Good *afternoon/morning*, and thank you for joining us today for Gulf Publishing Company's Oil and Gas Industry Forecast.

*Hydrocarbon Processing* recently completed its outlook for 2012 for the global Hydrocarbon Processing Industry, or HPI. I will share some of the highlights from our report with you.
The 2012 Live Forecast

- 86\textsuperscript{th} year forecast published in \textit{World Oil}
- 44\textsuperscript{th} year presented at our Forecast Forum at River Oaks
- Based on responses from government agencies and operators worldwide
- Report published in the February 2012 edition of \textit{World Oil}
- Publisher’s Letter provided upon conclusion today
Thanks, Ron. Good morning!

Industry Trends

Pramod Kulkarni
Editor, World Oil
We’ll begin our forecast with this, the mother of all charts. Since economics is the primary driver of our oil and gas industry, what happens in this chart will dictate how many wells we’ll drill, in what regions, and whether we’ll be drilling for oil or gas.

Fortunately for us, rising oil prices since 2010 are providing a generous lift for drilling and production activity. Oil near $100 will support drilling for oil and liquids in the U.S. and international shale plays. Hundred dollar oil is also great for large deepwater projects, enhanced oil recovery in mature fields, and even oil sands in Canada.

Unfortunately, the oil price rise is occurring simultaneously with a severe drop in prices for U.S. natural gas. With gas below $3 per thousand BTU, it is no longer economical to drill for dry gas in North America.

As in the past, there will be volatility in both oil and gas prices. A drop in oil prices down to $80 will still sustain most oil projects. If natural gas prices rise above $4, gas drilling will once again return to North America.
According to the U.S. Energy Information Agency, the average WTI price in 2011 was $94.86. World Oil forecasts the WTI price for 2012 to average at $98.50.
World Oil also estimates the Henry Hub natural gas price to drop to $3.10 per million BTU on average in 2012.
High crude oil prices have provided the incentive for the reversal of the U.S. oil production chart since 2008. In 2011, U.S. operators have produced 5.6 million barrels of oil per day, an increase of 2.5% since 2010.
The impact of oil and gas prices is quite evident here in the oil and gas drilling split. The U.S. used to be a haven for gas drilling. At the end of 2011, nearly 60% of the rigs were drilling for oil. The percentage of oil-directed drilling is likely to go up even further in 2012.
Government at work

- Repeal of tax breaks
- Fracing regulations
- Emissions standards

I’ve just covered the logical part of our forecast, where economics drives activity. The illogical part concerns the Obama administration’s obsession with renewable energy, often at great cost, and the hits our industry might suffer in 2012 with regards to the repeal of tax breaks, and possible EPA actions against shale fracturing and stricter emissions standards.
Our World Oil forecasting team has done a remarkable job of combining the logical and illogical elements which govern our industry. I am especially pleased to welcome back Kurt Abraham as our executive editor. Kurt loves to drill through statistics and glean valuable insights. He even found errors in how the Texas Railroad Commission calculates its well numbers. I'll let Kurt reveal this useful information and have him deliver the U.S. forecast in his wonderful radio voice.
**U.S. E&P Spending**

- '07: $100 billion
- '08: $110 billion
- '09: $90 billion
- '10: $111.74 billion
- '11: $122.44 billion
- '12E: $122.44 billion

*Up 10% in 2012*

Source: Barclays Capital

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**U.S. Wells Forecast**

- '08: 44,905 wells
- '09: 34,000 wells
- '10: 44,905 wells
- '11: 47,918 wells
- '12E: 47,918 wells

*Up 6.7% in 2012*
Average Number of Rigs in U.S.

- '08: 2,250
- '09: 2,000
- '10: 1,750
- '11: 1,577
- '12E: 2,019

*Up 7.6% in 2012

Wells vs. Rig Utilization

<table>
<thead>
<tr>
<th>Year</th>
<th>Wells</th>
<th>Rig Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>56,841</td>
<td>1,878</td>
</tr>
<tr>
<td>2011</td>
<td>44,905</td>
<td>1,877</td>
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<tr>
<td>Difference</td>
<td>11,936</td>
<td>1</td>
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</table>

Sources: API and Baker Hughes
Drilling Activity Forecast

Wells drilled - Texas

*Up 4.1% in 2012

The Texas Oil & Gas Economy

THE TEXAS PETRO INDEX

September-October 2008

INDEX (Base=100 Jan 1995)

Dec 2011
289.1

Dec 2009
186.6
**Onshore Drilling Activity Forecast**

**Texas Districts, including the Barnett shale**

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012E</th>
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</thead>
<tbody>
<tr>
<td>District 5</td>
<td>1,691</td>
<td>1,344</td>
</tr>
<tr>
<td>Texas District 7B</td>
<td>1,096</td>
<td>1,112</td>
</tr>
<tr>
<td>Texas District 9</td>
<td>1,620</td>
<td>1,474</td>
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<tr>
<td><strong>Total</strong></td>
<td>4,407</td>
<td>3,930</td>
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</table>

