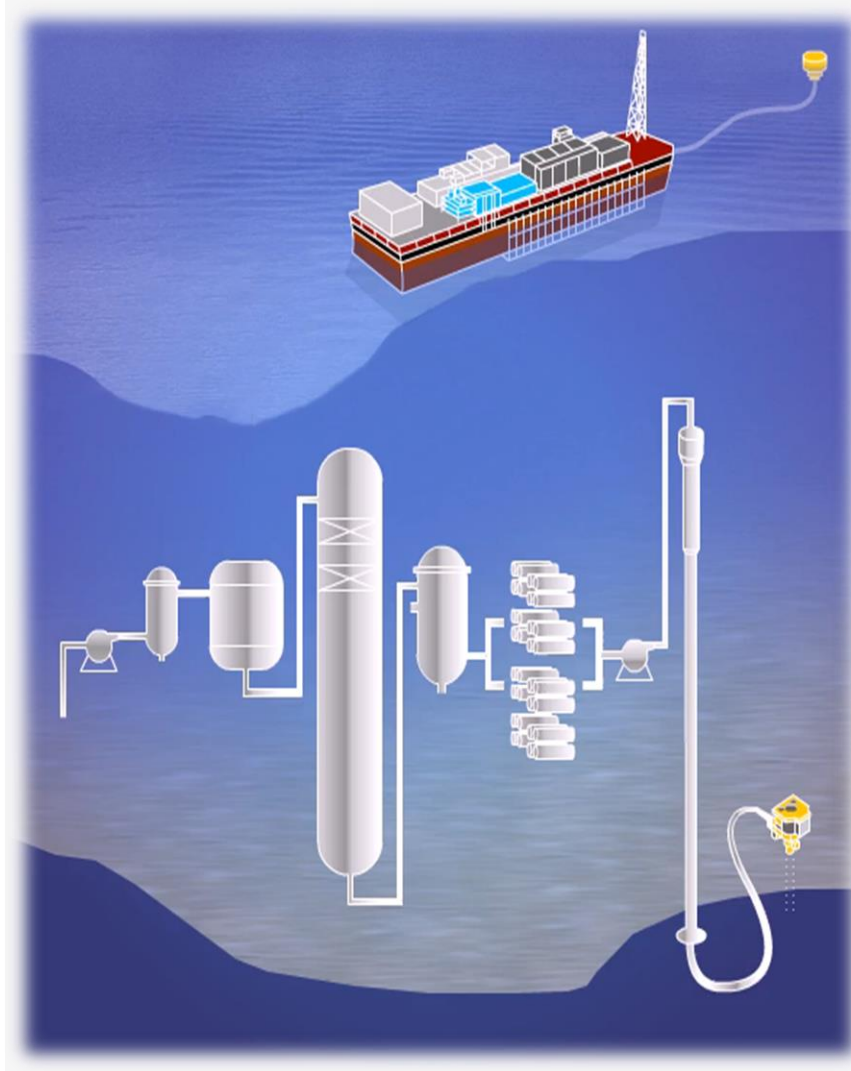
- Reservoir Injection (Pressure or Disposal)
- Commercial Export - Supply to gas plant
- Production Recovery - Artificial lifting
- Power generation - Fuel Gas
- Storage Tanks - Blanketing

COMM / TECH SPECIFICATIONS

- Liquid knock-out
- LP/MP/HP Compression
- Cooling
- Dehydration
- Export / Injection



SEA WATER PROCESSING



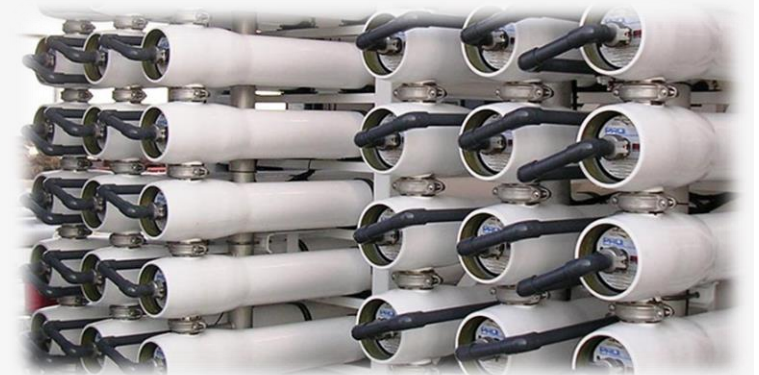
PROCESSING STEPS

- Sea Water Intake
- Chlorine Injection
- Filtration (Coarse, Micro & Nano)
- Dearation / O₂ Removal
- Sulphate Removal
- Pumping
- Injection

