Tillerson hails ‘remarkable’ people of oil and gas industry

US SECRETARY of State Rex Tillerson said at the opening of the 22nd World Petroleum Congress in Istanbul on Sunday that oil and gas players will continue to “make the massive investments, they’ll take the risks and they’ll persevere” to keep the world supplied with the energy it needs.

Saudi Aramco keeps output at record levels

Brazil turns to face future with ambitious plans

Turkish investment
Moves to reduce energy imports dependency.

US permit review
Interior Secretary aims to ease backlog for drilling applications.

Upstream survey
Woodside, KBR and Barra Energia executives give their industry views.

Seismic ripples
Geoscientists Without Borders spread oil and gas expertise through humanitarian work.

Petrobras sell-off
Brazilian giant offers Campos basin field for sale.

Extend your maintenance interval with 50%

The world’s only NORSOK compliant surface tolerant paint system for brush and roller
Dear friends and industry colleagues,

It seems only yesterday when we left Moscow and the 21st WPC in 2014. Here we are three years later and much has changed.

We are here in Istanbul for the largest gathering of senior oil and gas representatives from around the world for the 22nd World Petroleum Congress. Our Turkish Committee and the WPC Congress Programme Committee have prepared another world-class Congress for you.

The theme 'Bridges to our Energy Future' is perfect for the challenges we are seeing in the petroleum industry. Building bridges between the oil and gas industry, its customers and all stakeholders is something we all must do.

As part of the expected 5000 participants, we look forward to welcoming more than 600 speakers to the Congress, including heads of state, ministers and chief executives of national and international oil companies, the leaders of international organisations and top-level experts from around the globe.

During over 100 sessions they will share their knowledge and expectations for the future of the oil and gas industry with you. The Plenaries, Chief Executive Panels, Strategic Sessions, Forums and more will address a wide spectrum of issues across the sector, such as upstream challenges in a low oil price environment, the increasing importance of petrochemicals in downstream, the rise of natural gas, climate change strategies, engaging and retaining talent in our industry and how to manage all these issues through better governance.

The Congress will be accompanied by one of the largest strategic oil and gas exhibitions, the World Petroleum Exhibition, featuring our 65 member countries. It will also include special stands showcasing the industry’s involvement in social responsibility with young leaders to the 20,000 visitors we anticipate.

This is where you will also find the Poster Plaza with up to 200 presentations from 20 different technical Forums on E&P, petrochemicals and refining, natural gas and the sustainable management of the industry.

With beautiful Istanbul as the background, the social events, including the Opening Ceremony and Turkish Night will be another highlight at the “Olympics of the Oil and Gas Industry”. We are grateful to hold the Congress under the auspices of the Presidency of the Republic of Turkey and are reassured by their dedication to hosting a safe and secure event for all.

I am delighted to welcome you to Istanbul for the World Petroleum Congress and hope that your visit, your networking and the reacquaintance with old friends will give you lasting memories.

Jozsef Toth, WPC President
Setting out the goals and ideas for WPC

SINCE our last congress in Moscow the global economy has slowly recovered, together with the oil price and all projections indicate a robust growth in energy demand, with oil and natural gas as the key components of the world’s energy matrix up to 2050.

The United Nations has recently increased its global population projections from 9 billion to 10 billion people for 2050 and it could get higher. All these people need clean energy and that is our primary aim. Our industry will be prepared to meet the challenges.

We are working with the OPEC Fund for International Development (OFID) to focus on the issue of energy poverty and highlight all the good things that the industry is doing around the world to combat this. During the Congress, we will be launching our online Energy Access Platform, which sets out these goals and there will also be special sessions demonstrating the work in this area.

This joint industry initiative will provide a platform to promote initiatives of the oil and gas sector to facilitate access to safe, affordable and reliable energy wherever it is needed. By sharing practical knowledge, projects and solutions with each other, we can leverage the expertise and capabilities of our industry as a key part of the energy sector to enhance the lives of the billions of people without access to modern energy options. With energy access now strongly embedded in the Sustainable Development Goals as SDG 7, energy poverty alleviation becomes a global priority. As we are all aware, this is particularly important in developing countries, as access to affordable modern energy is essential to developing local economies and helping them rise out of poverty.

The IEA will be launching their World Investment report this week so we will see the scale of the challenges ahead. We will need the allocation of huge amounts of capital, innovative thinking and new technologies. As an industry we will ensure, as we have over the past 150 years, the sustainable, reliable and affordable delivery of the energy resources necessary for economic development.

One main outcome for the Congress is to encourage everyone involved in the petroleum industry to share their experience, ideas and best practice, to promote dialogue between the key stakeholders and to identify the long-term goals that our industry must pursue to ensure the delivery of our mission — the sustainable exploration, production, and consumption of oil and natural gas and their products for the benefit of all.

Pierce Riemer,
WPC Director General

WPC YP Olympics

The World Petroleum Congress is widely recognised as the Oilympics of the oil and gas industry. Last Saturday, from 7am to 4pm, the Olympics bridged the generations and brought together the young generation and industry experts in inspiring oil games.

Volunteers from all around the world, representing the diversity of our industry, participated in an orienteering race and explored the city of Istanbul. The participants developed their industrial knowledge, built an international network and met with oil and gas leaders.

The WPC Young Professionals Committee will award today the best team of participants, recognising their passion for our industry.

Come and join us at the YP Lounge to congratulate the winners and meet with the participants, and why not broaden your knowledge while discovering the questions and answers of this new edition of the Oilympics.

