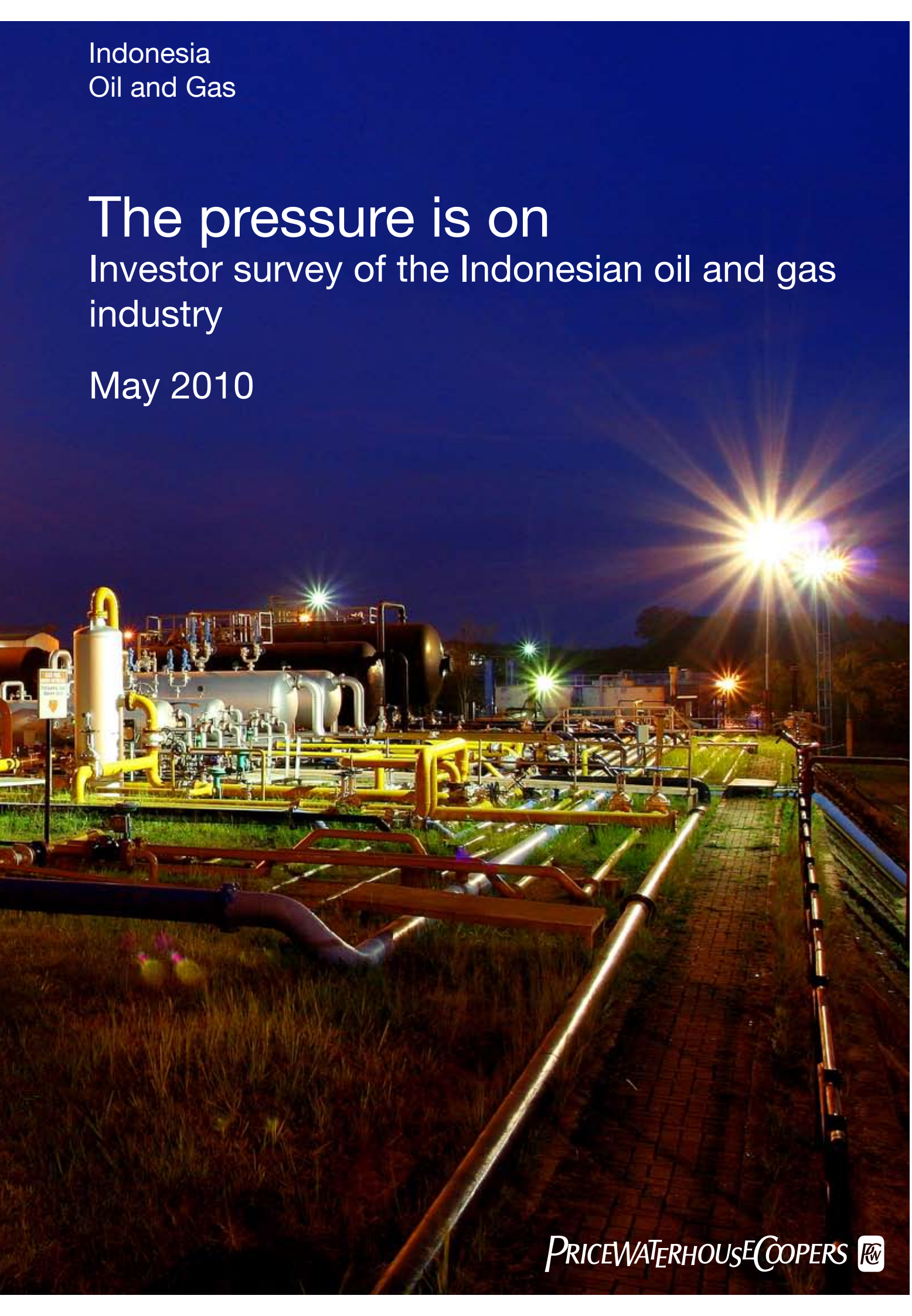
Indonesia
Oil and Gas

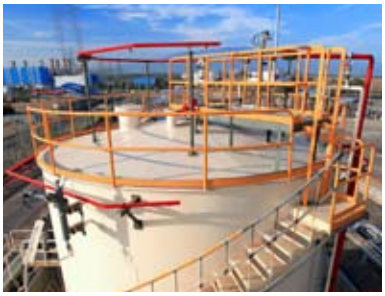
The pressure is on

Investor survey of the Indonesian oil and gas industry

May 2010



PricewaterhouseCoopers



Contents

Introduction

The pressure is on.

Indonesia has a long standing history in the oil and gas industry, with a diversity of geological basins which continue to offer sizeable oil and gas reserve potential. However, Indonesia's crude oil production has declined over the last decade due to the natural maturation of producing oil fields combined with a slower reserve replacement rate and decreased exploration/investment. The Government of Indonesia ("GoI") continues to put a lot of effort in increasing Indonesia's oil production and attracting (new) investors. But this proves to be challenging.

This is the fourth edition of our survey of the Indonesian oil and gas industry, and where applicable we have analyzed trends in survey participants' responses from prior reports. The survey responses come from 32 different companies currently operating in the Indonesia oil and gas sector and therefore can be used to draw credible conclusions about the issues preventing the industry from reaching its full potential. The survey shows that there have been improvements in some areas, but also indicates that contract sanctity, uncertainty over cost recovery and interference from other government agencies continue to stifle investment.

We trust that this report will prove informative and would like to thank all the individuals who took the time and efforts to participate in this important undertaking.

Executive Summary

Photo source : Chevron Oil Products Indonesia
Duri Field test station 3

Supply and demand for oil and gas

Unsurprisingly, survey participants believe that the demand for oil and gas will continue to grow, both globally and in Indonesia. Similar to our 2008 survey results, the demand for gas is expected to increase at a greater rate than the demand for oil. Most respondents (64% for oil and 91% for gas) seem to be of the opinion that there are still significant oil and gas reserves to be discovered in Indonesia, especially in Eastern Indonesia (Papua, East Timor, Maluku, etc). The majority of the survey respondents indicated that the price of crude oil would remain in the US$ 66 - 80 per barrel range for 2010 and increase to US$81- 100 in 2011.

Employment

In line with the continued increase in global demand for oil, the demand for employees working in the oil and gas industry in Indonesia is likely to increase over the coming years, although compared to previous survey results, there has been a shift towards “remaining the same”, especially for the expatriates. A large percentage of survey participants indicated that they expect to increase their hiring of local staff. Similar to the 2008 survey results, a large portion of the survey participants expect difficulties in attracting sufficient (skilled) human resources.

One of the reasons behind this is the fact that a significant proportion of skilled local employees seek employment abroad (mostly in the Middle East) in search of higher compensation.

Capital Expenditures

The participants’ general view seems to be that the capital spending will decline or at least stay the same over the coming 5 years. This is a significant change in sentiment compared to the 2008 survey results where over 90% of the survey participants thought capital expenditures would increase or even significantly increase. This pessimistic view is a worrying development as the GoI is keen to see an increase in investment in the Indonesian oil and gas industry.

Challenges facing the industry

There are a number of fiscal, legal and bureaucratic challenges which have hindered the achievement of Indonesia’s full investment potential in the upstream oil and gas industry. With geological resources having been extensively exploited for more than four decades, it is understandable that the current prospects are not as compelling as they were in the past (due to declining find sizes or the need to move into

more difficult environments such as offshore deepwater or more remote areas). It is therefore of the utmost importance for the Government of Indonesia to seriously address geology non-related challenges to attract higher investment in the upstream oil and gas industry.

From this survey, the five most critical challenges facing the industry are as follows:

1. **Interference from other government agencies, such as the tax authorities**
2. **Uncertainty over cost recovery and BP Migas / BPKP audit findings**
3. **Contract sanctity**
4. Corruption, Collusion and Nepotism ("KKN")
5. Confusion over Law No. 22/implementing regulations

The challenges highlighted in bold were also included in the top five challenges in our 2008 survey. Survey participants were slightly optimistic on the development of certain challenges over the longer term as they expect some improvements within the coming five years. Despite this ray of hope, the survey participants also indicated that they don't expect any significant improvement for the remaining challenges. The main reason behind this somewhat pessimistic view may be that many of the challenges confronting Indonesia, such as KKN and judicial reform, require structural changes and it will take a long time to implement real changes.

Competitiveness

From this survey, the five most competitive features of the Indonesian oil and gas industry are as follows:

1. Geological opportunities (including access to acreage)
2. Political stability
3. Trained workforce
4. Ease of foreign ownership
5. Risk premium

As in the 2008 survey, industry participants indicated that geological prospectivity remains Indonesia's most attractive feature, followed by political stability. This is a positive sign and will improve levels of foreign investment, however, this needs to be tempered with the survey participants' negative views on intra-ministerial coordination. The trained workforce has re-surfaced in the top five most competitive features. The oil and gas industry has a long history in Indonesia which has resulted in a large, well educated workforce, especially technical professions such as engineers and geologists, which is regarded as an asset to the industry.

Other challenges

Indonesia usually ranks high in corruption listings. The majority (60%) of the survey participants indicated that the recent high profile arrests in relation to corruption are having a positive impact on the perception of Indonesia's commitment to fighting corruption. Survey participants indicated that Indonesia is on the right path, but that it will take considerable efforts from the GoI to maintain the current course.

An overview of the oil and gas industry in Indonesia

Photo source : Chevron Oil Products Indonesia
Attaka Aerial

Introduction

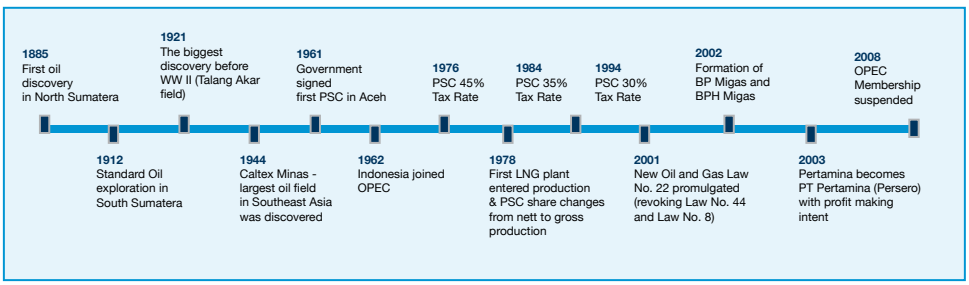
The oil and gas industry, both in Indonesia and globally, has experienced dramatic swings in recent years. The industry had been experiencing a significant resurgence in investment coinciding with the run up in crude oil prices which peaked at approximately US$145 per barrel in mid 2008.

This was then tempered with the onset of the global financial crisis and ensuing global recession which gained momentum in the latter half of 2008. From its peak in mid-2008, the oil price collapsed by more than 70% and ended 2008 at approximately US$40 per barrel. With market confidence returning crude prices recovered somewhat in the first half of 2009 hovering in the US$70 per barrel range and ending the year at approximately US$75 per barrel. Along with this recent volatility, total investment in the Indonesian oil and gas sector saw its first decline in 2009 by US$1.2 billion dollars and spending on exploration continues to be only a fraction of the global spend despite generally favorable geological prospects. Likewise, the industry's contribution to domestic revenue dropped by around 7% in 2009. It is hoped that renewed investor confidence will lead to increased exploration spending in 2010 and beyond. In addition, several large projects currently under development should come on stream in 2010 to assist the continued key contribution that the Indonesian oil and gas industry provides to the national economy.

