

經濟部暨所屬機關因公出國人員報告書
(出國類別：開會)

**參加 2012 海域石油探採技術會議年會
(Offshore Technology Conference)
報告書**

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出國地點：美國休士頓
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壹、 前言

Offshore Technology Conference (OTC) 海域石油探採技術會議創立於 1969 年，是全球最著名的組織，設立於美國德克薩斯州休士頓市，其宗旨在致力發展海域油氣資源，即使在政經動盪的時代，OTC 仍持續推動開發能源新技術、創新工藝、淬煉技能與挑戰極限上不遺餘力，為全球經濟做出最卓越的貢獻。

本次活動主題分為五大部分：貿易展示（附件一）、技術研討會（附件二）、工業界專題討論、頒獎（附件三）及教學與成長，透過案例討論及近年來全球深水探勘計畫的介紹，讓與會人員分享新技術與實務經驗，同時也關注替代能源包括風能、海流、海水溫度能源轉換及水合物的發展..等。

參加此會議的目的，係為學習及觀摩國際海域油氣探勘新趨勢發展、新技術發明、新能源開發、新觀念思維、新機具設備、新公司崛起等，藉由技術討論中了解各國環境保護、政策方向、規定條文、工安標準、業界準則等，及展示會中的各家油氣探採科技儀器設備功能、設計、概念、構思、規劃等，並蒐集歐美各國油氣探採最新資料運用在本公司現有探採工程中做最適化選擇，同時於推動 F 構造油氣田開發投資案、兩岸合作海域開發、深水礦區經營、邊際型油氣田開發、油田探勘生產、新能源開發、海洋礦產探勘、國外合作經營礦區之海域礦區探勘生產時，可以優先引入先進國家之技術，提昇本公司整體探採水準。

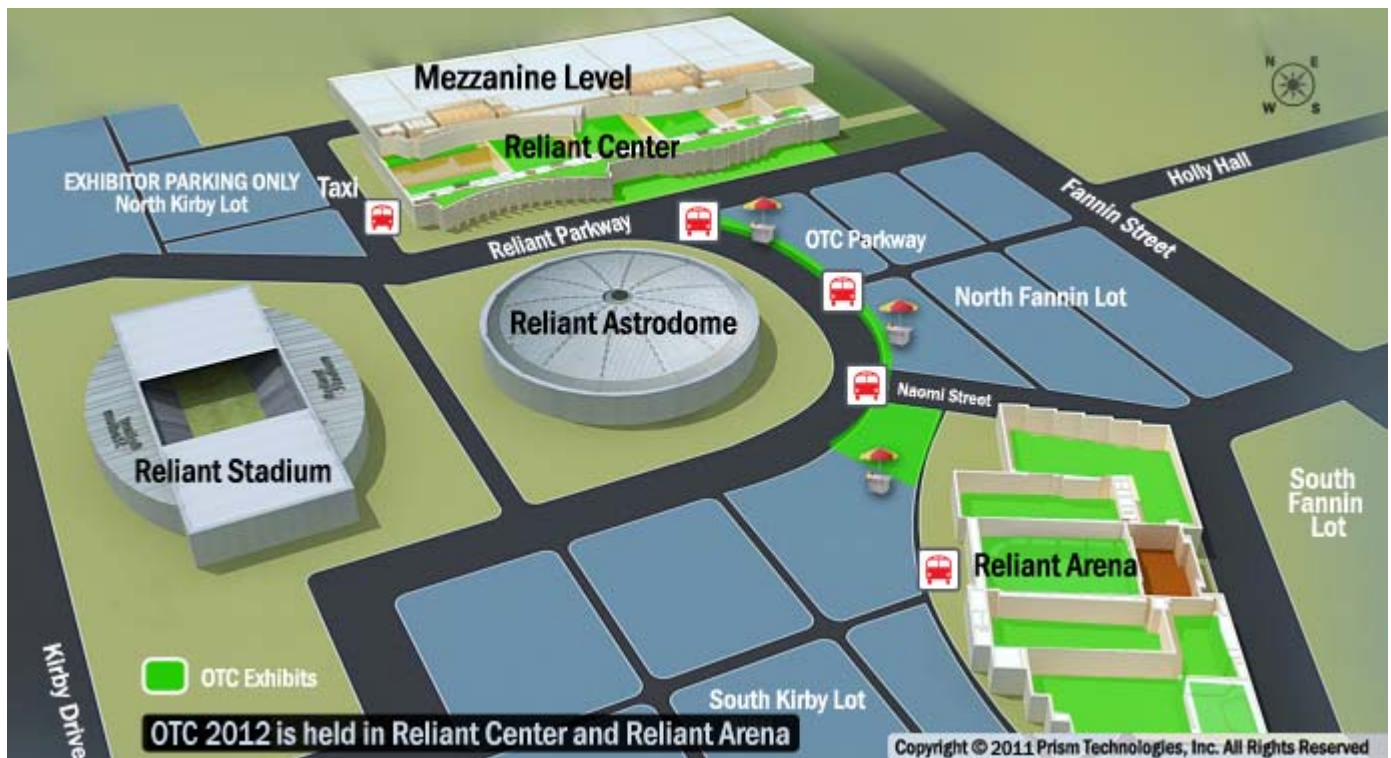
貳、 行程

本次奉派赴美參加「2012 海域石油探採技術會議(OTC)年會」，自 101 年 4 月 29 日起至 101 年 5 月 5 日止，包括啟程、返程時間共 7 天，其主要行程簡述如下：

起 程 日 期	天數	地 點	工 作 內 容
101.04.29	1	臺北－美國休士頓	啟程
101.04.30	1	休士頓	參加會議
101.05.01	1	休士頓	參加會議
101.05.02	1	休士頓	參加會議
101.05.03	1	休士頓	參加會議
101.05.04~06	2	美國休士頓－臺北	返程

參、 OTC 活動概述

海域石油探採技術會議(OTC)年會，每年舉辦一次，2012 舉辦地點仍在美國休士頓的 Reliant Park，展覽場地分別在 Reliant Center、Reliant Arena & Reliant Parkway 三處，展示面積共有 641,350 ft² 為歷年之最。



OTC 為美國參加人員最多的十個大型會議之一，吸引國際上 100 多國與油氣相關行業的執行長、經理、工程師、科學家、學生等前來共襄盛舉，據統計參觀人數達 89,400 人次為 30 年來的新高且較去年成長 14%；參展廠商來自 48 個國家(包括首次與會的 6 個國家 Bahrain, Hungary, Israel, Lithuania, New Zealand, and Taiwan.)共達 2500 家，新增加 200 家廠商其中有來自台灣的 2 家(Gloria Material Technology Corp 榮剛材料科技(股)公司 & Kevin Steel Corp.)。

今年共有 48 項技術討論會(Technical Sessions)，每項議題再包含 4-8 個子題，發表論文計 288 篇。探討內容有：浮動式 LNG 工廠技術的進展、WhoDat 油氣田開發、濱海近岸漸變段地質工程技術、

FPSO 新技術及外海裝卸問題、尖端鑽井技術、新思維創造新機運、超過 15000psi 工作壓力之鑽完井新技術、海上新能源開發、生產平台設計新標準、深水作業昇導管新技術、水下監控檢測新設備、深水井之下水泥作業、深水區水下量測作業之改善、流動保證的設計與現場經驗、安哥拉新的巨大水下工程、ISO 19905-1 升降式鑽機現地驗證、ROV 水下遙控作業車新技術、海洋礦產之開採可行性、海域資源特性研究、流動保證-固粒管理及化學劑添加、撓曲管研究、升降式鑽機腳架盤與海床地質關係研究、海洋礦產之技術開發、海象學研究、Macondo 事件後在安全與油污染防治上的檢討、Jubilee 開發計畫、油氣田開發概念、海域深水區開發新機具-未來願景、海底流體流動及大陸側坡穩定度監測、水下技術-尖端發展、技術/計畫與財務、水下加熱技術的發展、生產平台上部結構技術、最新海洋地球科學、海上工作船之設計需求與趨勢、深海錨錠系統、海上風力能源、Marlim 三相分離系統、如何判斷井況-地層孔隙壓力分析與井控間關係、海洋工業之安全流程、管線-操作(IMR)、產能挑戰從生產平台上部到儲油層、材料科技、水下油氣處理技術-優劣勢分析、超深水域-、油層分析技術更新。

