Platform Group

Day II Discussion

Challenges and Risks

Topic	Engineering or Operating Challenges for OTEC (failure risks)
PROCESSES:	
Fabrication	State-of-the-art
Deployment	State-of-the-art
Construction	N/A
Installation (integration and commissioning)	-Deck equipment modules sized for lifting capability at integration site -Floating draft less than depth at integration site
OMR&R	State-of-the-art
Monitoring	State-of-the-art
Safe Operating Procedures	State-of-the-art
Decommissioning	State-of-the-art
Component Viability	Little or no risk of component failure under standard operating conditions

Processes

Topic: Semi-submersible	Manufacturability	Operabil ity	Reliability	Logistics	Scalability
PROCESSES:					
Fabrication	Semi-Submersible: Standard offshore rig fabrication Spar: Fewer qualified manufacturing facilities Monohull: Acceptable FPSO Construction		High	Less than established offshore industry	No issues
Deployment	N/A	N/A	High	Standard heavy-lift ships sufficient up to 20,000 tons Spar: ~165 m length limitation	Adequate for 20,000 ton total weight (hull and equipment)
Construction	(Assumed same as fabrication) Spar: Outfitting with OTEC equip is more complicated Monohull: Ship is more amenable to installation of internal OTEC equip				

Processes

Topic: Semi-submersible	Manufacturability	Operability	Reliability	Logistics	Scalability
PROCESSES:					
Installation (Integration and commissioning)	Quayside deck commissioning Spar: Requires deepwater for deck installation and heavy lift or float over	Local lift capacity for integration may be an issue (eg. pacific islands)	High (if the equipment is available)	Wet-tow to final site (short distance) or dry-tow (long distance)	Standard oil rig techniques
OMR&R		Routine/ Standard maintenance (simpler than typical oil rig) Spar: More Difficult to access Monohull: Greater response to sea states		Close to shore	
Monitoring		Performance monitoring			Monohull: Instrumentation advised to monitor fatigue

Processes

Topic: Semi-submersible	Manufacturability	Operability	Reliability	Logistics	Scalability
PROCESSES:					
Safe Operating Procedures		Meet regulatory and company HSE operating requirements	High		
Decommissioning	In accordance with current practices Spar: Harder	N/A	High	Transporting to desired location for disposal	N/A
Relocation	NA	Consistent with Normal Practices Spar: Difficult, may not be cost effective	High	Requires new moorings; Spar: Extensive disassembly + reassembly	NA
	Manufacturability	Operability	Reliability	Logistics	Scalability

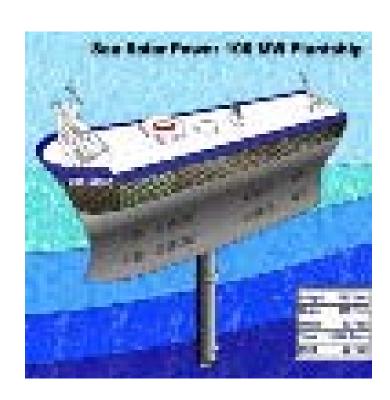
Economic Drivers

	Semi-Submersible/ Spar/ Monohull
Cost Limiting Factors/cost drivers?	Labor rates/productivity Outfitting (equipment in hull) Steel costs Transportation
Possible Cost Savings?	Design for inexpensive manufacturing; Minimize internal equipment; optimize schedule
What Research can be done on Cost Reduction	Low cost manufacturing techniques, materials; developing OTEC standards based on cost/risk
Are Technologies viable?	Yes

Semi-Submersible Used for Oil and Gas Drilling



Ship Shape



"Red Hawk" Spar Platform

