time, it seems is flying by. The recent economic downturn has again reminded us of the importance of keeping up-to-date with information. The news media has been filled with some positive, but mostly negative news. Some is slanted one way, and others lean the other way. Like all forms of information, it must be absorbed and processed with all of the other information available. This bulletin is full of information from technical papers, scouting information, talk summaries, and education seminars.

In attending a recent talk on preparation for emergencies (non-technical), it became apparent that we should all have a plan. Do you have an updated plan for your professional future? In this emergency preparation meeting there was a discussion related to having a year’s supply of food storage – not a bad idea. The issue that was pointed out was the need to rotate the food stocks, so fresh food was always available.

Applying this to the technical arena is simple. Have you updated your technical information related to your profession? Do you keep your information fresh, and update it on a regular basis? The IPA has made huge strides to insure the most recent information is available to members, through the annual convention, the website, the newsletter, lunch talks, and continuing education programs. This has also included partnerships with other professional societies, such as AAPG, to ensure that quality information and opportunities to learn are made readily available here in Indonesia.

The other day, Joel Guttormsen was asked what types of petroleum geology is present in Indonesia. His reply was interesting, “Let’s remember Indonesia has well over 60 basins. With the exception of a thick Cretaceous Chalk play, Indonesia has every depositional and structural style found throughout the globe. We have turbidites, reefs, deltas, fluvial, and even igneous reservoirs. We have simple to complex structures, including fold and thrust belts and intense inversion structures. We have conventional and unconventional reservoirs, including world class fractured basement fields. In short, we have it all. A technical professional has a regular sandbox to play in here, and compared to many parts of the world Indonesia is incredibly under-explored.”

With the incredible diversity of petroleum plays, are we as professionals keeping a fresh stock of ideas in our pantry? With all of these basins and unique depositional environments, plus prolific source rock, we should be swimming in ideas. If we are not keeping our saws sharp, then the teeth get rusty and new ideas do not surface. The AAPG US-Southwest chapter had a meeting a few years ago with a unique theme “You Can Teach an Old Dog New Tricks.” The bottom line was this mature area was far from exhausted, and new play concepts were the key to future success. Two years later, this old basin was revitalized by a brand new play and 25 land rigs could be counted in the small basin where a single tired workover rig had been before.

That was the first reactivation, as the basin more recently went through another round of boom drilling with another new play. Why the new activity? Simple, someone had kept the saw sharp and recognized similarities in the area to another play they had read about. They had kept the saw sharp and used their resources. The IPA is a super source for information and this bulletin is one piece of a much larger resource. The food storage is in place here in Indonesia, we just need to know what is in it and continue to bring forward new ideas for investment.

Thank You, The Editors

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IPA Members and Friends,

For anyone who has been following overseas news reports on TV or the internet (which probably includes most of us), the two big news items right now are firstly, the financial crisis amongst global investment firms, and secondly, the 2008 US Presidential election. I am not going to comment on the financial situation, other than to say, how could all the smart investment bankers and economists get it so wrong? Financial problems, which started in the US, have spread around the world like wildfire, a strong reminder of the inter-dependency of global economies. Similarly, the election of a new US president will have far reaching effects. It will impact people everywhere, whether they agree with it or not. Therefore, it is not surprising, that there is so much interest in the US presidential race.

Part of the allure of this election is that it offers some significant changes. As oil and gas professionals, we are especially interested in the candidate’s position on energy, and how a new government would affect the way we conduct our business. Both political parties are offering policy changes that will reduce their country’s dependence on imported oil. These include the increased use of alternative energy sources, decreased consumption, improved extraction of existing deposits, unconventional resources, and opening new areas to drilling (such as the offshore continental shelf and prospective sections of wildlife refuges).