2012 年會焦點話題：

1. 深水作業區石油探採之風險評估與策略：2010 年墨西哥灣鑽油平台「深水地平線」的爆炸事件，這場意外引發各界關注海域石油探勘的安全問題及墨西哥灣沿岸的環境污染問題，由此次漏油事件危機近年來更加重視深水作業區石油探勘開發生產之風險管理，藉由規則、新技術及策略的改變以改善鑽井安全、漏油處理反應及危機管理的能力。
2. 改善經營環境在海域能源探勘作業上：作為全球海上能源探勘工業需持續適應新技術的挑戰及不斷改變的環境規定，在目前和未來環境下集中心力努力去提高探勘作業之完整性。集合專業人

士、安全專家和政府官員一起工作下去提升層次。在同一時間，探勘工業處於一般公眾和法規下更詳細之監察。在較高的透明度下，它正經歷著比以往更廣泛的審查。

3. 全球能源展望：模式改變。眾所周知以目前石油和天然氣蘊藏量而言是足以供應全世界未來需求的。然而，相對的有些不確定性存在，作為投資者卻面臨著長交貨期和長回報期的風險。金融風暴和經濟衰退的持續影響，世界能源市場在改變，政策因素和技術發展結構直接影響到能源供應和需求。此外，石油作為一種資產類別的出現改變了石油市場，同時也大量暴露於金融市場。因此，石油市場正在經歷較大波動。原油價格也受到越來越多無關供需基本面的因素影響。
4. 2030 年全球海域油氣探勘展望：從現在預測 20 年後的海域石油和天然氣發展是一個有趣的和令人深思的話題，業界高層的觀點和策略將是多樣的和挑戰性的，在市場變換下世界經濟和能源消耗亦將改變，石油工業在地理位置和技術面上也將跟著發生變化。提出 20 年的行業願景，需要一個合乎邏輯的預測心態以及堅定的企業戰略。四個傑出的從業者從各個角度和地理位置上提供有關石油行業在 2030 年的願景。
5. 獨立公司在海域石油探勘所扮演之角色：墨西哥灣石油產量佔美國產量的 30%，獨立公司在墨西哥灣石油產量計 90 萬桶/天，和他們擁有生產礦權的 81%和 46%的深水礦權，看看就業貢獻可知在墨西哥灣近 40 萬就業機會中有 20 萬個是獨立公司所提供，這些工作轉化為近 40 億美元的投資及 18 億美元歸屬在聯邦，州和地方財政年收入中，進一步擴大延伸到所有僱傭和操作運營方面所產生的間接影響。這些間接影響，影響到所有的美國人，尤其是那些在墨西哥灣沿岸地區，從快餐店老闆和工人到房屋建築商和家具供應商等。這個主題將討論獨立公司的前景展望和障

礙，考慮操作營運、管理和政策問題，這將影響墨西哥灣的未來，一些關鍵問題包括：墨西哥灣鑽井和生產活動的復甦？是什麼導致它復甦？在政策、法規和投資面上有什麼不配合的地方？是什麼造成 Macondo 的悲劇？它的代價是什麼？我們是否缺乏技術支持以繼續向前邁進，成本支出又是多少？

6. 政府政策-自 Macondo 事件後墨西哥灣現況分析：Macondo 事件的結果，就是美國新的監管機構 BOEMRE（現 BSEE）近期對墨西哥灣暫停了探勘活動，如此對當地企業和就業造成了廣泛的影響，如何有效的運用法規和資源，做好生活和環境的安全防範？在現有的法規作用下對當地經濟、就業和墨西哥灣的石油產量影響又是什麼？
7. 澳洲-成功後的挑戰：由於大型油氣田的發現澳大利亞目前正經歷著一場衝擊，有些油氣開發在世界上來說是屬最大規模的海上開發。油公司增加開發資本，間接增加了澳大利亞及其人民的利益。相反，這種大規模的開發活動，將挑戰澳大利亞的技術資源、監管機構、市場產品供需，短期內澳大利亞政府如何掌控這個巨大的成功呢？
8. 通過全球技術創造價值：會議討論重點是技術發展下的價值創造。傳統的海域技術研發中心是將新思維移轉給全世界，這種全球性技術創造價值由多元社會、政治和經濟的驅動下發生在整個行業的各個層次；當我們從傳統的中心轉移，此討論將解釋什麼、如何以及為什麼這種移轉會帶給石油行業更大的價值。特別是，將討論及處理從其他工業引進新技術所扮演之角色、移動技術中心至中東/南美和澳洲、思想領導的多元化與來源、經濟化的全球化研發、政治和全球社會的利益、及適應跨國公司的智慧財產權的策略和技術管理規範的收穫和價值保護。

9. 替代能源-何謂前景：將匯集在替代能源業界上的領導人在最有前景的替代能源價值鏈的狀態報告，將介紹哪些技術是最有潛力的及他們的公司是如何分配其投資，評論不同的技術最有可能的商業化時間表，可能規模化的商業投資，和他們對整個國家和全球能源平衡的貢獻。

2012 年共有 10 家公司 13 項新技術新發明在 OTC 受到表揚，其中 Baker Hughes、FMC Technologies & Schlumberger 公司各有 2 項產品，其他如 ClampOn、Dockwise、Halliburton、Reelwell AS、ShawCor Ltd.、Tesco Corporation & Versabar Inc 公司各有 1 項。(附件三)

肆、心得

有市場就有供應，有需求就有生產，綜觀目前經濟發展趨勢，第三世界國家(如中國、印度、巴西、蘇聯)仍持續朝工業化前進，社會發展欣欣向榮，對能源的需求仍持續增加，在替代能源未普及化的情況下，傳統能源礦物仍是主要的提供者，各項能源中尤以對石油的需求仍維持在高檔，因為石化產品所提供的便利性與生活是密不可分的。石油是屬於消耗性資源用完了就沒了，就已知的全體儲量有限，為維持高石油產量就不得不向更艱困的自然環境挑戰，朝更深、天氣更極端的未知區域去探勘，深水-超深水、戈壁沙漠、極地，一個接著一個的去突破其環境上的限制，溫度、壓力、材料、天氣及多變的地層都將是未來需要面對的課題；與航太工業、遙測技術相結合，開發出下一個世代的工具提供油氣探勘所需；環境保護與資源開發間如何取得平衡？如何在極端環境作業下兼顧人員安全與設備維護？上述課題仍需克服與解決。但是能源需求沒有停滯，石油工業的未來仍然是亮麗可為。

OTC 年會提供了一個平台，聯結產業界、學術界、地方官員及終端客戶，從探勘至生產、從設計到規劃、從安裝到試車、小至螺絲釘油封大到 FPSO，結合了石油工業、能源產業、海事工程、機械製造、太空工業等形成一個完整的產業供需鏈。在這裏 OTC 會場有 2500 家與石油行業的供應商，跟石油探勘有關的各式各樣產品及服務應有盡有，來到此會場一次性就可以解決所有問題、得到應有的服務。在這裏 OTC 會場有 4 整天的學術及工程實績發表會，議題包羅萬象，可以讓人了解到石油工業、海事工程近年來的新觀念新發展新趨勢，讓我們跟上業界的潮流不落伍。在這裏 OTC 會場有所謂的專題討論與焦點會談，分別針對工安環保、法規、事故教訓、價值創造、替代能源與未來願景做更深層之分析檢討，讓我們跟上能源時代的腳步向上躍