*Down 10.2% in 2012

---

**Onshore Drilling Activity Forecast**

**Texas Districts, including the Eagle Ford shale**

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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Texas District 1</td>
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<td>1,848</td>
</tr>
<tr>
<td>Texas District 2</td>
<td>666</td>
<td>798</td>
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<tr>
<td>Texas District 4</td>
<td>693</td>
<td>839</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,740</td>
<td>3,485</td>
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*Up 27.2% in 2012
Onshore Drilling Activity Forecast
Areas that include the Haynesville shale

<table>
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<td>Texas District 6</td>
<td>726</td>
<td>740</td>
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<tr>
<td>Louisiana North</td>
<td>1,179</td>
<td>1,015</td>
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<tr>
<td><strong>Total</strong></td>
<td>1,905</td>
<td>1,755</td>
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</table>

*Down 7.9% in 2012

---

Onshore Drilling Activity Forecast
Louisiana

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<th>2011</th>
<th>2012</th>
<th>% Diff.</th>
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<tbody>
<tr>
<td>North Louisiana</td>
<td>1,179</td>
<td>1,015</td>
<td>-13.9</td>
</tr>
<tr>
<td>South Louisiana</td>
<td>301</td>
<td>332</td>
<td>10.3</td>
</tr>
</tbody>
</table>

*Down 9% in 2012
Drilling Activity Forecast

Oklahoma

*Up 21.1% in 2012

Drilling Activity Forecast

North Dakota, including the Bakken shale

*Up 53.6% in 2012
Drilling Activity Forecast
Penn., Ohio, NY and W. Virginia (Marcellus and Utica shales)

*Up 0.6% in 2012

Alaska (onshore and offshore)

*Up 26% in 2012
California (onshore)

WELLS

*Up 2.1% in 2012

Rocky Mountains
Including the Niobrara shale

<table>
<thead>
<tr>
<th>State</th>
<th>2011</th>
<th>2012E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>3,075</td>
<td>3,321</td>
</tr>
<tr>
<td>Wyoming</td>
<td>1,562</td>
<td>1,646</td>
</tr>
<tr>
<td>New Mexico</td>
<td>2,281</td>
<td>2,304</td>
</tr>
<tr>
<td>Utah</td>
<td>780</td>
<td>817</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7,698</td>
<td>8,088</td>
</tr>
</tbody>
</table>

*Up 5.1% in 2012
Justin Smith
Offshore Editor, World Oil

Offshore Forecast
Offshore drilling and production activity is increasing around the world. Many frontier areas are becoming more intriguing, including East Africa, Sri Lanka and, despite some disappointments last year, Greenland, where just this week Statoil acquired a stake in the Pitu exploration block from Cairn Energy. The rig order boom that began in October of 2010 will yield more units entering the market as the year progresses, predominately in the form of jackups. As a result, we forecast that 3,168 wells will be drilled in offshore areas around the globe, which is an increase of 7.5 percent from the 2,948 wells drilled in 2011.
Starting with the U. S. Gulf of Mexico, activity has increased considerably since this time last year, when the deepwater drilling moratorium was in full swing following the Macondo blowout. Operators in the region have adapted to the stricter SEMS and spill containment requirements, and are receiving permits at a steady pace. According to World Oil’s offshore rig database, RigStar, the number of rigs drilling in these waters has more than doubled in the last year, with the entirety of the increase coming from the oil-rich, deep-water segment.

Last year 183 wells were drilled in the Gulf, but, as deepwater activity continues to ramp up, we expect operators to drill 220 wells this year, which is an increase of 20 percent. The data we received from BOEMRE was somewhat incomplete, so those numbers will mostly be increased later as the data is refined.

It should also be mentioned that Saipem newbuild semisubmersible Scarabeo 9 arrived off the coast of Cuba this month, where it is about to begin exploration work for Repsol. Both the oil industry and U.S. politicians are watching what happens there with great interest, although whether it is with optimism or trepidation depends on who you ask.
In Brazil, Petrobras continues to make its pre-salt push, calling for more rigs and more investment. Newly minted rig contractor Sete Brasil, in which Petrobras has placed significant investment, has ordered eight rigs in the last year, seven drillships and one semi, all of which are to be constructed in Brazil. While these units are still a couple of years from being put to work, they do illustrate the long-term aspirations of Brazil’s largest operator. At the moment, however, the lack of available deepwater units has hamstrung Petrobras and other operators in Brazil from reaching their drilling goals. That said, we expect more wells to be drilled this year, 250 to be specific, than last year when 202 wells were drilled. This represents an increase of nearly 24 percent.
Northern Europe may be one of the most extensively explored regions in the world, but large discoveries are still being made, particularly in the Barents Sea. Combined, Statoil’s Skrugard discovery last year and the recent Havis oil find, both of which are in the same Barents Sea license off the coast of Norway, hold an estimated 400 to 600 million barrels of recoverable oil equivalents. Down the coast in the North Sea, Lundin’s Avaldsnes field and Statoil’s adjoining Aldous filed have a combined recoverable potential of up to 3.3 billion barrels of oil. Hopes are high in the region for additional discoveries offshore the relatively quiet areas of Ireland, the Faroe Islands and West of Setland.

