The Offshore Technology Conference (OTC) events around the globe, including OTC Asia, are brought to you by 13 sponsoring non-profit academic, scientific and professional organisations dedicated to the advancement and diffusion of scientific and technological knowledge of offshore resources and related environmental matters.

Income from this event is invested back into these sponsoring organisations’ programmes that will provide opportunities for industry professionals to enhance their professional and technical competence, and to promote education in areas to continue to help advance the offshore energy industry.

**SPONSORING ORGANISATIONS**

American Association of Petroleum Geologists
American Institute of Chemical Engineers
American Institute of Mining, Metallurgical, and Petroleum Engineers
American Society of Civil Engineers
American Society of Mechanical Engineers
Institute of Electrical and Electronics Engineers, Ocean and Engineering Society

Marine Technology Society
Society of Exploration Geophysicists
Society for Mining, Metallurgy & Exploration
SNAWE
Society of Petroleum Engineers
The Minerals, Metals & Materials Society

**REGIONAL SPONSORING ORGANISATIONS**

IBP
International Association of Drilling Contractors

**ENDORSING ORGANISATIONS**

IADC
Penhaligon Equipment & Suppliers Association
Corporate sponsorship and exhibition income from this event is invested back into industry through OTC’s 13 sponsoring organisations’ programmes for its multidisciplinary members worldwide and the wider energy industry, such as training, technical journals and educational programmes.

**CORPORATE SUPPORTING ORGANISATION**

**PRINCIPAL SPONSORS**

**GENERAL SPONSORS**

Opening Ceremony, Welcome Reception, lanyards and Closing Session.
ASIA’S PREMIER OFFSHORE ENERGY EVENT

Founded in 1969, the Offshore Technology Conference (OTC) organises the world’s foremost events for the development of offshore resources in the fields of drilling, exploration, production, and environmental protection. The flagship OTC is held annually in Houston, Texas, U.S.A.

The first OTC Asia was held in 2014. OTC Asia’s vision and goal is to fulfil OTC’s mission to promote and further the advance of scientific and technical knowledge of offshore resources and environmental matters. Furthermore, OTC Asia aims to:

- Meet the demand for technical information to support the growth of the offshore oil and gas industry in Asia.
- Provide opportunities for industry professionals and their employers to share their applied technologies and best practices with other producing areas in the world.
- To create opportunities to institute and strengthen intersociety collaboration and cooperation with member societies based in Asia.
OTC ASIA 2018 IN NUMBERS

19,003 Unique Attendees
1,451 C-Suite Executives and Government Officials
239 Sponsors and Exhibitors
18 NOCs and IOCs
5,274 Participating Organisations
71 Countries Represented
30+ Hours of Networking and Business Opportunities
15+ Hours of High-Level Industry Dialogues

ATTENDANCE BY REGION

Asia: 94.80%
Middle East: 0.94%
Europe: 2.36%
Africa: 0.33%
North America: 1.51%
Latin America: 0.04%

ATTENDANCE BY JOB FUNCTION

Business / Strategy / Economics: 17.74%
Downstream and Petrochemicals: 3.09%
Drilling and Completions: 7.07%
Education: 4.08%
Gas and Pipelines: 4.64%
Geoscience: 3.24%
HSE / Security / Social Responsibility: 2.13%
IT / Data / Analytics: 2.48%
Maintenance and Integrity: 4.03%
Naval and Marine: 2.07%
Power Generation and Transmission / Regasification: 0.74%
Production and Operations: 7.71%

Projects and Assets: 6.87%
Purchasing and Procurement: 3.91%
Reservoir: 1.67%
Sales / Marketing / Communications: 14.46%
Others: 14.07%

97.1% rated OTC Asia as good to excellent
93.1% would recommend OTC Asia to their colleagues
89.1% plan to participate in future OTC Asia events
88.4% said it was valuable to attend OTC Asia
OTC ASIA 2018 IN NUMBERS

CONFERENCE

- 1,670 Conference Delegates
- 442 Speakers
- 76 Conference Sessions
- 293 Technical Presentations
- 242 Presenting Organisations

EXHIBITION

- 218 Exhibitors
- $5,360m^2$ Net SQM of Exhibition Space
- 8 National Pavilions

DEVELOPMENT PROGRAMMES

- The Next Wave
- University R&D Showcase and Challenge
- High School Student STEM

- 1,876 University and High School Students
- 149 Educational Institutions

RECOGNITION PROGRAMMES

- Spotlight on New Technology
- Distinguished Achievement Awards
The Board of Directors is responsible for the operational stewardship of the event, to ensure that OTC’s mission is upheld.

Members of the OTC Board are appointed to four-year terms by their respective society or organisation. The OTC Board includes 14 representatives, 12 from OTC’s sponsoring organisations and two from OTC’s endorsing organisations. The two principal officers, the Chairman and the Vice Chairman, are elected for two-year terms by the Board during their annual meeting.

**CHAIR**

Wafik Beydoun
Society of Exploration Geophysicists

**CHAIR**

Neil Kavanagh
Woodside Energy Ltd.
Society of Petroleum Engineers

**VICE CHAIR**

Cindy Yeilding, American Association of Petroleum Geologists

**MEMBERS**

Norman Carnahan, American Institute of Chemical Engineers

Jerry Carroll, Institute of Electrical and Electronics Engineers, Oceanic Engineering Society

Doreen Chin, American Association of Mechanical Engineers

Galen Cobb, Petroleum Equipment & Services Association

João De Luca, Brazilian Petroleum, Gas and Biofuels Inst.