升。在這裏 OTC 會場可以看到有近年來新技術新機具的發明，它們運用在石油探勘工作現場以達到更經濟更迅速更確實之目的，讓我們能擴展視野增進本質學能。

台灣身處在能源的孤島，天然油藏資源本來就不豐富，台灣中油公司之探勘部門分別在陸上及海域進行鑽探作業，自開採迄今油氣資源也日漸耗竭，陸上大的油氣構造發現不易，環保意識抬頭，鑽井之井位一席難求，鑽探活動逐年縮小、市場萎縮進而造成鑽井技術未能提升；海域鑽探則因 90 年代前海探處之簡併，造成海域鑽探人才的大量流失，已有 12 年未曾在台灣海域主導海上鑽井活動，近年來雖致力於高雄外海 F 構造開發工程，但與國際間新的海域鑽井技術已產生極大的落差，國外的石油工具供應商早就不將台灣視為市場的一環，更難以藉產品購置取得新技術支援；國際探勘業務前期又僅以投資參股不做經營人為主政策，現今雖取得利比亞、查德等礦區經營權，鑽井業務已顯出左支右絀的窘境來；公司高層更應重視此技術與人力斷層之問題，給予探勘組織應有之定位及預算，方能延續及再造我國油氣探勘事業。

看著中國大陸、巴西、墨西哥、馬來西亞等石油界後進，靠著天然資源豐富、探勘活動熱絡，人才積極參予、政府大力配合下逐漸成長壯大，大舉入侵石油探勘業的上、中、下游，我們卻仍然在人力緊縮、法規限制等政策及政客口水之緊箍咒下坐失良機，令人不勝唏噓。

伍、 建議

- 一、 OTC 為一年一度最大型之海域石油探採技術會議，會中可獲得最新的海域油氣探採、海事、結構及環保技術與新器材發展的資訊，建議每年「組團」派員參加，以海域 F 構造開發工程需求，採任務分工方式全方位有系統的引進全套新技術、新設備及新思維，才足以迅速提升本公司之探勘水準。
- 二、 大陸各大油公司（CNPC、CNOOC、SINOPEC）的發展歷程與經營及對探勘的重視為本公司向上突破及成長的最佳教材，其企業文化、發展雄心及投資策略在在都是台灣中油公司應該努力學習的對象。
- 三、 探勘人才的培養、油氣資源的開發、前進國際的腳步是不能停下來，中油公司已經停滯不前 15 年了，藉著本次海域 F 構造開發工程及國外查德礦區的新發現，讓我們凝聚一心、解除束縛、共創未來。

附件一、Products and Services Index (參展廠商產品及服務目錄)

1	Accessories	63	Offshore Structure/ Systems
2	Actuators	64	Offshore Well Equipment/ Services
3	Aircraft Transportation and Services	65	Oil & Gas Transport
4	Artificial Lift	66	Packing, Seals, Gaskets, Bearings
5	Association and Governmental Services	67	Pipeline Systems and Equipment
6	Buildings	68	Pollution and Spill Control/ Clean Up
7	Cargo	69	Positive Displacement Pumps
8	Cargo Handling Equipment and Services	70	Power Generation
9	Centrifugal Pumps	71	Power Supply
10	Chemicals	72	Pressure Vessels
11	Christmas Tree/Wellhead Valve	73	Process Equipment & Services
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14	Computer Hardware & Software	76	Production System Valves
15	Computer Systems	77	Production Vessel/ Platform
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17	Construction	79	Publications/ Technical Literature/ Training
18	Construction and Repair	80	Pump Equipment and Services
19	Consultants	81	Pumps/ Compressors
20	Contracting Services	82	Research & Development
21	Control Systems	83	Rope, Wire Rope & Chain

22	Corrosion/ Abrasion Control	84	Rotary/ Progressing Cavity Pumps
23	Data Acquisition, Storage and Transmission	85	Safety Equipment and Systems
24	Decommissioning	86	Safety Valves
25	Design & Construction	87	Safety, Environmental Protection & Regulatory Service
26	Drilling	88	Sea Transportation and Services
27	Drilling Vessels/ Platforms	89	Seabed
28	Drilling/ Completion Services	90	Separation Systems
29	Electrical Systems and Transmission Equipment	91	Ship Building and Repair
30	Enhanced Recovery	92	Ship, Boats, Vessels, Equipment
31	Environmental Monitoring and Protection	93	Stimulation Products/ Services
32	Exploration	94	Storage Systems
33	Exploration & Production	95	Subsea Systems
34	Fasteners	96	Subsurface
35	Filtration systems	97	Subsurface Valve
36	Financial Services	98	Surface
37	Flexible Pipe	99	Surface Equipment
38	Floating Production Storage Vessel	100	Surface Production/ Process Sales Equipment
39	Flow Control	101	Surface Service
40	Fluids	102	Surface Systems
41	Heat Exchanger/ Transfer	103	Surface Transport and Facilities
42	Hydraulic System	104	Survival System/ Vessels / Lifeboat/ Jacket
43	Information Technology	105	Switch, Connector, Enclosure
44	Injection Equipment/ Services	106	Technical, Laboratory and Computer Services
45	Injection Pump	107	Tools
46	Inspection and Testing	108	Training

47	Instruments & Control	109	Transportation & Communication
48	Jointed Tubulars	110	Treatment Systems
49	Laboratory Equipment and Service	111	Tubulars & Piping
50	Laboratory System	112	Valve and Actuators
51	Land Transportation and Service	113	Waste Disposal
52	Lighting Equipment	114	Weather
53	Logging & Formation Evaluation	115	Well Completion
54	Manufacturing/ Machine Shop	116	Well Control Systems
55	Marine Equipment & Services	117	Well Services Vessels/ Platform
56	Marine Services	118	Wellbore Equipment
57	Materials	119	Wellbore Service
58	Mechanical System	120	Wellbore Systems
59	Monitoring and Instrumentation	121	Wellhead Equipment
60	Mooring, Positioning, Anchors	122	Wireline Equipment and Services
61	Mud Pumps	123	Workover Equipment and Services
62	Offshore Platforms		

附件二、Technical Program (技術研討會議程)

Technical Program - Monday, 30 April, 0930-1200

Monday Sessions

0930-1200 | 1400-1630

Tuesday Sessions

0930-1200 | 1400-1630

Wednesday Sessions

0930-1200 | 1400-1630

Thursday Sessions

0930-1200 | 1400-1630

Room 306

Panel: Risk Management Strategies for Deepwater Exploration and Development

Events in the Gulf of Mexico (GOM) over recent years have led to numerous advances in managing human and environmental risks associated with drilling and production operations in the deep and ultradeepwater GOM. Changes in regulatory agencies, economic developments, and advances in technology have led operators and service providers to new business practices and strategies to improve drilling safety, containment, spill response, and crisis management.

This panel will bring together executives from major players in the deepwater GOM: independents, drilling contractors, super-major operators, international national oil companies, and service providers.

Room 604

Advances in Floating LNG Technology

0930	23527	Challenges on the Safety of Floating Liquefied Gas Terminals: Hull, Topside, and Interface
0952	23166	Wind Effect Estimation and Navigational Effect in Side-by-Side Offloading Operation for FLNG and LNG Carrier Ships
1014	23321	Assessing Integrity and Reliability of Multicomposite LNG Transfer Hoses
1036	23019	Methodology To Determine Floating LNG Tank Capacity by Combination of Side-by-Side Downtime Simulation and Cost/Benefit Analysis
1058	23669	Delivering Offshore Gas to Regional Mid-Markets: Assessing the Comparative Merits of Floating LNG and CNG Transport Routes
1120	23261	Development of CO2 Tolerant LNG Production System

Room 602

Who Dat Development

0930	22993	The Who Dat Development: Evolution of a Project From Lease Sale to First Production
0952	23149	Subsurface Review of the Who Dat Field
1014	23289	OPTI Hull Series: A Versatile Platform for Deepwater Field Development

1036	23128	Adapting the OPTI-EX Topsides To Suit the Who Dat Reservoir
1058	23120	Achieving Regulatory Approval for the Who Dat Floating Production Unit
1120	23519	Unique SURF Interface on the OPTI-EX Generic Floating Production System FPS
1142	23378	Subsea Who Dat Project - Producing Light and Heavy Oil in a Deepwater Subsea Development