Stephane Rousselet
WPC YP Committee Vice Chair
## Monday 10 July

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 – 09:30</td>
<td><strong>Plenary 1: Building Bridges to our Energy Future</strong></td>
<td>Plenary Hall</td>
</tr>
<tr>
<td></td>
<td>Session Chair: Besim Sisman, CEO, TP, Turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Keynote Speakers: H.E. Dr. Mohammed Bin Saleh Al-Sada, Minister of Energy &amp; Industry and Chairman of the Board, Qatar Petroleum, Qatar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rovnag Abdullayev, CEO, SOCAR, Azerbaijan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wang Yilin, Chairman, CNPC, China</td>
<td></td>
</tr>
<tr>
<td>09:30 – 10:30</td>
<td><strong>Plenary 2: Shaping the Future of Energy</strong></td>
<td>Plenary Hall</td>
</tr>
<tr>
<td></td>
<td>Session Chair: Alexander Novak, Minister of Energy, Russia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Keynote Speakers: Darren W Woods, Chairman &amp; CEO, ExxonMobil, USA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rovnag Abdullayev, CEO, SOCAR, Azerbaijan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wang Yilin, Chairman, CNPC, China</td>
<td></td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>11:00 – 13:00</td>
<td><strong>PRESIDENTIAL CEREMONY</strong></td>
<td></td>
</tr>
<tr>
<td>13:00 – 14:30</td>
<td>Lunch Buffet</td>
<td></td>
</tr>
<tr>
<td>13:00 – 13:30</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>13:30 – 15:00</td>
<td><strong>CEO Panels</strong></td>
<td>Hall 5</td>
</tr>
<tr>
<td></td>
<td>CEO 1 The industry's response to the Paris Declaration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chair: Dev Sanyal, Chief Executive, Alternative Energy and Executive VP Regions, BP, UK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Speakers: Bjorn Otto Sverdrup, Senior Vice President Sustainability, Statoil, Norway</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marc Hauchecorne, SVP Strategy and Business Development, Engie E&amp;P, France</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decio Oddone, General Director, ANP, Brazil</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alparslan Bayraktar, Deputy Undersecretary, Ministry of Energy &amp; Natural Resources, Turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CEO 2 How to be competitive in a cyclical environment</td>
<td>Hall 6</td>
</tr>
<tr>
<td></td>
<td>Chair: Mark McCollum, President and CEO, Weatherford, USA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Speakers: Steven M Greenlee, President, ExxonMobil Exploration Company, USA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amin H. Nasser, President and CEO, Saudi Aramco, Saudi Arabia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ben van Beurden, CEO, Shell, Netherlands</td>
<td></td>
</tr>
<tr>
<td>13:30 – 15:00</td>
<td><strong>Technical Programme</strong></td>
<td>Hall 1</td>
</tr>
<tr>
<td></td>
<td>Block 1: F1: Exploration challenges – how to reduce risk?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Block 2: F7: Competitive refining technologies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Block 3: F12: Opening up new uses and applications for gas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Block 4: F16: Knowledge management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Block 3: RT9: Role of gas in the energy mix in a volatile World</td>
<td></td>
</tr>
<tr>
<td>14:30 – 16:30</td>
<td><strong>WPC Excellence Awards Technological Innovation</strong></td>
<td>Interactive Poster Plaza</td>
</tr>
<tr>
<td>14:30 – 16:30</td>
<td><strong>WPC Excellence Awards SR Presentations</strong></td>
<td></td>
</tr>
<tr>
<td>15:00 – 15:15</td>
<td>Coffee Break</td>
<td>Bridge Auditorium</td>
</tr>
<tr>
<td>15:15-16:15</td>
<td><strong>CEO Panels</strong></td>
<td>Hall 7</td>
</tr>
<tr>
<td></td>
<td>CEO 3 Diplomacy and dispute resolution in the oil and gas industry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chair: Sir Robert Fulton, Global Leadership Foundation, UK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Speakers: F W de Klerk, former President of South Africa and Nobel Peace Prize Laureate 1993</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lakhdar Brahimi, former Foreign Minister, Algeria and UN Special Adviser to the Secretary-General 2004–05</td>
<td></td>
</tr>
<tr>
<td>15:15 – 16:15</td>
<td><strong>Expert Workshops</strong></td>
<td>Hall 5</td>
</tr>
<tr>
<td></td>
<td>EW01: Carbon Emission Management: Upstream and Downstream Best Practices &amp; Opportunities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EW02: Masterclass in Strategies &amp; Techniques for Raising Capital for the Global Oil &amp; Gas Industry</td>
<td></td>
</tr>
<tr>
<td>15:15 – 16:15</td>
<td><strong>Technical Programme</strong></td>
<td>Hall 1</td>
</tr>
<tr>
<td></td>
<td>Block 1: RT1: Exploration and production cost efficiency – building resilience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Block 2: RT5: Delivering successful downstream projects</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Block 3: RT8: Role of LNG in security of global energy supply</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Block 4: RT11: Geopolitics and global trends</td>
<td></td>
</tr>
<tr>
<td>16:15 – 17:45</td>
<td><strong>Strategic Sessions</strong></td>
<td>Hall 5</td>
</tr>
<tr>
<td></td>
<td>ST 1 Risk management, resilience &amp; adaptation in a volatile world</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chair: Maria Moraus-Hanssen, CEO, E&amp;P, ENGIE, France</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ahmed Kenawi, Senior Vice President, Middle East and North Africa, Halliburton, USA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Orlando Velandia, CEO, ANH, Colombia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emeliana Rice-Oxley, Vice President Exploration, Upstream, Petronas, Malaysia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Abdulmunim Saif Al Kindy, Director, Upstream Directorate, ADNOC, UAE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Raad Alkaidi, Senior Director, Boston Consulting Group’s Center for Energy Impact</td>
<td></td>
</tr>
<tr>
<td>16:15 – 17:45</td>
<td><strong>Technical Programme</strong></td>
<td>Hall 1</td>
</tr>
<tr>
<td></td>
<td>Block 1: F2: Unconventional hydrocarbon resource development – North American phenomena or global opportunity?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Block 2: F8: Integration of the refining and petrochemical industry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Block 4: F17: Cyber security and new technology risks</td>
<td></td>
</tr>
</tbody>
</table>
OPENING CEREMONY