In total, we foresee 392 wells being drilled in the North Sea area, which is a 3.4 percent increase over the 379 wells drilled last year.
To the chagrin of many operators, the supply of high spec rigs capable of drilling in these rough waters can’t keep up with demand, which is stifling drilling in the region a bit. Statoil has contracted several new rigs be built to combat this, but drilling will remain flat throughout much of the region for the next year. Denmark is the only country that will experience a noteworthy change, with the drilling of 21 wells expected this year, up considerably from the 9 wells drilled last year.
Countries in West Africa run the gamut in terms of exploration and development experience, with relatively new players, such as Sierra Leone, Liberia and Senegal, competing with seasoned veterans like Nigeria and Gabon for resources and investment dollars. While Nigeria is used to keeping production going in the midst of weathering internal strife, potential unrest in some of these new participants could upset the apple cart, as has been the case the last several years in Mauritania. Nevertheless, the status quo in the region seems to never be at risk. Events like Total’s seemingly endless stream of discoveries off Angola and growing Chinese investment in Nigeria should keep drilling in the region stable for years to come, if not climb further.

A 6.7 percent increase in drilling is expected in West Africa this year, bringing the total number of wells drilled in the region to 222, up from the 208 drilled last year.
The boost in drilling will be spread across each of the major countries in the region. Deepwater powerhouse Angola will see the largest bump, with the drilling of 7 more wells than last year. It seems extremely improbable that the blowout and rig loss that Chevron suffered in Nigeria this month will spur the government there to enforce a Macondo-esque moratorium and regulatory boondoggle, leaving future drilling there unaffected.

And while I don’t have a slide breaking out East Africa, I would be remiss not to mention what is going on there. Long story short, things are looking up. Tanzania and, to an even greater degree, Mozambique are garnering more interest from operators. Following several large discoveries, Anadarko in particular is making a big push into the region.
There may not be much in the way of drilling in the Eastern Mediterranean, what with only 11 wells drilled last year and 14 expected this year, but each well drilled there yields significant results. Offshore Israel, Noble Energy’s appropriately named Leviathan natural gas field and the earlier Tamar gas discovery have been complemented by yet another massive gas find, this time off the coast of Cyprus. Noble currently estimates that the Levant basin, in which all of these fields are situated, contains gross mean natural gas resources of over 33 trillion cubic feet. Even with the low price of gas, this region is generating interest, but when the price rebounds, Israel, Cyprus and most likely Lebanon, too, will have a lot to be excited about.
The shallow waters of the Middle East continue to be a hotspot of offshore drilling. Increased efforts by Saudi Aramco to develop the Manifa, Arabiyah and Hasban fields, as well as the continuing development of South Pars in Iran and North Dome in Qatar will keep jackups busy for years. The region will see 245 wells drilled this year, a fair jump of almost 10 percent from 2011, when 223 wells were drilled.
The busiest region of all for offshore drilling, as it has been for years, will be Southeast Asia. We forecast that a total of 776 wells will be drilled in the region in 2012, which is an increase of 4.6 percent from the 742 wells drilled in 2011.
Even with a decrease of 14 wells from last year, the 359 wells expected for Thailand in 2012 outstrips not only every other country except China, but all other regions except for the North Sea. Myanmar, or Burma if you prefer, and the Philippines will experience the largest percentage increase in wells drilled year-on-year, with increases of 214 percent and 900 percent expected, respectively. This is assuming wells in the Philippines don’t intrude upon what China considers its territory. A similar issue arose earlier this year when a seismic vessel was ushered by Chinese naval ships out of territory claimed by both the Philippines and China.
In recent years, the prime area for Australia’s new oil exploration has moved to the deepwater area of the Timor Sea. Nevertheless, the Carnarvon basin offshore Western Australia remains the busiest area overall for drilling and development work. In addition, Shell continues to find more sources to feed the company’s ambitious LNG projects. We forecast a total of 125 wells to be drilled in the region this year, up nearly 6 percent from 2011.
As per the norm, Australia will dominate the region drilling 104 wells this year, up just slightly from last year. New Zealand and East Timor will also experience modest increases, although the region as a whole will remain basically flat.
While we don’t have hard data for the resource potential of the Arctic, a recent assessment by the U.S. Geological Survey estimated that the region contains roughly 90 billion barrels of oil, over 1,600 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids. The technology does not yet exist to cost effectively tap these vast resources, operators continue to edge closer. Cairn had limited success offshore Greenland this year, but proved that the area was worth exploring; Statoil made the large Barents Sea finds off northern Norway I mentioned earlier; the Shtokman field in the Russian Barents Sea holds considerable quantities of gas and condensate waiting to be tapped; and Shell has received the necessary permits and is preparing to drill in the Chukchi Sea off Alaska later this year. We may still be a number of years away from being able to explore the interior of the Arctic, but inroads are being made.
It will be another strong, profitable year for producers around the globe, especially those focusing on crude oil. Considering prices near $100/bbl or higher, this type of economic structure will support greater liquids and shale exploration in a number of international areas, such as the liquids-rich Neuquen (NEW-KANE) basin in Argentina, just like it has done in North America. The relatively high price also supports large projects offshore the North Sea and in deepwater West Africa, Brazil and Southeast Asia.