Global Context

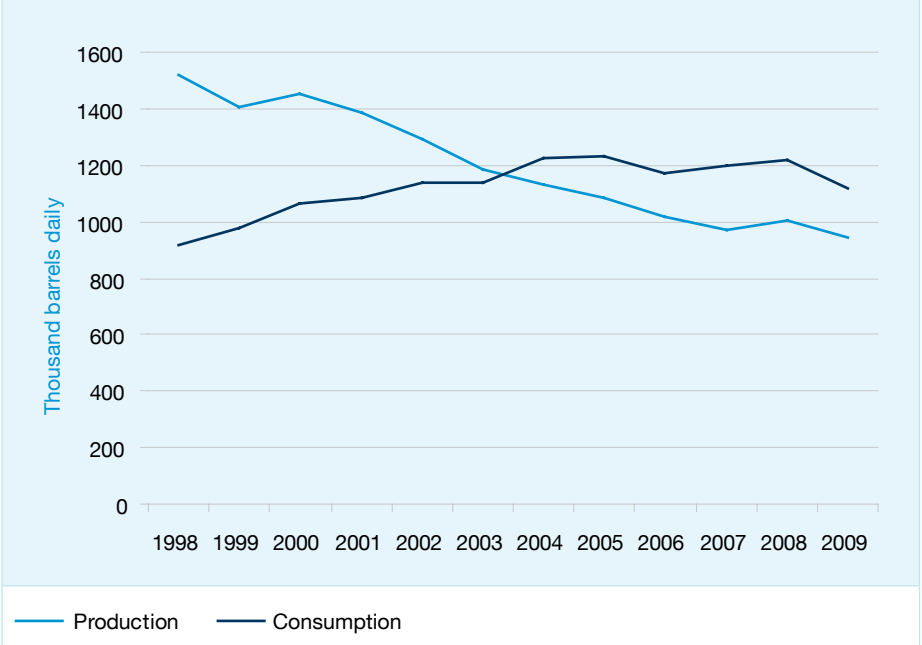
Indonesia has been active in the oil and gas sector for more than 125 years after its first oil discovery in North Sumatra in 1885, and continues to be a significant player in the international oil and gas industry.

Significant events in the history of Indonesia's Oil and Gas Sector



Indonesia holds proven oil reserves of 3.7 billion barrels and ranks twentieth among world oil producers, accounting for approximately 1.2% of world oil production. Declining oil production and increased consumption resulted in Indonesia becoming a net oil importer in late 2004. This factor, along with high oil prices in 2004-2008, led the Government to substantially scale back the domestic fuel subsidy in 2008 and to decide to temporarily withdraw from the Organisation of Petroleum Exporting Countries ("OPEC") – an organization representing approximately 45% of world oil production. As the only Asian member of OPEC since 1962, the Government has indicated it will consider rejoining OPEC if the country's oil production can be increased and it can become a net exporter again.

Indonesia Oil Production and Consumption



Source: BP Statistical Review of World Energy June 2009 for data 1998 – 2008
Directorate General for Oil & Gas (MoEMR) for 2009 production
Business Monitor International Ltd. for 2009 consumption forecast

Indonesia is ranked seventh in world gas production, with proven reserves of 112 trillion cubic feet in year 2008. This ranks eleventh largest in the world and the largest in the Asia Pacific region. Gas reserves are equivalent to three times Indonesia's oil reserves and can supply the country for 50 years at current production rates. Indonesia's gas industry is also being transformed by more competitive liquefied natural gas ("LNG") markets, new pipeline exports, and increasing domestic gas demand. Whilst Indonesia's natural gas production has increased in recent years (Indonesia supplied 2.3% of the world's marketed production of natural gas in 2008), the country is facing a declining global LNG market share to emerging LNG producers in Qatar, Australia, Algeria and Malaysia. After announcing its 2006 policy to re-orient natural gas production to serve domestic needs, Indonesia dropped from its status as world's largest exporter of LNG in 2005 to the world's third largest exporter of LNG in 2008. It exports to Japan, South Korea and Taiwan around 12% of the world's LNG exports. Indonesia's three existing LNG facilities are based in Arun in Aceh, Bontang in East Kalimantan and Tangguh in Papua. The Tangguh Project, which commenced first production mid 2009, broadens Indonesia's LNG customer base to China and the west coast of the United States.

Resources and Production

Key Indicators - Indonesia's oil and gas industry

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Reserves										
Oil (Million Barrels)	9,613	9,753	9,747	9,094	8,613	8,100	8,680	8,400	8,220	7,993
Proven	5,123	5,095	4,722	4,437	4,301	4,440	4,370	3,990	3,750	4,303
Potential	4,490	4,659	5,025	4,657	4,312	3,660	4,310	4,410	4,470	3,690
Gas (TCF)	170	168	177	168	188	180	170	165	170	159
Proven	95	92	90	92	98	97	94	106	112	107
Potential	76	76	86	76	91	83	76	59	58	52
Production										
Crude oil (1000 barrels)	1,415	1,342	1,252	1,146	1,096	1,062	1,006	955	979	949
Natural Gas (million standard cu m)	68,365	66,300	70,350	72,700	72,800	68,700	69,300	68,261	70,000	79,670
LPG (1000 MT)	2,088	2,188	2,099	1,922	2,945	2,743	1,774	2,117	2,224	1618**
LNG (100 MT)	26,990	23,883	26,215	27,392	25,238	23,677	22,400	20,851	19,034	19290*
New Contract signed	5	10	1	15	17	23	5	28	34	34

Source:

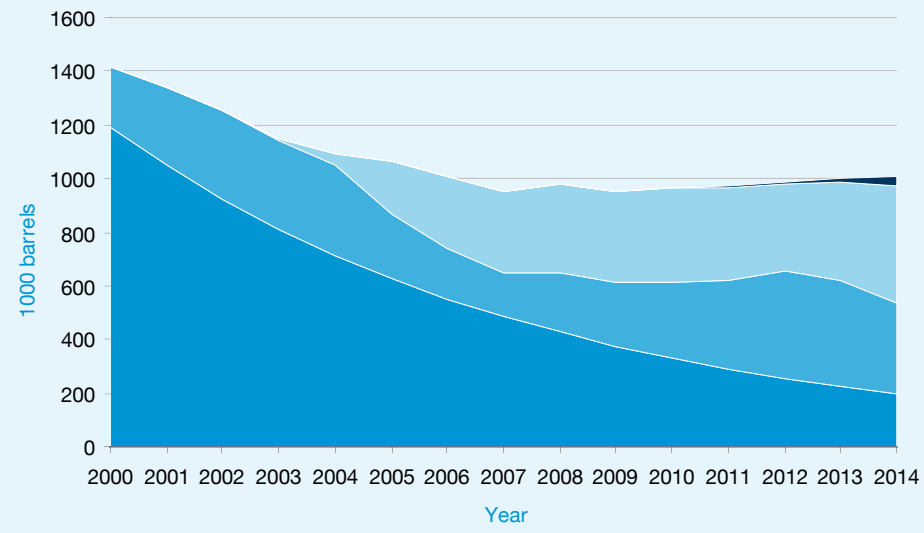
- OPEC 2008 Annual Statistical Bulletin
- BP Statistical Review of World Energy June 2009
- Directorate General of Oil & Gas (MoEMR) for crude oil production data 2000 - 2009

* Projected based on first six months of production for 2009 (MoEMR)

** Projected based on first three months of production for 2009 (MoEMR)

Indonesia has a diversity of geological basins which continue to offer sizeable oil and gas reserve potential. Of the estimated 128 oil basins, only 38 have been extensively explored. Most oil production and exploration is currently carried out in the basins of Western Indonesia (the bulk of Indonesia's oil reserves being located onshore and offshore of central Sumatra and East Kalimantan). Indonesia's crude oil production declined over the last decade due to the natural maturation of producing oil fields combined with a slower reserve replacement rate and decreased exploration/investment. During 2009, Indonesia's total crude oil production was 0.949 million barrels per day, a drop of 33 percent since 2000.

Indonesia Oil and Condensate Production Forecast



Source: Directorate General of Oil & Gas (MoEMR) 2008-2009 (actual) 2010-2014 (forecast)

As Indonesia's oil production has decreased, the country has attempted to shift towards natural gas (and to a lesser extent, geothermal), especially for power generation. This can be seen by the relative increase in the number of gas wells drilled for the years 2003 to 2009 as displayed in the table below.

Wells Completed

	2003	2004	2005	2006	2007	2008	2009
Oil	558	807	605	566	570	574	568*
Gas	42	88	430	402	420	439	434*
Dry hole	25	80	52	49	55	62	40
Other	288	125	63	58	55	52	not available
Total	**913**	**1100**	**1150**	**1075**	**1100**	**1127**	**1042**
Average depth (ft)	3079	3330	3350	3120	3350	3597	not available

Source: OPEC 2008 Annual Statistical Bulletin for data 2003-2008

Directorate General for Oil & Gas (MoEMR) for 2009 data.

* Pro rata estimate

Other related sectors

Indonesia's total geothermal energy potential is equivalent to 27,710 MW of electricity – the largest geothermal energy capacity in the world. Of this total 11,369 MW is confirmed as probable reserve, 1,050 MW as possible reserve and 2,288 MW as proven reserve. The remaining 13,003 MW is still speculative and hypothetical resources. However, progress in this sector has been slow and present installed capacity is only 4.3 percent of its potential, or around 1,200 MW which compares to a target of 9,500 MW set for 2025. Geothermal energy is a special focus of Indonesia's US$400 million Clean Technology Fund co-financed by the World Bank and Asian Development Bank for which significant scale-up of large-scale geothermal power development has been identified as a priority.

Indonesia's coal bed methane ("CBM") reserves are estimated to be 453 Tcf which is larger than Indonesia's estimated conventional natural gas resource. This would make the Indonesian CBM resources potentially one of the largest in the world. But utilization is still low. The first CBM contract was signed in 2008 and by the start of 2010 there were twenty CBM cooperation contracts in place with four more CBM contracts to be offered in the first round of 2010. The government wants CBM to be productive by 2011 and has set daily production targets of 500 mmcf by 2015 rising to 900 mmcf by the year 2020.

Survey approach

Photo source : Santos Asia Pacific Pty Ltd

Survey background

This is the fourth edition of the Indonesian oil and gas survey. The purpose of the survey is to inform the public and private sectors in Indonesia and abroad about Indonesia's upstream petroleum industry and to highlight some of the challenges facing the Indonesian upstream oil and gas industry in attracting optimal investment and achieving its full potential. Where possible, we have compared current results with the results from prior surveys to discover trends and to assess whether conditions are deteriorating or improving.

Survey coverage

The 2010 report is based on the results of a confidential comprehensive survey circulated by PricewaterhouseCoopers Indonesia to senior management (Country Managers, CFO, COO, Finance Managers, etc) of a wide range of companies operating in the Indonesian oil and gas industry (E&P, drilling, oil field services and seismic analysis companies). Refer to charts 4.1 and 4.2 for the background of the survey participants. The survey questionnaire included both quantifiable and qualitative data sections. Because of the incompleteness of certain quantifiable data responses we have been unable to utilise this data in its entirety in our report.

The survey questionnaire was sent to 300+ individuals working for 76 different companies active in the Indonesian oil and gas industry. We received a total of 33 responses (representing 32 different companies currently active in the Indonesia oil and gas sector); however, responses from several companies were aggregated and therefore represent the combined views of several executives. Although the response rate to this survey is relatively low, the completed surveys came from companies representing almost 68% of Indonesia's petroleum production in 2009 and several recent entrants to the Indonesia oil and gas sector that are currently in the exploration stage. As such, the views expressed by the survey participants can be used to draw supportable conclusions about the issues that prevent the industry from reaching its full potential, and to make credible observations about investment and spending trends in the industry.