Tillerson talks up industry in personal speech at WPC opening

US Secretary of State Rex Tillerson said at the opening of the 22nd World Petroleum Congress in Istanbul on Sunday that oil and gas players will continue to “make the massive investments, they’ll take the risks and they’ll persevere” to keep the world supplied with the energy it needs.

A moved Tillerson was in Turkey to accept the prestigious Dewhurst Award at WPC on Sunday night. The former ExxonMobil chief, who spent more than 41 years in the industry, credited his professional success to the people of the industry, who he said worked with great risk and little public notice to deliver the energy crucial to economic growth and poverty alleviation.

Fundamental ingredients are required to keep investors active, he said, citing "a strong rule of law, international order, a respect for contract sanctity, and a level of integrity between partners and counterparts".

Tillerson added that the industry “must continue to invest in human talent” moving forward. “What I miss most, I miss all of you. I miss you as colleagues, I miss you as partners, I miss you as competitors, I miss the healthy debates, the collaboration, the breakthroughs that were achieved.”

Tillerson, who was notified of his selection for the award last year, joked that he expected to make the visit to Istanbul as a leisurely and relaxing trip after his expected retirement from the US oil giant. But, he said wryly, “I will be there, prepared my way on my own schedule, so to speak”. The minister further used his remarks to pay heartfelt gratitude by being present at the event.

Tillerson also took a moment to remember those killed or injured last July, when a coup was attempted against the Turkish government. “Nearly a year ago the Turkish people, brave men and women, stood up against coup plotters and defended their democracy,” he said.

With the next WPC taking place in Houston in 2020, Tillerson assured listeners he would show his gratitude by being present at that event. “We look forward to hosting you as well.”

He said wryly: “I will be there, in some capacity, one way or the other.”

Aims: Turkish Minister of Energy & Natural Resources Berat Albayrak

Turkey ploughs in cash

UPSTREAM INVESTMENT

Country aims to cut energy import dependency

TURKEY is investing in the upstream sector in an attempt to reduce its energy import dependency, while at the same time ploughing resources into large midstream projects to ensure security of supply in the widening region, writes Erin O’Cinneide.

Speaking at the opening of the 22nd World Petroleum Congress (WPC) in Istanbul on Sunday evening, Turkey’s Minister of Energy & Natural Resources Berat Albayrak said: “Oil and gas alone will constitute half the 50% of global energy supplies in the near future... And yet we are far behind the level of investment in this sector to ensure global security of supply.”

To meet strong domestic demand and in an effort to secure “predictable market conditions”, the Ankara administration is looking to take a more direct stake in upstream investments.

“We have begun focusing on oil and gas exploration studies in the Mediterranean and Black Sea regions,” Albayrak said.

“We have intense studies already under way to conduct seismic research in the Mediterranean basin, and we intend to do the same for the Black Sea as well. These studies will (be followed by) further exploration and drilling activities and will push forward the potential in both seas as well as the security contribution of supply in Turkey and our region.”

Albayrak name-checked the Tanap and Turkstream mid-stream projects as significant investments from Turkey in wider regional energy security. “Our energy diplomacy, however, is driven neither by pure commercial interests nor by security of supply alone. We emphasise the role of energy as a peacemaker and the supporter of prosperity, rather than as causing conflicts, as we have seen in the past.

“We will continue to support regional infrastructure projects as long as they contribute to regional peace and stability, multilateral welfare and security of supply,” the minister said.
SAUDI Aramco has managed to sustain record crude oil and gas production despite low oil prices in the past year, the company said in its 2016 annual review.

Aramco Chairman Khalid al-Falih, who is also Saudi oil minister, said 2016 will go down as a turning point for both Saudi Aramco and the global oil and gas industry.

"Saudi Aramco leveraged its capabilities, talent, innovation, and fiscal discipline to ensure resilience and realise landmark achievements, including record high rates of crude oil production, raw gas processing, and sales gas production, along with stronger integration within the entire petroleum value chain," he said.

The achievements came against the backdrop of persistently low oil prices and a weak global economy.

Aramco completed its second expansion of the Shaybah crude oil facility and commissioned the giant Wasit gas plant, increasing its overall crude oil production and gas processing capabilities.

"These mega-projects, and others currently under construction, will help meet growing domestic demand for energy, substantially increase production of gas as an efficient, cleaner energy for utilities and industry, and supply feedstocks to the manufacturing base," Falih said.

Aramco is determined to expand its global presence once a minority stake in the company is offered to investors as part of Saudi Arabia’s economic reforms.

"The Vision, which aims to diversify the national economy beyond oil and build a thriving private sector, will enable Saudi Aramco to expand its global presence. The company will enlarge its supply chain and improve business reliability through a local network of suppliers and manufacturers while increasing the competitiveness of Saudi Arabia’s energy sector—and in the process, generate sustainable growth and quality jobs for Saudis," Falih added.

Chief executive Amin Nasser said Aramco’s vision is to become the world’s leading integrated energy company.

He said the oil market remained challenging in 2016, causing project deferments or cancellations across the industry.