Paul Jones, Society of Petroleum Engineers

Mark Kalman, The Minerals, Metals & Materials Society

Steve Leverette, Society of Naval Architects and Marine Engineers

Brian Miller, American Society of Civil Engineers

Charles L. Morgan, Society for Mining, Metallurgy and Exploration

Chuck Richards, Marine Technology Society

Bodley Thornton, International Association of Drilling Contractors

**MEMBERS**

Stephen McDowall, Marine Technology Society

Zhijun Jin, China National & Chemical Corp. (SINOPEC) Research & Development; American Association of Petroleum Geologists

John Halkyard, Deep Reach Tech Society of Naval Architects and Marine Engineers

Galen Cobb, Halliburton; Petroleum Equipment & Services Association

Jerry Carroll, Institute of Electrical and Electronics Engineers, Oceanic Engineering Society

Sateesh Dev, MODEC Offshore Production Systems (S) Pte. Ltd.; American Association of Mechanical Engineers

Arthur Cheng, National University of Singapore; Society of Exploration Geophysicists

Fong Nyuk Loon, TechnipFMC; American Society of Civil Engineers

Arnis Judzis, University of Utah; American Institute of Chemical Engineers

Andrew Spowage, Wood Group; The Minerals, Metals & Materials Society
The Advisory Committee consists of senior stakeholders in the Asia Pacific region from national oil companies (NOCs), international operators and service companies. The role of the committee is to provide advice and counsel to the OTC Asia organising committees regarding the planning and development of the event.

**CHAIR**

Tan Sri Wan Zulkiflee Wan Ariffin  
President & Group CEO  
PETRONAS

**MEMBERS**

- Visal Leng, President, Asia Pacific, Baker Hughes, a GE company
- Mark Langston, General Manager, Reservoir Management, Chevron Asia Pacific Exploration & Production
- Wang Dongjin, Vice President, China National Petroleum Corp. and President, PetroChina
- William Bullock, President, Asia Pacific & Middle East, ConocoPhillips
- Mustaffa Kamal bin Abu Bakar, Chief Operating Officer, Dialog Group Bhd.
- Edward Graham, Chairman & President, ExxonMobil Exploration & Production Malaysia Inc. and Chairman, ExxonMobil Subsidiaries in Malaysia
- Joe Rainey, President – Eastern Hemisphere, Halliburton
- Brian Trulove, Senior Vice President, Offshore, Hess
- Kenneth Pereira, Managing Director, Hibiscus Petroleum Bhd.
- Kenji Akiyoshi, Executive Director, Member of the Board, Oil & Gas Upstream Business Unit, Japan Oil, Gas and Metals National Corp.
- Hisao Tatsumi, Senior Vice President, JX Nippon Oil & Gas Exploration Corp.
- Roger Jenkins, President, Murphy Oil Corp.
- Shashi Shanker, Chairman and Managing Director, Oil & Natural Gas Corp.
- Ayman Asfari, CEO, Petrofac
- Datuk Mohd Anuar Taib, Executive Vice President & CEO, Upstream, PETRONAS
- Sompong Vangvuthipornchai, CEO, PTT Exploration & Production Public Co. Ltd.
- Tan Sri Dato’ Seri Shahril Shamsuddin, President & Group CEO, Sapura Energy Bhd.
- Shah Hakim Zain, Group CEO, Scomi Group Bhd.
- Ramadan Mansour, Vice President, South & East Asia, Schlumberger
- Datuk Iain Lo, Chairman, Malaysia and Vice President, New Business Development, Asia, Shell
- Christophe Malaurie, President, Asia Pacific, TechnipFMC
- Javier Rielo, President & CEO, Total E&P Asia Pacific
- Lance Marklinger, President, Global Sales, Weatherford
CONFERENCE

“Through a dynamic exchange of thoughts on the achievements and aspirations of the region and the industry, the conference intends to showcase Asia’s contributions to a thriving energy market and its potential to flourish beyond what it is today.”

Tan Sri Wan Zulkiflee Wan Ariffin
President and CEO, PETRONAS
CONFERENCE ATTENDANCE

Showcasing Asia as a centre of excellence in providing innovative technology and cost-efficient solutions to the offshore energy industry

- 1,670 Conference Delegates
- 76 Conference Sessions
- 442 Speakers
- 10 engaging country and panel discussions
- 10 focused country sessions
- 44 multidisciplinary technical sessions
- 293 interactive technical presentations and dialogues
- 141 knowledge sharing ePoster presentations
- 5 timely special sessions

98.6% rated the conference as good to excellent
90.1% rated the technical programme as good to excellent

Opening Ceremony  Executive Plenary Session  Game Changing Ideas Plenary Session  Panel Sessions
Country Sessions  Special Sessions  Technical Sessions  Knowledge Sharing ePoster Sessions
CONFERENCE ATTENDANCE

BY REGION

- Asia: 86.41%
- Middle East: 4.09%
- Europe: 4.09%
- Africa: 1.75%
- North America: 3.06%
- Latin America: 0.60%

TOP 10 COUNTRIES

- Malaysia
- Thailand
- South Korea
- Singapore
- USA
- Indonesia
- India
- Australia
- China
- Japan

BY PRIMARY BUSINESS

- 4.19% Consulting
- 39.28% Exploration and Production
- 6.47% Government / Regulators
- 3.17% Manufacturing / Original Equipment Suppliers
- 0.06% Telecommunications
- 4.55% Education
- 0.54% Finance / Insurance / Legal
- 0.66% Hardware / Equipment
- 0.72% Marine Services and Shipping Logistics
- 1.74% Unmanned/Remote/Autonomous Systems and Vehicles/Drones/Robotics (Surface/Aerial/Underwater)
- 9.76% Engineering / Construction
- 1.56% Geosciences
- 1.08% IT and Software Development
- 19.94% Oilfield Services
- 6.28% Others
### BY JOB TITLE

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>C-Level Executive</td>
<td>9.34%</td>
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<tr>
<td>Senior Management / Head of Department / Custodian</td>
<td>33.89%</td>
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<tr>
<td>Manager / Supervisor / Foreman</td>
<td>27.61%</td>
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<tr>
<td>Staff / Executive / Administrator</td>
<td>28.38%</td>
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<tr>
<td>Student</td>
<td>0.78%</td>
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</table>