Based on its 2011 E&P survey results of 351 companies, Barclays Capital expects global E&P spending to increase by $43 billion in 2012, to $476 billion, a majority of which will be invested in exploration.
We estimate that drilling outside the U.S. totaled 56,321 wells last year. This year, an equally satisfying forecast is on tap, with a 4.3% increase to 58,754 wells expected. Every region will attain some measure of increase, although Western Europe will struggle. South America, Africa, the Middle East and the Far East/South Asia will have the most significant gains.
In Canada, oil is driving activity in a big way not seen since the 1996, when the well count was over 25,000. This is particularly true in Alberta, whose oil sand deposits now account for just over half of all Canadian crude production. Technological advances have prompted investment in shale and tight gas plays in British Columbia and Alberta. TransCanada's proposed Keystone XL pipeline, which would bring tar sands oil from Canada to refineries in Oklahoma and Texas, has been a hugely divisive issue. Last November, the State Department announced that the proposed route through Nebraska's environmentally sensitive Sand Hills region required additional review, thus pushing the decision to 2013. While the Keystone issue could eventually curtail E&P activity, we do NOT believe it will have an effect in the short term. For 2012, we forecast a 3.2% increase to 13,010 wells.
in Mexico, E&P activity last year remained almost even with 2010’s level. Mexico in early 2011 held licensing rounds for performance-based contracts on oil blocks allowing participation by foreign oil companies for the first time since the industry was nationalized in 1938. Foreign firms will have no ownership rights over any oil they produce, but they should infuse Mexican fields with improved technology. We expect a slight increase, to 1,150 wells, in 2012.
South America has remained a strong epicenter of E&P growth, with expanding activities in both deepwater and the discovery of vast shale plays at the southern tip of the continent. Across the region, drilling will be up nearly 11% this year, at 3,957 wells.
in **Venezuela**, drilling was up more than 18%, and the number of rigs running jumped from 70 to 83. Some of that gain was due to the start of implementation of new contracts for development of reserves in the Orinoco oil belt. Whether this activity level can be maintained remains to be seen.

In **Colombia**, drilling was up 12% last year, and another gain of 5.6% is forecast this year. Indeed, rig activity set a record in 2011, with an average 64 units working, compared to 41 in 2010.

Overall, we expect the 5 most active drillers on the continent to see a 9.3% increase.
This year, Brazil plans to boost onshore drilling by a whopping 78%, to 601 wells. Officials also expect to hike offshore drilling another 24%, to 250 wells. While the country has begun building its first nuclear submarine to protect its vast, new offshore oil discoveries, we foresee a dramatic increase of over 50% in the 2012 well count.
While several areas in Western Europe show promise of potentially lucrative gas resources, we expected development to be very slow. In France, a government ban of fracturing technology has slowed development, and other western European countries are looking to approach the controversy with similar caution.
German producer Wintershall recently began drilling the first of 16 new wells at its Emlichheim operations near the Dutch border. Over the next five years the company plans to sink 12 horizontal and four vertical wells. Several other operators have submitted applications to conduct exploratory drilling in the area. We expect activity to increase by 5.2% in 2012.
Several countries are finding it difficult to increase activity, including the UK and The Netherlands. As a consequence, we predict that drilling will fall this year by 2.5%.
In the **UK**, there is some exploration interest among medium independents, driven mostly by higher oil prices and the area’s proximity to major European consumption. The U.K. recently awarded 46 new licenses to explore for oil and gas in the North Sea as part of the country’s **26th offshore oil and gas licensing round**.

Over in **Norway**, the picture is a little brighter. Although drilling, overall, remains at a plateau, 22 new oil and gas discoveries were made in 2011, sixteen of which were made in the North Sea. Last year’s investment level was relatively high, and the Norwegian Petroleum Directorate expects it to remain at a high level over the next five years.
While the potential of recent gas finds throughout Eastern Europe continues to dominate the news, regulatory issues and technology challenges have set the timeframe for gas production 2-4 years down the line. A flurry of conventional oil finds continues to drive near-term activity and we predict a 8.2% increase, to 315 wells, in 2012.
Whereas the Ukraine announced it will begin its shale first **drilling** work in 2012 order to determine the amount of resources, and by 2015 plans to switch to commercial production, Poland’s **Polskie Górnictwo Naftowe i Gazownictwo SA** or PGNiG has targeted to increase its production of natural gas to 6.2 Bcf 1.8 million tons of crude oil.