“We responded to this challenge by intensifying our focus on excellence and on lowering costs, addressing every aspect of our business. Since its earliest beginnings, Saudi Aramco has sought to be the world’s most reliable producer of petroleum energy. “Our long-term approach to managing the Kingdom’s hydrocarbon resources has consistently delivered superior performance and growth.”
US INTERIOR Secretary Ryan Zinke is pushing for reforms he says could ease the backlog of nearly 3000 pending onshore drilling permits.

Zinke signed a secretarial order last week directing the US Bureau of Land Management (BLM), a division of the Interior Department, to take an in-depth look at the backlogs and delays and “identify areas where improvements can be made in the permitting process to ensure the safe and timely exploration and development of our nation’s federal energy resources”.

The BLM had 2802 applications for a permit to drill (APD) pending as of 31 January, according to the Interior Department. In addition, the average time to process an APD in the fiscal year 2016 was 257 days, although a review is required to be carried out within 30 days.

“Oil and gas production on federal lands is an important source of revenue and job growth in rural America, but it is hard to envision increased investment on federal lands when a federal permit can take the better part of a year or more in some cases,” Zinke said.

Zinke also called on the BLM to hold quarterly lease sales, although the bureau is already required to do this under the Federal Onshore Oil & Gas Leasing Reform Act of 1987.

A spokesman for the Department of Interior did not immediately respond to a request for comment on this point.

Making the permitting process easier has been a priority of the US oil and gas industry for years and it often blamed the previous Obama administration for the delays. But one administration official defended the bureau last year, saying it had approved far more permits than operators were using.

“In the last year, the BLM approved 4228 drilling permits, yet industry only drilled 1620 wells,” then-BLM director Neil Kornze told lawmakers in March of last year.

“As result of the agency’s robust permitting effort in recent years, there are currently over 500 approved drilling permits in industry’s hands that are available for use today with no additional action or review from the Bureau.

“In other words, at current activity levels, industry has more than four years’ worth of drilling permits approved and ready to go.”

However, industry groups cheered Zinke’s move to streamline the permitting process.

“A key component of a successful policy is repairing the federal permitting process so that companies have the confidence to invest and see their projects move forward,” American Petroleum Institute Upstream & Industry Operations Group director Erik Milito said.
**INTERVIEW**

On the eve of WPC 2017, **Upstream surveyed** many of the leading figures in the international oil & gas industry on **topical issues shaping the sector**. **Woodside chief executive Peter Coleman** responds

As the industry adjusted to the extent that companies can operate profitably in the current lower price environment for oil and gas? If not, what more needs to be done and by whom?

COLEMAN: The industry has responded to lower prices by reducing costs and reaching out to new customers and markets. We have had two to three years of greatly reduced investment in the industry, which will create a gap in the supply pipeline that will become a factor in the next few years. We are now positioning for the rebalancing we expect in the years ahead.

UPSTREAM: What impact will climate concerns have on the operations of oil and gas companies over the next five years and beyond? Does the US decision to pull out of the Paris accords actually change that outlook?

COLEMAN: Heightened climate concerns reinforce the need for companies to be aware of their emissions and make efforts to reduce them. We need to acknowledge we are competing with renewables and stake our claim for gas to play a major and ongoing role in the energy mix. But we should also be exploring opportunities for complementarities with renewables, with gas poised to play an increasingly important role, offering reliability that renewables cannot.

Regardless of the US’ position on the Paris Agreement, there has been a major shift in the energy mix in the US as cheap gas has increasingly displaced coal, allowing reindustrialisation at the same time as emissions reductions.

UPSTREAM: Is gas becoming more attractive than oil for companies and, if so, what implications does that have for the business?

COLEMAN: Gas has always made up the biggest share of Woodside’s portfolio but we still see near-term opportunities for oil developments, like the one we are part of in Senegal. The big opportunities for gas are in power and, increasingly, transportation. The reason we believe there will be an ongoing need for oil is that it is particularly useful in transport and petrochemicals, which developing countries want and need.

UPSTREAM: Can large-scale, multi-billion-dollar conventional oil and gas developments, including in deep waters, compete for capital against short-cycle shale and unconventional developments in the US and beyond?

COLEMAN: Both conventional and unconventional developments are shifting to models that offer a faster time to market and earlier revenue with a lower quantum of capital at risk. This is partly in response to competition from other low-cost suppliers but also reflects investors’ expectations of quicker returns. However, the market will need some larger scale developments to deliver the volumes required in the next decade.

UPSTREAM: What financing challenges does the industry face, and will addressing such challenges involve more mergers and acquisitions?

COLEMAN: The move to a more open and fluid LNG market is a welcome long-term development but presents a transitional challenge — how to justify the capital-intensive construction of new supply that will be needed. As always, industry needs solid relationships with credible customers before taking a final investment decision on new projects, which involves convincing them we have good low-cost developments that will meet their needs.

UPSTREAM: Where do you expect the oil price to be by the end of this year? And by 2020?

COLEMAN: We expect the oil price to be range-bound between US$45 and $60 over the next year. History has shown that forecasting much beyond that is a courageous endeavour. For the purposes of budgeting, it pays to take a conservative approach. A number of factors will influence pricing by 2020, including demand growth, field decline and the cost of supply.