### BY JOB FUNCTION

<table>
<thead>
<tr>
<th>Job Function</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business / Strategy / Economics</td>
<td>20.84%</td>
</tr>
<tr>
<td>Downstream and Petrochemicals</td>
<td>1.80%</td>
</tr>
<tr>
<td>Drilling and Completions</td>
<td>12.34%</td>
</tr>
<tr>
<td>Education</td>
<td>3.41%</td>
</tr>
<tr>
<td>Gas and Pipelines</td>
<td>1.98%</td>
</tr>
<tr>
<td>Geoscience</td>
<td>11.08%</td>
</tr>
<tr>
<td>HSE / Security / Social Responsibility</td>
<td>2.04%</td>
</tr>
<tr>
<td>IT / Data / Analytics</td>
<td>1.02%</td>
</tr>
<tr>
<td>Maintenance and Integrity</td>
<td>2.34%</td>
</tr>
<tr>
<td>Naval and Marine</td>
<td>1.81%</td>
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<tr>
<td>Production and Operations</td>
<td>8.50%</td>
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<tr>
<td>Projects and Assets</td>
<td>11.44%</td>
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<tr>
<td>Purchasing and Procurement</td>
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<tr>
<td>Reservoir</td>
<td>8.56%</td>
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<tr>
<td>Sales / Marketing / Communications</td>
<td>5.65%</td>
</tr>
<tr>
<td>Others</td>
<td>6.17%</td>
</tr>
</tbody>
</table>

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**From one edition to the other, the response has been great. It reflects the significance of the industry in this region. We have a very well developed oil and gas service and equipment industry and OTC coming to Asia is quite significant. It provides the industry a platform to showcase, not only its capabilities, but also the products and services it is able to offer, not only for this region but also to expand outside of the region.**

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**I've attended quite a number of technical sessions and panel sessions, I think for where the industry is at the moment, the programme has captured exactly the positioning of the industry, coming out of a downturn and moving into a transition.**

---

Adif Zulkifli
Senior Vice President, Development & Production, Upstream Business
PETRONAS

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Robby O’Sullivan
Front End Technical Manager, Asia Pacific
TechnipFMC
The opening ceremony took place on the afternoon of Tuesday, 20 March. The session hosted by Tan Sri Wan Zulkiflee Wan Ariffin, OTC Asia Advisory Committee Chair, and President and Group Chief Executive Officer, PETRONAS, welcomed over 2,000 people. The audience witnessed the official opening of the OTC Asia 2018 edition and also heard remarks from Wafik Beydoun, Chairman, OTC Board of Directors.

Asia continues to position itself as a dynamic and vibrant market where rapid economic and demographic growth will sustain demand for oil, gas and petroleum products in Asia in the foreseeable future. However, it is imperative for us to continue to be vigilant in maintaining cost discipline and drive for efficiency. This must remain a priority to future-proof the industry… I believe that investments in technology are crucial in sharpening the competitive edge of an organisation. We need to accelerate the pace of technological investments in order to overcome current and future industry challenges.

“ OTCP Asia reflects the region’s position as a global provider and user of technology where cultural and geographic diversity foster collaboration and innovation. This event showcases Asia’s achievements, its aspirations, and the important technological developments that the region needs to stay robust and resilient in the shifting global energy market.

“ Today, we are seeing the prices as well as the industry’s activity momentum gaining strength, and we would like to hope that this period of recovery only means a very promising and optimistic future. Therefore, the next challenge is to pursue the right business and operational models to ensure sustainability and viability of the industry.
The executive plenary featured Neil Duffin (President, ExxonMobil Production Company), Rajesh Kakkar (Director Offshore, ONGC), Datuk Mohd Anuar Taib (EVP & CEO, Upstream, PETRONAS), Andy Brown (Upstream Director, Shell), Khaled Al Mogharbel (President, Eastern Hemisphere, Schlumberger), and Doug Pferdehirt (CEO, TechnipFMC).

Expounding on the conference theme “Excellence in Asia” with a focus on how to remain resilient and responsive to a dynamic energy market, the distinguished panel of leaders discussed how best practices and norms need to be fully evaluated whilst seeking fit-for-purpose, affordable and innovative solutions. Spotlights were on key lessons learnt, new and effective approaches to adopt, and how best can the industry adapt to the new oil price environment.

Population growth and GDP growth goes hand-in-hand. World population is going to grow to 9 billion by 2040, and Asia is going to grow to 4 billion people. The drive and need for growth in the oil and gas, and renewable sectors are not going to satisfy the energy need for the various industries. Hence we need to transform the industry, run the industry differently. Collectively, the industry needs to change its mindset by bringing all - digital, data, new technology into play, and that is the new energy industry that we are going to see moving forward.

Neil Duffin
President
ExxonMobil Production Company (EMPC)

I think the first and foremost important thing is, as we grow we become very rigid in our thinking. So if we actually have to collaborate and get some meaningful outcome, first of all, we need to change our mindset. I think there can be collaboration at different levels, it can be in terms of technology, human resources sharing, anything.

Rajesh Kakkar
Director, Offshore
ONGC

Over the past three years we have seen resiliency, a lot of collaborative efforts to reduce costs, there are a lot of new techniques, new technologies that get discovered to make the industry more efficient, and different kinds of contracting. These are things that the industry have done to remain relevant and potentially be a more vibrant industry in the future.

Datuk Mohd Anuar Taib
Executive Vice President & CEO, Upstream
PETRONAS
Standardisation and collaboration are needed in the oil and gas industry so supply chain can provide a better service.

We need to stop boxing ourselves, starting with the commercial model. We need to be more flexible, to be more efficient and be lean in business in addition to leading the exploration and technology front.

Fundamentally, we have to change our behaviour... We need to willingly make a commitment to our clients, what we can do to continue to innovate, to drive down the cost curve, to continue to drive change.
Today, we are transforming ourselves through digital transformation, not just digital innovation… To encourage innovation, we need to tear down silos, encourage in-person communications.

The next wave of automation is well underway. Rapid advances in robotics, sensing, machine vision, deep learning, voice recognition, analytics, and artificial intelligence mean that machines are increasingly able to perform tasks formerly done by humans. Every company must totally rethink its labour strategy. Both blue- and white-collar jobs are at risk. In the next decade, most workers will be managed by algorithms. Teams of the future will be made up of humans, robots, and algorithms working together.