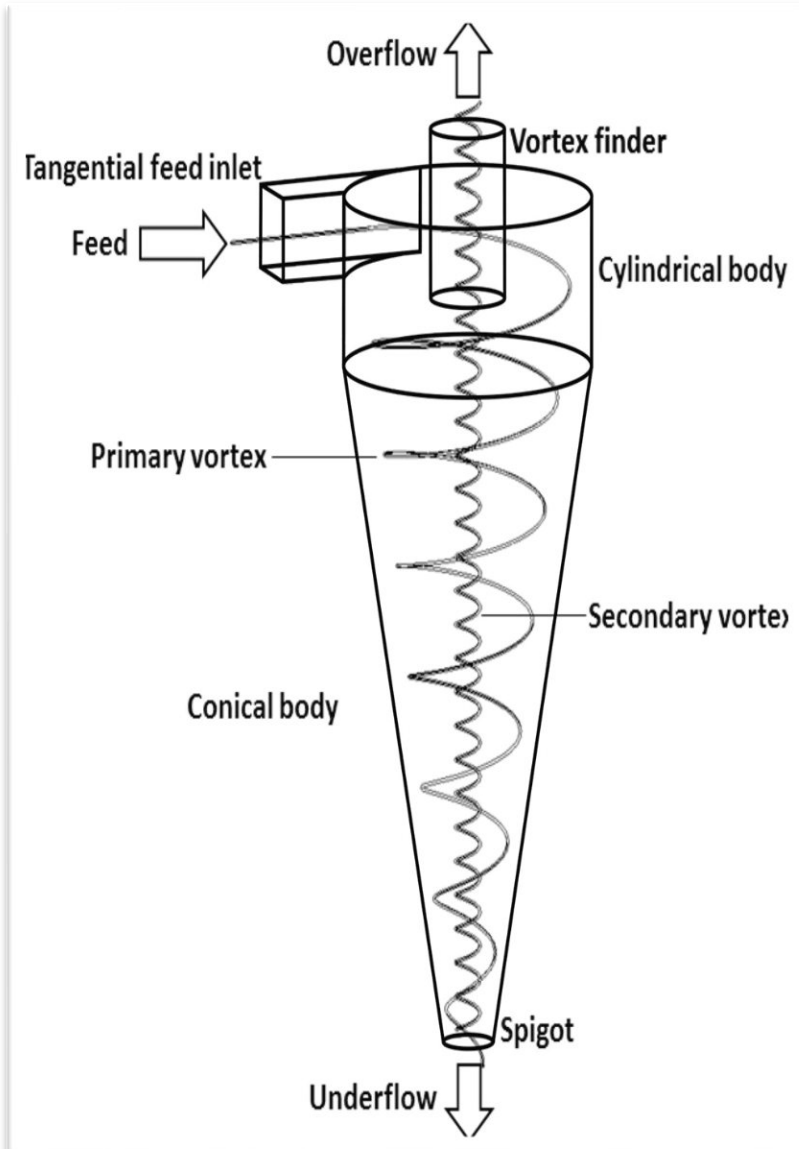


SEA WATER END - FUNCTIONS

- Reservoir Injection
- Plant Service / Utility Water
- Cooling water Medium / HVAC
- Accommodation Fresh Water



PRODUCED WATER PROCESSING

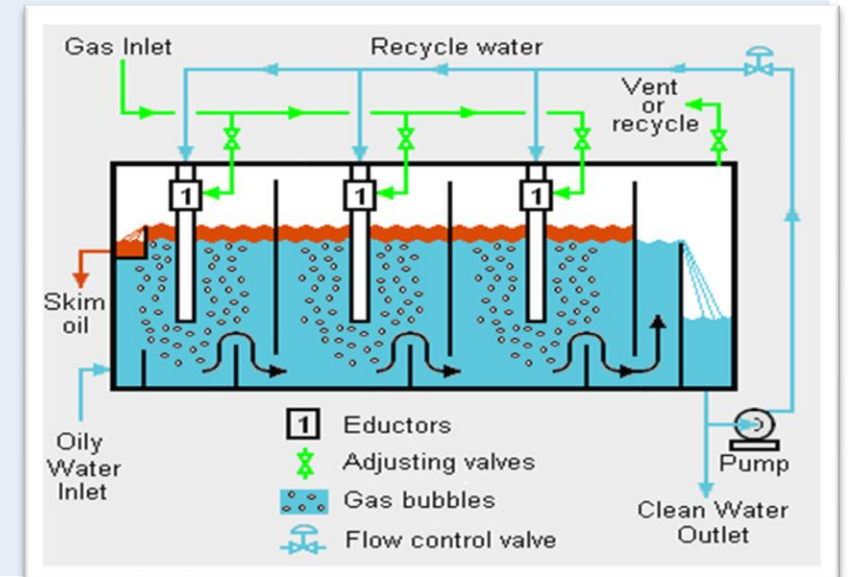


PROCESSING STEPS

- Production Water separation
- Hydro cyclone / Oil Removal
- Degassing / Oil Removal
- Filtration / Oil & Sand Removal
- Flootation / Membranes
- Pumping
- Injection

PROD WATER END - FUNCTIONS

- Reservoir Injection
- Pre-heating
- Disposal / Overboard



OIL EXPORT/OFFLOADING



OFFLOADING MODES

- Pipeline Transfer
- Offloading Buoy
- Tandem Offloading
- DP shuttle Offloading
- Cargo Transfer Vessel (CTV)

OFFLOADING DETAILS

- Crude Specifications
- Offtake Quantity
- Port Call
- Laycan



THANK YOU