Room 312

Geotechnical Technology Transfer From Onshore and Near-Shore Practices

0930	23635	Identifying Some Knowledge Gaps in Marine Foundation Practice: A Design and Construction Perspective
0952	23025	Seismic Analysis Soil-Pile-Structure Interaction of Pile Supported LNG Tank
1014	23386	Theoretical and Experimental Investigation on Underwater Ground Anchors
1036	23409	Assessment of Liquefaction Induced Hazards for Immersed Structures
1058	22983	The Effect of Grain Shape on Pile Capacity in Sand
1120	23297	Seabed Soil Classification, Soil Behavior, and Pipeline Design

Room 610

Innovative FPSO and Offshore Offloading Solutions

0930	23208	Qualification of a DP-Based FPSO Offloading Vessel
0952	22994	Impact of Marlin on the Crude Oil Export Operations
1014	23617	Offshore Offloading Systems and Operations Bonded Flexible Oil Offloading Lines: A Cost Effective Alternative to Traditional Oil Offloading Lines
1036	23565	The Aseng FPSO: A Project Execution Example
1058	23266	TUMAS: A New Solution for Shallow Water FPSO Mooring
1120	23543	A Cold Repair Method for FPSOs
1142	23304	A Challenging Mating Operation Between VLCC Class FPSO and Soft Yoke Mooring System in Extremely Shallow Water

Room 606

Cutting-Edge Drilling Technology

0930	22889	A Step Change in Safety: Drilling Deepwater Wells With Riser Margin
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0952	23202	Designing the World's Deepest Offshore Well To Drill and Core the Earth's Mantle
1014	23219	Salt Steerability and Hard Rock Drilling Performance in Santos Basin
1036	23247	Feasibility of TLP With Tender Assisted Drilling for Northwest Australian Waters: A Case Study
1058	23278	Advancements in Structural Well Integrity: Design and Operation
1120	22973	Successful Broadband Drillstring Technology Uptake: From Field Test to Extended Reach Offshore Campaign
1142	23583	Innovative Drilling Rig for Deepwater Dry Tree Floating Platform

Room 600

Adaptive Thinking to Create New Opportunities

0930	23620	The New Edge in Knowledge: How Knowledge Management Is Changing the Way We Do Business
0952	23539	Reliability and Integrity Assurance of Subsea Technology Using ASCE
1014	23510	Improved Decision Making and Operational Efficiencies Through Integrated Production Operations Solutions
1036	23606	The Use of Virtual Reality and PLM Technologies To Support Upstream and Downstream Offshore Asset Management
1058	23152	Engineering Knowledge Management and Decision Support
1120	23276	The Modelbase: An Architecture for Organizational Adaptive Decision Making

Technical Program - Monday, 30 April, 1400-1630

Monday Sessions

[0930-1200](#) | [1400-1630](#)

Tuesday Sessions

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Wednesday Sessions

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Thursday Sessions

[0930-1200](#) | [1400-1630](#)

Room 306

Panel: Improving Operational Integrity in Offshore Energy Operations— A Global Perspective

As the global offshore energy industry continues to adapt to ongoing technical challenges and a changing regulatory environment, the industry has focused efforts on increasing operational integrity in ongoing and future offshore operations.

Industry professionals, safety experts, and government officials are working together to promote operational integrity.

At the same time, the industry is under greater scrutiny from the general public and regulators. Because of higher visibility, it is experiencing a more extensive regulatory review process than what it has previously experienced.

This panel, composed of a multinational group of industry leaders and governmental officials, will address the growing opportunities and challenges that members in the industry face, as well as the current approaches in maintaining operational integrity.

Room 604

Drilling and Completions Over 15,000 PSI

1400	23063	Merging ASME and API Design Methods for Subsea Equipment Up to 25,000 PSI Working Pressure
1422	23473	New Generation Control System for 20 KSI Subsea BOP Stacks
1444	23627	New Packer and Safety Valve Concepts Development for Ultra High Pressure and Ultra High Temperature Test and Production Wells
1506	23621	15K Plus: The Limits of Established Pressure Vessel Design Methods
1528	23630	Slickline-Retrievable Wellhead Plugs and Downhole Plugging System Provides Wellbore Integrity for Extreme HPHT Environments
1550	23429	Design and Development Considerations for HP/HT Subsurface Safety Valves
1612	23654	Analysis of Salt Creep and Well Casing Damage in High-Pressure and High-Temperature Environments

Room 602

Local Power Generation for Offshore Developments

1400	23135	Application of Wave Energy Converter Technology to Remote Power Requirements in Oil and Gas Field Developments
1422	23253	Innovative Wave Energy Converter for Oil and Gas Developments
1444	23221	An Efficient Hull for Cost-Effective Power Solutions
1506	23137	Offshore, Subsea Power Delivery Management Mode
1528	23494	The Use of Unmanned Production Buoys to Develop Marginal or Submarginal Stranded Fields or End of Life Hydrocarbon Resources

1550	23245	Offshore Wind as Power Supply to Oil and Gas Platforms
1612	23138	Renewables, Ready or Not?
Room 312 New API Standards for Platform Design: Insight and Interpretations		
1400	23558	Insights into Using the 22nd Edition of API RP 2A Recommended Practice for Planning, Designing and Constructing Fixed Offshore Platforms – Working Stress Design
1422	23443	Alignment of API Offshore Structures Standards With ISO 19900 Series and Usage of The API Suite
1444	23045	Dynamic Response of Baldpate Compliant Tower Platform to Major Hurricanes in Gulf of Mexico
1506	23459	Use of RP 2MET Annex Gulf Metocean Conditions With 2A and 2SIM
1528	23440	API Offshore Standards: Underlying Risk Values and Correlation With ISO
Room 610 Advanced in Deepwater Steel Risers		
1400	22951	Accounting for VIV in Wake-Induced Motion of Risers in Tandem at High Reynolds Number
1422	23296	Advances in Materials Selection and Welding for High Strength Top-Tensioned Riser Systems
1444	23672	Buoyancy Spacing Implications for Fatigue Damage Due to Vortex-Induced Vibrations on a Steel Lazy Wave Riser
1506	23464	Phased Array Automated Ultrasonic Testing (PA AUT) Pre-Qualification
1528	23113	Galloping Assessment: Instability Occurrence of Slender Structures of Noncircular Cross Section in Current Flow
1550	23048	Riser VIV Axial Fatigue Analysis and Mathieu Instability Mitigation
1612	23164	Design of an Optimized Composite Repair System for Offshore Risers Using Integrated Analysis and Testing Techniques
Room 606		

RPSEA Funded Projects in Subsea Monitoring

1400	23183	Overview of Subsea Monitoring and Inspection Technologies Development in RPSEA
1422	23487	Robotic MFL Sensor and Vibration-Based Deepwater Riser Monitoring System
1444	23186	Miniature Sensors for Monitoring the Operational Condistions of Pipelines
1506	23006	Subsea Monitoring: High-Resolution 3D Laser Imaging for Inspection, Maintenance, Repair, and Operations
1528	23512	Autonomous Inspection of Subsea Facilities: Gulf of Mexico Trials
1550	23502	New 2D and 3D Acoustic Tools and Techniques for Underwater Metrology and Inspection

Room 600		
Deepwater Cementing: A Culture of Safety		
1400	Keynote	A Culture of Safety
1422	Keynote	Operational Best Practices and Considerations for Deepwater Cementing
1444	23663	Key Factors To Consider for Sidetrack Plug Success in Deepwater Operations Using Synthetic Based Muds
1506	23664	Deepwater Cementing Standards: Applicability and Regulatory Impact of Best Practices
1528	23666	Learnings From Foamed Cement Job Simulations
1550	23668	Fundamental Investigation of the Chemical and Mechanical Properties of High-Temperature Cured Oil-Well Cements

Technical Program - Tuesday, 1 May, 0930-1200

Monday Sessions	Tuesday Sessions	Wednesday Sessions	Thursday Sessions
0930-1200 1400-1630	0930-1200 1400-1630	0930-1200 1400-1630	0930-1200 1400-1630
Room 306			
Panel: Global Energy Outlook: Changing Patterns			
It is now widely recognized that the world has sufficient oil and gas resources to satisfy future demand. However, there are also uncertainties in the provision of this supply as investors face several risks—in an industry with long			

lead times and long pay-back periods. The ongoing impacts of financial turmoil and economic downturn, the changing structure of world energy markets, and developments in policies and technologies all directly affect energy supply and demand.