Chart 4.1

Survey Participants' background

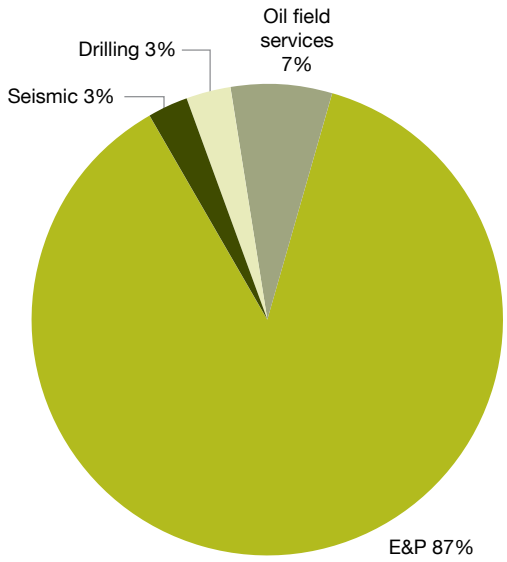
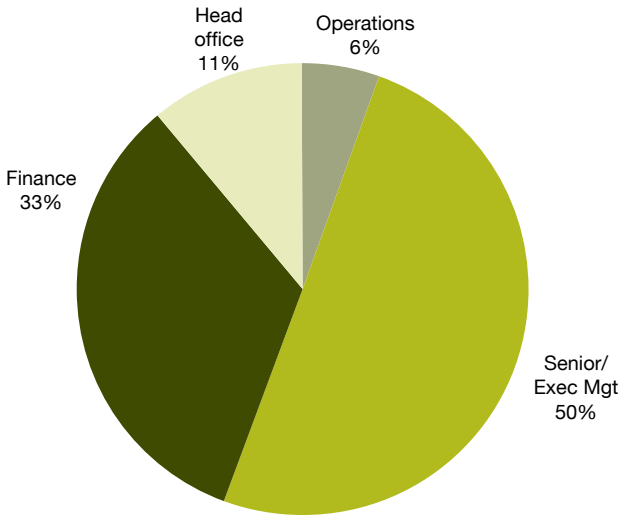


Chart 4.2

Survey participants' functional role



Supply and demand for oil and gas

Photo source : PetroChina Indonesia Operations
Tanker v Tug boat

As expected, almost all survey respondents are of the opinion that the demand for oil and gas will continue to (significantly) increase in the next five years (see charts 5.1 and 5.2). Although oil prices have come down from the historical highs reached in 2008, the current commodity prices still allow difficult-to-reach areas and reservoirs to be economically viable. None of the participants expect the global demand for oil and gas to decrease. As can be seen on chart 5.2, the survey participants indicated that the demand for gas, both globally and in Indonesia, would significantly increase in the next five years. This may be an indication of a shift towards cleaner energy. It is interesting to note that survey participants expected the global demand for oil to increase more than the demand for oil in Indonesia. This may be due to the continuing increase in demand for oil in countries like India and China.

A. Will Indonesian and world oil and gas demand rise or fall over the next five years?

Chart 5.1

Indonesian and world oil demand

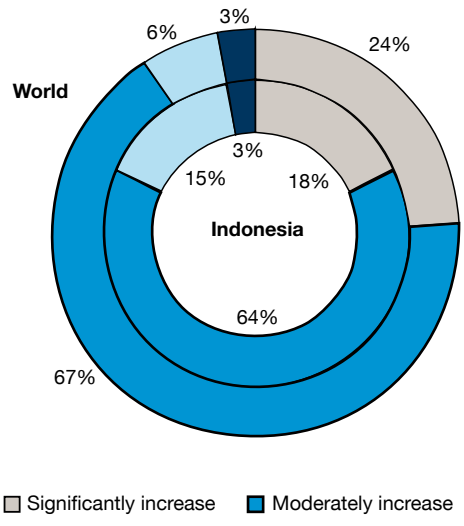
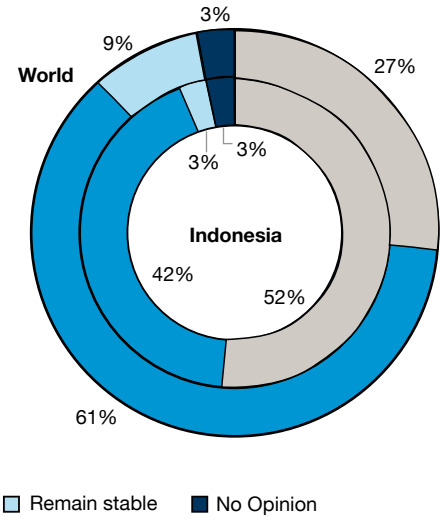


Chart 5.2

Indonesian and world gas demand



Significantly increase | Moderately increase | Remain stable | No Opinion

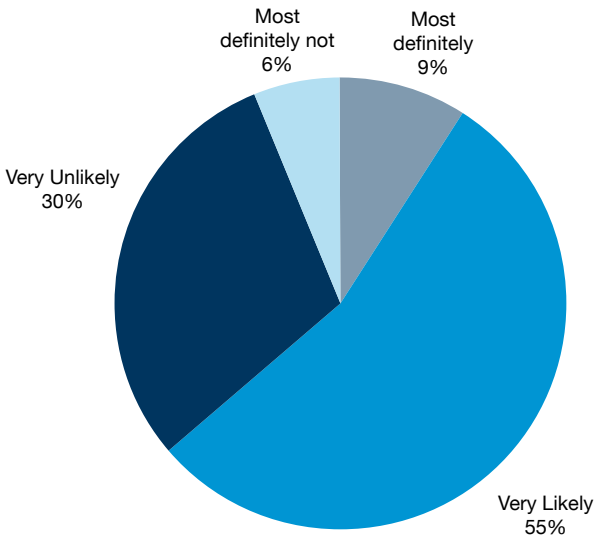
"Gas demand, both locally and internationally will largely depend on the continued growth of the Indonesian, Indian and Chinese economies. Indonesian domestic demand should also grow should the Country be successful in changing its fuel supply mix away from fuel oil and more to gas. LNG supply from Asia will likely be overweighted between 2015-2020."

Survey participant comment

B. Are there significant Indonesian oil reserves yet to be discovered?

Chart 5.3

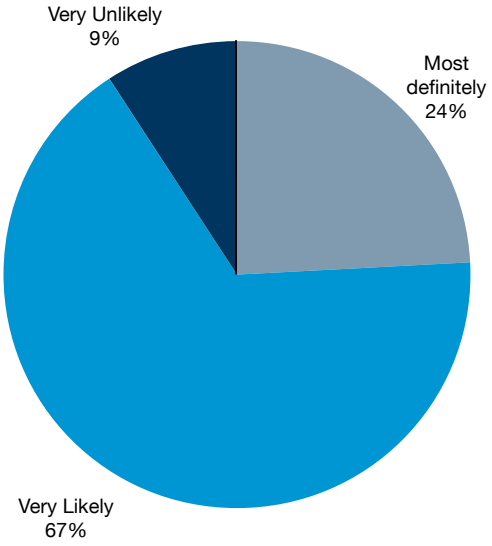
Significant oil reserves to be discovered?



C. Are there significant Indonesian gas reserves yet to be discovered?

Chart 5.4

Significant gas reserves to be discovered?



Most respondents (64% for oil and 91% for gas) seem to be of the opinion that there are still significant oil and gas reserves to be discovered in Indonesia. This is not surprising since the survey was restricted to companies currently operating in Indonesia, and if they didn't believe this to be the case it would be illogical for them to continue to operate here. Consistent with our 2008 survey, respondents indicated that they believed there were slightly more gas reserves to be discovered than oil reserves. Almost 30% thought it was very unlikely that there are still significant oil reserves to be discovered. Whereas, only 9% thought it was very unlikely that there are still significant gas reserves to be discovered. Overall survey participants still believe that its geological prospects is still one of Indonesia's most competitive features.

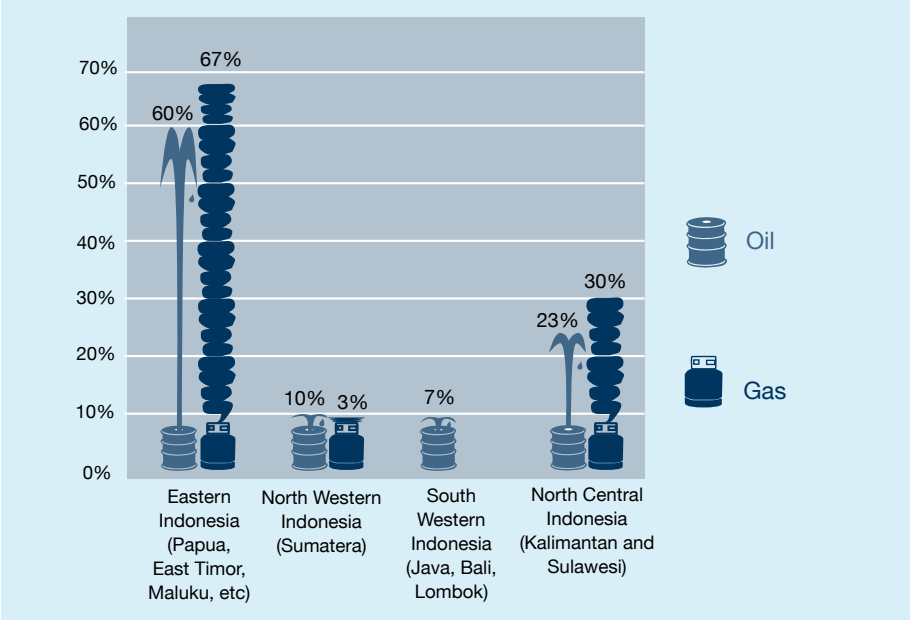
"As a mature country for exploration activities, it is a challenging time to find new reserves here."

Survey participant comment

D. Which of the following areas offers the greatest potential for new discoveries of crude oil and gas reserves?

Chart 5.5

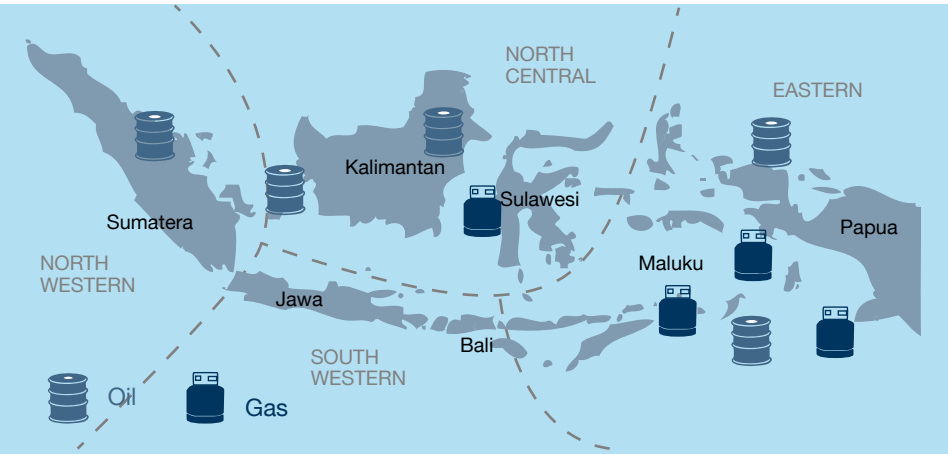
Potential for new reserves



As can be seen in chart 5.5 above, the majority of oil and gas reserves are believed to be in Eastern Indonesia (Papua, East Timor, Maluku, etc), followed by North Central Indonesia (Kalimantan, Sulawesi). It is interesting to note that participants are less optimistic to find potential new oil reserves in North Western Indonesia (Sumatera), considering that this basin provides a large percentage of the country's current oil production. In our 2008 survey, 34% of the survey participants indicated that new oil discoveries would be in Eastern Indonesia, this percentage has now increased to 60%, whereas in 2010 only 10% of survey participants believed new oil discoveries are expected in North Western Indonesia (2008: 34%). The expectations for South Western and North Central Indonesia have remained more or less the same with our 2008 survey results.