**Gas has always made up the biggest share of Woodside’s portfolio, but we still see near-term opportunities for oil developments.**
WPC Social Responsibility Programme 10th July, 2017

Special - Today in the SR Global Village
Opening of Social Responsibility Global Village Art Gallery
Come and see what young people made from old material.
Opening starts at 14.00. Gallery is placed across the Bridge Auditorium

SR Excellence Awards: Presentation of finalists today in the Bridge Auditorium between 15.00 to 16.30

The WPC Excellence Awards (WPCEA) recognises oil and gas companies with outstanding initiatives on Social Responsibility. More than 120 nominated projects were reviewed by the independent judging panel in this cycle’s awards nominations. To recognise the efforts of both national oil companies and large organisations, as well as small to medium-sized organisations, there are two winners.

Finalists from small to medium-sized companies:
• OMV: Women’s Empowerment Programme in Pakistan (Making history and changing the future)
• Salym Petroleum Development: Go Local: programme to enhance local content, develop local resources and increase local capacity
• Woodside Energy Ltd: Woodside Science & Technology Collaboration-community education and outreach

Finalists from large companies & national oil companies:
• BP: Enterprise Development Programme
• HPCL: Empowering women from poorer households-improving access to efficient sources of energy: HPCL Social Initiative
• Indian Oil Corporation Ltd: Smokeless Village Initiative and ‘Pradhan Mantri Ujjwala Yojana’ Implementation
• Saudi Aramco: Saudi Aramco’s Initiatives Support Productive Families

Free trial subscription

A wise investment
Give yourself an advantage. Give yourself Upstream.

What does a subscription to Upstream give you? It ties you in to the industry networks of 30 experienced reporters in important energy hubs around the globe. It gives you exclusive and comprehensive oil & gas news, every week in Upstream’s newspaper and around the clock at UpstreamOnline.com. You get unlimited access to our archive and the Upstream App, and you get the sleek bimonthly magazine Upstream Technology. Finally, you get peace of mind, knowing that you have tapped into the best source of industry news in the business.

Make your investment today. Just go to www.upstreamonline.com/subscribe
In the picture...

Scenes from the opening day at the show

Photos: TOLGA SEZGIN
Special Thanks to the 22ND WPC MEDIA & EVENT PARTNERS

MEDIA & EVENT PARTNERS

Special Thanks to the 22ND WPC SPONSORS & OFFICIAL PARTNERS

HOST COUNTRY SPONSOR

TURKISH PETROLEUM

CO-HOST SPONSOR

SOCAR

PLATINUM SPONSORS

bp  Chevron  CNPC  ExxonMobil  PDVSA  Qatar Petroleum  Total

GOLD SPONSORS

SINOPEC

OFFICIAL PARTNERS

OFFICIAL COMMUNICATION PARTNER

OFFICIAL INTERNATIONAL BUSINESS NEWSPAPER

OFFICIAL NATIONAL MEDIA PARTNER

OFFICIAL HOST BROADCASTER

OFFICIAL DAILY NEWSPAPER

SILVER SPONSORS

Baker Hughes  Halliburton  Repsol  Schlumberger  InterShah
On the eve of WPC 2017, Upstream surveyed many of the leading figures in the international oil & gas industry on topical issues shaping the sector. Sounding in here is Graham Hill, KBR executive vice president, global business development & strategy.

**HILL:** Gas is the “future fuel” of the world, according to both the market makers (oil & gas companies) and the market commentators. KBR is a gas-facing E&C company, so we feel good about where we are placed.

Low and abundant gas means that the LNG export and downstream/derivatives businesses will prosper in places where there are unique combinations of advantaged feedstocks, support infrastructure, government incentives and support for business, and ready access to global markets.

Such territories will be the US, based on low gas prices from shale oil/gas, Russia, and the Middle East — based on low liquid feedstock prices.

Expensive oil will remain in the ground (somewhat a repeat of what we have witnessed in the coal industry), which includes arctic, remote, deep, hostile, and difficult flow properties. Prices will remain lower for longer, and the current reality is the new norm. Customers and contractors will have to adapt to this new normal.

UPSTREAM: Can large-scale, multi-billion-dollar conventional oil and gas developments, including in deep waters, compete for capital against short-cycle shale and unconventional developments in the US and beyond?

**HILL:** The short answer is no. The longer answer is they will have to push all the constraints in order to become viable — including technology, contracting plans, delivery methodologies, supply sourcing, etc.

These opportunities will include niche areas where the combination of infrastructure, government policy, access to skills, sensible government business environment, and legal and fiscal policies create an environment for such projects to thrive. We have seen recently many offshore oil and gas basins fade into the margins due to some combination of circumstances embraced by these criteria above.

UPSTREAM: Where do you expect the oil price to be by the end of this year? And by 2020?

**HILL:** We believe that oil will continue to hover between $45 and $65 per barrel for the foreseeable future. Shale oil in the US is acting as a governor on oil prices for the time being. With abundant feedstocks in the US, access to the best technology, unique pipeline and fiscal infrastructure, land ownership rules, and government support, the American shale industry is set to dominate world energy prices for the foreseeable future. Shale oil in the Middle East, there is no scenario where we have learnt that shows demand outstripping supply any time soon.

UPSTREAM: What financing challenges does the industry face, and will addressing such challenges involve more mergers and acquisitions?

**HILL:** Inevitably, in a falling market, those with cash will seek to consolidate their interests and positions. This will be on both the owner and contractor side. Small owner organisations will simply run out of cash, and leave themselves exposed to asset sell-off or face acquisition.

Those liable for acquisition will have advantaged assets characterised by good infrastructure, sensible pro-business government policy, access to skilled labour, sensible environmental regulations, and sound legal and fiscal policies. Difficult and expensive oil will not be acquired. We are seeing many moves across the contract world where companies are consolidating due to a combination of factors — moves to infrastructure, downstream, and distressed balance sheets. There will likely be more to come, especially those with balance sheet issues.