The cloud is a safe place to play.
Panel sessions featured business leaders and industry experts who engaged in insightful dialogues on current industry issues and shared knowledge and best practices in key areas of concern.

**SESSION TOPICS**

- The Sum is More than Its Parts – Balancing Cost, Quality, Reliability, Safety and Sustainability
- Strategy Review – Reshape and Regain Market Competitiveness
- Revolutionary Evolution - The Impact of Big Data on Offshore Energy
- Applications of Technologies from Other Industries to Oil and Gas
- The Energy Paradigm
- Better for Longer - Asset Integrity and Life Extension
- Decommissioning - The New Era
- Talent and Performance Management in Oil and Gas

As we move out from the traditional contract environment of being told what to do, we take on more responsibilities, we have a greater share of ownership, and because of that ownership we create more value.

It is no longer a question of whether we need to reshape to regain competitiveness. The question is how and what should we do. It is through integrated approaches, necessity for new and fast technological advancements and be open for collaboration.

The pitch by the fund manager is that the industry can provide good return to investors. The mantra has switched from growth in 2014 to the emphasis of cash flow and sustainability through the down cycle.

To survive, the industry has to adapt to the new reality, come together and initiate collaboration and partnership with host companies, regulators, service providers, partners to continue harnessing and supplying the world with energy.
What will enable us to embrace industry 4.0? It is through digital transformation. If we don’t go through digital transformation, we become obsolete.

The revolution in unconventional oil and gas has really changed our assumption about the sources of hydrocarbon and how quickly it can be developed to meet growing demand. The abundance of fossil fuels has altered the pricing environment for the foreseeable future.

Expand your thinking of what a Rigs-to-Reefs programme can be. Is there an opportunity for the jacket to keep integrating in the marine environment?
PANEL SESSIONS

Nor Hazleen Madros
CEO
PETRONAS Leadership Centre

Liane Smith
VP Digital Solutions
Wood

C. Susan Howes
Vice President Engineering Subsurface Consultants & Associates, LLC

Wijnand Moonen
Vice-President, Business Development, Southeast Asia, Managing Director Sky Futures (Malaysia) Sdn. Bhd.

Hazli Sham Kassim
Senior General Manager, Integrated Hydrcarbon Management, MPM PETRONAS

Stefan vos de Wael
General Manager Shell Energy Global Integration

D.J. Schuld
Operations Director – Consulting/Asset Integrity Services, Continental Europe, Middle-East, India & Asia Lloyd’s Register

Zahari Abdul Razak
Group Technical Advisor, GTA and Custodian, Civil and Structural Discipline PETRONAS

Stig Adolfsen
Regional Director – Asset Integrity Fugro Singapore Marine APAC

Hasliza Othman
Senior General Manager, Resource Development, MPM PETRONAS

Inge A Van Coppenolle
Human Resources Manager, Asia Pacific ExxonMobil Asia Pacific Private Pte. Ltd.

Stig Adolfsen
Regional Director – Asset Integrity Fugro Singapore Marine APAC

Ahmed Ibrahim
Vice President Digital Sales – APAC Baker Hughes, a GE company

Aly Hakam
Area Manager Chevron

Ravikumar Jeevarathinam
Vice President Technology & Innovation Lloyd’s Register

Chris Do
President & CEO IEV Group Sdn. Bhd.

Bartholomew Jukui
End of Field Life BOM/D&R Owner Sarawak Shell Bhd.

Christopher Do
President & CEO IEV Group Sdn. Bhd.

Clay Harter
CTO - Oil and Gas Bahwan CyberTek a TIBCO Partner

Robert Shoup
Chief Geologist Subsurface Consultants & Associates, LLC

Dr. Deva Ghosh,
Professor in Geophysics, Head of Centre of Seismic Imaging Universiti of Teknologi PETRONAS

Allan R. Magee
Professor National University of Singapore
Country sessions provided in-depth coverage of the latest oil and gas developments in Asia and beyond. In addition to country briefings that included market outlook, investment climate and opportunities, these sessions also highlighted industry and technological advancements in recent and on-going major projects.

COUNTRIES

For the oil and gas industry, a sustainable development scenario is the key to survival. Even in the sustainable development scenario, gas demand will be much higher than oil and coal in 2040.

If there is regulation that is blocking or hampering your investment in Indonesia, we want to listen and do the best we can do. We want to work together with you to make your investment in Indonesia easier than before.

The gas demand will be strong for the next 20 years, even though the government has plan to curb the growth. Meanwhile the supply from new fields is limited, our domestic supply currently has reached its maximum capacity. In the near future, the challenge is how to prolong field life to maintain domestic supply as long as possible. A huge investment will be put in new technologies to enhance the fields’ productions and reserves.

We are considering increasing regional cooperation by expanding the grid interconnection and pipeline network to neighbouring countries to share power supply.
The global LNG market is expected to grow at around 5% on a year-on-year basis, or 290 mtpa in 2017 to 530 mtpa in 2030, which is a gross increase of 240 mtpa.

How can we make the best, in order to sustain production that’s in the plateau, extend the life of the fields and satisfy the country’s ever increasing demand in terms of energy?

It is estimated that 75% of India’s hydrocarbon reserves are yet to be discovered, and of the proven reserves, only 5% (oil) and 3% (gas) have been exploited.

The government of Sri Lanka has made plans to launch a mini licensing round commencing this year (2018). Also, Sri Lanka has plan to conduct a major licensing round in 2019.
COUNTRY SESSIONS

Emry Hisham Yusoff
Country Chairman
PETRONAS Carigali
Myanmar Ltd.

Piya Sukhumpanumet
Senior Vice President, Myanmar Asset
PTTEP

Yan Naing Win
Head, Operations Assurance, International Assets
PETRONAS

Syahir Luthfi Chan
Managing Director-Thailand, Cambodia and Laos
Schlumberger Overseas S.A.