The high expectations for gas in Eastern Indonesia are a promising feature of the industry.

Map of Indonesia

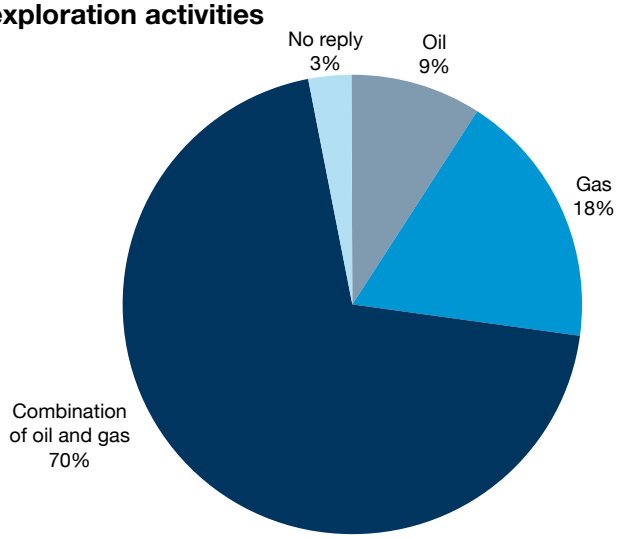


E. What will be the focus of your company's Indonesian exploration activities for the next three years?

Given the expectations of survey participants that there are still significant undiscovered oil and gas reserves in Indonesia, it is not surprising that the majority of the participants indicated that they will focus on a combination of oil and gas exploration for the next three years. This is generally consistent with prior surveys. Participants indicated that there will be more focus on gas exploration in the coming years (18% in 2010 versus 6% in 2008).

Chart 5.6

Focus exploration activities



Employment

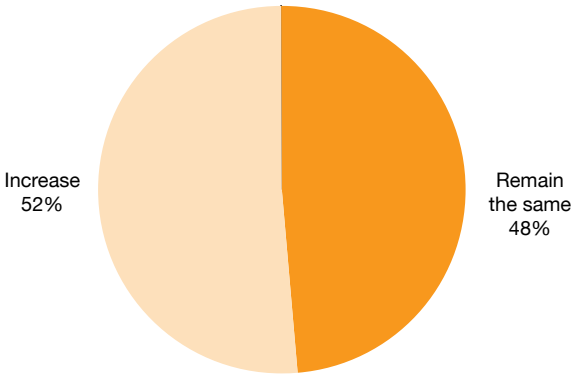
Photo source : Chevron Oil Products Indonesia
Duri Field test station 1 -

A. Compared to 2009, will the level of employment in the oil and gas industry in Indonesia increase or decrease?

The belief that significant undiscovered oil and gas reserves exist in Indonesia, undoubtly gives rise to the high percentage of survey participants who think that employment in the Indonesian oil and gas industry will increase over the coming years. More than 50% of the participants believe that the employment will increase, however, the percentage (2010: 52%) is lower than in the 2008 survey (61%). The remaining half of the participants indicated that they think employment will remain stable.

Chart 6.1

Employment in oil and gas industry

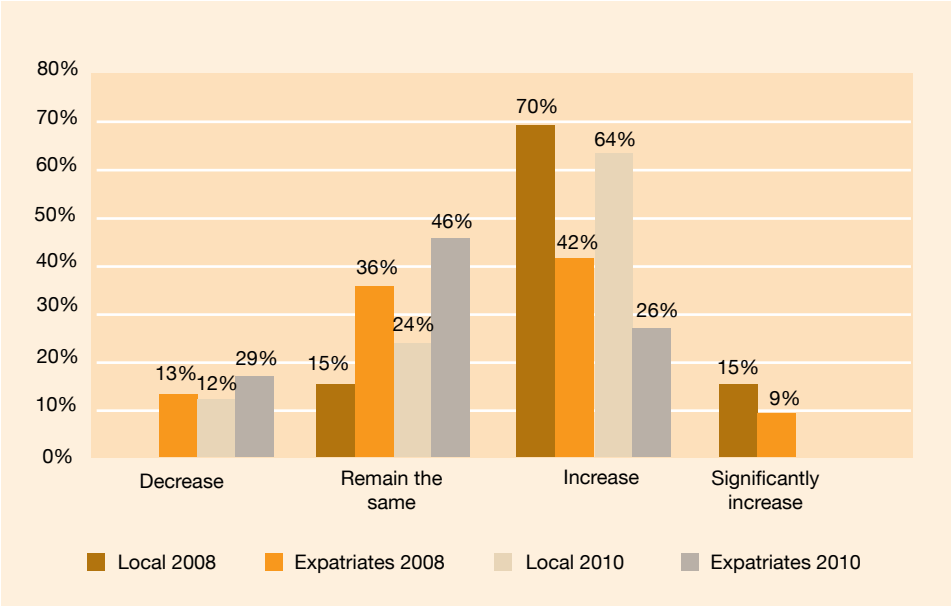


"With the downturn in exploration activities over the last ten years, the available pool of nationals with extensive exploration experience is limited and aged. Furthermore, with the onset of mature and aging production throughout the archipelago there are limited nationals with enhanced oil recovery experience."

Survey participant comment

B. Compared to 2009, will the number of employees in your company increase or decrease?

Chart 6.2
Employee numbers

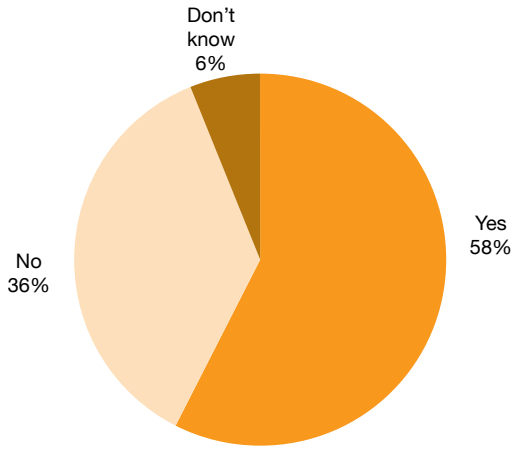


Unsurprisingly, survey participants see the number of employees working in the oil and gas industry in Indonesia increasing over the coming years, although compared to previous survey results, there has been a shift towards “remaining the same”, especially for the expatriates. A large percentage of survey participants indicated that they expect to increase their hiring of local staff. However, a recurring theme in the comments made by survey participants was that they consider attracting qualified and talented staff to be one of the most significant challenges facing the industry in Indonesia and across the globe, both now and in the future. Consistent with our 2008 survey, several respondents commented on the trend for skilled (national) employees to leave Indonesia to work in other locations (mostly the Middle East). One possible reason behind this “brain drain” is the somewhat restrictive salary guidelines from the regulator, which result in skilled local employees seeking employment outside Indonesia.

C. Do you expect the industry to encounter difficulties in hiring and retaining employees in 2010?

Chart 6.3

Difficulties in hiring and retaining employees



"Too many skilled Indonesians are working overseas. Not enough skilled Indonesians in the 5-15 year experience range."

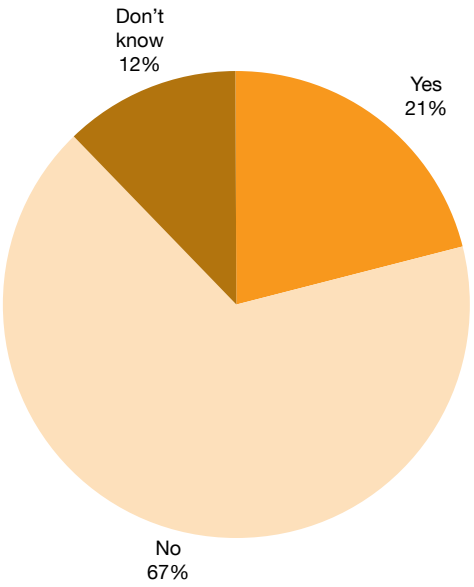
Survey participant comment

D. Does the Indonesian oil and gas industry have a sufficient number of skilled staff to perform these activities?

Given the fact that a majority of survey participants indicated that they expect to encounter difficulties retaining employees in 2010, it is worrying that they also indicated that the Indonesian oil and gas industry currently does not have a sufficient number of skilled staff. Like in our 2008 survey, 67% of the survey participants indicated that Indonesia does not have sufficient skilled staff to perform the required activities (see Chart 6.4). The fact that two-thirds of survey participants believe that the Indonesian oil and gas sector lacks a sufficient number of skilled staff combined with the fact that over half also expect difficulties in hiring and retaining employees isn't a good trend.

Chart 6.4

Sufficient skilled staff



Capital expenditures

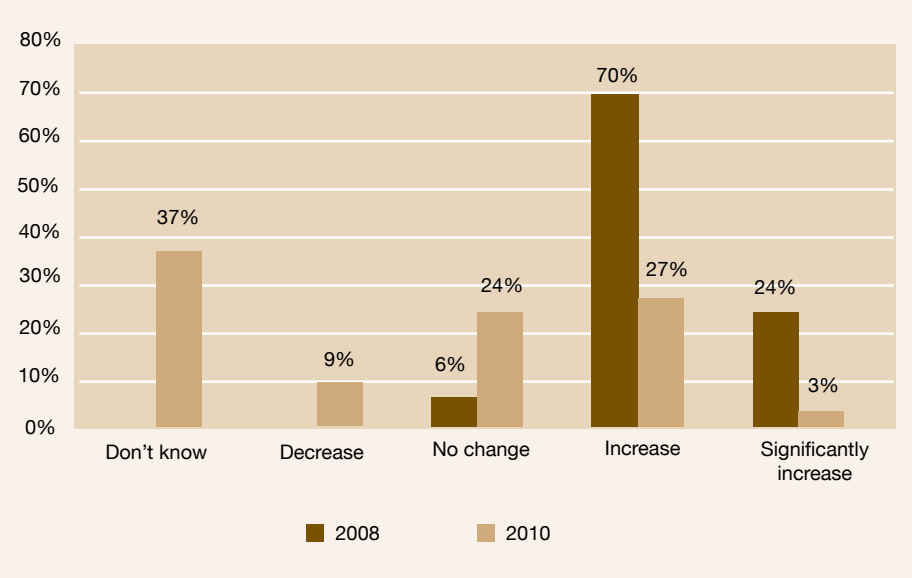
Photo source : PetroChina Indonesia Operations

A. Compared to 2009, how will the capital spending for the Indonesian oil and gas industry change over the next five years?

As can be seen in the chart below, the participants' general view still seems to be that the capital spending will decline or stay the same over the coming 5 years. This is a significant change in sentiment compared to the 2008 survey results where over 90% of survey participants thought capital expenditures would increase or significantly increase. Over 35% of survey participants indicated that they "don't know" what capital expenditures will do over the next five years which we are interpreting as a negative trend given the long-term nature of the industry and need to plan far in advance before investments reap measurable returns. This pessimistic view is a worrying development as the GoI is keen to see an increase in investment in the Indonesian oil and gas industry.

