Decomworld
Business Intelligence for the Offshore Oil & Gas Industry

DECOM SUMMIT

7th Annual Decommissioning & Abandonment Summit

March 17-19, 2015 | Royal Sonesta Hotel, Housten, USA

Post Conference Report

"On March 17-19 2015, over 600 global oil and gas executives gathered in Houston at the 7th Annual Decommissioning & Abandonment Summit – the world's largest conference and exhibition of its kind. Developing a strategy to cost-effectively tackle aging and idle offshore facilities and wells was top of the agenda.

On behalf of DecomWorld, I would like to thank all of our speakers, sponsors, exhibitors, partners and attendees who made the 2015 Summit a huge success. We look forward to welcoming you back in Houston in March 2016"

Phil Chadney

Phil Chadney
D&A Summit Director | DecomWorld

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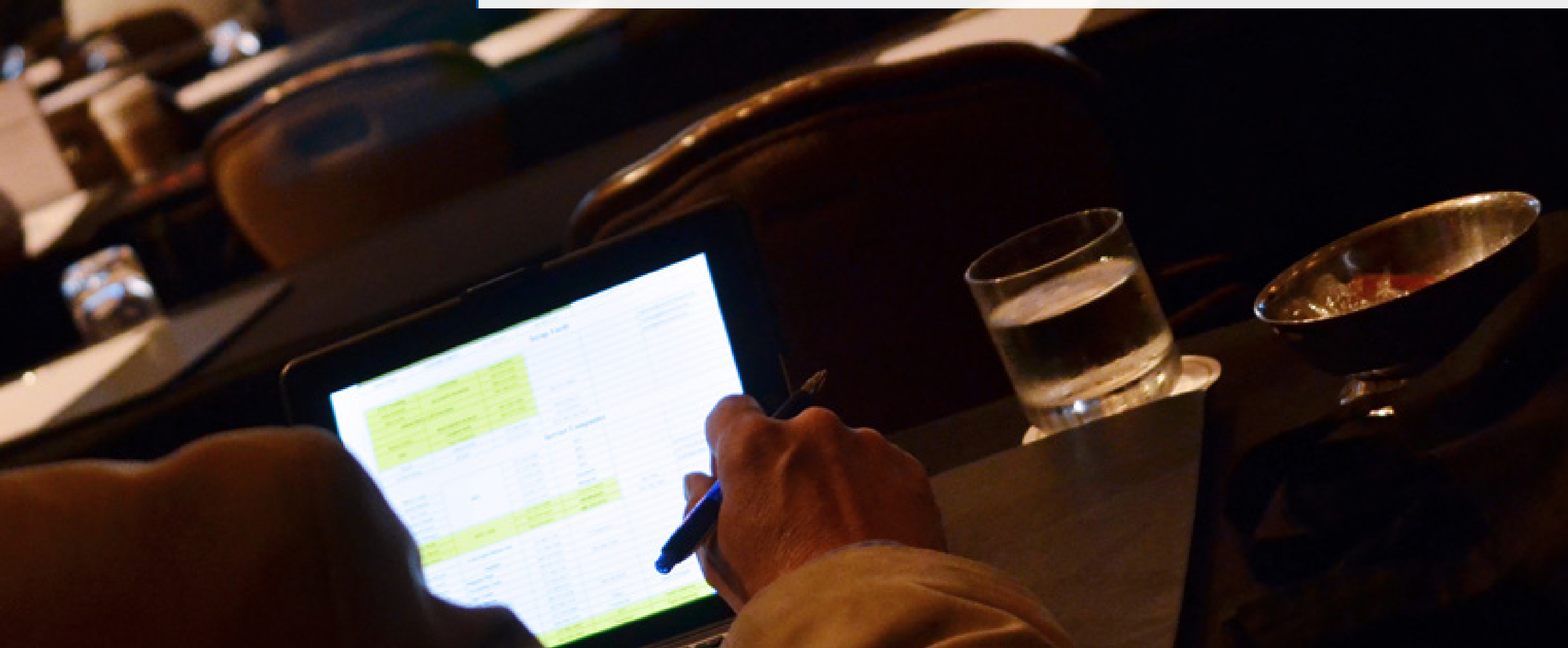

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Summit at a Glance

46 EXHIBITORS

611 ATTENDEES ACROSS THE 3 DAYS

The 1st GALA DINNER

20 COUNTRIES REPRESENTED

7 OFFSHORE REGIONS REPRESENTED

3 WORKSHOP THEMES

1. *Legal Challenges*
2. *Cost Estimation*
3. *Deepwater Decommissioning & Subsea Abandonment*

5 KEYNOTE THEMES

1. *Regulatory Updates*
2. *Rigs to Reefs Progress*
3. *Operator Case Studies*
4. *Collaboration & Strategy*
5. *International Decommissioning Market*

3 TRACK SESSIONS

1. *Subsea Infrastructure, Pipeline and Topside Decommissioning*
2. *Well Plugging & Abandonment*
3. *Environmental, HSE & Risk*

Introduction

On March 17-19 2015, over 600 global oil and gas executives gathered in Houston at the 7th Annual Decommissioning & Abandonment Summit – the world's largest conference and exhibition of its kind. Developing a strategy to cost-effectively tackle aging and idle offshore facilities and wells was top of the agenda.

All three conference and exhibition days were packed with knowledge sharing and networking opportunities. Day 1 (Tuesday 17 March) focused on some of the most cutting-edge decommissioning challenges in workshop format – a series of more informal sessions ahead of the highly anticipated keynote day (Wednesday 18 March). These workshops began with a focused legal panel debate centred on the Bureau of Ocean Energy Management's Risk Management Program, followed by Cost Estimation best practices for decommissioning from shallow water to deep water. The workshop day's afternoon sessions were themed around the new frontier "deepwater decommissioning and abandonment" - chaired by Randall Abadie, Civil, Marine & Diving Team Leader at Shell Exploration & Production Company. Anadarko's Red Hawk case study and BHP Billiton Petroleum's Neptune insight provided some of the very first shared experiences of deepwater decommissioning and was followed by an operator panel question and answer session with Marathon Oil, BHP Billiton and Stone Energy.

One of the brand new highlights for this year's Summit was the DecomWorld Gala Dinner, which took place after the conference sessions on Tuesday 17 March. DecomWorld were honoured to have Former Shell President, John Hofmeister, open the evening with a highly passionate keynote address on 21st Energy Prosperity. This was followed by a cross-industry case study sharing the story behind the raising of the Costa Concordia.

The Keynote Day (Wednesday March 18) saw Win Thornton, Vice President of Decommissioning at BP drive forward the regulator and operator debates. The Bureau of Safety & Environmental Enforcement's Regional Supervisor, Susan Green, opened the regulatory section with a complete update on Idle Iron progress and some of the critical areas which the regulator is addressing in both the structural decommissioning and well abandonment space. After this a panel representing North Sea and Gulf of Mexico regulators allowed delegates to get perspective on the regulatory differences from basin to basin. A separate panel of Rigs to Reefs leaders also shared the progress to date - and live polling indicated the support for artificial habitat retention in the Gulf of Mexico (see Live Polling Results section).