This list of objectives does not only apply to the US, but to all petroleum producing nations around the world. As an explorationist, it is the last point that has caught my attention – opening up new areas to drilling. It seems counter productive that governments are restricting access to prospective new areas, while their citizens are struggling to cope with rising prices and increased demand. Responsible oil companies with sound HSE practices should be allowed to explore and drill for oil in all accessible areas.

Indonesia will be facing a presidential election next year, with similar challenges to improving its energy sector. As we are well aware, Indonesia is a net importer of petroleum, and has recently made the decision to stand down from OPEC. The clear way to regaining self sufficiency is to find new petroleum resources. Easy to say, but not so easy to do. To their credit, the Government of Indonesia in recent years has increased the number of exploration blocks available through the direct award and regular tender processes. However, the challenge still remains to execute the work programs and successfully add reserves. Many oil companies (some large, some small) have accepted the challenge, and we keenly await their drilling results over the next few years.
Recap of the 32nd Annual IPA Convention and Exhibition

IPA successfully conducted the 32nd Annual Convention and Exhibition at the Jakarta Convention Center, May 27th-29th, 2008. 3,211 professionals and students from Indonesia and overseas registered as convention participants, and another 1,474 visited the exhibition - making for 4,685 people attending over the course of 3 days.

All there benefited from the high quality technical presentations and plenary sessions involving many influential figures in the Indonesian oil and gas industry. The extensive exhibition area provided an opportunity to meet with PSC companies, government representatives, and learn about some of the latest oilfield technologies. Another exciting part of the convention involved the signing of 12 new energy-related contracts.

High on every participant's agenda was the chance to meet with friends and network with other petroleum industry professionals. The photo montage which follows captures some of the moments from the convention.

The technical sessions are certainly a major component of the convention. IPA appreciates the efforts of the paper and poster contributors and their supporting companies, the volunteers who chaired the many different sessions, and BPMIGAS for granting permission to use Indonesian data and share the results of their studies and analysis.

A total of 28 posters and 97 oral presentations were delivered. Of these, a panel of IPA volunteer judges voted the following as the best of the 2008 convention. Reprints of these articles will likely follow in future IPA Newsletters.

Best Professional Oral Presentation - Geoscience
IPA08-G-093
"Insights on Oligocene-Miocene Carbonate Mound Evolution and Morphology from 3D Seismic Data, East Java Basin, Indonesia"
Amy Ruf, EXXONMOBIL OIL INDONESIA

Best Professional Oral Presentation - Engineering
IPA08-E-068
"A Novel Multilateral Construction Technique is Applied in Indonesia, Yielding Multiple-Fold Improvements in Well Productivity"
Indra Utama, JOB PERTAMINA-TALISMAN (OK)
Best Professional Oral Presentation - Others
IPA08-BC-138
“The Economics of Indonesian PSC’s”
Guy Allinson, UNIVERSITY OF NEW SOUTH WALES

Best Professional Poster Presentation
IPA08-G-156
“Cenozoic Carbonates and Their Reservoir Development of in SE Asia”
Moyra E. J. Wilson, CURTIN UNIVERSITY

Best Student Oral Presentation
IPA08-SG-081
“Reservoir Modeling of Shallow Zone in Handil Field, Mahakam Delta, East Kalimantan”
Ratna Widiarti, ITB

Best Student Poster Presentation
IPA08-SE-052
“The EOR Impact of Bacteria from Handil Field in Kalimantan on Crude Oil from X Reservoir in Java Island”
Amalia Yunita Halim, ITB

The exhibition area was buzzing with activity, with PSC and oilfield service companies on-hand to discuss their activities and plans in Indonesia. Of the 113 booths, a panel of IPA volunteer judges voted the following as the best:

Best PSC Company Booth: ExxonMobil Oil Indonesia Inc.
Best Oil Contractor Company Booth: Halliburton
Best Oil Service Company Booth: Paradigm

The success of the Annual Convention & Exhibition is only possible through the work of the IPA staff and numerous volunteers who invested their energy and time to make it a productive venue for openly discussing issues critical to the success of the Indonesian oil and gas industry. The IPA is largely a volunteer organization, and invites interested members to send an e-mail to ipa@cbn.net.id or contact one of the Professional Committee members to learn how to get involved.