Greg Ross
Country Manager/Managing Director,
Australia Aker Solutions

Ashish Bhandari
Vice President, India
Baker Hughes, a GE company

Mukesh Dhiman
Director
KPMG India

Kamal Arafeh
Vice President
Halliburton India

Jitender Sharma
Global Account Director
Schlumberger India

Saul Kavonic
Head of Oil, Gas, LNG and Energy, Australasia
Wood Mackenzie

Subramanian Sarman
CEO and MD
L&T Hydrocarbon Engineering Ltd, India

Michael Hlaing Myint
Country Manager, Myanmar & Vietnam
Schlumberger

Wan Azryn Wan Ab Rashid
Chief Executive Officer
DNEX Oilfield Services Sdn. Bhd.

Sithu Moe Myint
Country Manager
MPRL E&P Pte. Ltd.

John Field
Exploration Lead
Shell Myanmar

Junichi Kobayashi
General Manager, Tubular Products Technology Division
Nippon Steel & Sumitomo Metal Corporation

Atsushi Hatakeyama
Deputy General Manager, Technical Department 1,
Division 1
JX Nippon Oil & Gas Exploration Corporation

Hosi Sabavala
Technology Development Manager – Upstream
Woodside Energy Ltd.

Corinne Zuglian
JV & Planning Director
Total E&P Myanmar

Hong-Gun Sung
Director
Korea Research Institute of Ships and Ocean Engineering

Yu-Taeck Seo
Professor
Seoul National University

René Peters
Director Gas Technology
TNO Research

Alexander Vergroesen
Managing Director
IRO (The Association of Dutch Suppliers in the Oil & Gas Industry and Renewable Energy Industry)

Junya Okazaki
Senior Researcher, Technology Innovation Center
JGC Corporation

Chaminda Kularathne
Petroleum Geologist
Petroleum Resources Development Secretariat (PRDS)

Junichi Kobayashi
General Manager, Tubular Products Technology Division
Nippon Steel & Sumitomo Metal Corporation

Atsushi Hatakeyama
Deputy General Manager, Technical Department 1,
Division 1
JX Nippon Oil & Gas Exploration Corporation

Sander Zwanenburg
Director Asia-Pacific
Ampelmann

Chas Charles
CEO & Director
Hayleys Energy Services Lanka Ltd.

Rutger Baan
Director, Jack-ups and Semi-submersibles
GustoMSC

Anton Leemhuis
Director Business Development
Smart Fields
TNO Research

Max van de Kemenade
Sales Manager South East Asia
IHC IQIP

Rob Thomson
Associate Partner & Business Development Director – APAC
io oil & gas consulting

Will Pulsford
Global Upstream
Poten & Partners
We need to fill the underutilised capacity and improve our position both internally and externally for export. A lot of that is going to be through brownfield modification, tie-backs and opportunities to use existing facilities we have abandoned.

What we now see is because of low oil prices and increased competition. This is now getting an impetus from the industry that wasn’t there before. It is no longer a luxury to cooperate, it is a necessity to cooperate. We are already starting to see the early signs across the sectors of more cooperation to unleash that value and bring down the cost and be competitive to extract new volumes in Australia.

In Netherlands, there are some 250 small fields, onshore and offshore, currently in production. They increasingly become more complex as they mature. If we are not careful, some of those reserves will become stranded. So the challenge is to even production in stranded reserves.

We are entering a new phase for the offshore industry. How to reduce cost and schedule saving? Answers are to maximise fabrication constructability into the design, prepare ready-made FEED package, apply standardisation and localisation and make digital transformation. We also need to improve our engineering capability because it is one of the ways to escape the current situation.

For the first 3 months of 2018, we have a few oil and gas related projects in the pipeline with an expected investment worth RM1.8 billion. This emphasises Malaysia’s role as a strategic location for oil and gas industry players.

There is a large youthful population in Myanmar that provides a labour force that is very attractive to foreign investors.

Greg Ross
Country Manager/Managing Director, Australia
Aker Solutions

Saul Kavonic
Head of Oil, Gas, LNG and Energy, Australasia
Wood Mackenzie

René Peters
Director Gas Technology
TNO Research
(represented by Han Tiebot)

Tae-Jin Kim
Senior Vice President
Hyundai Heavy Industries Co., Ltd.

Corinne Zuglian
JV & Planning Development Manager
Total E&P Myanmar

YBhg Dato’ Azman Mahmud
Chief Executive Officer
MIDA

COUNTRY SESSIONS
Special sessions included project and technology sessions which featured new and emerging technologies, and highlighted projects that had new or significant technological achievements.

**SESSION TOPICS**

- FLNG – Charting a New Course
- Autonomous Operations in Offshore Oil & Gas Industry – Opportunities and Challenges
- Plugging and Abandonment Technology – Supplier and Service Industry’s Response to P&A Liabilities in Oil and Gas
- Deepwater Projects
- Technologically Challenged Fields
TECHNICAL SESSIONS

Technical sessions provided industry professionals the opportunity to present their technical expertise, and share best practices and case studies with industry peers. It served as a platform for presenters and the industry to hone their knowledge through an active exchange of ideas.

SESSION TOPICS

- Alternative/Offshore Renewable Energy
- Asset Integrity
- AUV/ROV Assisted Operations
- Big Data in Design and Operations
- Brownfield Development
- Cementing
- Decommissioning and Abandonment
- Deepwater Designs and Station Keeping
- Deepwater Wells Technology
- Developing Insights in Governance, Standards and Guidelines
- Digital Applications
- Drilling and Completions Case Studies
- Drilling Fluids and Geomechanics
- Drilling Bottom Hole Assembly and Bit Technologies
- Emerging Geophysical Technologies
- Facilities Engineering
- Floating Systems
- Flow Assurance
- FLNG
- Gas Production from Hydrates: Well and Reservoir Issues
- Gas Production from Hydrates: Simulation Studies of Flow and Geomechanics
- Gas Production from Hydrates: Supporting Experimental Studies
- Geotechnical and Geohazards
- High CO₂ and Contaminated Fields
- HSE and Critical Operations
- Installation and Construction
- IOR/EOR
- Managed Pressure Drilling and Under Balanced Drilling
- Marginal Fields
- Materials, Corrosion and Inspection
- Metoceans and Hydrodynamics
- Oil and Gas Environmental Protection
- Pipeline
- Play-Based Exploration and Basin Studies
- Reducing Exploration and Development Risks
- Reservoir Characterisation
- Reservoir Management and Surveillance
- Reservoir Modelling
- Riser Systems
- Sensors and Measurement Systems
- Subsea Processing, Flowlines and Umbilicals
- Unconventional
- Well Completions and Tubular Technologies

44 technical sessions

293 Technical Presentations

90.1% rated the technical programme as good to excellent
KNOWLEDGE SHARING ePOSTER SESSIONS

An ePoster is an electronic version of the traditional poster, presented in digital format. ePoster authors shared their technical studies via stations provided at the event. This format offers an informal, interactive and instant environment for knowledge transfer.