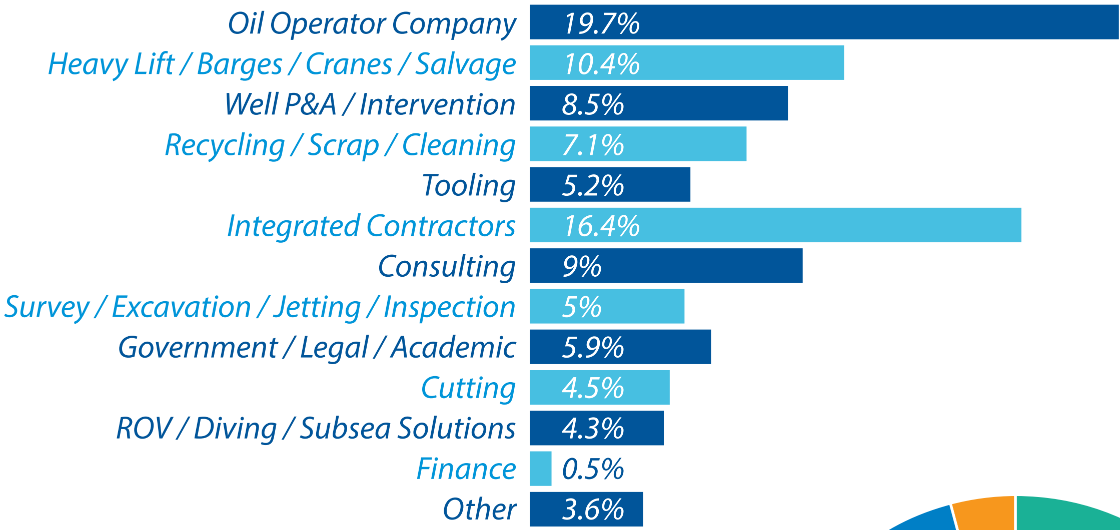
Operator's representing Chevron Environmental Management Company, the business unit responsible for decommissioning and abandonment, plus BP, Marathon Oil, Shell Exploration & Production Company, Talisman Energy – Norway and PetroSA covered themes spanning safety and cost performance improvements, multi-owner decommissioning collaboration programs, international opportunities in less mature basins and strategic approaches to abandonment.

The final conference and exhibition day saw the delegation split into three focus areas, with dedicated panel sessions and presentations addressing specific topics spanning pipeline decommissioning, subsea decommissioning, well plugging and abandonment, diving, environmental management and topside removal.

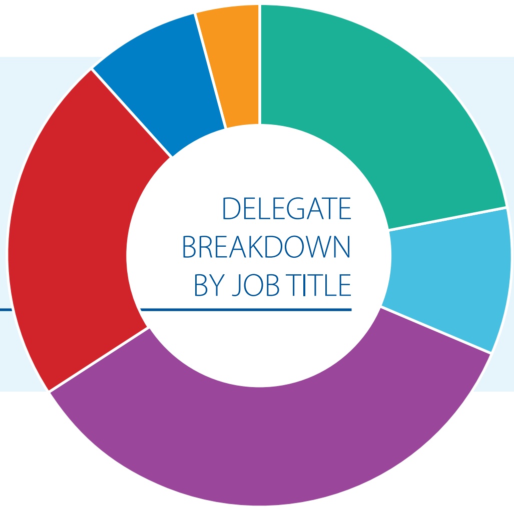
Throughout the three days the 46 different technology and service providers in the exhibition hall networked with over 600 attendees. The busiest time for the exhibitors was during the networking breaks and lunches, as well as the drinks receptions which took place after the conference sessions closed on day one and two.

Delegate Overview
(including regions, job title, company type)

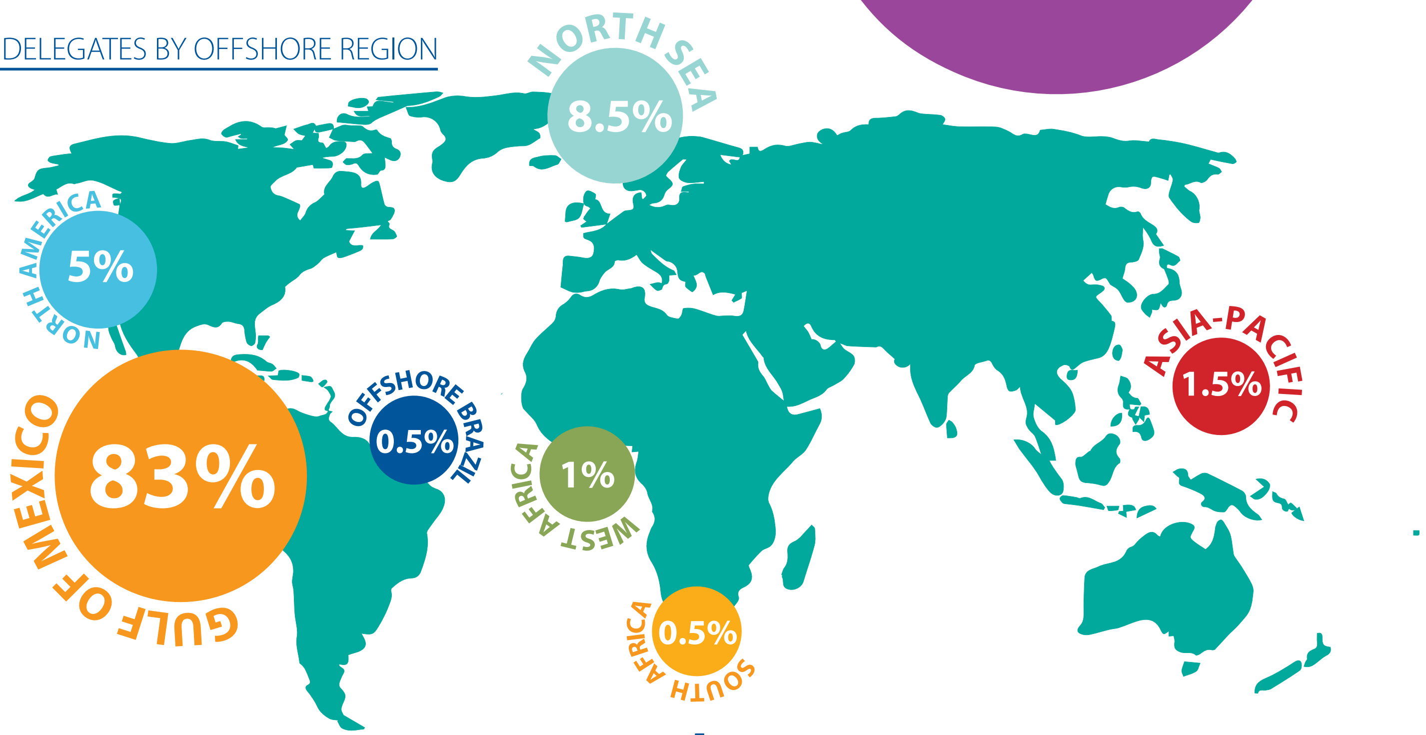
DELEGATE BREAKDOWN BY COMPANY TYPE



C-Level / VP **22.1%**
Upper Management / Strategy **9.3%**
Engineering / Project management **34.6%**
Business Development / Sales / Marketing **22.6%**
Regulatory / Compliance / Law **7.5%**
Other **3.9%**



