



Gas Field Development - Challenges and Current Best Practices to Maximise Value

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A Life Cycle through Optimizing Production from Gas Reservoirs with Different Levels of CO₂

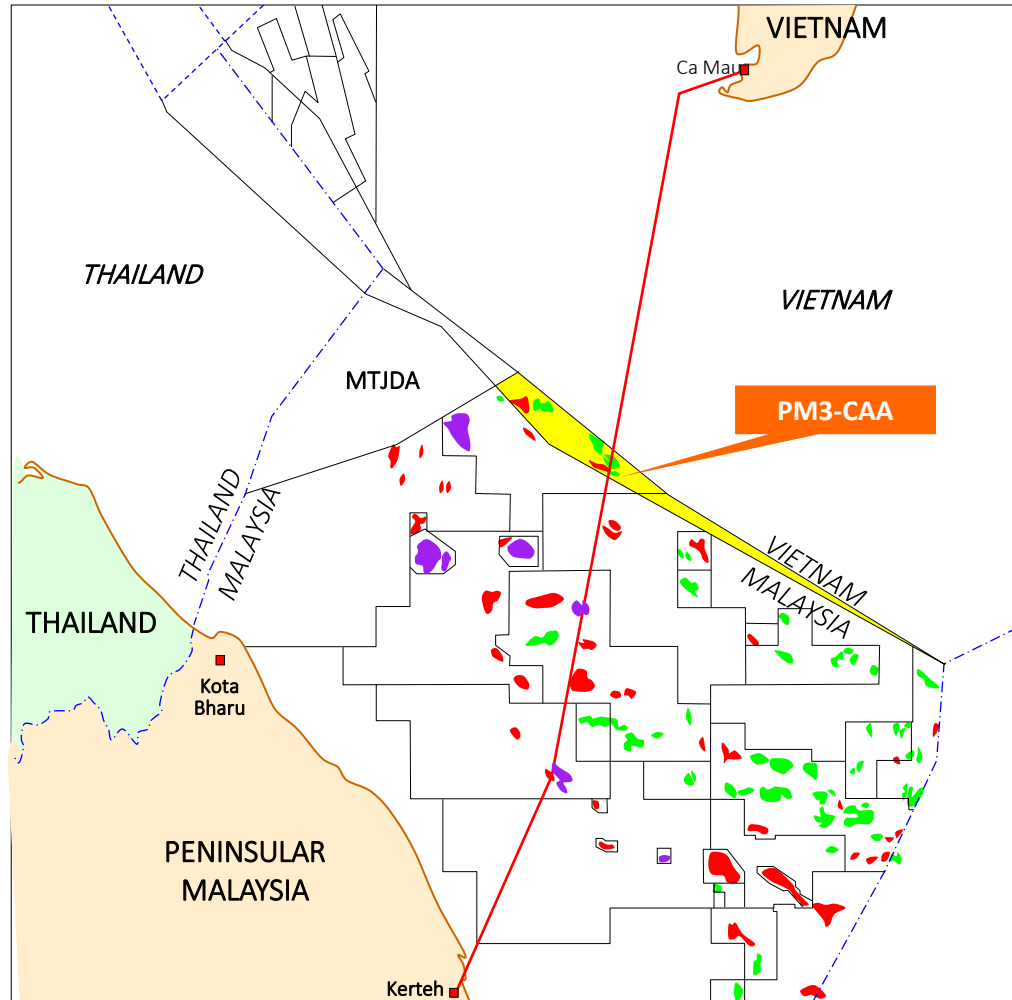
CALEB SIEW

SENIOR MANAGER, RESERVOIR SURVEILLANCE AND OPTIMIZATION

HIBISCUS MALAYSIA



Field Overview



- Overlapping area between Malaysia and Vietnam
- Production commenced in the 90s
- Offshore Oil and Gas processing facilities
- Multiple fields and producing platforms
- >250 wells drilled throughout field life

Key Challenges

An illustration showing a person standing on a path that leads to a large white arrow pointing upwards. The path is flanked by red and white striped barriers, suggesting a challenging or restricted path forward.