In addition, the emergence of oil as an asset class has transformed the oil market, which is now far more exposed to the broader financial markets. As a result, the oil market is experiencing greater volatility. The price of crude has been impacted by a growing number of factors not directly related to supply and demand fundamentals.

This panel will debate key issues affecting today's fast-changing global energy industry. It will examine the challenges and opportunities facing the petroleum sector, and seek to identify potential "game-changers" in technologies and public policy.

23658

Panel: Global Energy Outlook: Changing Patterns

Room 604

Improvements to Deepwater Subsea Measurements: RPSEA Program

0930 **23134** **Improvements to Deepwater Subsea Measurement: RPSEA Project 07121-1301**

0952 **23412** **An ROV-Deployed Deepwater Subsea Sampling System**

1014 **23317** **Improvements to Deepwater Subsea Measurements RPSEA Program: ROV-Assisted Measurement**

1036 **23218** **High-Pressure/High-Temperature Sensor Development and Qualification**

1058 **23314** **Improvements to Deepwater Subsea Measurements RPSEA Program: Evaluation of Flow Modeling**

1120 **23199** **Meter Alteration Effects From Fouling and Erosion**

1142 **23413** **A Unique Software Tool for Estimating Subsea Measurement System Uncertainty**

Room 602

Flow Assurance: Design and Field Experience

0930 **23682** **Defining Requirements for Thermo-Hydraulic Analysis in Support of Design and Operation of Hydrocarbon Production Systems**

0952 **23044** **Bypass Pigging Operation Experience and Flow Assurance Study**

1014 **23129** **Experimental Study of High-Viscosity Oil/Water/Gas Three-Phase Flow in Horizontal and Upward Vertical Pipes**

1036	23046	Flow Assurance in the Design and Operability of a CO2 Transportation System
1058	23353	Simulation of Slug Flow in Oil and Gas Pipelines Using a New Transient Simulator
1120	23644	Recirculation Loop Analysis for a Subsea Boosing System
1142	22988	Oil/Water Flow Experiments With a Real Viscous Crude: The Influence of ESP on Flow Behavior

Room 312

PAZFLOR: A Giant and Innovative Subsea Project

0930	23172	Keynote: Pazflor: A Major Step for Angola
0952	23173	The Pazflor Adventure
1014	23174	Pazflor: The Challenges of the Offshore Phase
1036	23175	Pazflor: Performing Fabrication and Construction in Angola
1058	23176	Startup of a Giant
1120	23177	Frontier Subsea Technologies
1142	23178	Pazflor: Testing and Qualification of Novel Technology: A Key to Success

Room 610

ISO 19905-1: A Site-Specific Assessment of Mobile Jack-Up Units

0930	23047	Background to the ISO 19905-Series and an Overview of the New ISO 19905-1 for the Site-Specific Assessment of Mobile Jack-Up Units
0952	23342	Environmental Actions in the New ISO for the Site-Specific Assessment of Mobile Jack-Up Units
1014	23040	Structural Modeling and Response Analysis in the New ISO Standard for the Site-Specific Assessment of Mobile Jack-Up Units
1036	23521	Foundation Modeling and Assessment in the New ISO Standard 19905-1
1058	23337	Long-Term Applications in the ISO Standard for Site Specific Assessment of Mobile Jack-Up Units and the Use of Skirted Spudcans

1120	23071	Structural Acceptance Criteria in the New ISO for the Site-Specific Assessment of Mobile Jack-Up Units
1142	22949	The Benchmarking of the New ISO for the Site-Specific Assessment of Mobile Jack-Up Units
Room 606 Ocean Mining I: An Ocean of Opportunities		
0930	23234	Use of Autonomous Underwater Vehicles in Seafloor Massive Sulfide Exploration
0952	23084	Rare Earth Content of Manganese Nodules, Clarion-Clipperton Zone Exploration Areas
1014	22938	Deepsea Mining: Heading Back Down to 15,000 FT
1036	23256	Phosphate Mining Offshore New Zealand
1058	23322	Subsea Minerals Sampling
Room 600 Innovations in ROV/AUV Technology		
0930	22989	Space Robotics Technologies for Deep Well Operations
0952	23506	Using High Definition 3D Video for Subsea Inspection and ROV Manipulator Operations
1014	23408	Towards Safer Subsea Interventions: Report on Using Glass-Free S3D Technology To Improve ROV Tasks
1036	23286	Subsea Intervention Tool for Deep Waters and Harsh Environments
1058	23499	Using 3D Subsea Inspection Technologies for Pipeline Incident Response
1120	23365	Autonomous Inspection Vehicle: A New Dimension in Life of Field Operations

Technical Program - Tuesday, 1 May, 1400-1630

Monday Sessions

[0930-1200](#) | [1400-1630](#)

Tuesday Sessions

[0930-1200](#) | [1400-1630](#)

Wednesday Sessions

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Thursday Sessions

[0930-1200](#) | [1400-1630](#)

Room 306

Panel: Year 2030—Visions of Worldwide Offshore Oil and Gas

Predicting what the offshore oil and gas industry will look like 20 years from now is an intriguing and thought-provoking topic. Strategies and perspectives from respected industry executives will be varied and provocative. Market shifts in world economies and energy consumption will change undoubtedly. The industry will also change, both geographically and technologically.

Providing visions of the industry in 20 years requires a logical predictive mindset as well as a firm corporate strategy. Four distinguished panelists from various positions and geographic locations will provide their visions on the industry in 2030.

The varied backgrounds and perspectives of the panelists and the discussion topic will provide new ideas and strategies for the future.

Room 604

Invited Organization (EAGE): Advances in Offshore Resource Characterization

1400	23696	UK Atlantic Margin Exploration: Petroleum Geology and Associated Technological Challenges
1422	23697	Geohazards and Ocean Hazards in Deepwater: Overview and Methods of Assessment
1444	23698	Marine Electromagnetic Methods for Gas Hydrate Characterization
1506	23699	Integrating Seismic, CSEM, of Well Log Data for Reservoir Characterization
1528	23700	New Opportunities From 4D Seismic and Lithology Prediction at Ringhorne Field, Norwegian North Sea
1550	23701	Time-Lapse Seafloor Gravity and Height Measurements for Reservoir Monitoring
1612	23702	High-Resolution FWI: Changing the Way We Image and Interpret Seismic

Room 602

Flow Assurance: Solids Management and Chemicals

1400	23347	Asphaltene Deposition Tool: A Field Case Application
1422	23624	Study of Wax Inhibition in Different Geometries
1444	23206	Considerations and Lessons Learned on Development of Gas-Lift Paraffin Inhibitors for Subsea Wells in the Gulf of Mexico
1506	23397	Continuous Anti-Agglomerant LDHI Application for Deepwater Subsea Tieback: A Study

		on Water Quality and Low Water Cut Scenarios
1528	23144	Nonemulsifying, New Antiagglomerant Developments
1550	23490	Predicting Hydrate Blockages in Oil, Gas, and Water-Dominated Systems
1612	23150	A Fast and Information-Rich Test Method for Scale Inhibitor Performance

Room 312

Advances in Flexible Pipe Technology

1400	Keynote	Operational Experience of the Fatigue Performance of Flexible Risers
1422	23281	Qualification of Unbonded Dynamic Flexible Riser With Carbon Fiber Composite Armors
1444	23339	Qualification of Flexible Dynamic Risers for Supercritical CO ₂
1506	23110	Experimental Evaluation of the Metal-to-Metal Seal Design for High-Pressure Flexible Pipes
1528	23670	Integrity Management of Flexible Pipe: Chasing Failure Mechanisms
1550	23185	Qualification of Composite Armor Materials for Unbonded Flexible Pipe