DELEGATES BY OFFSHORE REGION



Regulators / Industry Bodies / Associations / Academic / Legal

Bureau of Ocean Energy Management | Bureau of Safety & Environmental Enforcement | Bureau of Safety & Environment Enforcement | Decom North Sea | Department of Energy and Climate Change | DGH | DPR | Erhvervshus Nord | Gulf of Mexico Foundation | Legge Farrow Kimmitt McGrath & Brown L.L.P | Looper Goodwine P.C. | Louisiana Department of Wildlife & Fisheries | Louisiana State University | Mississippi Department of Marine Resources | NAPIMS/NNPC | Pilko & Assocaites | Pillsbury Winthrop Shaw Pittman LLP | Pillsbury Winthrop Shaw Pittman LLPPillsbury | Rigzone | Texas A&M University Corpus Christi/Harte Research Institute | Texas Parks and Wildlife Department | US Government Accountability Office |

Operators

Anadarko Petroleum Corporation | BG Group | BHP Billiton Petroleum | BP | Chevron | Chevron North America Exploration and Production | ConocoPhillips | ENI Corporate University | ENI SpA | ExxonMobil | ExxonMobil Gas & Power Marketing Co | Fieldwood Energy | Freeport-McMoRan Oil & Gas | Inpex Corporation | Kuwait Oil Company (K.S.C) | Marathon Oil Company | Marathon Oil Corporation | Noble Energy | Perenco | Petroleum Agency South Africa | PetroRio S.A. | PetroSA | Repsol | Shell | Shell Exploration & Production Company | Shell Exploration and Production Company | Shell Nigeria Exploration & Production Company Limited | Shell Oil Company | Stone Energy Corporation | Talisman Energy Norway | Talos Energy LLC | TOTAL E&P USA

Contractors and Service Providers

Consulting: Athena Consulting, Inc. | Celtic Design Consultants | DECO | DWD Consulting (Aberdeen) Ltd | Endeavor Management | ERM | EXP Engineering International | Facilities Consulting Group, LLC | Idelmec Energy Consulting Services | Independent | IPT Global | JLES Oil & Gas Consulting | Keystone Engineering Inc | M&H | Oliver Wyman | Paloma Energy Consultants | Project Consulting Services | Reverse Engineering Services Ltd | SLR Consulting | Team Management & Consulting | Thompson Engineering | TSB Offshore, Inc.

Cutting/Severance: 1 Diamond, LLC | Bluegrass Bit Companies | Bluegrass Companies | DEMEX International | Explosive Service International | Foro Energy | Genesis Attachments | Mactech Offshore | Proserv

Finance: EnVen Energy Ventures | Federal Inland Revenue Service

Heavy Lift / Barges / Cranes / Salvage: B&J Martin, Inc. / Martin Quarters, LLC | Boa Marine Services | Bosarge Boats | Canal Barge Company, Inc. | Central Boat Rentals, Inc. | DLS, LLC | Heerema Marine Contractors | Holloway Houston | Hornbeck Offshore | Mammoet Decom BV | McDermott | McDonough Marine Service | Offshore Technical Solutions | SBM Offshore | Sea Trucks Group | Seaway Heavy Lifting | Subsea 7 | Titan Salvage | Versabar

Integrated Contractors: DNV GL | DSS | Dupre' Energy Services | EDG, Inc. | EFC Americas | Energy Industries LLC | Ensco | GBI Group | GE Oil & Gas | Guardian Seal Tech | Halliburton | HB Rentals | Hydra Offshore Construction | INTERACT | Legacy Offshore | Montco Oilfield Contractors | Overdick GmbH & Co. KG | Sparrows | Synergy Industrial Group | TECHNIP | TETRA Technologies, Inc. | The REACH Group | Wintershall Holding GmbH |

Other: GMS | Gulf Land Structures LLC | IHC Engineering Business | IHS | Intergraph | KRISO | PLS Inc. | The Maritime Executive

Recycling Scrap / Cleaning: American Pollution Control Corp | Argonne National Laboratory | Blue Water Shipping | ecoserv | EMR | Envirocon Environmental Services | Environ Corp | Falck Safety Services | Lotus LLC | Modern American Recycling Services | Offshore Specialty Fabricators | Offshore Specialty Fabricators, LLC | PEI - Mercury and Chemical Services | Port of Esbjerg | Port of Frederikshavn Havn | Ramboll | Ramboll ENVIRON, Inc. | TexCom | TexCom Environmental Services

ROV / Diving / Subsea Solutions: Aarbakke Innovation | Advanced Remote Marine Services, LLC | ANT | Aqueos | Delmar Systems Inc. | FMC Kongsberg Subsea AS | Global Diving & Salvage Inc. | Harkand | Lockheed Martin Mission Systems and Training | Oceaneering International Inc. | Subsea Solutions Intervention | TUSK Subsea Services, LLC | WOM – Subsea

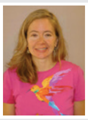
Survey / Excavation / Jetting / Inspection: C & C Technologies, Inc. | Cashman Equipment | Gardline Surveys Inc. | InterMoor, Inc | InterMoor Inc. | Manson Gulf, LLC | PSC Industrial Outsourcing | PSC Industrial Outsourcing, LP | Return to Scene | Scanwell US LLC | STATS International Inc. | Stork | Stork Technical Services USA | TDI-Brooks International, Inc. | TerraSond Limited

Tooling: Deep South Communications | Diverse Scaffold Solutions | Eaton Oil Tools | IPMM, LLC | JDR | Loc | Otto Fuchs Drilling Solutions | Precise Propellant Stimulation | Seatools | TDTECH Limited | Wellbore Fishing & Rental Tools | WellSite Services-Portable Power

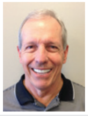
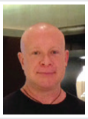
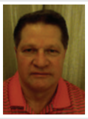
Well P&A / Intervention: Archer | Baker Hughes | Deltide Energy Services | FTO Services | Helix ESG Inc. | HydraWell | Morrison Well Services | Schlumberger | Uptime International | Weatherford | Welltec |