As a benefit to IPA members, transcripts of the opening and closing speeches can be found on the IPA website at http://www.ipa.or.id/files/32nd_IPA_Convention_Speeches.htm.

IPA is already planning for the 33rd Annual Convention & Exhibition, May 5th-7th, 2009, at the Jakarta Convention Center. A Call for Papers has been issued and committees are busy organizing the agenda. More information can be found at http://www.ipa.or.id/33rd-Convention/index.asp. We’ll see you there in 2009!
Let's Do Lunch ...

The Luncheon Talk sessions continue to bring topics of interest to the IPA membership, with Mr. Peter McCabe and Dr. Alton Brown volunteering their time and expertise to deliver informative talks.

In June, Mr. Peter McCabe with the Petroleum Resources Division of CSIRO, presented “Deltaic Systems and Super-Systems – Controls on Petroleum Accumulation” as part of the International AAPG 2007-2008 Distinguished Lecturer Series. Mr. McCabe described the need to understand how deltas evolve over short-term (tides, waves, river discharge) and long-term scales (tectonics, sedimentation rates, climate changes), to better understand evolution of the petroleum system. The presentation compared and contrasted deltaic systems from around the world, and how these short-term and long-term factors influenced the evolution of these systems. Mr. McCabe has kindly shared his presentation, and it can be accessed from the Luncheon Talks section of the IPA web site (http://www.ipa.or.id/luncheon.asp).

In November, “Implications of Methane Storage Mechanisms for Exploration and Production from Gas Shales” was presented by Dr. Alton Brown, Consultant. Dr. Brown discussed the mechanisms for gas storage in shallow and deep shale gas reservoirs. Gas sorption is common for shallow shale gas, and porosity storage the mechanism for deeper shale gas. Different geologic conditions were reviewed, which influence the success of a shallow (high TOC, aquifer support, and fractures), or deep shale gas prospect (thermal maturity and high TOC). Also discussed were the benefits of reservoir stimulation technologies, such as fracturing, to enhance the producibility of shale gas.

Please contact Hans Schwing (Luncheon Talks Chairman) by e-mail at hans_schwing@murphyoilcorp.com with ideas and/or suggestions for future Luncheon Talk sessions. Topics should be relevant to Indonesia E&P activities or of broad interest to the IPA membership.
AAPG is now accepting requests from universities who would like to participate in the 2009 Imperial Barrel Award (IBA) contest. Visit the AAPG IBA website at http://www.aapg.org/iba/ to learn how to get your university involved. There are also opportunities for companies to help sponsor this program with supporting funds, mentoring, and technology.*

The IBA contest involves students forming interdisciplinary teams, delegating tasks, and working through a project interpreting an integrated subsurface data set and developing prospects - all on a strict deadline. Prospects are then orally presented to a panel of judges. The IBA contest provides university students a great opportunity to gain practical experience prospecting, working in teams, communicating their findings effectively, and socializing with other participating universities and industry members over the course of the competition.

As covered in the May 2008 IPA Newsletter, a contingent from the University of Indonesia won the 2008 Imperial Barrel Award (IBA) challenge for the Asia-Pacific region and participated in the finals at the 2008 AAPG Annual Convention in San Antonio. Good luck to the Indonesian university students who will participate in 2009.

*Note from the editors: We encourage company and individual involvement with the Indonesian Universities. After all the students are our future. Please note companies can be involved through funding, mentoring, and help with technology. We encourage this type of support.