21 ePoster Stations

120+ technical presentations
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Tomasz Matlak, Schlumberger
WeeChin Wong, Schlumberger
Zahris Sham Abu, Schlumberger
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Thiagaraj Mariappan, Shell
Jian Zhang, SINOPEC Shengli Oilfield Co. Research Institute of Petroleum Engineering
Marin Abelanet, Subsea 7 Asia Pacific
Sharifudin Salahudin, Sutera Energy Solutions
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WeeChin Wong, Schlumberger
Zahris Sham Abu, Schlumberger
Ahmad Zairi Dzuljastri, Shell
Thiagaraj Mariappan, Shell
Jian Zhang, SINOPEC Shengli Oilfield Co. Research Institute of Petroleum Engineering
Marin Abelanet, Subsea 7 Asia Pacific
Sharifudin Salahudin, Sutera Energy Solutions
Colin Swan, TechnipFMC
Elie Daher, United Safety
Paco Vieira, Weatherford
Thomas Ng, Weatherford
RECOGNITION PROGRAMMES
The Offshore Technology Conference Asia (OTC Asia) Distinguished Achievement Awards, modelled after the prestigious awards at the Offshore Technology Conference’s (OTC), recognises major technological, humanitarian, environmental, and leadership contributions to the industry.

**Distinguished Achievement Award for Individuals**
Simon Ong for his contributions to the offshore sector. During his career, he advocated a regional engineering headquarters in Kuala Lumpur for Shell’s Projects & Technology business, which paved the way for high value careers for young individuals in technology and innovation, providing technical solutions to the oil and gas industry and managing projects from design, fabrication to start-up.

Ong also spearheaded the entry into the deepwater arena for Malaysia and the region by delivering Gumusut-Kakap and Malikai.

"It is an honour to be selected to win this inaugural award. It is very much a reflection of the recognition to the individuals who have contributed to the industry. Of course, I alone am not the only person that helped develop this capability in Malaysia. So I can say that I am very excited and very proud to represent my colleagues and all those who have helped make this industry competitive and competent."

**Special Citation**
Datuk Abdullah Karim for his outstanding leadership and key role in delivering the PFLNG Satu project.

"I feel proud, honoured and privileged to be given a lot of credit by the industry."

**Distinguished Achievement Award for Companies, Organisations and Institutions**
PETRONAS for their ground-breaking PFLNG Satu project.

PFLNG Satu is the world’s first floating Liquefied Natural Gas (LNG) facility, which unlocks small stranded gas fields which were previously uneconomical to monetise.

Currently moored 180km offshore in the Kanowit Field in Sarawak, Malaysia, PFLNG Satu completed commissioning and achieved its first cargo in April 2017, successfully proving the concepts, technology and processes used to adapt natural gas liquefaction for an offshore environment.

**Special Citation**
Michael Utsler for his achievements as a technical pioneer, inspiring leader and dedicated mentor. Some of Utsler’s key achievements include championing LNG as a marine fuel and serving as President of the BP Gulf Cost Restoration Organisation.

"It’s truly an honour and a privilege to be recognised by your peers and by your industry. It’s an industry that I’ve been a part of for 40 years and it’s one that I take great pride in being able to represent and be in service of supporting its successes."
OTC Asia recognises innovative technologies with the Spotlight on New Technology® Awards. This recognition programme is exclusively for OTC Asia exhibitors. The programme recognises the latest and most advanced technologies from the region that are leading the industry into the future.

**AWARD RECIPIENTS**

- **ConocoPhillips**, producer of Compressive Seismic Imaging
- **Halliburton**, producer of Quasar Trio™ M/LWD Triple Combo Service
- **Halliburton**, producer of WiFire™ Acoustic Firing Head
- **NGL Tech**, producer of Low Pressure-Condensate Recovery System (LP-CRS)
- **NGL Tech**, producer of Sep-iSYS™ Cyclonic Sand Removal System (CSRS)
- **Schlumberger**, producer of Pulsar, Multifunction Spectroscopy Service
- **Schlumberger**, producer of SpectraSphere Fluid Mapping-While-Drilling Service
- **TechnipFMC**, producer of In-Service Riser Inspection System (IRIS) Technology
- **Weatherford**, producer of HeatWave™ Extreme Service
- **Weatherford**, producer of WFX0™ Openhole Gravel Pack System
We see that South East Asia is one of the growing regions in the world and we believe that here at OTC Asia is one of the most important scenes to be on and we see it as helpful in developing further into the region.

Sjur Bratland
Managing Director
Norwegian Energy Partners
Showcasing the latest innovations and services to develop offshore energy resources

OTC Asia received positive feedback from exhibitors, strengthening its place as a vital venue to showcase the latest innovative technologies and services reinvigorating the energy sector. OTC Asia would like to thank all exhibitors for their feedback and participation this year.