Chart 7.1

Capital spending over the next five years



"Capital availability is more difficult since the onset of the global economic crisis"

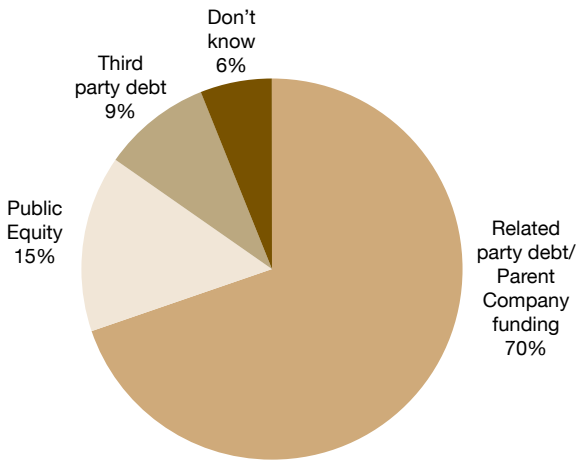
Survey participant comment

B. What will be the primary source of capital for the Indonesian oil and gas industry over the next five years?

As can be seen in Chart 7.2, the primary anticipated source of capital seems to be related party debt/parent company funding, which is not surprising as the industry is dominated by a few large international players. The use of third party debts seems to have decreased compared to our previous survey. Given the current low interest rates this is somewhat surprising, however, given the ongoing financial crisis this may indicate that industry players are having difficulty obtaining third party debt.

Chart 7.2

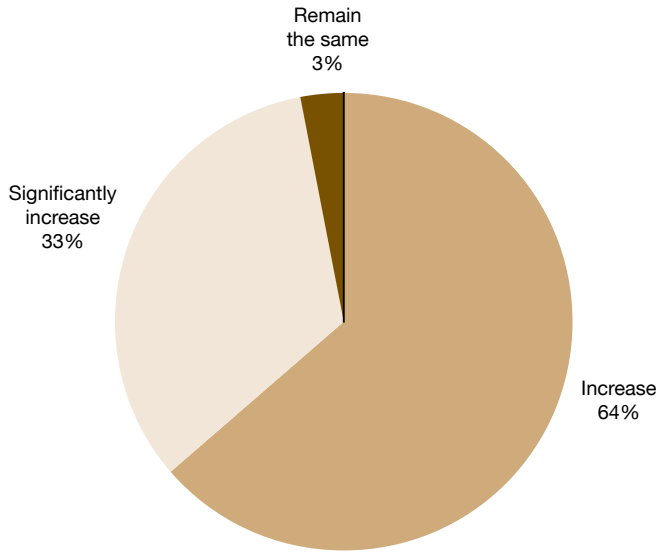
Source of capital



C. Compared to 2009, how will the Indonesian oil and gas industry's need for capital change over the next five years?

Chart 7.3

Need for capital



Not surprisingly a majority of the industry participants believe that the need for capital will continue to increase over the next five years. The anticipated increase in capital spending is likely a result of the increased focus on mature fields and more remote exploration/deepwater activities which are more costly to run/operate.

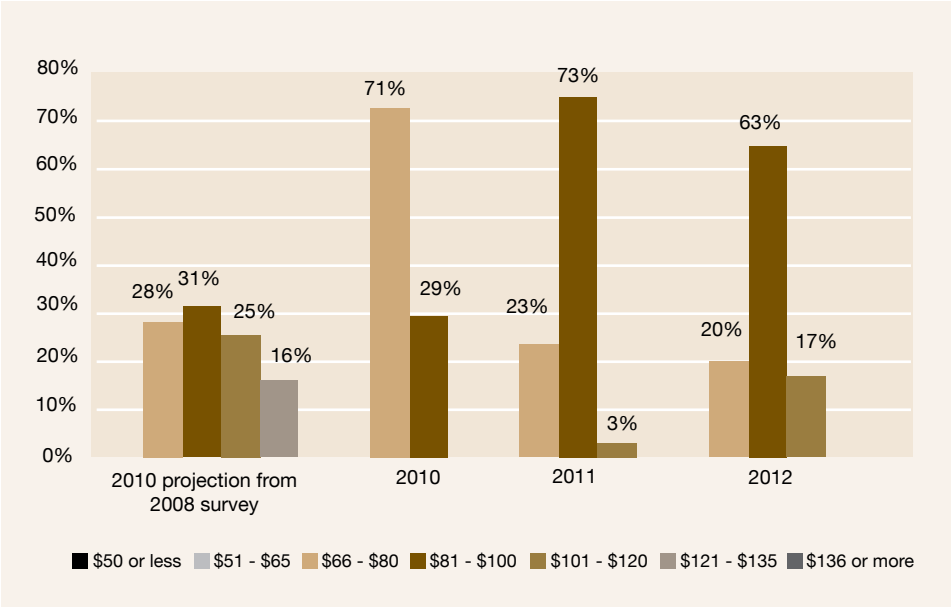
"Significant capital will be needed to attain the Governments target of 1.3 mmbo over the next few years. This investment and subsequent reserves/production will be critical for the Government to meet its future budget goals as well."

Survey participant comment

D. What do you anticipate the average price in US$ per barrel of crude oil will be in 2010, 2011 and 2012?

Chart 7.4

Average price in US$ per barrel of crude oil



The majority of the survey respondents indicated that the price of crude oil would remain in the US$66 - 80 per barrel range for 2010 and increase to US$ 81-100 per barrel in 2011 (the survey was undertaken in early 2010 when oil prices ranged between US$70 and US$80 per barrel). Not surprisingly, the further into the future the projection is carried, the wider the range of responses from participants. For 2010 the majority of respondents believed that the oil price would still be in the $66 - $80 per barrel range, however 29% of respondents believed that prices would be higher than this. It is interesting to see that there seems to be more consensus between participants compared to the 2008 survey, where the anticipated average price per barrel was more diverse and higher than in the current survey. This may be an indication that the participants believe that the high oil prices were not sustainable.

“As much of the production comes from mature basins and as costs rise in connection with commodity prices it is clear that capital spending will rise. In addition, as the industry moves to explore in frontier areas these costs will be significantly higher.“

Survey participant comment

Challenges facing the industry

Photo source : PricewaterhouseCoopers
Oil rig workers

To gain an understanding of the most critical challenges facing the industry we asked survey participants to rate 15 different challenges confronting the Indonesian oil and gas industry, as well as indicating any other challenges they deemed relevant. On a scale of 1 to 5 (1 being “Significantly Important”, 3 being “Moderately Important” and 5 being “Not Important at All”) survey participants were asked to rate the following challenges confronting the Indonesian oil and gas industry:

Table 8.1

Critical Industry Challenges	
Confusion as to the roles of the central, provincial and regional governments	Relations with local government
Interference from other government agencies, such as the tax authorities	Confusion as to the role of Pertamina/BP-Migas and the Ministry of Energy and Mineral Resources (“MEMR”)
Corruption, collusion and nepotism (“KKN”)	Contract sanctity
Relations with local community	Confusion over Law No. 22/ Implementing regulations
Security of assets, people and ownership rights	Confusion over BP Migas regulations/”grand fathering” of prior Pertamina rulings
Labor regulations	Confusion over energy policy and supporting blueprints (gas utilization etc.)
Political risks	Uncertainty over cost recovery and BP Migas / BPKP audit findings
Taxation	

"Cost recovery changes retroactively are unacceptable. Capping or limiting cost recovery (investment) in the future will not lead to the optimal exploitation of Indonesian hydrocarbons."

Survey participant comment

Top five challenges facing the industry

Table 8.2

Challenge	2010 survey % of responses rated issue as "1 - Significantly Important"	2008 survey % of responses rated issue as "1 - Significantly Important"
Interference from other government agencies, such as the tax authorities	55%	30%
Uncertainty over cost recovery and BP Migas / BPKP audit findings	48%	37%
Contract sanctity	48%	32%
Corruption collusion and nepotism ("KKN")	30%	24%
Confusion over Law No. 22/ Implementing regulations	27%	14%

The challenges highlighted in bold were also included in the top five challenges in our 2008 survey.

The 2010 survey results are not surprising given recently issued regulations and draft regulations currently circulating related to cost recovery and taxation. The 2010 survey participants are clearly more aligned in terms of the areas which are significantly important to the industry, namely 1) Interference from other government agencies, such as the tax authorities, 2) Uncertainty over cost recovery and BP Migas / BPKP audit findings and 3) Contract sanctity.

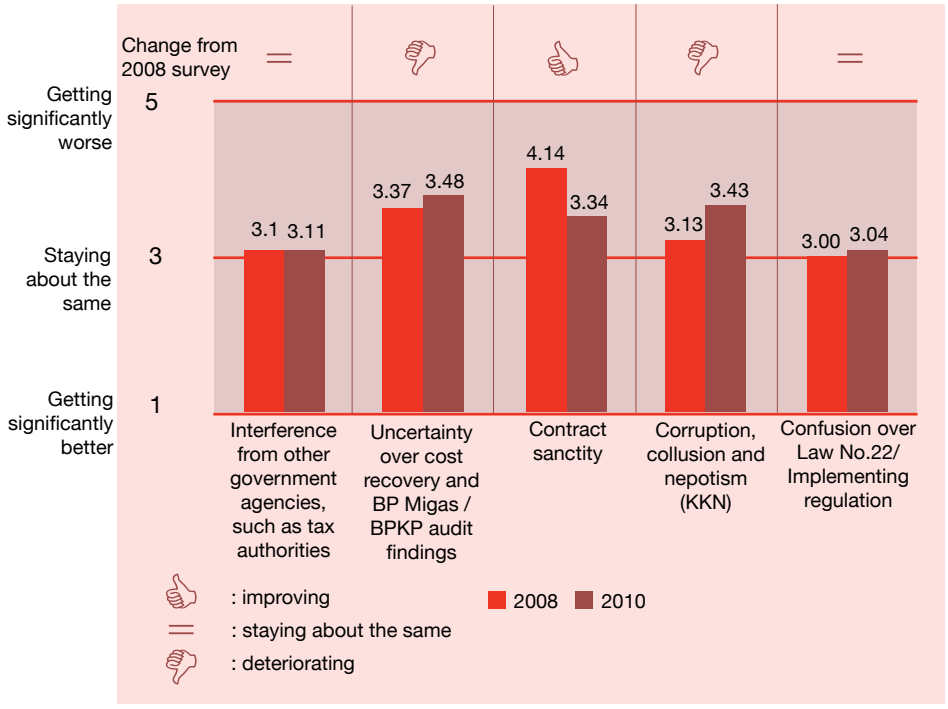
"Protect contract sanctity"

Survey participant comment

Survey participants' view on development of challenges over the next 12 months:

Chart 8.1

Development of challenges (over the next 12 months)



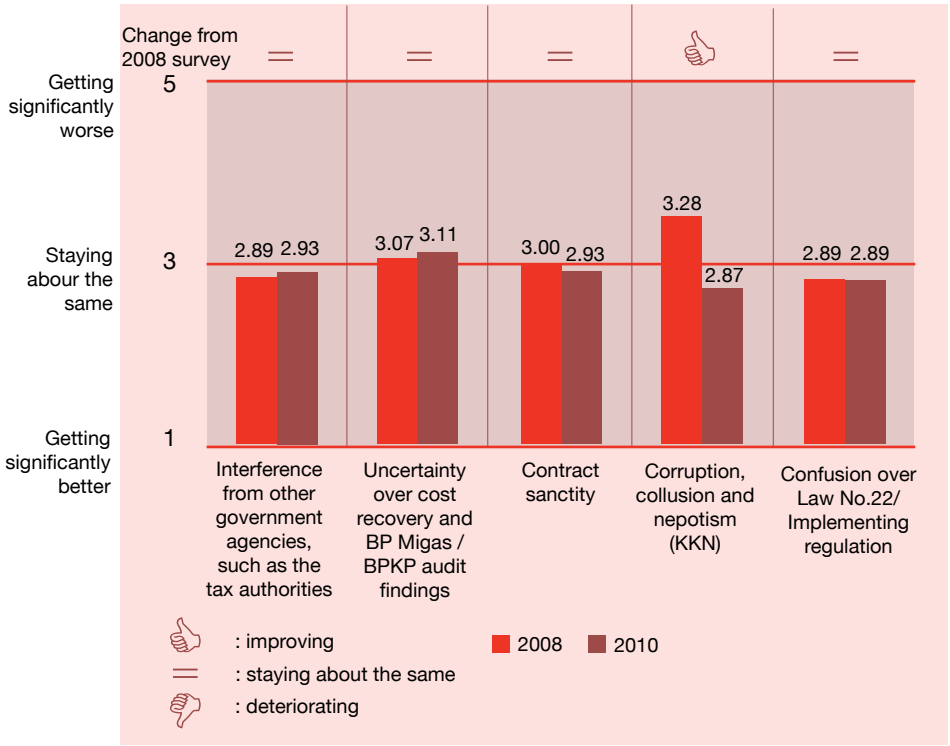
"The government needs to give the operators free rein to explore, procure and put fields on stream. The government should not get involved in micromanagement. A foreign company investing millions of dollars in Indonesia should be allowed to run its business the same way as it does in the rest of the world. The government should lift the restrictions on the hiring of expatriates."

