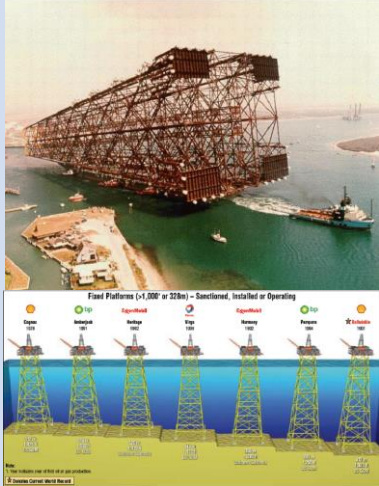


Fixe Platform & Compliant Piled Tower (CPT)

Dry Trees	Yes
Production	Yes
Storage	No
Drilling	Yes
Workover	Yes
SCRs utilisation	n/a
Max. Oil Production	280 kBPD
Water Depth Limitation	500m

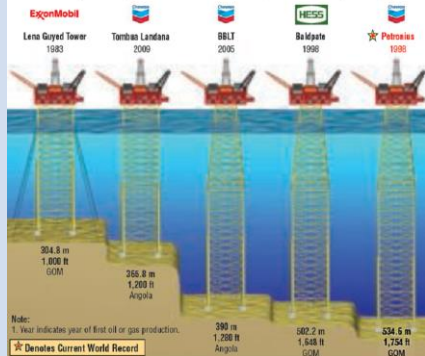
Shell's Bullwinkle Platform under tow



Amerada Hess "Balpate" Compliant Tower



Compliant/Guyed Towers – Sanctioned, Installed or Operating

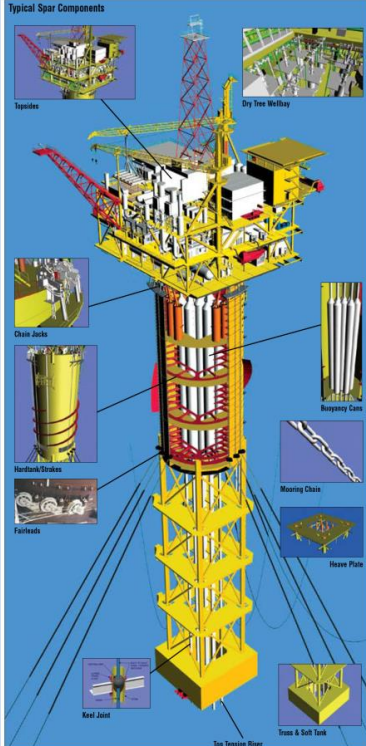


- Custom designed for site specific application.
- Single drilling centre.
- Surface completed wells.
- Integral drilling/work-over facilities.
- No oil storage; export pipeline or FSO.
- Tensioned rigid risers for production.
- Flexible or steel catenary risers for import/export.
- Lesser sensitivity to topside load.
- Long development schedule.

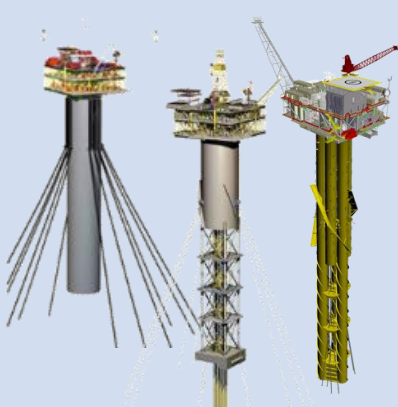
Single Point Anchor Reservoir (SPAR)

Dry Trees	Yes
Production	Yes
Storage	No
Drilling	Yes
Workover	Yes
SCRs utilisation	Yes
Max. Oil Production	160 kBPD+
Water Depth Limitation	3000m+

Typical SPAR Components



Classic/Truss/Cell SPAR General arrangement



- Custom designed for site specific application.
- Well options:
 - Single drilling centre, surface completed wells, integral work-over.
 - Remote wells completed subsea by specialist vessel.
- Export options:
 - Integral oil storage, export via offshore loading unit.
 - No oil storage, pipeline or FSO.
- Tensioned risers, flexible or steel catenary risers.
- Medium development schedule.
- Topside float-over or offshore lifts

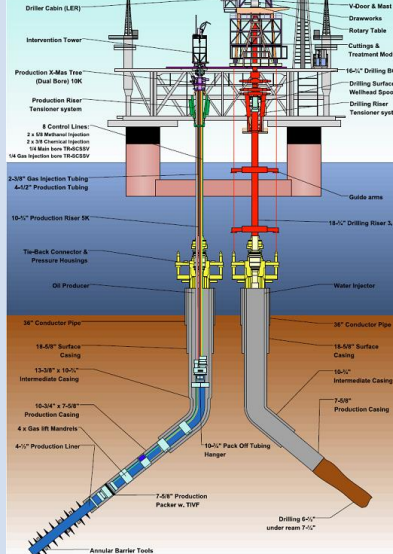
Tension Leg Platform (TLP)

Dry Trees	Yes
Production	Yes
Storage	No
Drilling	Yes
Workover	Yes
SCRs utilisation	Yes
Max. Oil Production	370 kBPD
Water Depth Limitation	1500m