Room 610

Developments in Jack-Up Geotechnical Engineering

1400	23157	Development of an Integrated Jack-Up Installation System
1422	23002	Cone Penetrometer-Based Spudcan Penetration Prediction in Uncemented Carbonate Sand
1444	23053	Experimental and Numerical Studies of Spudcan-Pile Interaction
1506	23184	Design of Gravel Banks: A Way To Avoid Spudcan Punch-Through Type of Failure
1528	23225	Comparison of ISO 19905-1 Frameworks and a Plasticity-Based Spudcan Model for Jackup Foundation Assessments
1550	23049	A Force-Resultant Model for Spudcans in Soft Clay and Application to Jack-Up Push-Over Analysis
1612	23050	An Overview of Spudcan Reinstallation Near a Footprint

Room 606**Ocean Mining II: Technology Developments**

1400	23592	A Linear Rock Cutting Test Setup for 3D Tests Under Hyperbaric Pressure
1422	23395	Development of the ROVDrill Mk.2 Seabed Push Sampling, Rotary Coring, and In-Situ Testing System
1444	23250	Flow Assurance for Deep Ocean Mining: Large-Scale Experiment for Flow Correlation Validation and Abrasion Testing
1506	23224	Subsea Slurry Lift Pump Technology: SMS Development Project
1528	23102	Deepsea Riser Lift Via the Air Lift Technology
1550	23003	Flow Assurance of Vertical Solid-Liquid Two-Phase Riser Flow During Deepsea Mining
1612	23331	Experimental Study of Air-Water Flow in Undulating Pipeline and Implication on Sand Transport

Room 600**Metocean Exhilaration**

1400	23570	Ocean Current Monitoring From 500 to 1,000 Meters
1420	23376	Ocean Current From 500 to 1,000 Meters in the Gulf of Mexico
1444	23343	Ocean Observing in the 4th Dimension: Using Autonomous Gliders for Operational Surveillance of the Gulf of Mexico
1528	23563	Examining Variations in West of Shetlands Current Profile Shapes in Light of Regional Oceanography
1550	22923	Setting a New Standard for Metocean Databases

Technical Program - Wednesday, 2 May, 0930-1200**Monday Sessions**

0930-1200 | 1400-1630

Tuesday Sessions

0930-1200 | 1400-1630

Wednesday Sessions

0930-1200 | 1400-1630

Thursday Sessions

0930-1200 | 1400-1630

Room 306

Panel: Roles of Independents Offshore

The offshore Gulf of Mexico (GOM) now accounts for 30% of US production. Independents produce 900,000 BOPD in the GOM, and they hold 81% of the producing leases and 46% of the deepwater leases. A look at the contribution of jobs shows that almost 200,000 of the 400,000 jobs in the GOM are a result of independents operations. These jobs translate to almost \$40 billion of investment and some \$18 billion in federal, state, and local revenue on an annualized basis. The footprint extends further when you consider all the indirect effects which arise from the employment and operations side. These indirect effects affect all Americans, and in particular, those in the Gulf Coast region, varying from the fast food owner and worker to the home builders and furnishing supplier.

This panel will discuss the outlook for independents' growth and the barriers to realizing them.

It will consider operational, regulatory, and policy issues which will shape the GOM's future.

Some key questions to be addressed include:

Will the GOM see a resurgence in drilling and production? And if so, what will lead that?

Is there a mismatch between policy and regulations and investment?

What operational effects have the post-Macondo tragedy produced? And what about the cost?

Do we lack any technologies to continue to move forward or drive down costs? And is there any "game changer" out there?

Room 604

Focus on Safety and Spill Response in the Post-Macondo Era

0930	23436	Lessons Learned following Macondo: Safety Enhancement on the US Outer Continental Shelf
0952	23596	Marine Well Containment Company Progress
1014	23691	The Development and Maintenance of an Evergreen Spill Response Capability in the Gulf of Mexico
1036	23359	The Value of Dispersants for Offshore Oil Spill Response
1058	23703	The Activities and Guidelines of the Well Life Cycle Practices Forum

Room 602

Jubilee Project

0930	23430	Jubilee Project Overview
0952	23428	Jubilee Field Development, Ghana: In-Country Activities and Maximizing Their Impact

1014	23463	Jubilee Field Development HSE Management and Safety Case
1036	23451	Jubilee Field Reservoir Description and Waterflood Performance Overview
1058	23458	Jubilee Field Subsea Production System Design and Delivery
1120	23456	Jubilee Development Installation, Hook-up and Commissioning, and Ready for Startup
1142	23439	Jubilee Field FPSO: A Fast Track Delivery Success

Room 312

Field Development Concepts

0930	23121	Arctic Development Roadmap: Prioritization of R&D
0952	22997	Overcoming Field Development Challenges in Depleting Ultra-HPHT Field
1014	22954	Production Optimization By Solving the Well Location Problem
1036	23195	Recent Advances in Dynamic Modeling of Naturally Fractured Reservoirs
1058	23015	New Research and Application of High-Efficient Development Technology for Offshore Heavy Oil in China
1120	23194	Next Generation Offshore Cooling System To Deliver a Step-Change Improvement in Both Topsides and Subsea Gas Processing
1142	23615	Floating CNG, a Simpler Way To Monetize Offshore Gas

Room 610

New Deepwater Construction Equipment: A Vision for the Future

0930	23169	Building a Giant for Single Platform Lifts
0952	23034	FDS2 and CastorONE: A Reply for the Deepwater Forthcoming Vision
1014	23363	Developing a Business Case for Marine Asset Investment
1036	23462	New Deep Water Construction Equipment – A Vision for the Future / Design Considerations and Equipment Details of the 5,000mT Mast Crane of the Deepwater Pipelay and Heavylift Vessel <i>Seven Borealis</i>
1058	23232	Improved Pile Driving Prediction in Carbonate Soil and Rock

Room 606

In Situ Monitoring of Slope Stability and Seabed Fluid Flow

0930	23155	Analysis and Interpretation of High-Resolution Geophysical Data: Offshore Sarawak, South China Sea
0952	23065	HORUS: Towards Permanent Monitoring of Underwater Geohazards
1014	23260	Pore Pressure Monitoring of Active Fault-Fluid-Hydrate System in Deep Water, Nigeria
1036	23095	Novel Relief Well Design for the Alleviation of Gas or Fluid Pressure in Shallow Permeable Layers
1058	22890	Evaluation of Fault Reactivation Potential During Offshore Methane Hydrate Production in Nankai Trough, Japan
1120	23271	Long-Term Monitoring Array for Landslide Precursors: A Case Study at the Ligurian Slope, Western Mediterranean Sea

Room 600

Subsea Technology: Cutting-Edge Developments

0930	23704	Steel Catenary Jumper for Single Hybrid Riser in Deepwater Applications
0952	23496	Emergency Supply of Subsea High Pressure Control Fluid Six Shooter
1014	23092	Subsea Technology: A Reflection on Global Challenges and Solutions
1036	23536	Subsea to Subsea Commissioning and Diagnostics for Subsea Facilities
1058	23161	Subsea Well Intervention Vessel and Systems
1120	23544	Advances on the Analysis of Critical Failure Modes of Subsea Umbilicals: Excessive Crush Loading
1142	23480	Enhanced Subsea Safety Critical Systems

Technical Program - Wednesday, 2 May, 1400-1630

Monday Sessions	Tuesday Sessions	Wednesday Sessions	Thursday Sessions
0930-1200 1400-1630	0930-1200 1400-1630	0930-1200 1400-1630	0930-1200 1400-1630

Room 306

Panel: Government Policy—Recent Consequences in the Gulf of Mexico

The recent moratorium imposed on the Gulf of Mexico has had widespread impacts on local businesses and employment, US Oil and Gas companies, and US oil dependency. The new US regulatory agency BOEMRE (now BSEE) was a result of the Macondo incident.