Survey participant comment

Survey participants' view on development of challenges (over the next one to five years):

Chart 8.2

Development of challenges (over the next one to five years)



"Unless the GoI significantly moves to honor existing agreements, streamlines the approval, oversight and regulation of the industry, investment in the sector will decline over the long term, leading to unacceptable decreases in oil and gas production."

Survey participant comment

As can be seen in chart 8.1, survey participants were generally neutral or pessimistic on the development of these challenges over the next 12 months. Survey participants were somewhat more optimistic on the development of these challenges over the longer term. The main reason behind this somewhat pessimistic view may be that many of the challenges confronting Indonesia, such as KKN and judicial reform, require structural changes and it will take a long time to implement real changes.

"Never before in its history has the industry in Indonesia faced such political interference over issues such as contract sanctity, cost recovery, taxation and import duties."

Survey participant comment

Competitiveness

Photo source : Premier Oil

Indonesia's petroleum industry has for decades been viewed by international petroleum investors as an attractive destination for investment, however in recent years there has been some concern that the country's competitiveness is slipping. To gauge the accuracy of this concern, we asked the survey participants to rate Indonesia's competitiveness compared to other countries on the following features (1: highly competitive, 3: neutral, 5: not competitive at all):

Table 9.1

Feature	
Geological opportunities (including access to acreage)	Infrastructure
Existing fiscal framework	Regulatory framework
Trained workforce	Risk premium (i.e. fiscal terms)
Ease of foreign ownership	Environmental regulations
Contract and project approval process	Political stability

What are the most attractive features of investing in Indonesia?

Table 9.2

Feature	2010 Score	2008 Score	Change from 2008 survey
Geological opportunities (including access to acreage)	1.8	2.6	👍
Political stability	2.4	2.9	👍
Trained workforce	2.5	3.4	👍
Ease of foreign ownership	2.6	4.1	👍
Risk premium	2.9	3.8	👍

The features in bold were in the top 5 competitive features in the 2008 survey.

As can be seen in Table 9.2, survey participants indicated that Indonesia's most competitive features are becoming even more competitive. Geological opportunities have always been regarded as Indonesia's most competitive feature. It is interesting to note that risk premium and ease of foreign ownership have become significant competitive features. The fact that the political stability has become a more competitive feature may be the result of increased government focus on stability throughout the archipelago.

"Indonesia's competitiveness in the oil and gas industry will be decreased if the Indonesian Government continues issuing regulations and laws for monopoly and cost recovery restriction."

Survey participant comment

What are the least competitive features of investing in Indonesia?

Table 9.3

Feature	2010 Score	2008 Score	Change from 2008 survey
Regulatory frame work	3.4	3.1	👎
Contract and project approval process	3.3	3.0	👎
Existing fiscal framework	3.2	3.8	👍
Infrastructure	3.1	3.4	👍
Environmental regulations	3.1	3.2	=

Ratings:

1: Highly attractive

3: Neutral

5: Highly unattractive

The fact that regulatory framework has deteriorated is probably due to new (draft) regulations currently circulating related to cost recovery and taxation. Survey participants clearly do not appreciate any changes to existing contracts. It is interesting to see that the existing fiscal framework has improved compared to our 2008 survey. Although infrastructure has scored low in previous surveys, it is promising to see that survey participants have rated infrastructure better in 2010. This may be the result of the GoI's aggressive program to increase investment in infrastructure projects.

In addition, we asked survey participants their views on the development they expected in the competitiveness of these features. As shown in charts 9.1 and 9.2, survey participants indicate that, although they don't expect that things will get significantly worse, they don't expect significant improvement either. This pessimistic view will not help to attract investors.

However it should be noted that participants are optimistic regarding the development of geological opportunities, trained workforce, political stability and infrastructure over the coming 5 years.

In 2008 and 2005 PricewaterhouseCoopers undertook similar surveys and included many of the competitive features listed on the previous page. Although this is not true in all respects, we noted that Indonesia seems to have lost competitiveness for several features compared with the results from previous surveys, or at least is staying the same.

Chart 9.1
Development of competitiveness (within 12 months)

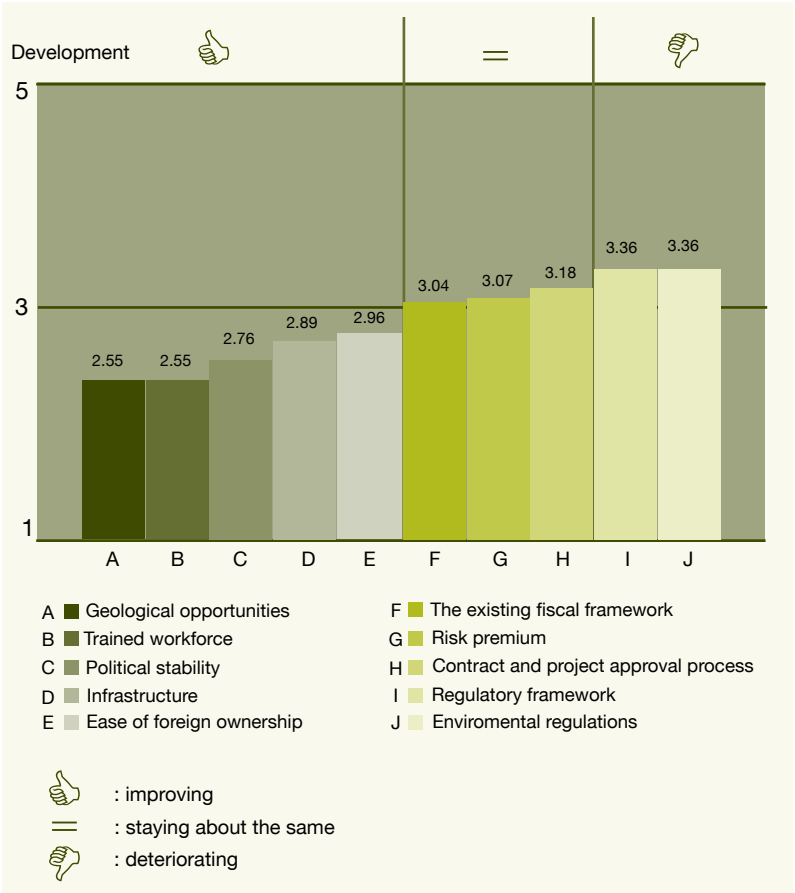
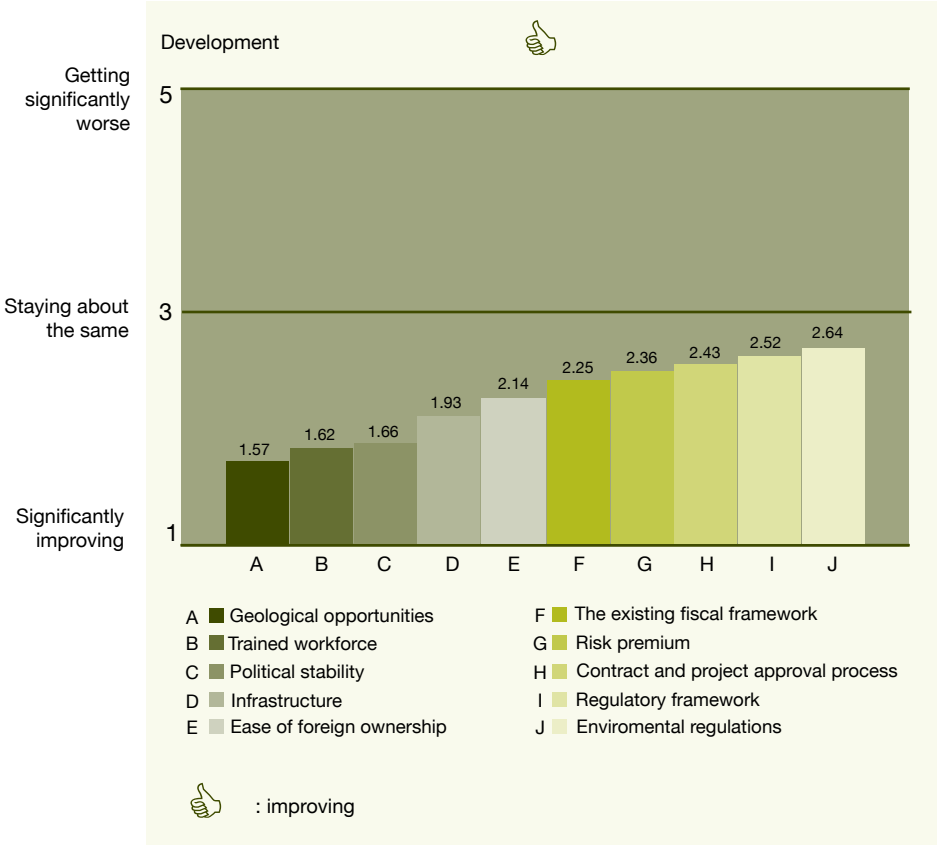


Chart 9.2
Development of competitiveness (within 1- 5 years)



Although no significant changes compared to the 2008 survey results, it seems that survey participants are slightly more optimistic and expect some improvement on certain challenges in the one to five year window. This may be because the majority of these challenges are regarded as structural and require a long time to achieve real improvement.

Survey participants were asked to rate the relative competitiveness of different countries in comparison with Indonesia on four different features, namely geological prospects (including access to acreage), infrastructure, political stability and regulatory framework.