To date, more than 100 concessions for shale gas exploration have been granted to foreign and domestic companies. Besides Chevron, ExxonMobil, and Talisman, nearly 20 other oil and gas companies are exploring shale gas concessions in Poland. ExxonMobil late last month started fracking its second Polish shale gas well, while Talisman and partner San Leon Energy recently spud their first shale gas well in the country.
It was a stellar year for Russia’s upstream sector. In 2011, Russia’s state-controlled gas producer Gazprom announced a four-year, $200 billion investment plan to explore gas fields on the Yamal Peninsula in Eastern Siberia, build a new gas route and a South Stream gas pipeline via the Black Sea to Europe. Like many other companies, Gazprom will be seeking loans and partners ready to join in. With a boost in E&P budgets and expansive development in the country’s Arctic waters, we predict a 7.1% increase in wells this year.
Offshore activity, including a slew of promising deepwater finds in 2011, continues to drive development in West Africa, although startup delays have hampered several big projects. We predict that drilling will remain stable, with a slight increase of 2.1% in 2012.
The northern half of the continent saw great political and social unrest last year, yet the continent’s E&P activity was not affected significantly, save for Libya. While the region’s wells drilled were down 14% from 2010’s level, the vast majority of the difference was due to disruptions in Libya.
Activity in this region continues to set records. Another all-time, regional high for wells drilled was reached last year at 2,540. This year, activity will jump another 5.1%, to 2,670 wells.
Abu Dhabi is moving forward with new field developments, both offshore and onshore. Thus, drilling in the emirate will remain at a high level, totaling 270 wells or more this year.

Meanwhile, Saudi Arabia will add more rigs this year, as the Kingdom boosts both development work and exploration further. Saudi Aramco said that it is looking to increase its drilling rig count to 145 this year, including workover rigs, to boost natural gas and oil output from Manifa field, as well as to maintain output in other fields. Partly state-owned Petroleum Development Oman (PDO) accounts for more than 80% of the oil and gas produced in the country, but international oil companies are significant investors in Omani upstream. We expect E&P activity to increase slightly in Oman this year, to a total of 545 wells.
A series of new discoveries, as well as foreign investment both onshore and offshore in South Asia will continue to boost its drilling activity, with an estimated 552 wells in 2012.
Interest remains high in India, where the ninth round of New Exploration License Policy (NELP) auctions took place last March. This round attracted 74 bids for 33 of 34 blocks. Additionally, Mumbai-based Reliance Industries recently announced plans to drill more development wells in the D1 and D3 fields on deepwater Block with BP as its investment and technology partner.

A 7.5% gain to 490 wells is forecast for 2012.

<table>
<thead>
<tr>
<th></th>
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<th>2012E</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>456</td>
<td>490</td>
</tr>
<tr>
<td>Pakistan</td>
<td>57</td>
<td>62</td>
</tr>
<tr>
<td>Total</td>
<td>513</td>
<td>552</td>
</tr>
</tbody>
</table>

*Up 8% in 2012*
Another drilling record appears to have been set by China, which currently drills 23% of the wells throughout the world, second only to the U.S. China drilled an estimated 24,350 wells in 2011 and we expect a 2.5% increase in 2012. Determined to boost reserves and output, Chinese companies have focused E&P activity on the offshore areas of Bohai Bay and the South China Sea, as well as onshore fields in western interior provinces.
To counter declining production at mature fields, Southeast Asia’s gas production has generally risen in the region and LNG has become one of the major investment opportunities and areas for development. As onshore and shallow water fields are reaching exhaustion, E&P players are conducting exploration activities in deeper waters. We expect a near-9% increase, to 1,872 wells, in 2012.
Indonesia’s gas market has been transformed by the introduction of LNG, with new projects at various stages of development. Despite this, most of the country remains undeveloped, with only 38 of 128 basins having been explored. We expect drilling activity to continue to rise in Indonesia, at a 15% increase in 2012, a slew of new E&P incentives, offered by the government, will boost interest in unexplored areas.

<table>
<thead>
<tr>
<th>Country</th>
<th>2011</th>
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</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>951</td>
<td>1,093</td>
</tr>
<tr>
<td>Thailand</td>
<td>575</td>
<td>545</td>
</tr>
<tr>
<td>Malaysia</td>
<td>80</td>
<td>88</td>
</tr>
<tr>
<td>Vietnam</td>
<td>56</td>
<td>60</td>
</tr>
<tr>
<td>Myanmar</td>
<td>56</td>
<td>86</td>
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<tr>
<td>Philippines</td>
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<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,718</td>
<td>1,872</td>
</tr>
</tbody>
</table>

*Up 8.9% in 2012*
We expect another mild increase in regional drilling in the South Pacific this year, 4.3% to 268 wells. While Australia and New Zealand have experienced oil production declines, while the region’s burgeoning LNG industry is continuing to grow.
The prime area for Australia’s new oil exploration has moved in recent years to the deepwater area of the Timor Sea, though onshore work continues to grow as well. A further gain of 4.9%, to 215 wells, is expected this year.