How effective have the US agencies been in providing regulations and resources that safe guard lives and environment? What effects have the recent regulations had on growth in local economies, jobs, and Gulf of Mexico output? There are many effects of recent regulations that have a wide range of topics to discuss and debate.

Topics include:

Local economic impact

Gulf of Mexico production output levels

Lease holdings

Operators and contractors desire to be in the Gulf of Mexico

Cost to drill and operate in the Gulf of Mexico

This panel pulls together a wide variety of expertise to debate the issues around the effects that recent regulations have had in the Gulf of Mexico.

Room 604

Technology, Projects, and Finance

1400	23607	Technology Roadmaps as a Tool for the Technology Management Process in Production Assets
1422	23118	Enhanced Technology Qualification: A Reliable Path When Facing Changing Conditions and Demands
1442	23064	Maximizing the Benefit of Technology by Evaluation Qualification From Early R&D and Concept Stages of Development
1506	23504	Delivering Projects During a Skills Shortage: Lessons Learned From the UK Nuclear Industry
1528	23004	Infrastructure Sharing: Creating Value for Brazilian Deepwater Offshore Assets
1550	23114	An Engineering Approach to Upstream Insurance: Risk Management or Poacher Turned Gamekeeper?

1612	23485	Probabilistic Evaluation of Oil and Gas Reserves Considering the Effect of Change in the Oil Price
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Room 602

Active Arena: Australia—Challenges of Success

Australia currently is experiencing a surge in activity due to the discovery of numerous hydrocarbon fields. Some of these developments rival the largest offshore developments in the world. The increased capital expenditures by oil companies lead to many benefits and rewards for Australia and its people. Conversely, this massive development leads to challenges for Australian technical resources, Australian regulators, and market availability for product. In short, how does Australia handle this huge success? All of these items will be addressed by a panel of experts. After evaluating the current conditions, the panel will look forward to developments in the coming decade.

Room 312

Advances in Subsea Thermal Management Technology

1400	Keynote	The Evolution of Thermal Design Challenges in Offshore Production Systems
1422	23108	Field Deployment of the World's First Electrically Trace Heated Pipe-in-Pipe
1444	23033	A Holistic Approach to Steady-State Heat Transfer From Partially and Fully Buried Pipelines
1506	23646	Electric Heating of Pipelines and Large Export Flowlines >30 Inches and More Than 100 km
1528	22953	Experimental Study on Wax Deposition Characteristics of a Waxy Crude Oil Under Single Phase Turbulent Flow Conditions
1550	23628	Case Study: Optimization in Interventionless Monobore Design in Completing Horizontal Gas Producing Wells in Malaysia

Room 610

Topsides Technology

1400	23334	Advances in Production Monitoring: A Deepwater Field Case History
1422	23200	Field Implementation of New Electrostatic Treating Technology
1444	23079	Mobile Gas Lift Compressor and Well Unloading System for Enhancing Oil Production and Reserves, While Reducing Greenhouse Gas Emissions in Offshore Environments

1506	23109	Best Practice in Flare Gas Measurement
1528	23549	Acid Gas Dehydration: Is There a Better Way?
1550	23306	High-Pressure Gas Liquid Separation: Experimental Verification of Separator Internals in Laboratory and Real Fluid Systems

Room 606

Recent Updates in Offshore Geoscience

1400	23373	Exploitation Strategy in the Development of Gas and Oil Fields: Case Study
1422	23681	Reservoir Geophysics in Brazilian Presalt Oilfields
1444	23055	Results of Frequency-Based Interpretations of Deepwater Passive EM Survey Data
1506	23680	Emerging Applications for EM Methods: Beyond Drill or Drop
1528	23556	Using Simulation To Address Challenges of Subsalt Imaging in Tertiary Basins With Emphasis on Deepwater Gulf of Mexico
1550	22939	High-Resolution Seismic Imaging and Reservoir Characterization for Drilling Risk and Production Management

Room 600

Design Issues and Trends for Offshore Service Vessels

1400	23329	Hydrodynamic Behavior During Offshore Loading and Discharge
1422	23319	Design Issues and Trends for the New Generation of Offshore Support Vessels
1444	23437	U.S. Coast Guard Review of Natural Gas Fueled Vessels
1506	23445	LNG Fueled Offshore Support Vessels in Americas
1528	23421	LNG as a Fuel For Offshore Vessels: Bunkering Technology
1550	23483	New Marine Era for Gas

Technical Program - Thursday, 3 May, 0930-1200

Monday Sessions

Tuesday Sessions

Wednesday Sessions

Thursday Sessions

Room 306**Panel: Value Creation Through Global Technology**

This panel session focuses on the changing role of technology development in value creation. Traditional centers for offshore research and technology development are giving way to thought leadership migrations around the world. This globalization of technology value creation is occurring at all levels throughout the industry, born by various social, political, and economic drivers.

As we shift from the traditional centers, this panel helps explain what, how, and why this migration promises to bring greater value to the industry. In particular, this panel will address the new roles of importing technology from other industries; the move for technology centers in the middle east, South America, and Australasia; the diversification and sourcing of thought leader resources; the economies of globalized R&D; the political and global social benefits; and the need to adapt multinational intellectual property strategies and technology management paradigms to reap and protect the value created.

Room 604**Deepwater Moorings**

0930	23333	Development of HMPE Fiber for Deepwater Offshore Permanent Mooring
0952	23083	Who Dat Project: Polyester Mooring System Design, Analysis, and Installation
1014	23012	SCORCH JIP: Examination and Testing of Severely Corroded Mooring Chains From West Africa
1036	23369	Mooring Lines – Integrity Management Monitoring of Mooring Lines
1058	23493	Nominal vs. Manufactured Chain Link Dimensions and the Implications on In-Service Inspection
1120	23324	Polyester Mooring Stiffness Modeling and Effect on SCR Design for FPSO Application

Room 602**Offshore Wind Energy**

0930	23433	US Offshore Wind Energy: Standards and Third Party Oversight
0952	23406	Design Load Cases Required for Offshore Wind Turbines in Hurricane-Prone Regions
1014	23470	Model Tests for Three Floating Wind Turbine Concepts

1036	23058	Dynamic Stability of Suction Caisson Founded Offshore Wind Turbines
1058	23381	Dynamic Stresses and Fatigue Evaluation of Wind Turbines
1120	23675	Incorporation of Multimember Substructure Capabilities in FAST for Analysis of Offshore Wind Turbines
1142	23492	Implementation of a 2MW Floating Wind Turbine Prototype Offshore Portugal

Room 312

Marlim 3-Phase Separation System

0930	23230	Marlim SSAO 3-Phase Subsea Separation System:Project Overview and Execution Strategy
0952	23228	Marlim 3-Phase Subsea Separation System - Introduction to the Involved Reservoir Background
1014	23417	Marlim 3 Phase Subsea Separation System: Subsea Process Design and Technology Qualification Program
1036	23694	Marlim 3 Phase Subsea Separation System - Challenges and Innovative Solutions for Flow Assurance and Hydrate Prevention Strategy
1058	23564	Marlim 3 Phase Subsea Separation System: Controls Design Incorporating Dynamic Simulation Work
1120	23552	Marlim 3 Phase Subsea Separation System: Challenges and Solutions for the Subsea Separation Station To Cope With Process Requirements

Room 610

How Well Do You Know Your Well?: A Collaborative Approach to Pore Pressure Analysis and Well Control

0930	Keynote	Brent Couzens, Shell
0952	23180	Applying a Real-Time Engineering Methodology To Drill Ahead of Potential Undesirable Events
1014	22884	Friction Pressure Losses of Fluids Flowing in Circular Conduits
1036	22883	Guidelines for Optimum Underbalanced Drilling Practices Using Artificial Bayesian