Managing gas processing plant offshore

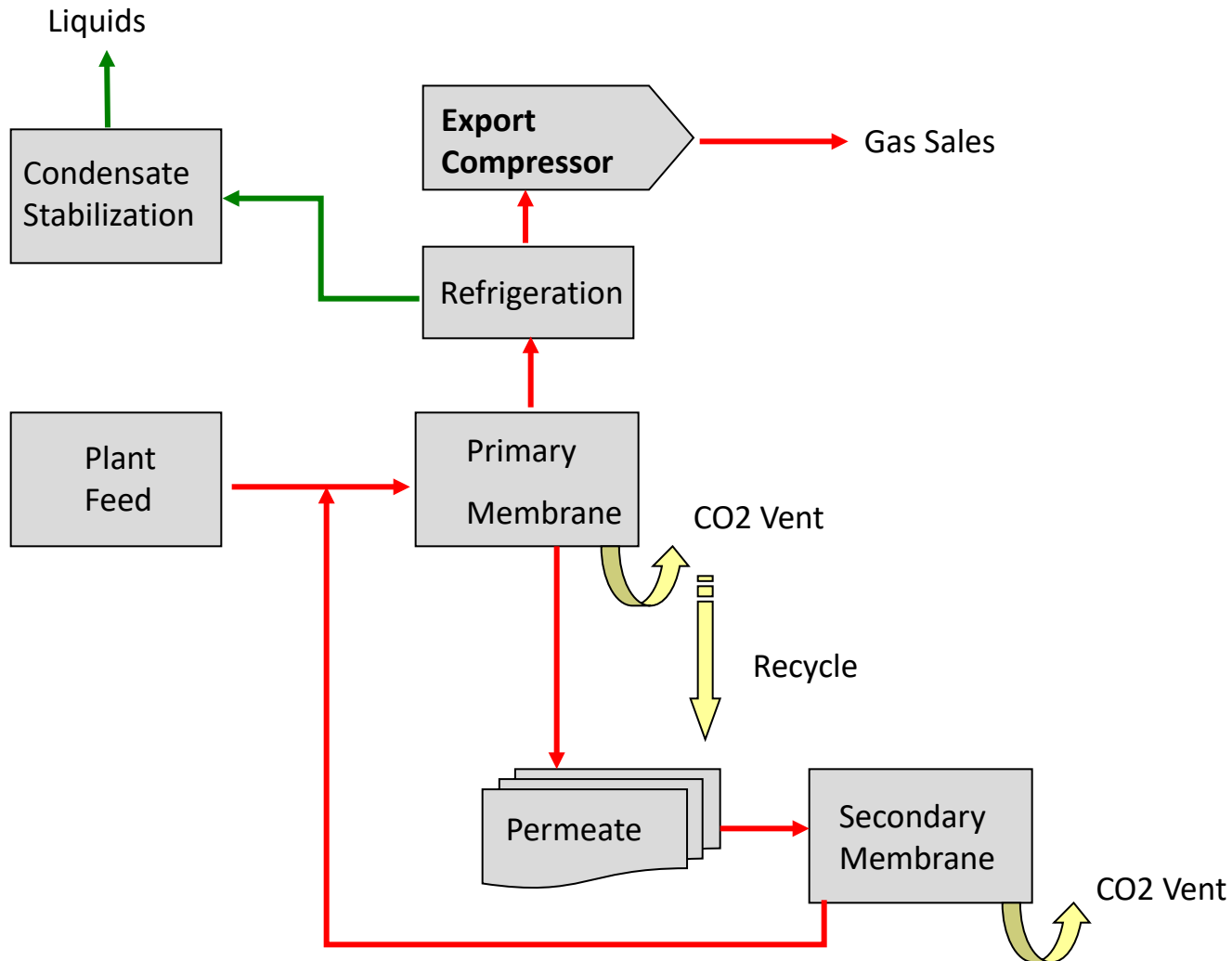
Varying CO₂ levels from reservoirs

Limited window for well intervention operation

Aging facilities and declining reservoirs

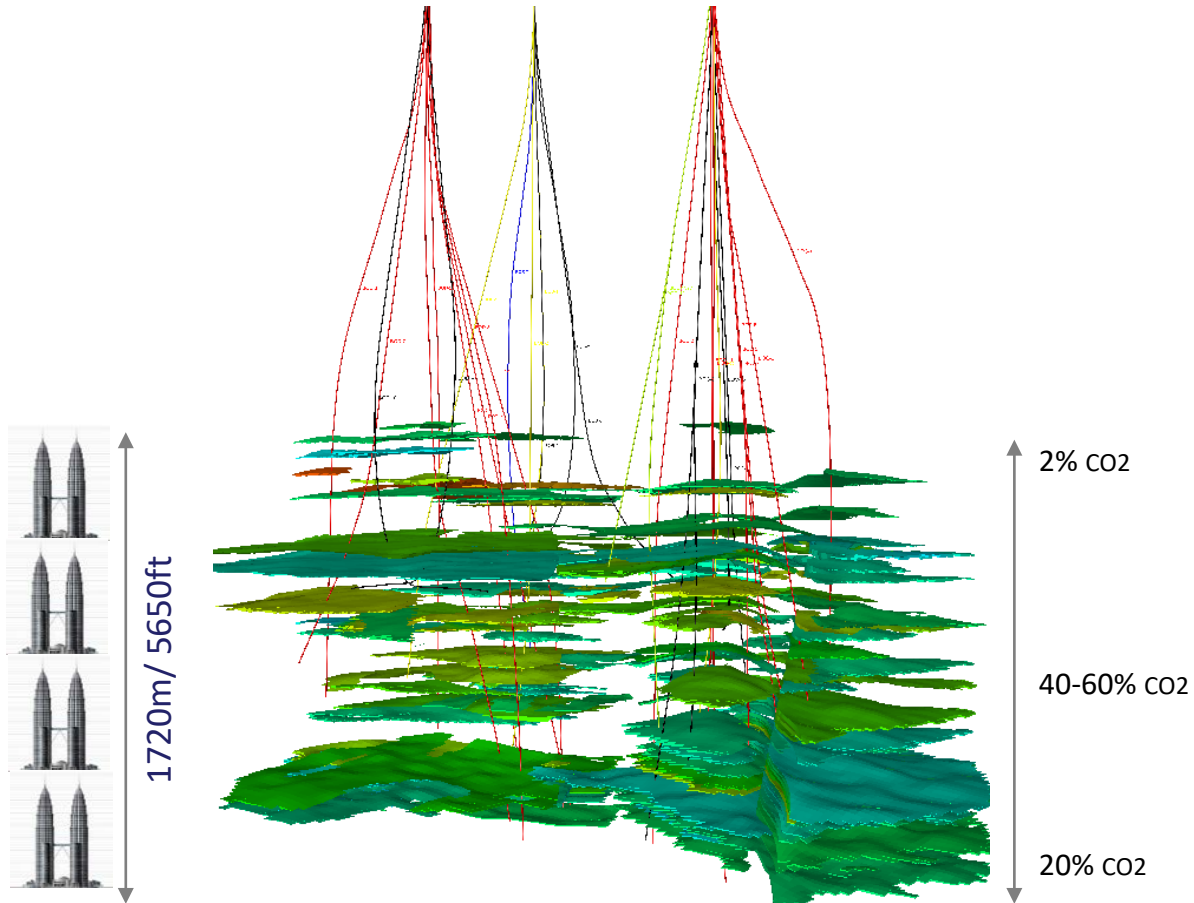
Varying sales demand from end Buyers

Process Overview



- Offshore installation of CO2 removal system
- Design handling capacity up to 630 mmscfd
- Pre-processing system prior to membrane treatment
- Maintaining strict gas sales specifications
- NGL stripping to increase liquid recovery

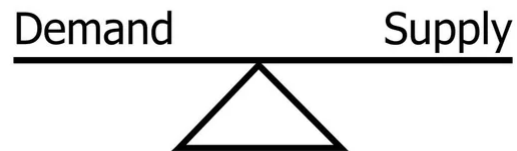
Reservoir Complexity



Multi-stacked Reservoirs

- >300 stacked clastic reservoirs
- Gross hydrocarbon column of >1700m
- Predominantly gas fields with oil production
- Thin layers of hydrocarbon
- Varying CO2 levels across all zones