In New Zealand, drilling remains in a narrow range of 40 to 45 wells annually, with about half to two-thirds onshore. Recent government incentives have resulted in the several companies, including Apache and TAG Oil, to invest in exploration/development programs.

**South Pacific**

<table>
<thead>
<tr>
<th></th>
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</tr>
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<tbody>
<tr>
<td>Australia</td>
<td>205</td>
<td>215</td>
</tr>
<tr>
<td>New Zealand</td>
<td>42</td>
<td>41</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>East Timor</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>257</td>
<td>268</td>
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*Up 4.3% in 2012*
2012 Worldwide Presentations

- Houston, Texas - January 27
- Rotterdam, The Netherlands - January 31
- Paris, France - February 1
- Milan, Italy - February 3

- 2012 Live Forecast Webcast – February 15
  Register online at www.worldoil.com

Ron.Higgins@worldoil.com
Included in the 2012 edition:

- Estimates for upstream capital expenditures during 2011 and projections for 2012
- U.S. and worldwide oil production figures for 2011 versus 2010
- U.S. drilling forecast for 2012 versus 2011 well totals, with an analysis of the U.S. rig count
- A global drilling forecast for the year ahead
- Active producing oil and gas wells in the U.S. during 2011
- Worldwide crude/condensate production during 2011
- Historical data on worldwide drilling, production and proven reserves
- Today’s full PowerPoint presentation

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Good afternoon/morning, and thank you for joining us today for Gulf Publishing Company's Oil and Gas Industry Forecast.

*Hydrocarbon Processing* recently completed its outlook for 2012 for the global Hydrocarbon Processing Industry, or HPI. I will share some of the highlights from our report with you.
From this slide, we can draw several key facts:

- Crude oil demand patterns are changing, looking forward to 2012.
- As energy demand shifts, so do future trading patterns.
- More importantly, demand for crude oil continues to increase.

These factors will definitely reshape future investment in the global HPI.
This bar graph shows changes in regional demand from our first slide. As you can see, there are definite changes in oil demand by the matured, developed regions and economies such as Western Europe, the US and Japan. This is expected. Developed nations are and continue to be more efficient in their energy consumption and have slower expansions in population.

Conversely, the developing economies of Asia-Pacific, the Middle East and Latin America are the engines of change. This group continues to exhibit strong demand growth for crude oil, as shown here.

The Asia-Pacific region continues to demonstrate strong demand increases from 2010 and forward. Two nations—China and India—are responsible for the majority of the new demand for energy. A growing middle class and large population support continued expansion of their economies and need for energy in all forms.
Too often, we hear that oil production has peaked. Well, that is a subject that our sister publication, *World Oil*, can fully address. To the dismay of the critics, peak oil is not a factor impacting oil supply; it is still a question of supply and demand. As shown here, total global demand for crude oil is not rising exponentially! Oil demand has endured moderate increases and decreases over the past six years. What is most important to see in this bar graph is that oil consumption by developed nations belonging to the Organization for Economic Cooperation and Development, or OECD, has been decreasing since 2006. OECD nations listed here include Europe, the US and Japan. Major decreases in demand from OECD nations occurred between 2009 and 2011. Oil demand from these nations in 2012 will rise modestly, at best, from previous levels.

The developing nations, or non-OECD countries, saw the reverse over the same period: their demand for crude increased and continues to rise. Looking forward, the growth share of future oil demand is shifting to non-OECD nations. China, India, Russia, and Brazil, along with the Middle East, are showing increases in crude oil demand and expansions of domestic refining capacity.
With demand increasing for crude oil and natural gas, new grassroots capacity will be needed, along with updated and revamped manufacturing capacity. As demand patterns shift, so will the future locations of new manufacturing capacity to support consumer markets.

This slide shows that major construction activity continues in all regions. Some regions, such as Asia-Pacific and the Middle East, dominate the list of active projects. Continued investment is the reality for the global HPI.
This slide shows the breakdown of *Hydrocarbon Processing*’s Construction Boxscore projects, as classified by business sector. Refining and petrochemical projects dominate current construction activity. This is not a surprise, since developing nations are in a growth spurt. Growing high-tech industries and well-paid jobs allow developing nations to move more population into the middle class. These new consumer products and goods are primarily based on crude oil and natural gas.