		Intelligence: Development and Field Cases
1058	23210	3D Seismic Pore Pressure Analysis in Offshore Arenque Field, Mexico
1120	22882	Development of Optimum Well Control Practices Using Artificial Bayesian Intelligence
Room 606 Process Safety in the Offshore Industry		
0930	23685	Developing Process Safety Capabilities in New College Graduates
0952	23677	Teamwork and Leadership in Challenging Times
1014	23051	Essential Process Safety Management for Managing Multiple Assets
1036	23678	Utilizing Integrated Technology To Develop Leading Indicators and Improve Process Safety Management
1058	23692	Integrating Barriers, Bridging Documents and SEMs Using the Bow-Tie System
Room 600 Pipelines: Operations/IMR		
0930	23586	Design and Installation of Submarine Pipelines and Risers Against Severe Underscouring
0952	23070	Fiber Optic Leak Detection Systems for Subsea Pipelines
1014	22935	Slug Flow Induced Vibration in a Pipeline Span, a Jumper, and a Riser Section
1036	23336	Offshore Pipeline Trenching in Arctic Regions: A Unique Concept: The Arctic Subsea Bucket Ladder Trencher
1058	23143	Effects of Thermal Cycling on Offshore Pipeline/Flowline Repair Tool Seal Systems
1120	23115	Inspection of Deepwater Pipelines Needs Specialized ILI Tools

Technical Program - Thursday, 3 May, 1400-1630

Monday Sessions	Tuesday Sessions	Wednesday Sessions	Thursday Sessions
0930-1200 1400-1630	0930-1200 1400-1630	0930-1200 1400-1630	0930-1200 1400-1630

Room 306**Panel: Alternative Energy: What are the Prospects?**

This panel will bring together leaders in alternative energy for a status report on which alternative energy value chains seem most prospective. The panelists will describe which technologies have the most potential and how their company is allocating its investments. They will also comment on the most likely timeline for the different technologies to become commercially viable, the likely scale of the commercial investments, and their contribution to the overall national and global energy balance.

Room 604**Production Challenges from Topsides to Reservoir**

1400	23122	The Challenges and Opportunities of FPSO Relocations
1422	23360	Online Structural Integrity Monitoring of Fixed Offshore Structures
1444	23181	New Developments in Wet Gas Metering To Meet Offshore Challenges
1506	23297	Seabed Soil Classification, Soil Behavior, and Pipeline Design
1528	23626	Sandface Completions Enter the Real-Time Age With a One-of-a-Kind Downhole Visualization Tool
1550	23352	Development of an Environmentally Friendly Polymer Scale Inhibitor for Tight Carbonate Reservoir Squeeze Treatment
1612	23075	Selection of the Optimal Velocity for Sand Transport at Low Concentrations for Near-Horizontal Flow

Room 602**Materials Technology**

1400	23405	Selection of Materials for High-Pressure Environments Using Accelerated Life Test Methods
1422	22906	Behavior of Mechanical Properties of High Wall Thickness and Grade in Hot Induction Bending
1444	23356	Sand Erosion Experiments and Model Development for UNS N06625 Cladding and UNS S32750
1506	23320	Material Selection for Brazilian Presalt Fields

Room 312**Subsea Processing Technologies: Advances and Gaps**

1400	22860	Subsea Processing: A Holistic Approach to Marginal Field Development
1422	23223	Compact Separation Technologies and Their Applicability for Subsea Field Development in Deep Water
1444	23478	Subsea Gas-Liquid Separation: Case Studies and Technology Benefits
1506	23103	Operational Experiences of Large Scale Condition Monitoring for a Subsea Gas Compression System Pilot
1528	23341	Reliability Gaps in ESP Technology for Deepwater Applications
1550	23099	Challenges for Water Quality Measurement for Produced Water Handling Subsea
1612	23622	Treating and Releasing Produced Water at the Ultradeepwater Seabed

Room 610**New Developments in Pipelines**

1400	23214	Multidisciplinary Approach to Data Acquisition of Major Deepwater Infrastructure Pipelines: A Comparison of Techniques Employed To Ensure Continuous Route Coverage, Abyssal Plain to Landfall
1422	23096	Mechanically Lined Pipe: Installation by Reel Lay
1444	22908	HIPPS-Based No-Burst Design of Flowlines and Risers
1506	23112	Development and Application of Reeled PiP Bulkhead Technology
1528	23308	GIS Support for Field Developments Projects: A Contractor Experience and Perspective
1550	23454	Application of a Grouted Sleeve To Remediate Damaged Subsea Pipeline




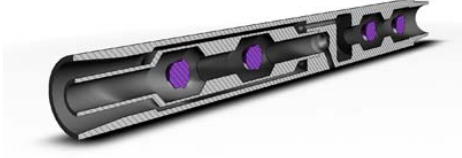

Room 606**Ultradeepwater: It Is Not All Surf**





1400	Keynote	Trond Stokka Meling, Statoil
1422	23500	Ultradeepwater Mooring and SCR Solution for Disconnectable FPSO

1444	23468	Design and Model Testing of a Shallow Draft Buoy
1506	22956	Olympus TLP: Passive Fire Protection PFP Optimization and Blast Mitigation
1528	23461	The Belly Spar: Design and Verification of an Ultradeepwater Solution
Room 600		
Updates in Reservoir Engineering Technology		
1400	23340	Reducing Uncertainty From PVT by Representative Sampling Subsea
1422	23582	3D Reservoir Modeling of Depressurization-Induced Gas Production From Gas Hydrate Reservoirs at the Walker Ridge Site, Northern Gulf of Mexico
1444	23282	Wireless Reservoir Surveillance Using Intelligent Tracers
1506	22972	Comparison and Validation of Theoretical and Empirical Correlations for Black Oil Reservoir Fluid Properties
1528	22967	Artificial Neural Network as a Tool for Reservoir Characterization and Its Application in the Petroleum Engineering
1550	23629	Drill Stem Test Design Optimization Improves Quality of Reservoir Data and Time Requirements for Deep and Ultra Deep Water Testing
1612	22963	Optimal Inflow Control Devices Configurations for Oil Rim Reservoirs

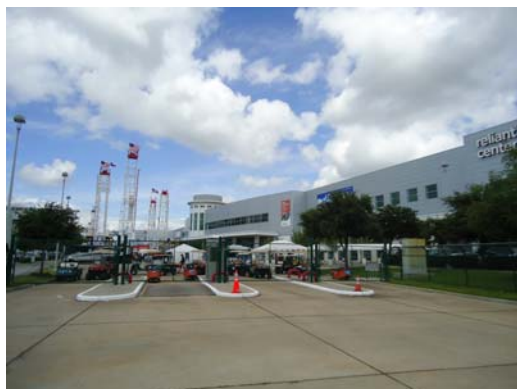
附件三、2012 Spotlight on New Technology Award Recipients (2012 年得獎新產品新技術新發明)

Company	New Technologies
Baker Hughes	<p>TeleCoil™ Downhole Communication System</p> 
Baker Hughes	<p>MaxCOR™ Large-Diameter Rotary Sidewall Coring Service</p>  <p><small>*New MaxCOR samples provide 225% more volume per unit length than standard 1" cores.</small></p>
ClampOn	<p>ClampOn Subsea Corrosion-Erosion Monitor</p> 
Dockwise	<p>Dockwise Vanguard</p> 

FMC Technologies	Pazflor Subsea Separation System	
FMC Technologies and Petrobras	Marlim Subsea Oil-Water Separation System	
Halliburton	EquiFlow® Autonomous Intervention Control Device (AICD)	
Reelwell AS	Reelwell Downhole Isolation Valve	
Schlumberger	Signature Quartz Gauges	

Schlumberger	PowerDrive Archer High Build Rate RSS	
ShawCor Ltd.	The ShawCor Simulated Service Vessel (SSV) TM	
Tesco Corporation	Directional Liner Drilling System	
Versabar, Inc.	The Claw	

附件四、Photo（會場照片集錦）



OTC 2012 會場 Reliant Center



OTC 2012 技術討論會會場



OTC 2012 Reliant Parkway 上的鑽機展示場家



OTC 2012 參展廠商中國大陸中國石化及中國海洋石油公司



OTC 2012 參展廠商中國石油及科威特石油公司



OTC 2012 參展廠商馬來西亞石油及墨西哥石油公司



OTC 2012 參展廠商新加坡及韓國



OTC 2012 參展廠商巴西及芬蘭