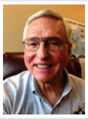
Speaker Line Up

Keynote Gala Dinner Speakers:				
	John Hofmeister	*Former President*	**Shell**	
	Christopher Peterson	*Vice President*	**Titan Salvage**	
Leading Operator Perspectives Include:				
	Ryan Kavanagh	*Facilities Engineer, Gulf of Mexico Deepwater Facilities*	**Anadarko Petroleum Corporation**	
	Mike Pottle	*GOM Drilling Engineer*	**BHP Billiton Petroleum**	
	Win Thornton	*Vice President - Decommissioning*	**BP**	
	Lewis Dennis	*US Offshore Area Decommissioning Manager*	**Chevron**	
	Scott Crook	*Operations Superintendent*	**Chevron**	
	Kevin Grice	*Sr. Scientist Health and Product Stewardship*	**Chevron**	
	Salvadore Spalitta	*Senior Counsel*	**Chevron**	
	Jim Christie	*Global Decommissioning Projects Manager*	**Marathon Oil**	
	Jim Millan	*Advanced Senior Facilities Engineer*	**Marathon Oil**	
	Pieter Erasmus	*Upstream Operations Manager*	**PetroSA**	
	Ernest Hui	*Decommissioning & Restoration Improvement Program Manager*	**Shell**	
	Dale Ramsey	*Abandonment Manager*	**Shell**	

Leading Operator Perspectives (cont.):				
	Randall Abadie	*Civil, Marine & Diving Team Leader*	**Shell**	
	Gary Siems	*Decommissioning Manager*	**Stone Energy Corporation**	
	Michael Bishop	*Decommissioning Manager*	**Talisman Energy - Norway**	
Regulatory & Market Updates From:				
	Susan Green	*Deputy Regional Supervisor for Regional Field Operations*	**Bureau of Safety & Environment Enforcement**	
	Angie Gobert	*Chief, Pipeline Section, Regional Field Operations*	**Bureau of Safety & Environmental Enforcement**	
	Donna Dixon	*Program Manager - Office of Risk Management*	**Bureau of Ocean Energy Management**	
	Wanda Lilly	*Financial Risk Analyst*	**Bureau of Ocean Energy Management**	
	Richard Brooks	*DECC Decommissioning Policy Advisor*	**Department of Energy & Climate Change**	
	Sunil Singh	*Dy.General Manager (Production)*	**DGH**	
	Mark Kaiser	*Research Professor & Director*	**Louisiana State University**	
	Dale Shively	*Texas Artificial Reef Program Leader*	**Texas Parks & Wildlife Department**	
	Mike McDonough	*Artificial Reef Co-ordinator*	**Louisiana Department of Wildlife & Fisheries**	
	Quenton Dokken	*President & CEO*	**Gulf of Mexico Foundation**	
	Greg Simmons	*Director of Rigs to Reefs*	**Gulf of Mexico Foundation**	
	Karen Boman	*Senior Editor*	**Rigzone**	

Expert Industry Insight & Case Studies From:

	Molly Finster	*Environmental Health Systems Scientist*	**Argonne National Laboratory**
	Bart Joppe	*Global Business Development Manager Plug & Abandonment*	**Baker Hughes**
	Jason Parrish	*Director of Business Development & Marketing*	**Deltide Energy Services**
	Bruce Crager	*Executive Vice President - Offshore Subsea Marine*	**Endeavor Management**
	Joseph Nicolette	*Principal and Global Ecosystem Services Director*	**ENVIRON International Corporation**
	Kurt Hurzeler	*Commercial VP, Well Ops U.S.*	**Helix ESG Inc.**
	Todd Veselis	*General Manager, Permanent Moorings*	**InterMoor**
	Glenn Legge	*Partner*	**Legge Farrow Kimmitt McGrath & Brown L.L.P.**
	Peter Kaufmann	*President*	**OTTO FUCHS Drilling Solutions**
	Ron Radford	*Vice President*	**PEI**
	Thomas Campbell	*Crisis Management Team Leader*	**Pillsbury Winthrop Shaw Pittman LLP**
	Amanda G. Halter	*Senior Associate*	**Pillsbury Winthrop Shaw Pittman LLP**
	Dale Seekford	*Owner*	**Precise Propellant Stimulation**
	Mikkel Benthien	*Director, Environmental Assessment*	**Ramboll**
	Brian Twomey	*Managing Director*	**Reverse Engineering**

	Tom Leeson	*Principal Consultant & Well P&A Manager*	**Reverse Engineering**	REVERSE ENGINEERING SERVICES LTD
	Darrel Shaw	*Technical Director*	**Reverse Engineering**	REVERSE ENGINEERING SERVICES LTD
	Steve Coombs	*Engineering Operations Director*	**Reverse Engineering**	REVERSE ENGINEERING SERVICES LTD
	Geoff Murray	*General Manager*	**TD Tech**	TDTECH
	Chuck Webb	*Director of Projects*	**TETRA Offshore Services**	TETRA
	Edwin Goldman	*Senior Vice President*	**TETRA Technologies**	TETRA
	Bob Byrd	*Vice President*	**TSB Offshore**	TSB OFFSHORE
	Ian Todd	*Project Director*	**Versabar**	Versabar
	Delaney Olstad	*Global Business Development Manager - Well Abandonment*	**Weatherford**	Weatherford
	Richard Segura	*Well Abandonment, Global Technical Manager*	**Weatherford**	Weatherford
	Nigel Snaith	*Consultant*		

Exhibition Hall Overview

2	Weatherford	31	M&H Energy Services
3	Weatherford	32	PEI - Mercury & Chemical Services
6	McDonough Marine Service	33	DecomWorld - Information Desk
7	GRUPO BYUCKSAN INTERNACIONAL	34	STORK
8	GRUPO BYUCKSAN INTERNACIONAL	35	ANT Applied New Technologies AG
9	IPT Global	36	Mactech Offshore
10	Legacy Offshore	37	TUSK Energy Services
11	Legacy Offshore	38	DSC Networks
12	Southern Recycling	39	DecomWorld - Reports
13	B&J Martin Inc	41	Texas Parks & Wildlife Department
14	Mississippi Department of Marine Resources	42	TDI- Brooks International
15	Schlumberger	43	ScanWell
16	Dupre Energy Services (DES)	44	Gulf Land Structures LLC.
17	ENSCO Offshore Company	45	DecomWorld - Local Services
18	Genesis Attachments	46	DecomWorld - Local Services
19	Aarbakke Innovation A/S	47	Subsea Solutions Intervention
20	Modern American Recycling Services (MARS)	55	Hydra Offshore Construction, Inc.
21	HB Rentals	56	Holloway Houston, Inc.
22	DecomWorld - Media Partners	57	Canal Barge Company
23	Baker Hughes	58	TETRA Technologies, Inc
24	Proserv	59	TETRA Technologies, Inc
25	TDTECH	60	Versabar
26	Bluegrass Offshore	61	Versabar
27	1 Diamond/Quanta Services	62	Reverse Engineering Services Ltd (RESL)
28	Uptime International A/S	63	Deltide Energy Services
29	NOV Wellbore Technologies	NZ	Ecoserve (Networking Zone)

State of the Global Decommissioning & Abandonment Industry

By Philip Chadney, *Senior Project Director*, **DecomWorld**

Offshore decommissioning is big business in the Gulf of Mexico (GOM) which, over the last 5 years, has generated approximately $9 billion in spending – driven by changes in federal regulations and declining shelf production. Plunging oil prices will accelerate decommissioning activity in 2015 for marginal structures, as well as provide a cost-incentive for cash-rich operators who can take advantage of a reduction in rig rates to execute well plugging and abandonment.