UPSTREAM: What implications does that have for the US, global business development & strategy?
Mentoring youth for the energy industry

AT THE 22nd World Petroleum Council Young Professionals Lounge Bridge Auditorium you will witness the closing of the generation gap between industry leaders and today’s young professionals. Through its Mentoring Programme the WPC creates a global network of industry experts with young professionals and students. They share ideas and experiences through periodic calls.

The WPC Mentoring Programme will be coming to you live at the 22nd WPC for its face-to-face meeting between mentors and mentees. The current WPC Mentoring Programme includes participation from 14 mentors representing 10 countries who guide 56 mentees from 21 countries.

The Mentoring Programme Lead is Varsha More, the YP Representative for the Indian National Committee, along with Anna Illarionova, the YP Representative from Russia, and they will present the highlights of the WPC Mentoring Programme for the 2015-17 cycle on 12 July in the YP & SR Auditorium located on the Bridge within the 22nd WPC Exhibition. Details of achievements, challenges and experiences gained during the Mentoring Programme will be shared with live interactive participation from current mentees present at the Congress.

The WPC is open to applications for its 3rd Mentoring Programme (2017-2020). This is a programme that offers you the chance for further development and I see it as an opportunity to expand one’s horizons. To learn more about how to connect directly with the WPC join us at our open session in the Bridge Auditorium on 12 July from 15:00 to 16:30. I have found my involvement in this WPC initiative has enhanced significantly my skills and I would encourage other young professionals to be part of these WPC projects, which give you a unique chance to develop global networks and get recognised for your participation.

By Varsha More, Mentoring Programme Lead, YP Member Indian National Committee
Imagine if you could use earth sciences to better predict the timing and ferocity of an earthquake. What if geoscience could be applied to solve water supply problems in places like Kenya or account for better fisheries mapping for habitat sustainability in Tanzania?

It was questions like these that brought about the Geoscientists Without Borders initiative—a donation-driven (both corporate and individual) organisation steered by the Society of Exploration Geophysicists (SEG) offering grant money for global projects that could both receive benefit and find solutions through geoscience.

The programme hosts two application periods per year in support of projects around the world. While some of the most recent ones, selected at a committee meeting in June, have yet to execute grant agreements, a pair from the previous period—earthquake preparedness in Haiti and a water project related to sustainable agricultural methods in Laos—are two of the new projects under the programme.

We’re not just sending somebody in to do research, produce a lot of data and some interesting results and then nothing happens with it,” explains Linda Ford, who runs the programme for SEG. “We want to make sure that the extra steps are made to ensure something is done with it. A great example of this is the project done in Kenya.

It was a short-term brown water management project. I think they were on the ground for two weeks. They did some data analysis and interpretation... made some recommendations for two to three months afterwards. Work was done on where to drill wells for a refugee camp.

“Prior to the geophysical survey work, the long-term success rate for the drilling was one in four. Post project, they drilled three wells that were successful right off the bat... within six months of the survey.

“They trained locals to carry on the work, if new wells are needed elsewhere. It’s an effort to make sure that these are truly resulting in humanitarian impact.”

Support Geoscientists Without Borders is the brainchild of chief geophysicist and Schlumberger fellow Craig Beasley.

Not long after Beasley took on the role of SEG president in 2004, a massive tsunami triggered by an underwater earthquake near Sumatra would devastate the area, killing more than 250,000 people.

Beasley, familiar with the Engineers Without Borders initiative, looked at his own discipline and started thinking what roles geoscience could take to actively support global humanitarian efforts.

“Some get turned away because they’re just not solid projects. We are continuing to work to fill our endowments for the future. Getting the word out has been a challenge... of time more than anything else.”

Geoscientists have the tools needed to effect positive change in communities facing environmental hardship and natural hazards like severe water shortages and threats of earthquakes and tsunamis.

Geoscientists Without Borders put geoscientists to work around the world, where they apply their specialised knowledge and technical skills to the mitigation of natural hazards in some of the world’s neediest communities. However, when the individual projects are done, it is important to have the pieces in place to carry on the work.

“One of the requirements of the programme is that the project lead has to include students in some way and we prefer they include students that are local to the actual project,” says Ford.

“We’re doing the best that we can to build up geoscience programmes at universities around the world as well as putting some pieces in place to make the project more sustainable. If someone local is involved in the project, then it can help continue to the work, or planning based on the work done beyond the scope of the project itself.”
Rig count positivity continues

US ENERGY companies added oil rigs last week for the 24th time out of the last 25 as the year-long drilling recovery resumed after a modest decline was reported in the previous report by energy services company Baker Hughes, writes Caroline Evans.

Drillers added seven oil units in the week to 7 July, bringing the total oil rig count to 768, the most since April 2015, according to the Baker Hughes report released Friday.

That tally is more than double the 331 active oil rigs that were reported in the same week a year ago after a lengthy period in which the pace of gains has slowed but not been halted by the softness of crude oil prices.

The number of rigs chasing natural gas in the US also climbed by five to 189, a total that is 101 higher than in the same period a year ago.

Alaska and Oklahoma saw the most growth, adding four rigs each for respective totals of eight and 136.

In Oklahoma, most of its growth was concentrated in the Woodford play. The Cana Woodford added four rigs while the Arkoma Woodford added one. However, the state’s gains were offset by a one-rig decline in the Mississippi Lime play.

The Granite Wash, which stretches across the Texas-Oklahoma border, also added two rigs.

Meanwhile, the prolific Permian basin, which Texas shares with New Mexico, dropped a rig. The decline was mirrored in New Mexico, which also shed one rig for a total of 59.