239 exhibitors and sponsors from 21 countries

of exhibitors rated the value of exhibition as fair to excellent

of exhibitors plan to exhibit in 2020

EXHIBITORS BY PRIMARY BUSINESS

- 3.34% Consulting
- 14.21% Exploration and Production
- 1.84% Government / Regulators
- 18.43% Manufacturing / Original Equipment Suppliers
- 0.66% Telecommunications
- 1.18% Education
- 0.46% Finance / Insurance / Legal
- 1.90% Hardware / Equipment
- 2.75% Marine Services and Shipping Logistics
- 0.52% Unmanned/Remote/Autonomous Systems and Vehicles/Drones/Robotics (Surface/Aerial/Underwater)
- 15.21% Engineering / Construction
- 0.39% Geosciences
- 0.90% IT and Software Development
- 21.69% Oilfield Services
- 16.52% Others

Net SQM of Exhibition Space: 5,360 m²
National Pavilions: 8
Sponsors: 21
EXHIBITORS BY JOB FUNCTION

- Business / Strategy / Economics: 20.98%
- Downstream and Petrochemistry: 1.52%
- Drilling and Completions: 9.05%
- Education: 0.52%
- Gas and Pipelines: 4.98%
- Geoscience: 0.98%
- HSE / Security / Social Responsibility: 1.11%
- IT / Data / Analytics: 0.92%
- Maintenance and Integrity: 2.16%
- Naval and Marine: 1.64%
- Power Generation and Transmission / Regasification: 1.25%
- Production and Operations: 6.49%
- Projects and Assets: 3.80%
- Purchasing and Procurement: 0.79%
- Reservoir: 0.46%
- Sales / Marketing / Communications: 34.89%
- Others: 8.46%
OTC Asia offers great opportunities for a diverse range of energy professionals to make new connections.

### TOP 10 COUNTRIES
- Malaysia
- Singapore
- Thailand
- USA
- South Korea
- Australia
- Indonesia
- India
- Japan
- China

### BY PRIMARY BUSINESS
- **7.21%** Consulting
- **1.73%** Geosciences
- **4.49%** Marine Services and Shipping Logistics
- **1.69%** Education
- **1.66%** Government / Regulators
- **19.19%** OilField Services
- **20.93%** Engineering / Construction
- **2.59%** Hardware / Equipment
- **0.50%** Telecommunications
- **15.53%** Exploration and Production
- **2.58%** IT and Software Development
- **0.57%** Unmanned / Remote / Autonomous Systems and Vehicles / Drones / Robotics (Surface / Aerial / Underwater)
- **1.43%** Finance / Insurance / Legal
- **9.15%** Manufacturing / Original Equipment Suppliers
- **10.75%** Others

### BY JOB TITLE
- **C-Level Executive** 7.64%
- **Senior Management / Head of Department / Custodian** 24.04%
- **Manager / Supervisor / Foreman** 23.58%
- **Staff / Executive / Administrator** 35.13%
- **Student** 9.61%

### BY JOB FUNCTION
- **Business / Strategy / Economics** 17.74%
- **Downstream and Petrochemicals** 3.09%
- **Drilling and Completions** 7.07%
- **Education** 4.08%
- **Gas and Pipelines** 4.64%
- **Geoscience** 3.24%
- **HSE / Security / Social Responsibility** 3.13%
- **IT / Data / Analytics** 2.48%
- **Maintenance and Integrity** 4.03%
- **Naval and Marine** 2.07%
- **Power Generation and Transmission / Regasification** 0.74%
- **Production and Operations** 7.71%
- **Projects and Assets** 6.87%
- **Purchasing and Procurement** 3.91%
- **Reservoir** 1.67%
- **Sales / Marketing / Communications** 14.46%
- **Others** 14.07%
Official Tour of the Exhibition

Following the Opening Ceremony on the afternoon of Tuesday, 20 March, industry leaders and VIPs toured the exhibition, led by Tan Sri Wan Zulkiflee Wan Ariffin, OTC Asia Advisory Committee Chair, and President and Group Chief Executive Officer of PETRONAS and Wafik Beydoun, Chairman, OTC Board of Directors.
The OTC Asia 2018 exhibition also included special features such as the OTCafé and Laman Asia where attendees could network, participate in giveaways, relax, enjoy artisanal coffee, and experience the diverse flavours of Malaysia.
DEVELOPMENT PROGRAMMES

“...What I really like is the session where we bring young professionals – the future of our industry – into OTC Asia. Many people from different countries and organisations will face very similar challenges in their day-to-day lives. To collaborate and learn from one another and hopefully this network will grow as they grow in terms of seniority in the industry.”

Datuk Mohd Anuar Taib
Executive Vice President & CEO, Upstream
PETRONAS
The Next Wave programme is tailored for energy professionals under the age of 36 or with less than 10 years working experience in the energy industry. This programme offered participants an opportunity to network with seasoned professionals, learn about pressing challenges and opportunities in the industry, and receive guidance on how to make the most of their careers.

The programme featured:

- 183 Participants
- 48 Organisations
- 12 Countries
- 1 Keynote
- 1 Ice Breaker Activity
- 18 Speakers
- 64 Roundtable Discussions
- 9 Hours of Networking
- 1 Panel

Rethinking Energy: Adapting to Disruptive Forces in the Oil and Gas Industry

The Next Wave programme is a programme designed for young professionals with the idea of making sure that people with diversity of thought come together and find answers for some of the pressing questions that are challenging young professionals in today’s energy industry.

Alex Hali
OTC Asia The Next Wave Chair
Consultant Engineer
FM Global
We’re actually at a very exciting time in the oil and gas industry. What we see is the convergence of having both deep mastery and agility. What this means is as an oil and gas industry we’re still expected to have very good, very deep functional knowledge, so the requirement to have deep mastery around specific functional capabilities is critical…. But at the same time we’re seeing this change to be agile across different skills.

Farehana Hanapijah
Head, Human Capital Management
PETRONAS
The University R&D Showcase and Challenge programme provides universities the opportunity to share their research and development projects relevant to the offshore energy resource industries, and collaborate with industry professionals to develop innovative ideas to address challenges facing the offshore energy industry.

- Chulalongkorn University
- Curtin University
- Dehradun Institute of Technology University
- Kyoto University
- National University of Singapore
- Suranaree University
- University of Petroleum and Energy Studies
- University of Western Australia
- Universiti Teknologi MARA
- Universiti Teknologi PETRONAS

8 Countries
- Malaysia
- Singapore
- Thailand
- USA
- Australia
- Nigeria
- India
- Japan
Participating universities worked with industry professionals and mentors during a challenge programme to address the topic **How Can We Make Future Offshore Developments More Cost Competitive in the Global Energy Market?**

Universities pitched their solutions to a panel of judges for a chance to win USD5,000 in funding to further research and development. The winning solution was “Poseidon: An Autonomous Structural Health Monitoring System for Offshore Structures” by Universiti Teknologi PETRONAS (UTP).