Over the last seven years, DecomWorld's Decommissioning & Abandonment Summit has served the global community with business-critical intelligence and unparalleled networking to reduce D&A cost, timelines and inefficiencies. Collaboration will be instrumental to unlocking D&A cost efficiencies and this theme was explored in-depth at the 2015 Decommissioning & Abandonment Summit, whilst addressing the emerging challenges and solutions which are impacting global operators tackling end of life assets.

For the Gulf of Mexico, the vast amount of activity in the decommissioning & abandonment market in the last 4 years (see Figure 1) has been in response to the 'Idle Iron' NTL regulation which came into effect from October 2010. In addition, platforms damaged from 2008's Gustav and Ike hurricanes resulted in a number of reactive decommissioning campaigns in 2009. To date, the most active years for the GOM D&A market have been 2009, 2011 and 2012.

Figure 1: D&A Progress in the Gulf of Mexico

	Structures Decommissioned	Wells Abandoned	Amount Spent ($bn)
2011	278	1385	1.85
2012	285	1269	2.1
2013	222	1234	1.9
2014	209*	1216*	1.7*

* *estimated figure*

The decommissioning opportunity doesn't just lie in the GOM, though. There are major developments in the North Sea and Asia-Pacific as pressure on operators and NOCs mounts to tackle the facilities and wells that have reached the end of their production life. In fact, the North Sea region is anticipated to reach expenditure levels that, to date, have only been experienced in the GOM – with $2bn per year across the next decade to be spent on decommissioning and abandonment projects. Allseas' Pioneering Spirit, the world' largest platform decommissioning vessel, is set to be a game-changer for the North Sea region.

The Asia-Pacific market will take longer to reach this kind of annual spend, which is partly a result of the pace of decommissioning guideline and regulation implementation. However, the creation of the ASCOPE Decommissioning Guidelines in 2013 clearly signalled progress and an awakening to the 'emerging reality' of decommissioning. Offshore regions including Brunei, Thailand and Indonesia will be some of the first offshore hubs to set the benchmark for the rest of the region.

When it comes to addressing the challenges, controlling the spiralling decommissioning cost is only the tip of the iceberg. The portfolio of decommissioning projects in the GOM is shifting from shallow water to deepwater prompting innovative approaches to TLP, FPSO, Spar and subsea well abandonment. At a global level, the lack of consistent decommissioning regulation, along with the huge variety of D&A approaches available, only adds to the complexity – making it harder to ensure a robust decommissioning plan and accurately estimate D&A costs.

The overarching D&A landscape is undergoing a shift in light of several key industry developments – this, in turn, will impact decommissioning strategy and activity in 2015-16:

- **Oil Price Uncertainty:** How will low oil prices impact the decommissioning market? To what extent will low oil prices provide uncertainty for contractors relying on abandonment revenue from operators? What strategy will operators take in an emerging era of low oil prices? From intelligence received by DecomWorld to date it seems likely that the cash-rich super-majors (such as ExxonMobil, Shell, Chevron and BP) will sustain or even increase decommissioning and abandonment activity in the current climate – taking advantage of reductions in rig rates. On the other hand, independent operators will

- **Shift from Shallow to Deepwater in the Gulf of Mexico:** Whilst the Gulf of Mexico has been working intensely to reduce offshore liability over the last 5+ years, almost all of the activity has been within the shallow water 'shelf' area. As such, the arrival of deepwater decommissioning prompts an entirely new set of challenges, methodologies, technologies and strategies. With the skyrocketing cost of subsea well P&A and deepwater structural abandonment, it's now a crucial time to develop cost estimation methodologies, best practices and apply lessons learned from the limited number of deepwater projects already completed. Anadarko set a benchmark for deepwater decommissioning in mid-2014 with the deepest floating production platform to date being successfully decommissioned – the Red Hawk Spar facility. Other regions, including Asia-Pacific, Northern North Sea and South America have a significant portfolio of deepwater decommissioning activity – how will this impact the development of rigless abandonment and heavy lift technologies?

- **Spiralling Decommissioning Costs:** Decommissioning cost estimation methodologies have come a long way in the last few years, however, actual costs and timelines have almost always exceeded original estimates. This has significant ramifications for not only the operators but also contractors, too, who have struggled to maintain margins due to unpredictability of decommissioning programs. As such, it's never been a more important time to minimize the 'unknowns' through rigorous planning and strategy.

- **Offshore Liability Changing Hands:** Independent operators are taking on ownership of aging facilities in the Gulf of Mexico – how will this impact decommissioning methodologies and the funding of decommissioning programs? With independent operators dedicating significantly fewer resources to decommissioning, it could mark a shift in the level of pre-engineering undergone and could certainly set an industry benchmark for a more cost-effective approach to decommissioning.

- **Senior Management Attention towards D&A:** There's no denying that convincing the "ExCo" (Executive Committee) level of any oil and gas operator of the significance of decommissioning is a major industry hurdle. Individuals representing the ExCo level are typically interested in pursuing the most "cutting-edge" new development programs. How can we raise awareness for the significance of decommissioning cost and convince those at the top of the chain to devote resources to decommissioning at an earlier stage to ensure effective planning is carried out to minimize cost? If we consider decommissioning at an operations phase, and even address decommissioning at a design phase, we can positively impact end-of-life costs.

- **Industry Collaboration:** Signs of industry collaboration are certainly on the horizon which could mark a renaissance in the decommissioning market. Industry discussions are progressing between operators and contractors which would significantly reduce cost through multi-operator and multi-asset campaigns (vs. standalone projects). The elephant in the room remains, though: will operators work together to reduce cost or will successful operators hold a tight grip on their finely tuned decommissioning process to maintain competitive advantage?

What is clear is that the global decommissioning and abandonment industry is maturing at different rates. Asia-Pacific countries can take lessons learned and best practices from the Gulf of Mexico to help formulate guidelines and regulation which will influence their future decommissioning plans and projects. As such, for a global industry which is still in relative infancy - with many technologies, synergies and efficiencies still to be explored – there remains a huge opportunity. Maximizing safety, reducing cost and enhancing timelines will continue to remain the core goals of operators embarking on the challenges and opportunities presented by D&A.

DecomWorld look forward to embarking on this journey with industry.

Deepwater Decommissioning & Abandonment

By Kory Kinney, *Specialist – Field Development*, **IHS**

Decommissioning in the US Gulf of Mexico is nothing new. Hundreds of platforms have been removed from its waters after they have served their purpose. However, as production moves into deeper water, new challenges in the decommissioning process are presenting themselves. At the recent DecomWorld Decommissioning and Abandonment Summit, offshore oil field operators, contractors, and regulators discussed the challenges of decommissioning the elaborate production systems necessary to exploit these deep water fields. As the deepwater infrastructure ages, operators will need to address these challenges sooner rather than later.