The Haynesville shale, which Texas shares with Louisiana, added two rigs.

Texas added two rigs overall for a total of 463, while Louisiana also saw a two-rig increase for a total of 59.

Utah dropped a rig for a total of seven.

The offshore rig count stayed flat at 21.

Canada dropped 14 rigs for 175.

BRAZILIAN oil giant Petrobras has unveiled two new divestment opportunities for upstream and downstream assets, as part of the company’s ambitious strategy to raise up to $21 billion by the end of 2018.

The potential transaction represents an opportunity to develop and monetise a heavy oil discovery in shallow waters,” said Petrobras.

According to the state-controlled company, the Maastrichtian reservoir in Maromba is considered economically attractive and fully appraised by nine wells, with first oil feasible for 2019 based on a development scenario using a floating production, storage and offloading vessel.

Four identified prospects — Lobo, Castor, Dingo and Chinchila — with multiple targets in Eocene, Maastrichtian, Alban and Aptian horizons are located across the concession, with sizeable exploration upside.

In order to participate in the bidding for Maromba, any invited player must be an offshore operator in Brazil and classified as a company able to perform activities in shallow waters.

Invited companies will have until 21 July to express interest to participate in the process, and until 7 August to sign a non-disclosure agreement.

In the past, Petrobras announced plans to deploy an FPSO at Maromba — first in 2015 and then in 2019 — but both initiatives were scrapped once the company realised it made more sense to channel resources to the development of the Santos basin pre-salt province.

Separately, Petrobras is looking to sell its fuel distribution business in Paraguay, including 197 service stations, representing a market share of 18%, and 113 convenience stores spread across the country.

The company is also aiming to sell its entire equity stakes in its gas and logistics businesses in Paraguay. Itaú BBA bank will coordinate the sale.

The Maromba and Paraguay divestments follow plans for the sale of the Arualo and Jurua natural gas fields, which are at a more advanced stage with bids due to be submitted soon.
INTERVIEW

On the eve of WPC 2017, Upstream surveyed many of the leading figures in the international oil & gas industry on topical issues shaping the sector. Barra Energia chief executive Renato Bertani gives his view.

Has the industry adjusted to the extent that companies can operate profitably in the current lower price environment for oil and gas? If not, what more needs to be done and by whom?

BERTANI: Yes, the oil industry went through big adjustments and this process is still ongoing. Of course not all plays continue to be viable in the current price environment, but there continues to be plenty of investment opportunities, in both conventional and non-conventional plays, that are profitable in the current price environment.

Looking into the next decades it is obvious that, in order to continue to remain sustainable, profitable and to be an agent for economic and social development, the industry will need to continue removing onerous burdens that come in various ways (inefficiencies, lack of capital discipline, project delays, disproportionally onerous tax and regulatory burdens, etc). This will require close co-operation between oil companies, service providers and governments.

UPSTREAM: What impact will climate concerns have on the operations of oil and gas companies over the next five years and beyond? Does the US decision to pull out of the Paris accord actually change that outlook?

BERTANI: The oil industry recognised long ago that the world’s energy matrix will change over the next decades, moving towards low carbon and renewable sources of energy.

This has been and will continue to be driven by environmental concerns and, most importantly, by a combination of markets and technology, which are making renewable energy more affordable and available to consumers.

This trend will continue regardless of the US decision to withdraw from the巴黎 Agreement, dictated by economics and consumer choice. Having said that, oil and natural gas will continue as important sources of energy and feedstock for products for several decades.

Therefore, while companies prepare for an orderly transition, the business model of the industry will continue to be centred on finding, developing and delivering oil and natural gas while delivering value to shareholders.

UPSTREAM: Is gas becoming more attractive than oil for companies and, if so, what implications does that have for the business?

BERTANI: Yes, natural gas is becoming increasingly important. Not only because of its lower carbon footprint but because it makes economic sense as an abundant, reliable and low-cost source of energy.

UPSTREAM: Can large-scale, multi-billion-dollar conventional oil and gas developments, including in deep waters, compete for capital against short-cycle shale and unconventional developments in the US and beyond?

BERTANI: The development of non-conventional resources has shown resilience because the pace of investments and completion of new wells may be quickly adjusted to price cycles, creating an opportunity to maximise returns out of market volatility.

However, in the medium and long term, it is inevitable that the huge investment reduction, particularly in offshore developments, will have an impact on the world supply.

As the current reservoirs deplete I have no doubt that there will be plenty of opportunities for offshore investments to come back. There will be plenty of capital available for projects, even if in deep water, as long as lessons learned during the low price cycle are not ignored and new project implementations adhere to strict operational and capital discipline.

UPSTREAM: Where do you expect the oil price to be by the end of this year? And by 2020?

BERTANI: No one has a crystal ball and any price prediction is ultimately going to be wrong. Nevertheless, if I have to guess, I would say that directionally prices will be at the current level, with some volatility, until the end of the year and will tend to grow moderately but steadily from 2018 onwards. !
Brazil turns to face the future as it lines up ambitious licensing plans

This is a historic opportunity for the oil and gas industry. Brazil’s own sector is going through the [biggest] transformation since the founding of Petrobras. When the bid rounds are over we will have a number of private operators in the pre-salt... and a variety of players in the gas sector.

ANP director general Decio Oddone

SOUTH AMERICA

Deir opens for international oil companies but whether they have confidence in country’s political stability remains to be seen

GARETH CHETWYND and FABIO PALMIGIANI
Rio de Janeiro

BRAZIL has invited the world’s oil and gas industry to a licensing bonanza rare in scale and quality this year, but participants may need to overcome fears about the possible impacts of the country’s political stability.