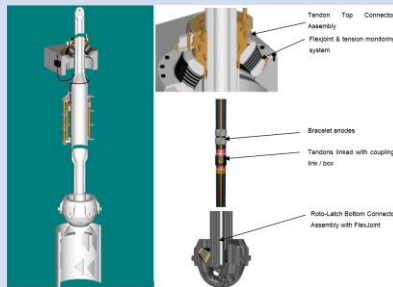
Schematic of the Mars TLP



MOHO NORD TLP SIMOPS – Schematics



Vertical Mooring - Tendons



- Custom designed for site specific application.
- Single drilling centre.
- Surface completed wells.
- Integral drilling/work-over facilities.
- No oil storage; pipeline or FSO.
- Tensioned rigid risers for production.
- Flexible or steel catenary risers for import/export.
- Sensitive to topside load.
- Relatively long development schedule.
- Topside integration at quayside by heavy lift cranes

Deep Draft Semi Submersible (DDSS)

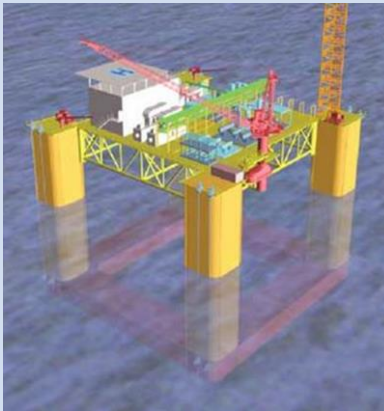
Dry Trees	Possible ⁽¹⁾
Production	Yes ⁽²⁾
Storage	No
Drilling	Possible ⁽¹⁾
Workover	Possible ⁽¹⁾
SCRs utilisation	Possible ⁽²⁾
Max. Oil Production	360 kBPD
Water Depth Limitation	2500m

1. Qualified for DDSS
2. Depending on water depth & environmental conditions, or long lazy wave SCR to be considered.
3. Limited storage capacity

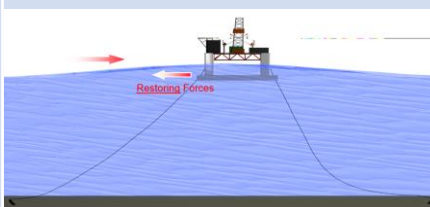
INDEPENDENCE HUB Deep Draft Semi



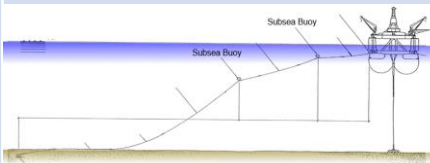
AKER Deep Draft Semi



Catenary mooring



Multi-Catenary mooring



- New-build or conversion.
- Well option 1: Remote subsea wells with work-over by specialist vessel.
- Well option 2: Wells below with integral drilling/work-over facilities.
- No oil storage; pipeline or FSO.
- Sensitive to topside load.
- Flexible risers – large number possible.
- Short to medium development schedule.
- Topside integration at quayside by heavy lift cranes or by float over

Floating Production Storage and Offloading (FPSO)

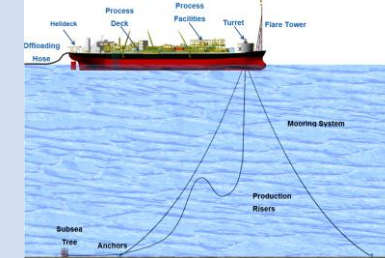
Dry Trees	No
Production	Yes
Storage	Yes
Drilling	Yes ⁽¹⁾
Workover	Yes ⁽¹⁾
SCRs utilisation	Possible ⁽²⁾
Max. Oil Production	330 kBPD
Water Depth Limitation	3000m

1. Drilling FPSO (FDPSO) for mild environmental conditions (West of Africa) : AZURITE FDPSO (Tulow, Congo).
2. Depending on water depth & environmental conditions, or long lazy wave SCR to be considered.

FPU typical Spread Mooring System



Internal Turret Moored FPSO



PRELUDE FLNG (Internal Turret, Australia)



EGINA FPSO (Nigeria)



- New-build or tanker conversion.
- Remote wells, normally completed subsea.
- Drilling/work-over requires specialist vessel.
- Integral oil storage & off-loading.
- Flexible risers, SCR (possible), hybrid risers
- Less sensitive to topside load (depending on new built or recycled tankers).
- Short development schedule.
- Topside integration at quayside by heavy lift cranes

Sevan Stabilized Platform (SSP)

Dry Trees	No
Production	Yes
Storage	Yes
Drilling	No
Workover	No
SCRs utilisation	Possible ⁽¹⁾
Max. Oil Production	120 kBPD+
Water Depth Limitation	1500m

1. Under investigation in GOM

SSP Piranema - PETROBRAS



SEVAN 650 n°1



- New-build.
- Remote wells, normally completed subsea.
- Drilling/work-over requires specialist vessel.
- Integral oil storage & off-loading.
- Flexible risers.
- Lesser sensitivity to topside load.
- Short development schedule.
- Topside integration at yard