At the Decommissioning and Abandonment Summit, it was pointed out that oil and gas operators are very good at producing hydrocarbons, not so much at decommissioning. This sparked a conversation regarding how prepared the operators are to do large scale decommissioning. So far, Gulf operators have been taking a reactionary approach to decommissioning as opposed to a proactive approach. The current price of decommissioning a project in deep water is not known and has often led to cost over runs. In order to make decommissioning easier on operators and contractors in the future, offshore fields need to be designed with decommissioning in mind. Collaboration between operators on decommissioning projects and pushing to develop the technology necessary to overcome these challenges could help drive down the costs of decommissioning.

Collaboration between operators would enable them to overcome current challenges to decommissioning, the primary obstacles being that decommissioning is very inefficient and very expensive. Collaboration could allow parties to uncover new methods of decommissioning and work to lower costs. Operator Marathon is hoping to get decommissioning costs to least 30% below today's prices.

Collaboration will also result in best practices for decommissioning. One thing we see in the Gulf of Mexico is a wide variety of different development schemes for the fields such as tension leg platforms, semisubmersible production platforms, spars, etc. and the methods of decommissioning these different design types will also exhibit a wide variety. The industry currently lacks the data and experience of decommissioning these large and diverse projects but is slowly gaining the experience. In 2014, the region saw the first decommissioning and reefing of a spar production facility with Anadarko's Red Hawk spar. The decommissioning of the spar helped provide the participating companies invaluable experience in handling the removal of these large structures. As more deep water floating production platforms are decommissioned, the processes will become smoother and more cost effective. The decommissioning of the Red Hawk spar came after some deferment as Anadarko sought out alternatives to the total decommissioning of the structure, including new fields to tie back to the platform as well as searching for a buyer for the sunset property.

Tying in new production to aging deep water infrastructure is one option operators in the US Gulf of Mexico are really embracing in order to defer the eventual decommissioning of their sunset properties. One notable expansion of an offshore platform the region has witnessed recently is the life extension of Shell's Auger TLP in Garden Banks Block 426. Originally installed in 1994, the Auger platform was a candidate for decommissioning. However, due to the discovery of the Cardamom Deep field and advances in directional drilling, Auger was granted a life extension. This sort of life extension is occurring in several fields around the Gulf, including at Eni's Allegheny TLP. The operator is tying back new subsea wells from its Allegheny South field, thereby extending the life of the Allegheny TLP, which would otherwise bean early candidate for decommissioning.

Extending the life of fields and infrastructure is one option for operators to defer the eventual need for decommissioning. Unlike decommissioning, extending field life is a cash generating activity and the marginal production can eventually be used to help offset some of the costs of decommissioning. In the current price environment of USD 45/barrel operators on both the shelf and in the deep water of the Gulf of Mexico looking to defer decommissioning campaigns. On the shelf, where decommissioning activities are fairly routine with dozens of platforms removed each year, operators are scaling back planned decommissioning campaigns into less wallet-busting endeavours. In the deep water, operators are opting for the extension of field life through the use of well intervention. As a result, new technologies are emerging that will help with life extension, especially in downhole operations.

Through life extension works of fields, operators can turn a liability into an asset. It also allows the operator time to spread the costs of decommissioning and abandonments over a greater time period. Moreover, life extension for aging projects allows time for the development of new technologies and processes that are likely to reduce the overall costs of decommissioning a project.. Current well life extension technology also has a very quick time to market. It generally takes about 3 months for permits to be approved to have well stimulation performed on wells. Given the rise of the use of Riserless Light Well Intervention vessels, operators don’t even need to rely on rigs anymore to do downhole operations.

On the horizon in the Gulf of Mexico there are not many planned deep water decommissioning projects planned.. The most likely candidate for decommissioning in the Gulf of Mexico right now is the Bullwinkle platform in Green Canyon Block 65. The Bullwinkle platform was originally installed in 1988 and is one of the largest oil platforms in the world. However, according to recent development plans submitted to the BSEE by the current operator, Fieldwood Energy, additional drilling of production wells is planned to be carried out this year. Again the operator is opting to delay decommissioning as long as possible.

Another challenge the industry is trying to overcome is the lack of suitable vessels to perform decommissioning operations. The current fleet of vessels have not really been designed to remove these massive structures. A speaker from ExxonMobil at DecomWorld revealed that they had done a feasibility study on the removal of the Delta gravity based structure deployed on the Brent field using Allsea’s massive derrick pipelay vessel Pioneering Spirit. The results of the study indicated that they would be unable to remove the legs of the platform as they are just too big, even for the massive Pioneering Spirit. As the decommissioning sector of the industry grows, more vessels capable of doing decommissioning of large structures will have to be designed.

Decommissioning in deep water is one of the next major hurdles operators will have to clear over the next five to ten years. Much of the infrastructure in the deep water zone of the Gulf of Mexico thankfully still has a long life ahead of it as operators routinely find new reserves to tie into aging platforms. However, as these nearby reserves run dry, operators will have to face the eventual decommissioning. Luckily, there is still time. Through collaboration, designing for decommissioning, coming up with best practices, and taking a proactive approach to these end of life projects, decommissioning can become cheaper and more efficient.

Most Valuable Conference Sessions

Top 3 Presentations Voted for By Attendees

1. **Red Hawk Deepwater Spar Decommissioning Case Study**
   Ryan Kavanagh, *Facilities Engineer, Gulf of Mexico Deepwater Facilities*, **Anadarko**
   Todd Veselis, *General Manager - Permanent Moorings*, **InterMoor Inc.**
   Ian Todd, *Projects Director,* **Versabar**
2. **A Case Study Into Bubbling Wells**
   Chuck Webb, *Director of Projects*, **TETRA Offshore**
3. **Regulatory Update from the Bureau of Safety & Environmental Enforcement**
   Susan Green, *Deputy Regional Supervisor for Regional Field Operations,* **Bureau of Safety & Environmental Enforcement**

Top 3 Panel Sessions

1. **International Operator Panel**
   Darrel Shaw, *Principal Consultant & Technical Director,* **Reverse Engineering**
   Mike Bishop, *Norway Decommissioning Manager,* **Talisman Energy – Norway**
   Win Thornton, *VP, Decommissioning,* **BP**
   Pieter Erasmus, *Upstream Operations Manager*, **PetroSA**
2. **Collaboration & Strategy**
   Dale Ramsey, *Abandonment Manager,* **Shell Exploration & Production Company**
   Win Thornton, *VP, Decommissioning,* **BP**
   Jim Christie, *Global Decommissioning Manager*, **Marathon Oil**
   Tom Leeson, *Director*, **Decom North Sea**
   Kurt Hurzeler, *Commercial Vice President, Well Ops US,* **Helix ESG Inc.**
3. **Operator Approaches to Subsea Infrastructure Removal and Well P&A**
   Bruce Crager, *Executive Vice President,* **Endeavor Management**
   Bob Byrd, *Vice President,* **TSB Offshore, Inc.**
   Larry Johnson, *Global Decommissioning Advisor,* **BHP Billiton Petroleum**
   Tina Joseph, *Decommissioning Lead,* **ExxonMobil**