(Please see map on next page for results)

Chart 9.3

Norway	
Geological prospects (including access to acreage)	👍
Infrastructure	=
Political stability	👍
Regulatory framework	👍

China	
Geological prospects (including access to acreage)	=
Infrastructure	👍
Political stability	👍
Regulatory framework	=

Vietnam	
Geological prospects (including access to acreage)	=
Infrastructure	👎
Political stability	=
Regulatory framework	=

USA	
Geological prospects (including access to acreage)	👍
Infrastructure	👍
Political stability	👍
Regulatory framework	👍

Venezuela	
Geological prospects (including access to acreage)	=
Infrastructure	👎
Political stability	👎
Regulatory framework	👎

Nigeria	
Geological prospects (including access to acreage)	=
Infrastructure	👎
Political stability	👎
Regulatory framework	👎

Angola	
Geological prospects (including access to acreage)	👍
Infrastructure	👎
Political stability	👎
Regulatory framework	👎

UAE	
Geological prospects (including access to acreage)	👍
Infrastructure	👍
Political stability	=
Regulatory framework	👍

👍 : More competitive than Indonesia

= : Same as Indonesia

👎 : Less competitive than Indonesia

As can be seen in chart 9.3 on the previous page, its geological prospects remain one of Indonesia's most competitive features. Of the countries included in the survey, only Norway, Angola, the USA and the UAE are seen to have better geological prospects. Despite Indonesia's fledgling democracy, the country was rated relative favorably on political stability, with only Norway, China and the USA being viewed more favorably. Surprisingly, Indonesia was rated positively on infrastructure, with only the UAE, the USA, and China rated more favorably; this can be partly explained by the results of an aggressive program that the GoI has put in place to increase investment in infrastructure projects. Survey participants rated the regulatory framework in Indonesia between its peers, with some countries scoring higher and some scoring lower than Indonesia. However, it is not surprising to see that Nigeria, Venezuela and Angola are rated lower than Indonesia in relation to regulatory framework.

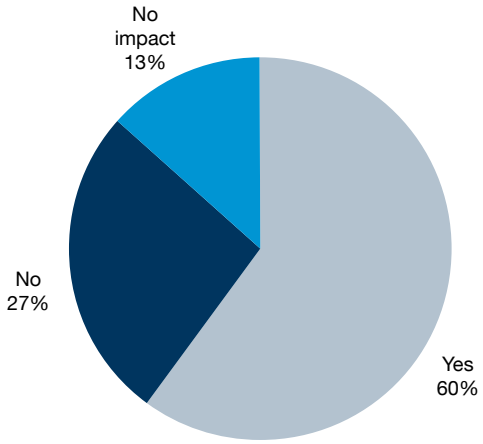
Other challenges

Photo source : Chevron Oil Products Indonesia
Sepinggan Field Platform

A. There have been several high profile arrests in relation to corruption. Do you think that these will improve the perception of Indonesia's commitment to fighting corruption?

Chart 10.1

Do the recent arrest have a positive impact on perception of commitment to fighting corruption?



In the 2008 survey, the GoI's approach to fighting corruption, collusion and nepotism ("KKN") did not seem to convince the survey participants that real actions had been taken to clean it up. As can be seen in chart 10.1, the majority (60%) of the survey participants indicated that the recent high profile arrests in relation to corruption are having a positive impact on the perception of Indonesia's commitment to fighting corruption. However it should be noted that in the 2008 survey 65% of the participants answered "yes" and 16% answered "no" to the above question. This may be an indication that survey participants are becoming more skeptical about the effectiveness of the GoI's approach to fighting KKN.

"Whilst the arrests are positive and a step in the right direction, corruption is too systemic to change considerably near-term."

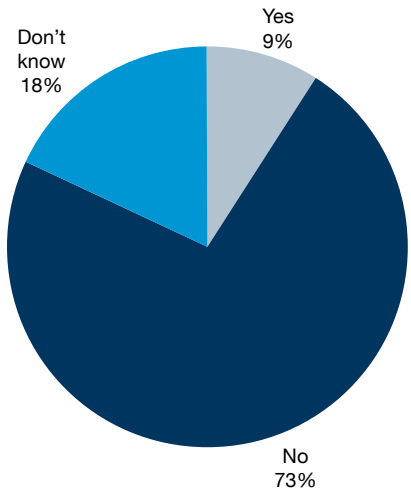
Survey participant comment

The GoI issued its energy blueprint in 2006 calling for greater diversification of the country's energy mix. As part of this debate the country's policymakers have been discussing the development of nuclear energy to fuel a portion of Indonesia's future energy needs. We asked survey participants if they believed the country was ready for nuclear energy and if it possessed the requisite knowledge and expertise to operate a nuclear power plant.

B. Do you think Indonesia is ready for nuclear energy?

Chart 10.2

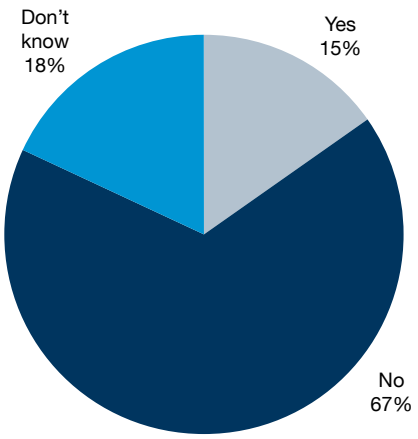
Readiness for nuclear energy



C. Do you think Indonesia has the knowledge and expertise to operate a nuclear power plant?

Chart 10.3

Does Indonesia have the knowledge and expertise to operate a nuclear power plant?



As shown in charts 10.2 and 10.3, survey participants clearly believe that Indonesia is not yet ready for nuclear energy. The main reasons behind this reluctance may be the lack of knowledge and the risks associated with volcanic eruptions, earthquakes and terrorism. However, as Indonesia will eventually run out of oil, it is definitely something that should be considered in due course.

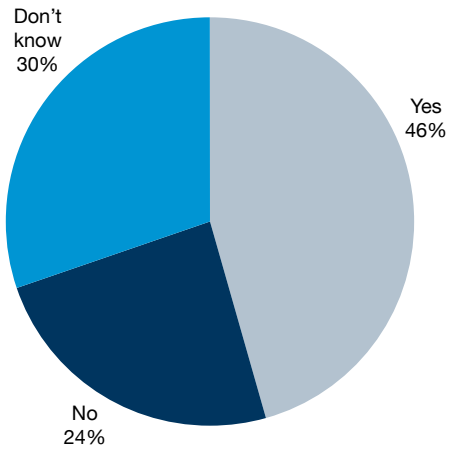
"CBM is all down to gas-price. If the GOI doesn't provide for market gas prices then CBM will never work."

Survey participant comment

D. Will Coal Bed Methane ("CBM") be a viable alternative for domestic gas?

Chart 10.4

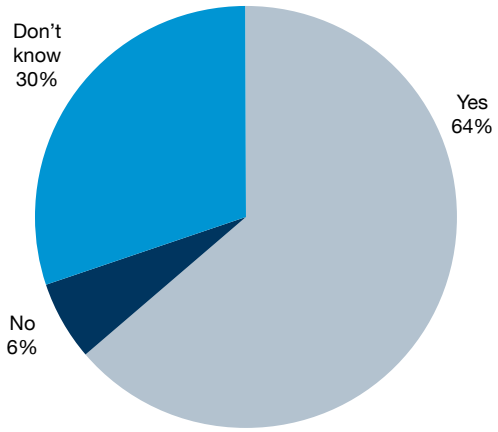
Is CBM a viable alternative for domestic gas?



E. Should the government provide more incentives for the development of geothermal energy?

Chart 10.5

More incentives for the the development of geothermal energy needed?



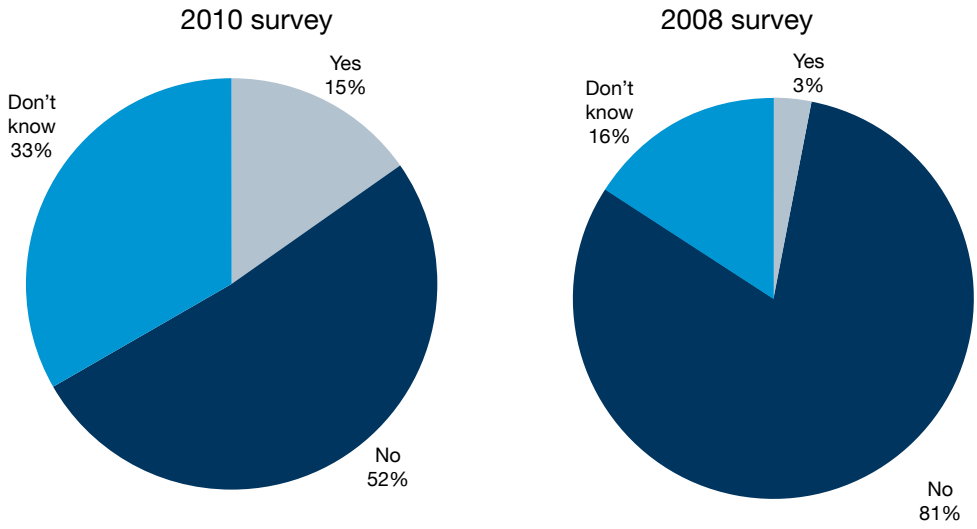
Indonesia holds 40 percent of the world's geothermal potential energy reserves, but ranks third for energy output after the United States and the Philippines. At a recent geothermal conference in Bali, President Susilo Bambang Yudhoyono indicated that he intends Indonesia to become the biggest user of geothermal energy in the world.

Survey participants clearly see that CBM and geothermal are viable alternatives for oil and gas. In order to stimulate the use of these alternative energy sources, they indicated that the GoI should provide more incentives. The fact that 30% of the survey participants indicated that they don't know whether more incentives should be given, may be an indication that both CBM and geothermal energy are still relatively new and there is still a long way to go to educating the market about the opportunities.

F. Has your company ever considered leaving Indonesia because of the issues described earlier?

Chart 10.6

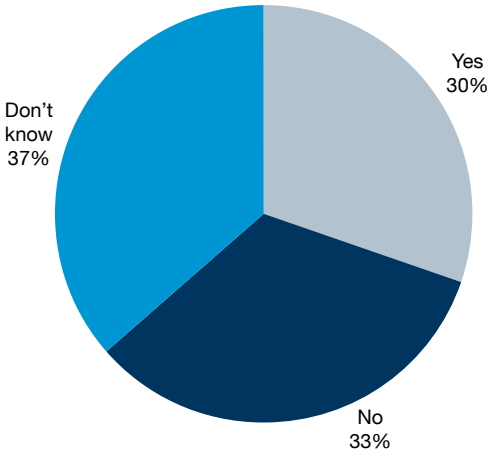
Ever considered leaving Indonesia?



G. Are you satisfied with the current return on investment you are getting from your operations in Indonesia?

Chart 10.7

Satisfaction with return on investment



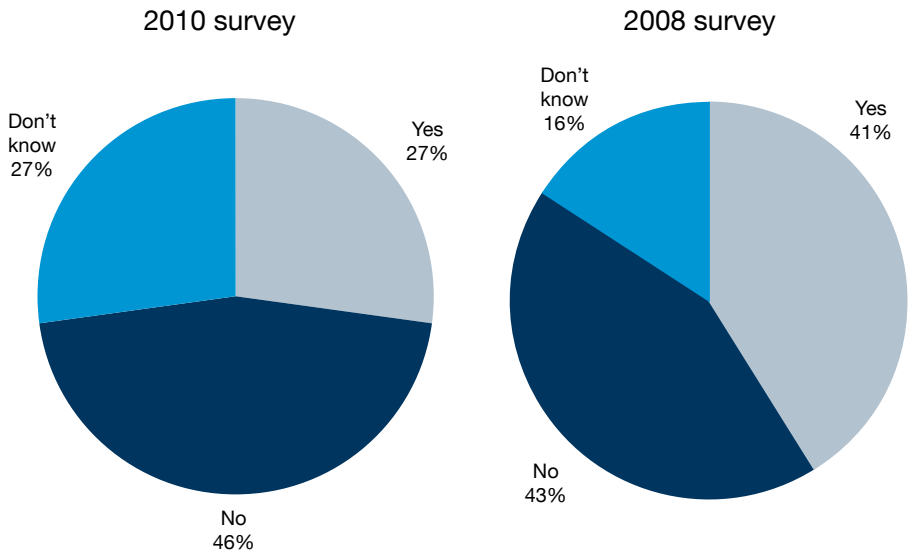
"Only positive action by the GoI can change the investment climate for the E&P industry"

Survey participant comment

H. Do you anticipate a significant improvement in returns from the oil and gas industry in Indonesia over the next five to ten years?