Sustaining Production and Resources



Long Term Development

- Near field exploration and development to sustain within PSC period

Mid Term Infill Drilling

- Identifying opportunities to increase recovery

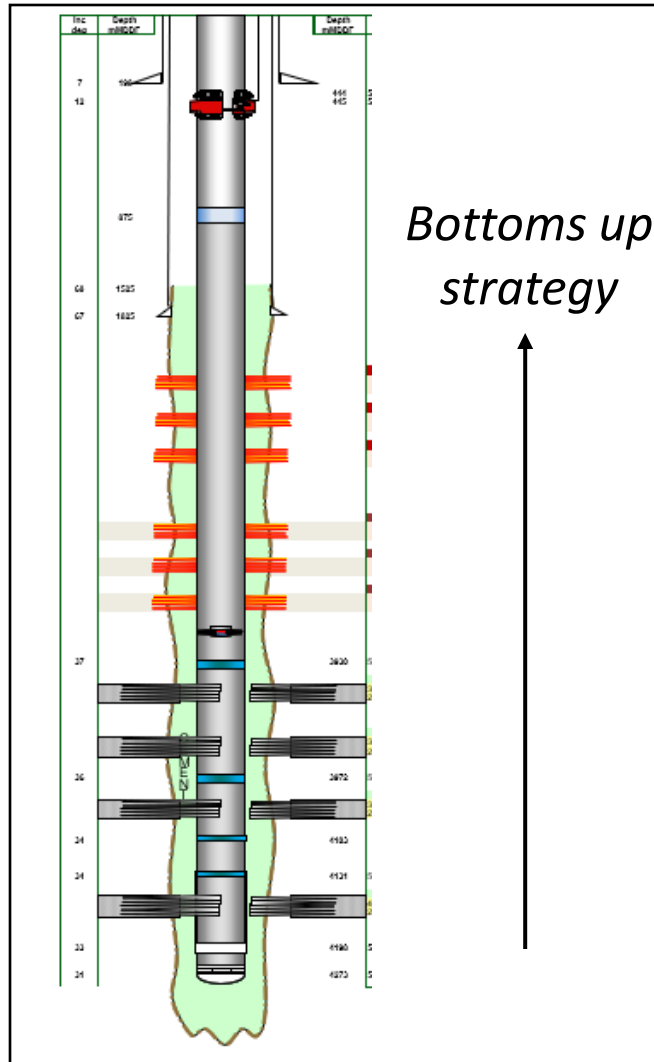
Well workover and Intervention

- Routine operations to sustain production within each year

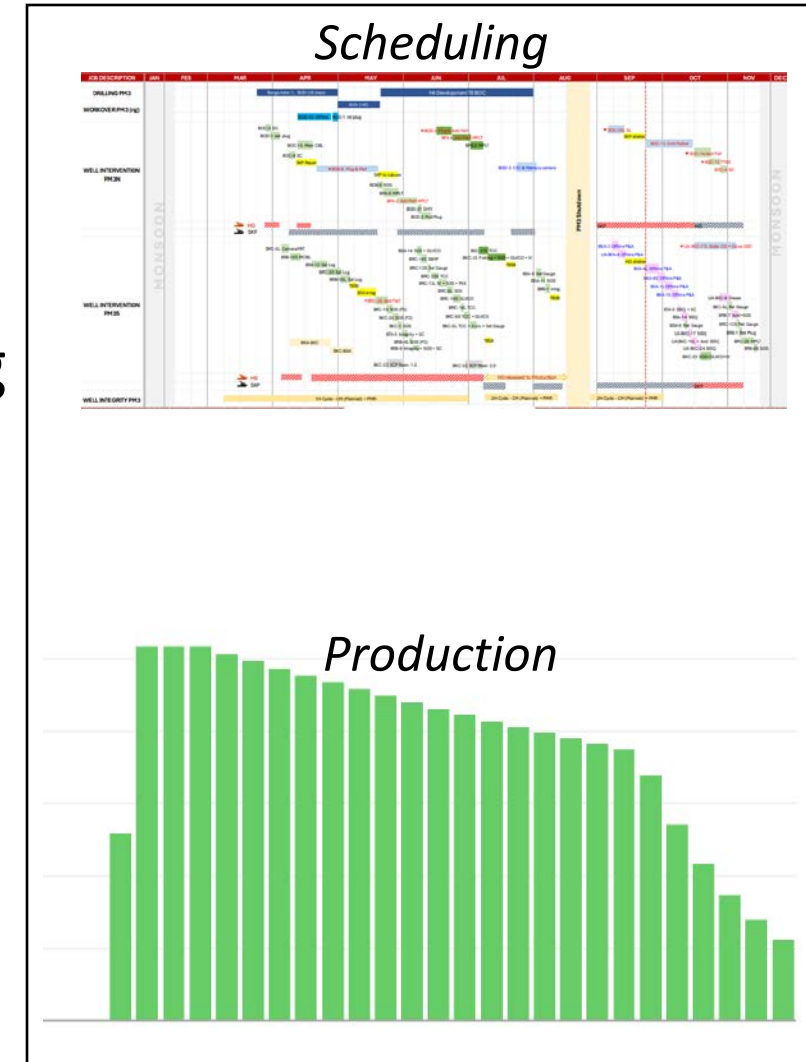
Low System Pressure

- Diverting depleted gas producers into oil system

Well Intervention Methodology



- Wellwork: Implementing bottoms up strategy
- Scheduling: Holistic planning on well intervention
- Cost: Timely operations managing expenditure
- Production: Sustaining supply of gas



Gas Blending Flow

Forecast

- Understanding the demand within time period
- Planning of activities ensuring gas sales demand is met

Sequencing

- Streams of production coming into play

Well Mix

- Combination of gas wells production meeting CO₂ requirement
- Maximizing condensate production

Gas Utilization

- Factoring gas usage for fuel, gas lift of oil production, flare

Sales Prediction

- Providing the final gas sales prediction

- ✓ Meeting gas sales demand
- ✓ Ensuring gas sales specification
- ✓ Meeting the requirement of the processing plant
- ✓ Planned maintenance
- ✓ High production efficiency

Learnings and Best Practices



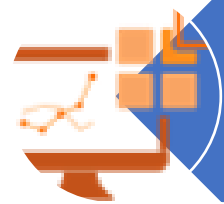
ASSET Management

Operations, Wells, Subsurface, Logistics, Warehouse...



People FOCUSED

Communication, Collaboration, Teamwork...



DATA Driven

Demand, Supply, Trends...



HUNGRY for More

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Acknowledgement

Thank you to all the Business Partners and Regulators, who are part of this Asset.



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