Top Workshop Voted for By Attendees

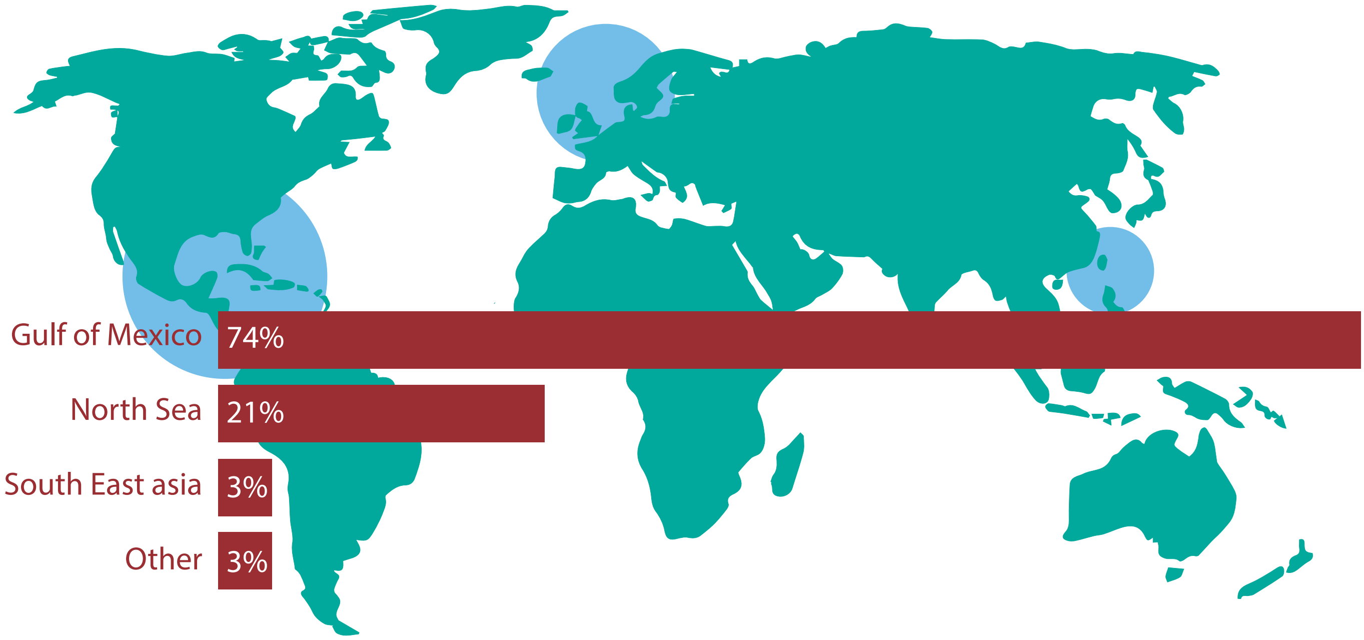
1. **Shallow & Deep Water Decommissioning Cost Estimation Workshop**
   Ernest Hui, *Abandonment Finance Manager,* **Shell**
   Dr Brian Twomey, *Managing Director,* **Reverse Engineering**

Live Polling Results

During the Summit, DecomWorld posed questions to the audience using live polling technology – this successfully provided an industry consensus on some of the biggest challenges and opportunities in the decommissioning and abandonment market.

Poll Respondents Breakdown

Which offshore market is your primary focus?



Collaboration

Do you believe that oil and gas community should collaborate to drive down decommissioning costs?

YES 95%

5% **NO**

Do you believe that industry can actually change our behaviours and collaborate?

72% **YES**

NO 28%

Regulation and Rigs to Reefs

What elements of regulation cause the biggest headaches?

28% Well P&A
3% Pipelines
22% Clean Seabed
47% Structural Removal

Do you support habitat retention through the Rigs to Reefs programs?

YES 96%

4% **NO**

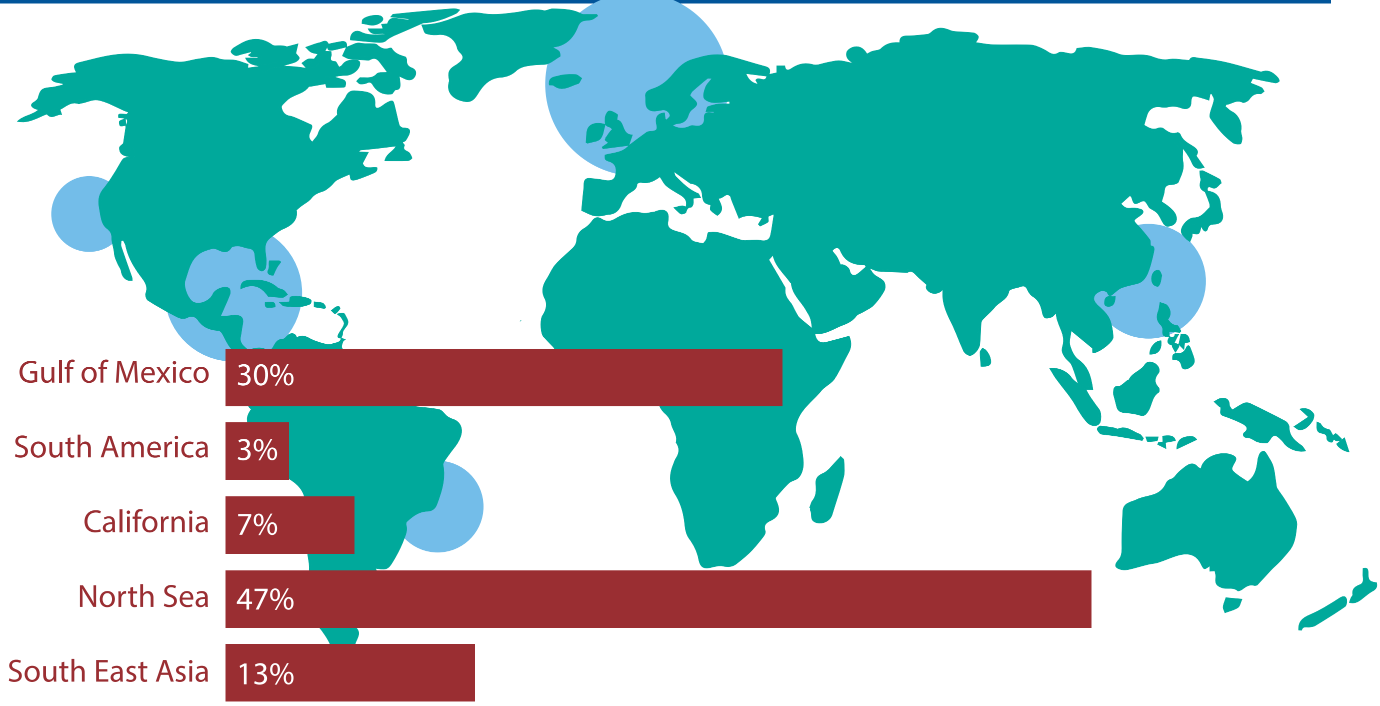
International Decommissioning Perspectives

Agree or Disagree:
Decommissioning activities do not get enough senior management attention.