The country will hold its 14th exploration and production concession round on 27 September, offering 287 blocks in 11 sedimentary basins, boasting untapped in-place volumes of 50 billion barrels of oil equivalent, according to the National Petroleum Agency (ANP).

Then, on 27 October, there will be pre-salt bid rounds in one day, offering production sharing contracts in two categories. Brazil’s second-ever pre-salt PSC round will offer four areas requiring unitisation with contiguous concessions in two categories.

The third PSC round will offer two well-mapped prospects – Peroba and Pau Brasil – with an estimated 9.4 billion barrels of oil in place between them. Also on the menu are two areas in a riskier pre-salt play, but with great potential.

The fact that these events are taking place in their current form is an indirect consequence of the political earthquake that shook Brazil last year.

The key change was the decision to repeal a law that made Petrobras the mandatory operator on all pre-salt PSCs, with at least 30% of the equity.

The new law was passed at the same time as then-president Dilma Rousseff was suspended from office, later to be impeached.

Former vice president Michel Temer took the helm, and wasted no time in making oil sector investment a plank of his administration’s economic policies.

As president, Temer put a strong technical team in place in both the Energy Ministry and at regulator ANP, and listened carefully to what the industry had to say about what might be holding back investment.

The single operator rule was seen as the single biggest bar to such investment.

Enacted in 2010 and intended to consolidate Petrobras’ dominance, the rule could just as easily have broken a company that was piling up debt without meeting production targets.

Petrobras, with a focus on debt de-leveraging, can now decide if it wants to participate in pre-salt contracts, but still enjoys preferential bidding rights.

Lifting impediments

The Temer administration addressed another long-standing industry concern by providing a firm licensing calendar to facilitate the long-term planning of investment portfolios.

The ANP has mapped out its plans to hold 10 rounds in the 2017-19 period, including annual offers in each of the three main categories – the pre-salt polygon, E&P concessions and mature areas.

One experienced oil company executive says the areas Brazil will offer in pre-salt rounds mapped out over the next two years could represent a risked recoverable resource bordering on 50 billion barrels of oil equivalent.

The ANP believes these offerings could add new production capacity of 2 million barrels of oil equivalent per day by 2025.

“This is geologically certainly possible but perhaps questionable on timing, even with a bigger group of companies developing these resources,” according to Thomas Adolff, an oil sector analyst with Credit Suisse bank.

Brazil’s production from the pre-salt province reached 1 million boepd in May 2016, just 10 years after first discovery, and has now reached an impressive 1.5 million boepd.

Decio Oddone, director general of the ANP, is urging investors to take heed of the game-changing element in Brazil’s licensing push.

Petrobras is looking to sell off non-core assets and is partnering international oil companies whenever possible.

The former monopoly company is today vacating much of the midstream sector, meaning that it, too, has an interest in open access and fair competition.

“This is a historic opportunity for the oil and gas industry,” says Oddone. “Brazil’s own sector is going through the [biggest] transformation since the founding of Petrobras.”

“When the bid rounds are over we will have a number of private operators in the pre-salt, a variety of players in the gas sector and a downstream market that no longer has Petrobras as the only player,” he adds.
If the planned Brazilian licensing bonanza had taken place four or five years ago, when oil prices were high and nobody had heard of the Car Wash corruption investigation, there would probably have been a frenzy of bidding, writes Gareth Chetwynd.

A 2015 study by the National Institute of Oil & Gas (INOG) at Rio de Janeiro State University (UERJ) suggested in 2015 that the pre-salt fairway contains more than 176 billion barrels of undiscovered recoverable resources, dwarfing the 30 billion to 40 billion barrels of oil equivalent already discovered in the area.

The same study, using industry-accepted methods, also determined that the average field size in the pre-salt polygon was 246 million boe.

The production data is as impressive as the potential. Brazil’s May data showed that 22 of the pioneering pre-salt wells are each producing more than 30,000 boe per day, with one or two of them nudging 40,000 boepd. By closing in wells before any real drop in pressure, Petrobras has avoided any discernible drop on the pioneering Lula field, where there is no sign of the oil-water contact yet.

“With numbers like these, it is easy to see why the pre-salt has attracted the attention of the majors, and the Brazilian pre-salt is one of the few remaining places in the world where the elusive giant field is not only present but expected,” according to Scott Stewart, a Latin America specialist with consultancy Drilling Info.

The terms on offer are seen as broadly attractive but there are a number of regulatory issues that worry the industry. There are also grumblings about the signature bonuses being demanded, and concerns about the government’s ability to deliver on policy promises in the current fraught environment.

Temer’s own future remains uncertain, but the early decision of Brazil’s Energy Minister Fernando Coelho Filho to remain at his post after his own party left the governing coalition set the tone for a relatively calm market response to the crisis. The “business as usual” motif could be heard recently when the Energy Ministry’s policy panel approved a clutch of measures and the ANP’s director general Decio Oddone reaffirmed Brazil’s commitment to holding the rounds on the scheduled dates.
WPC & ITN PRODUCTIONS PROUDLY PRESENT

JOURNEY OF THE DROP

Anchored by Natasha Kaplinsky
Watch the ground breaking programme that challenges the perceptions of the oil and gas industry around the world and explores the opportunities for sustainable growth.

JOURNEY OF THE DROP 2017 launches at the 22nd WPC
World Petroleum Congress

Visit us during the 22nd WPC at THE CINEMA located in the Rumeli Building, ICEC, Istanbul
Screenings at 11am, 1pm and 3pm

Watch online now: www.world-petroleum.org

Join the conversation
#journeyofthefallback @worldpetroleum @ITNP_IndNews