As the challenge winner, UTP will need to develop a prototype of the project within 6 months and provide monthly reports on the project’s progress. UTP will return to OTC Asia in 2020 to present the latest on Poseidon and share their experience with the next group of University R&D Showcase and Challenge participants.

“Collaboration is key to the future of our industry. Not only within the industry, but also when working with academic institutions. The OTC Asia University R&D Showcase and Challenge provides universities and industry a unique opportunity to discuss real-world problems, develop potential solutions, and receive face-to-face feedback on those ideas. It’s an invaluable way to come up with innovative ideas to disrupt the way we work.”

Neil Kavanagh
OTC Asia Oversight Committee Chair and Chief Technology Manager
Woodside Energy Ltd.
The High School Student STEM (Science, Technology, Engineering and Mathematics) programme is aimed at the next generation of offshore energy professional and their educators. This workshop offers the opportunity for high school students and teachers to engage and gain valuable insight into the industry.

This programme believes in the importance of giving teachers the tools they need to comfortably teach students on energy choices and careers. Hand-on activities provide educators with interactive, age-appropriate experiments using basic household items that illustrate energy concepts within the industry. The experiments are inexpensive and can easily be done in the classroom with their students.

The workshop is structured for students 16 years of age. The programme included expert speakers, hands-on activities, an Industry Panel Session, and an exhibition-technology tour. Students can use these opportunities to learn about how energy makes an impact on our everyday lives and career opportunities in the offshore energy industry.

The world faces many challenges today, and fundamentally, most of those have a technology challenge associated with them. We fundamentally believe that STEM - Science, Technology, Engineering and Mathematics - will not only provide the future staff that we need to meet future challenges, but also creates an educated society that will help us figure out how to solve global challenges that we are going to face as a society.

Edward Graham
Chairman
ExxonMobil Exploration and Production Inc.
Our younger generation in a Malaysian context is very important because culturally many of us are not exposed or aware of the oil and gas industry. Having programmes such as STEM, allows young Malaysians to have an impression of what the oil and gas industry is, and therefore they can make an informed decision with regards to their future.

Andrew Chan Jon Kit
Senior Geophysicist, Subsurface Asset
Murphy Oil
Various ancillary programmes were organised in conjunction with OTC Asia 2018 to provide further business opportunities for networking. These programmes were organised by OTC Asia stakeholders from the Malaysia Task Force and trade commissions.

**International Sourcing Programme (INSP)**

The International Sourcing Programme (INSP) coordinated by the Malaysia External Trade Development Corporation (MATRADE) in conjunction with the recent Third Offshore Technology Conference Asia 2018 recorded RM154.84 million.

MATRADE said the INSP involved the participation from 52 Malaysian companies and 22 foreign buyers from 12 countries, including those from ASEAN, South Asia, the Gulf, Africa and the United States.

“There were 169 pre-arranged business meetings coordinated during the two-day event,” it said in a statement Friday.

The foreign buyers were mainly looking for surface equipment, flow control, pipeline system and equipment, control systems, pump and compressors, safety equipment, well control systems, communication equipment and services, power generation, pressure vessels and services in drilling, oil and gas exploration, land transportation, training and consultancy.

Deputy Chief Executive Officer, Wan Latiff Wan Musa reminded both Malaysian companies and foreign buyers to play their role in following up on the business negotiations, as it may take between two or three years to conclude a transaction.

MATRADE will continue to support and encourage Malaysian oil & gas companies to explore and expand their business activities in the international arena.

The agency’s next activity will be participation in the Offshore Technology Conference (OTC) in Houston, from April 30-May 3 and the event which provide a good platform for Malaysian companies to exchange ideas, discuss on potential collaboration and promote their branding in the United States.

This will be followed by an INSP in conjunction with the 4th Malaysian Oil & Gas Services Exhibition & Conference, Export Acceleration Mission to Baku (Azerbaijan) and Almaty (Kazakhstan) alongside participation in the Abu Dhabi International Petroleum Exhibition and Conference.

Malaysia’s exports of O&G products in 2017 were valued at RM142.34 billion. The key exports were petroleum products, liquefied natural gas and crude petroleum.

**MALAYSIA TASK FORCE**

The Malaysia Task Force is made up of stakeholders in Malaysia, such as the national oil company, PETRONAS, the International Conference and Exhibition Professionals (iCEP), and government agencies including the Kuala Lumpur City Hall (DBKL), the Malaysia External Trade Development Corporation (MATRADE), the Malaysian Investment Development Authority (MIDA), the Malaysian Oil & Gas Services Council (MOGSC), and the Malaysia Petroleum Resource Corporation (MPRC).

The objective of the Task Force is to manage Malaysian interests, in order to ensure the event meets the needs of the local industry, and promote Malaysia as a regional hub for oil and gas services by arranging ancillary programmes to complement OTC Asia.

**CHAIR**

Muhammad Zamri Jusoh
PETRONAS

**VICE CHAIR**

Rao Abdullah
Halliburton
OTC ASIA 2018 IN PHOTOS
A Closing Session for OTC Asia 2018 took place on the afternoon of Friday, 23 March. Datuk Mohd Anuar Taib, Executive Vice President and Chief Executive Officer, Upstream of PETRONAS extended his appreciation to all the committee members, speakers, delegates, exhibitors, students and volunteers - as well as sponsors and supporters - for making the third edition of OTC Asia a resounding success.

The session also included a symbolic passing of the baton from Tan Sri Wan Zulkiflee Wan Ariffin, OTC Asia Advisory Committee Chair, and President and Group Chief Executive Officer of PETRONAS to Wafik Beydoun, Chairman, OTC Board of Directors to signify the return of OTC to Houston.
SAVE THE DATE

OFFSHORE TECHNOLOGY CONFERENCE ASIA

24 - 27 March 2020
Kuala Lumpur, Malaysia