The expanding middle classes in Asia-Pacific, the Middle East and Latin America support new demand for transportation fuels, plastics, polymers, and so forth. As DuPont used to say, “Better living through chemistry.” As nations improve the quality of life for their citizens, the global HPI will be a major factor in the increasing quality of life around the world.
Now we will drill down a little further to look at some key trends unfolding in the global refining industry over the near term.
This bar graph illustrates new global refining capacity additions by region from 2010 to 2015. Please note that the 2008/2009 downturn delayed new refining capacity additions in 2010 and 2011. This was in response to the dramatic decline in demand, as shown earlier. However, in looking a few years ahead to 2013 and 2014, we do see a wave of new refining capacity additions. The Middle East and Asia-Pacific regions are the dominant centers for new capacity. However, other regions are also adding new refining capacity through debottlenecking and revamp projects.
Digging deeper into the refining project data, we uncover some interesting facts:

In the US, new capacity additions will increase crude throughput as well as coking and hydrocracking capacity. These projects indicate more interest in upgrading the bottom of the barrel into light products such as middle distillates, instead of gasoline.

Likewise, Latin America is increasing its crude distillation capacity, with a similar focus on coking capacity to raise middle distillate production. Europe is boosting hydrocracking capacity to raise diesel production and reduce fuel oil yields, while the Middle East is adding new crude distillation capacity, with an emphasis on hydrocracking capacity to meet domestic fuel needs and export more fuel to Europe and China.

The big story on this slide is the Asia-Pacific region, where a large volume of crude distillation capacity will be added over the next six years. China and India are the driving factors for the majority of the near-term capacity expansion.
Asia-Pacific is the region with the most HPI construction project activity, as shown here. This slide indicates that there are more active petrochemical projects than refining or gas processing projects. However, this region is reporting 366 construction projects geared toward refining capacity, and it is the region with the largest number of planned refining capacity additions. The majority of the new refining capacity will be located in China and India.
Over the past 10 years, China has been the dominant developing “BRIC” nation in adding new refining capacity, as show here. BRIC is an acronym for Brazil, Russia, India and China. These are the nations that are demonstrating strong potential growth in HPI capacity.

The second major player of the region is India. India is a nation building its refining industry. Like China, India’s downstream is comprised of state-owned entities, except for Reliance Industries. India is seeking other options to diversify its transportation fuels mix, since much of India’s refining capacity is geared to support the growing petrochemical industry.
Besides the Asia-Pacific region, the Middle East is seeing significant construction activity. This region benefits from abundant crude oil reserves and natural gas; all are available to support the growing refining and petrochemical industry. Projects also focus on domestic demand along with export opportunities to China and Europe. The focus is almost split between refining and petrochemical construction projects, as shown in this slide.

In Saudi Arabia, four major refining expansions will come onstream before 2015, adding up to 1.6 million barrels per day of new refining capacity. This wave of new capacity is partly the result of the delay from the economic slowdown.

Altogether, the total new capacity under construction and in planning by China, India, and Saudi Arabia will bring substantial volumes of refined products into the global marketplace over the next 10 years.
This slide shows all active HPI projects for Latin America. This region is gearing up for a new wave of refining capacity updates and expansions. Brazil's state-owned oil company, Petrobras, has announced major investment plans to increase production of transportation fuels, especially jet fuel, over the next several years, to take advantage of newly discovered offshore crude oil reserves. Also, by 2020, Brazil is expected to be the world's third-largest oil producer after Russia and Saudi Arabia.
The last of the BRIC countries is Russia. At present, Russia has 27 older refineries in operation. Refinery throughput has not increased over the past 10 years. However, there are several joint ventures for grassroots refineries, and acquisitions of European assets are also part of Russia’s refining industry plans.

This table lists several major, ongoing refinery projects by Russian refiners. The emphasis is to produce more European-grade gasoline and diesel. However, politics will be a leading issue in future project announcements. These projects are several years away from coming online, but there is strong interest in completing them.

**Major refinery projects in Russian Federation**

<table>
<thead>
<tr>
<th>Company or JV</th>
<th>Location</th>
<th>Refinery or unit (capacity)</th>
<th>Status (startup date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PetroChina/ Rosneft</td>
<td>Dagang, China</td>
<td>Refinery (200,000 bpd)</td>
<td>Under construction (2015)</td>
</tr>
<tr>
<td>Rosneft</td>
<td>Chechnya</td>
<td>Refinery (510 million m³)</td>
<td>Planning</td>
</tr>
<tr>
<td>Rosneft</td>
<td>Tuapse</td>
<td>Refinery (8 million tpy)</td>
<td>Planning</td>
</tr>
<tr>
<td>Rosneft</td>
<td>Komsomolsk</td>
<td>New hydrocracker</td>
<td>Under construction (2014)</td>
</tr>
<tr>
<td>Rosneft</td>
<td>Novokuibyshevsk</td>
<td>Hydrocracker</td>
<td>Under construction (2014)</td>
</tr>
<tr>
<td>Lukoil</td>
<td>Burgas</td>
<td>Hydrocracker, resid</td>
<td>Engineering (2013)</td>
</tr>
</tbody>
</table>

*Table based on HP’s Construction Boxscore database-July 2011*
Natural gas/LNG market status and forecast

Next I’ll speak about current and future trends in natural gas and LNG markets around the world.
The International Energy Agency believes that natural gas could overtake coal before 2030 as the second-largest fuel in the energy mix in terms of demand, as shown in the slide. Gas use could rise as much as 50% over the next 25 years as gas demand from China increases and global coal demand decreases.