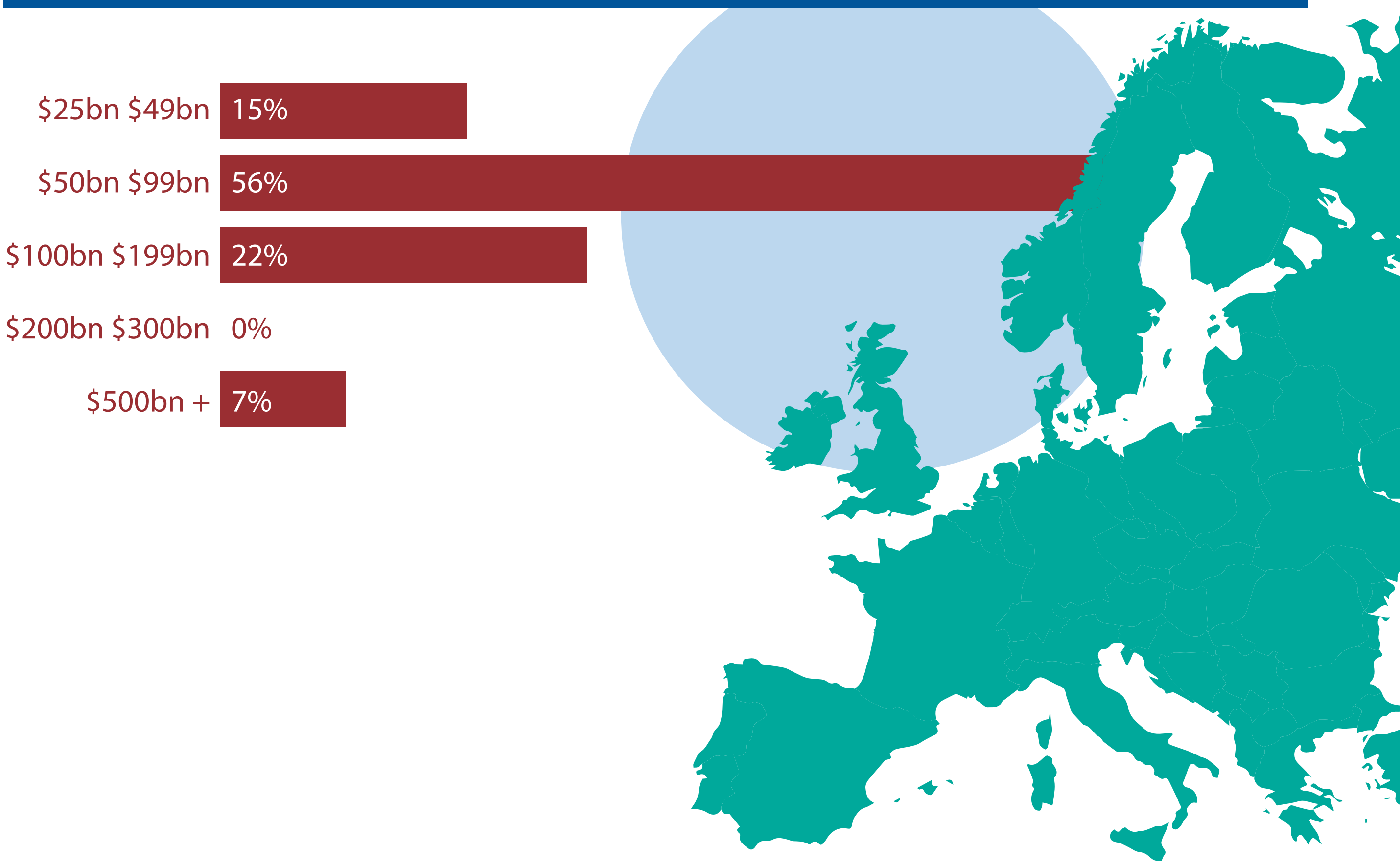
52% **AGREE**

DISAGREE 48%

Which regions hold the biggest opportunity for offshore decommissioning?



What's your estimate of the total decommissioning market size in the North Sea region?



Conference Rating*

80%
of attendees valued the *information gathered* at the conference as **good to excellent**

87%
of attendees thought the *quality of attendees and opportunity to network* was **good to excellent**

70%
of attendees thought the *overall value of the Summit* was **good to excellent**

The topics attendees were most interested in finding out about based on the advertised agenda were **Cost Estimation, Red Hawk Spar Case Study and Regulatory Updates**

*Based on those attendees who completed and returned conference survey

Testimonials

"I'm new to the decommissioning industry and this was a great introduction to the business"
Advisor, **Chevron**

"Excellent event with high quality presentations"
Principal Consultant & Technical Director, **Reverse Engineering**

"A worthwhile experience. Sessions cut across all areas of D&A and were excellently delivered by experts. Lots of opportunities to network – thumbs up!"
JV Finance - Finance & Accounts Division, **National Petroleum Investment Management Services**

"The show was well coordinated and kept on schedule. The speakers were informative and the Q&A was very good"
Regional Leader – North America, **GE Oil & Gas**

"An enabler for sharing challenges, opportunities and stimulating collaboration"
Specialist Engineer, **FMC Kongsberg Subsea AS**

"Networking opportunity is great!"
Regulatory Specialist, **Shell Exploration & Production Company**

Decomworld
Business Intelligence for the Offshore Oil & Gas Industry

Getting Involved at the 2016 Summit

If you are interested in taking part in the Decommissioning and Abandonment Summit 2016 either as a speaker, sponsor, exhibitor or attendee, DecomWorld would love to hear from you.

DecomWorld are always keen to speak with companies currently involved in the decommissioning and abandonment market, or perhaps thinking of contributing to the market in the future.

The following topics will be addressed at the Decommissioning & Abandonment Summit 2016:

- Deepwater decommissioning
- Subsea well plugging & abandonment
- Subsea structure removal methodologies
- Cost optimization strategies
- Strategic planning for decommissioning & abandonment
- New structural removal solutions
- Cost estimation advances
- Downhole tooling for effective P&A
- Rigless intervention strategies
- Regulatory updates
- Contracting strategies
- Collaboration developments
- North Sea decommissioning
- Environmental challenges
- New barrier technology
- Rigs to Reefs
- Pipeline decommissioning

The Decommissioning & Abandonment Summit will return to Houston in March 2016.

If you have a story to share or would like to contribute to the program or event nominate a company or individual you would like to hear from, please contact us on the details below.

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