Chart 10.8

Improvement in returns expected?



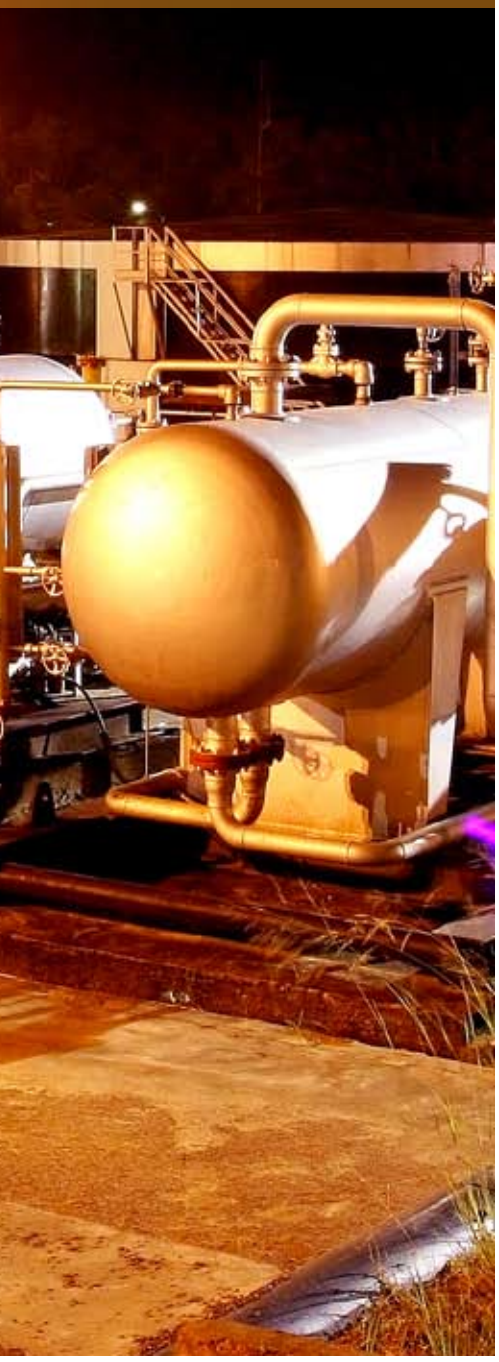
Despite the problems and issues noted in the earlier sections of the survey, investors are not currently considering leaving Indonesia, mainly due to the good geological prospects. However, only 30% of the survey participants indicated that they are satisfied with the returns they are getting on their investment in Indonesia and 73% are pessimistic about improvements over the next five to ten years. The fact that investors are not considering leaving Indonesia yet is undoubtedly linked to Indonesia's good geological prospects in combination with high commodity prices. However, it should be noted that in our 2008 survey, 81% of the participants indicated that they had not considered leaving Indonesia because of the issues described earlier, in 2010 this percentage decreased to only 52%. In addition, in 2008 41% of the participants indicated they anticipated significant improvements in return from oil and gas industry in Indonesia, in 2010 this was only 27%. The general opinion seems to have shifted towards "don't know". These developments may be an indication that although Indonesia is still regarded as attractive for investors, the "shine" is wearing off.

I. The government is trying to change the terms of the PSCs (including cost recovery). What do you think would be the best fiscal terms with the government?

The majority of the survey participants indicated that there should definitely be no cap on cost recovery and/or any changes to existing PSCs. In addition, they indicated that a tax/royalty scheme would be a better alternative to the current PSC system.

Conclusion

Photo source : PT Medco Energi Internasional Tbk



As this is the fourth edition of the oil and gas survey, we have been able to identify trends in survey participant's perception of various challenges facing the industry and the competitive features of the Indonesian oil and gas industry. Overall, survey participants indicated that Indonesia is still regarded as attractive; however the "shine" seems to be wearing off. We noted a general shift in survey participants' sentiment, as their perception of the industry seems to be less optimistic, which is not good for investments.

Geological prospectivity has always been Indonesia's most competitive feature. Survey participants indicated that they expect global and Indonesian demand for oil and gas to increase over the coming years. Survey participants indicated that they expect that there are still significant oil and gas reserves to be discovered in Indonesia. Similar to previous survey results, they expect that there are still more gas reserves to be discovered than oil reserves. According to the survey participants, these new to be discovered oil and gas reserves are likely to be found in Eastern Indonesia (Papua, East Timor, Moluku, etc).

Although this is a positive sign for the industry, the majority of the survey participants indicated that they expect their capital spending to decrease or stay the same over the next 5 years. Only 30% indicated that they expect their capital spending to increase over the next 5 years. This outlook is not a positive signal given the long-term nature of the industry and need to plan far in advance before investments reap measurable returns. This pessimistic view is a worrying development as the GoI is keen to see an increase in investment in the Indonesian oil and gas industry.

Similar to our 2008 survey, the majority of the survey participants expect to encounter difficulties in attracting sufficient skilled human resources. Although 67% of the survey participants indicated that Indonesia does not have sufficient skilled staff to perform the required activities, the trained work force remains a competitive aspect of the industry in Indonesia. The oil and gas industry has a long history in this country, which has resulted in a large, well educated workforce, especially of geologists and engineers. The experience and exposure gained by the workforce through employment by international oil and gas companies has enhanced their competence and expertise in these companies' operations.

We noted that the top 5 issues have remained more or less the same for a number of years. The major challenges facing the industry that stayed in the top five of the least competitive aspects of the Indonesian oil and gas industry are:

- Interference from other government agencies, such as the tax authorities
- Uncertainty over cost recovery and BP Migas / BPKP audit findings
- Contract sanctity

The troubling fact is that the survey participants do not expect significant change (i.e. improvement) within the next 5 years for the above mentioned issues. They indicated that they expect the issues to improve slightly except for uncertainty over cost recovery which they expect to get slightly worse.

Survey participants expect a slight improvement in relation to corruption, collusion and nepotism. This is a good thing, as it confirms that the GoI is on the right path and its significant efforts in fighting KKN are rewarded.

Overall, one can conclude that in order to remain competitive, it is critical that the investment climate in Indonesia continues to improve. In order to attract more investment Indonesia needs regulatory clarity, consistency, certainty and competitiveness.

However, it would not be fair to only look at the areas which need improvement. Indonesia has become more attractive for investors in some respects. This is partly due to the new initiatives of the Indonesian Government. The Government of Indonesia needs to stay focused on the issues highlighted in this survey and ensure that proper action is taken.

We believe that the President and the relevant ministries and government officials are aware of the need to develop an environment conducive to doing business, in addition to providing fiscal incentives. Based on the responses of the survey participants, it is clear that the industry is keen and supports the current government to take the necessary action to achieve such a business environment.

About PwC

Photo source : PricewaterhouseCoopers
Meeting on the walkway

Why PricewaterhouseCoopers?

When looking for a global professional services provider, whether for external audit, other assurance, tax or advisory services, companies today have a broad range of options. Differentiating between service providers can be difficult – most promise a high quality service at a fair price; many commit to having strong credentials and the ability to meet your needs. So why choose PricewaterhouseCoopers firms (PwC) as your service provider?

For companies operating in the Indonesian Energy, Utilities and Mining ("EU&M") sectors, there are some compelling reasons to choose PricewaterhouseCoopers firms as your professional services firm:

- Our dominant market share in these sectors means that we serve more companies in these sectors than any other firm, and that our professionals have tremendous industry knowledge gained from this breadth of experience;
- This industry knowledge results in immediate value being available to our clients as we bring our in-depth understanding of your business issues to bear; and
- For multinational Energy clients, we provide you with the unique experiences our professionals gain from tours of duty in foreign offices. With 13 regional Energy Centers of Excellence around the world, our people can work and train in important industry locations such as Canada, China, Nigeria, Russia, Saudi Arabia, Venezuela (and of course Indonesia) and many others.

PricewaterhouseCoopers Indonesia

Our offerings have been organised into three Lines of Service, each staffed by highly qualified experienced professionals and leaders in our profession.

- Assurance Services provides innovative, high quality, and cost-effective services related to organisations' financial control, regulatory reporting, shareholder value and technology needs;
- Tax Services provides a range of specialist tax services in three main areas: tax consulting, tax dispute resolution, and compliance; and
- Advisory Services provides comprehensive advice and assistance relating to transactions, performance improvement and crisis management, based on long-term relationships with clients and our financial analysis and business process skills.

- The PricewaterhouseCoopers global Energy, Utilities and Mining network includes some 3,400 qualified industry experts.

- For Indonesian companies that are expanding into new markets, considering a transaction, or making operational changes, PwC's clients can take advantage of our global presence; we operate in 151 countries, throughout the world and are located everywhere our clients need us.

- Within the current risk and control-oriented environment, the need for common standards and process simplification is a dominant theme in the EU&M sectors. PwC is assisting our EU&M clients with their needs across finance, accounting, trading and operational functions, resulting in improved management of their enterprises.

- We are committed to providing the highest quality professional services to every client we serve. Annual technical and industry training, internal quality control programs, and improved methodologies are just a few of the ways we ensure that quality is embedded into every service we provide.

- Our client service approach involves learning about the company's issues and seeking ways to add value to every task we perform. Our industry experience pervades our organisation, and as a result, we excel at helping EU&M companies to accomplish their strategic objectives.

- With over 30 years experience in Indonesia, our practice has grown to over 1,000 professional staff, including 32 Indonesian national partners and expatriate technical advisers, combining international and local knowledge, skills and experience.

- Our Indonesian EU&M practice comprises over 175 professionals across our three Lines of Service. This body of professionals has deep industry knowledge and provides us with the largest group of industry specialists in the Indonesian professional market.

- Through our involvement with the Indonesian Petroleum Association ("IPA"), we have helped to shape the industry as it progresses towards truly world-class standards.

- At PricewaterhouseCoopers firms, we help our clients to solve complex business problems by combining a global mindset and local resources with positive action.

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Glossary

BOPD	Barrel of Oil per Day
BP Migas	Badan Pelaksana Kegiatan Usaha Hulu Minyak dan Gas Bumi (Government Executive Agency for Upstream Oil and Gas Business Activities)
BPH Migas	Badan Pengatur Hilir Minyak dan Gas Bumi (The Financial and Development Supervisory Board/ The Government Auditor)
BPKP	Badan Pengawasan Keuangan dan Pembangunan (Government Audit Body)
CFO	Chief Financial Officer
COO	Chief Operating Officer
EU&M	Energy, Utilites, and Mining
GoI	Government of Indonesia
IPA	Indonesian Petroleum Association
KKN	Corruption, Collusion and Nepotism
LPG	Liquified Petroleum Gas
MEMR	Ministry of Energy and Mineral Resources
Pertamina	Perusahaan Pertambangan Minyak dan Gas Bumi Negara (The Indonesian State Oil Company)
PSC	Production Sharing Contract
US$	United States Dollar
VAT	Value Added Tax

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Photo source : PT Medco Energi Internasional Tbk

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