The fallout from the March 2011 Japanese earthquake and nuclear disaster will also play a part in this scenario. Not only has Japan's nuclear capacity been severely impacted by the disaster, but other nations have also grown skeptical about the safety of nuclear power. One example is Germany, which plans to close all of its 17 nuclear plants between 2015 and 2022.
This slide shows global trade flows for LNG and pipeline gas in 2010. However, new trade routes and supply patterns are emerging. This is partly due to the rise of shale and other unconventional gas and also because of greater LNG flows to Japan in the wake of the country’s nuclear outages. Despite the growing emphasis on LNG terminals, long-distance pipelines remain important to global gas trade. The primary drivers behind growth in pipeline-transported gas are decreasing gas production in the EU and booming gas demand in Asia, especially China.
Europe is heavily dependent on Russian gas, which is supplied by pipeline. However, Russia has cut off pipeline gas supplies to Ukraine several times over the past few years because of political disputes, impacting gas supplies to other European nations. As the slide shows, Europe imported more than 84 billion cubic meters of LNG last year.

In the future, European importers are expected to draw more on the Middle East and other LNG-exporting countries as they seek to reduce their dependence on pipeline gas from Russia.
Elsewhere in the world, gas demand growth will be driven by non-OECD regions and countries. Latin America is focusing on gas for power generation, although it will become a significant importer of LNG over the next decade, due to production declines in Argentina.

Middle Eastern gas demand has increased rapidly in recent years as a result of infrastructure investments, economic growth, and price subsidies that are now being rolled back in some nations. The region’s gas use is anticipated to double on increased power needs and demand for petrochemicals.

Also, in Asia-Pacific, natural gas will replace liquid fuels for power generation and industrial demand, especially in China. As a result of the Japanese nuclear outages, the Asia-Pacific LNG market is expected to tighten through 2020.
The last topic of discussion is petrochemicals. The focus here is on ethylene, since it’s the bellwether chemical for this market and so many other products are derived from it.
If it were all about demand, the picture would be very simple. Countries in the Asia-Pacific region—notably China and India—continue to lead the way in economic growth and petrochemical demand growth. While demand trends went sharply negative in developed areas—such as North America and Europe—during the recent recession, demand held firm in Asia and India. Moreover, since then, demand in those locations has resumed a steady upward climb, even amid an uneven recovery in most other parts of the world.

If you look closely at the timeline, though, you’ll see that Asian and Indian demand really began picking up steam around 2005, leading to the announcement of many new olefins projects. However, such projects typically take at least three years from the initial announcement to when units start up. So, just as those new facilities were coming online in 2008 and 2009, the global recession was devastating demand.
This led to a surplus in global ethylene capacity that topped out in 2010. However, as a result of strong demand growth in Asia and India, that surplus is on the decline. This means that in 2011, producers could at least think about building new capacity. That’s a definite improvement from conditions two years ago.
In the US, shale gas production is on the increase, leading to cheap and available natural gas liquids—mostly ethane—for use as feedstock. Suddenly, it’s become very economical to produce ethylene in the US, which means that the growing Middle Eastern petrochemical industry could have some competition.

As a result, you’re seeing producers seriously consider the addition of new petrochemical capacity in the US. However, even with high margins, demand growth in North America is simply not enough at the present time to justify new capacity by itself.

For that new capacity to be absorbed, the US will likely have to export more petrochemicals to regions such as Asia, India and even South America, where they’ll be in competition with local producers as well as those from the Middle East.
In general, demand trends are best within Asia-Pacific countries, India, and to a lesser extent, Brazil. Within supply, economics are strong—even if demand isn’t—in North America and the Middle East. Many Middle Eastern petrochemical projects are now coming onstream, and several US crackers are likely to be up by the end of the decade.

Meanwhile, Europe is becoming more of an importer as older, high-cost facilities in that region are being idled amid new capacity from nearby Asian and Middle Eastern producers. Construction work was down in 2011, but that will likely soon pick up, given the typical three-year lag for these projects.
I also want to talk briefly about our Market Data Book. This year it is bigger and better than ever. You will find HPI Economics including industry trends, construction, total spending, capital spending, maintenance spending and operating spending.

Refining, Natural Gas/LNG Processing, Petrochemicals and Maintenance are all covered in depth for 2012. This year it is 98 pages full of information around the globe and will assist you in budgets for the coming year.

It takes 11 months to gather the information for this project, and it is the most complete source of information serving the HPI. If you'd like to save 10% on your purchase of the Market Data Book, just enter (Rotterdam/Paris/Milan) as the savings code on the order form.
Thank you!

visit us on the web at
www.hydrocarbonprocessing.com

Thank you for your attention, and please enjoy the rest of your day!