Figure 1. UI master candidate students working as an interdisciplinary team on their IBA interpretation project.
33rd IPA Convention and Exhibition

May 5th - 7th, 2009
Jakarta Convention Centre

ADVANCE NOTICE AND PRELIMINARY CALL FOR PAPERS

Key Dates:
Call for Papers and Instructions to Authors: September 2008
Abstract Deadline: November 2008
Manuscript Deadline: February 2009
Finalized Papers: April 2009
33rd IPA Convention and Exhibition: May 5-7, 2009

Abstracts are invited for oral and poster presentations on all aspects of Indonesia's hydrocarbon exploration and production industry.

- Commercial and Regulatory Framework
- Corporate Social Responsibility
- Engineering
- Geoscience
- Human Resources
- Safety, Health and Environment
- Finance, Accounting and Tax
- Project Management
- Drilling

For the 2009 Convention, IPA will not arrange for approval of publication for papers from BPMIGAS and the General Directorate of Migas as was done in previous years. Therefore, when your proposed abstract is accepted by the IPA Technical Committee for publication, your Company should obtain BPMIGAS approval by sending a request letter for publication of your paper. If using Indonesian petroleum data not previously published, this is an obligation.

- Send your abstract to tpc_ipa@biz.net.id
- Visit the IPA website at http://www.ipa.or.id/for more information
Note from the Editors: The following article is a reprint of a technical paper from the IPA 2008 Conference and Exhibition, which was voted as the “Best Professional Oral Presentation – Others.” Future Newsletters will carry other papers that won in their respective category, to highlight the author’s effort to share quality technical information and case studies with the Indonesian oil and gas community.

In this article, Allinson and Naim review the economics of the Indonesian PSC structure, and provide some recommendations that might encourage development of marginal fields. With BPMIGAS recently awarding a multitude of new PSC’s and announcing 31 new PSC areas (see http://www.bpmigas.com), it is a very informative overview of how the PSC system works in practice for producing companies and the Government of Indonesia.

The views contained in the article are those of the authors, and do not necessarily reflect those of the IPA.

PROCEEDINGS, INDONESIAN PETROLEUM ASSOCIATION
Thirty-Second Annual Convention & Exhibition, May 2008

ECONOMICS OF THE INDONESIAN PSC

Guy Allinson, University of New South Wales
Geodi Naim, Energi Mega Persada

ABSTRACT

Despite some revisions over the years, the basic structure of the Indonesian PSC has been the same for many years. Many oil and gas field developments have been developed based on these terms. However, with many areas of Indonesia becoming more mature, the terms are now less likely to encourage significant international investors in undertaking further exploration and field development.

This paper analyses the economics of Indonesian PSCs with particular attention to First Tranche Petroleum, depreciation for cost recovery, cost recovery ceilings and domestic oil obligations. It will demonstrate that the terms for conventional Indonesian PSCs are severe and economically inefficient or inflexible. Because of this, the terms are likely to inhibit the development of marginal fields. Therefore they are less likely to optimise overall Government revenue than if more flexible terms applied. The paper suggests ways in which the Indonesian PSC terms can be made more flexible to cater for a wide range of exploration and development conditions and ensure that the terms are robust to future uncertainties in the economic environment.

THE STRUCTURE OF THE INDONESIAN PSC

A basic simplified illustration of the structure of the conventional Indonesian PSC is given in Figure 1. The figure illustrates the general way in which the after tax net cash flow for the contractors is derived for an oil field development. It is based on a contract signed in 2007 provided in confidence to the authors, but is reasonably representative of the range of modern PSCs in Indonesia for conventional contracts. For a presentation of the range of PSC terms for the acreage tender in 2006 see Directorate General of Oil & Gas, 2006.
Figure 1 includes example hypothetical data to illustrate the effects of the application of the PSC in one year of a field development. Figure 1 is interpreted as described below.

The top left hand side of Figure 1 shows that the first claim on gross revenue derived from hydrocarbon sales is First Tranche Petroleum (FTP) which in some PSCs is split between the contractors and the state. In other PSCs, 100% of the FTP goes to the state, as shown in Figure 1. In other PSCs, the Contractors receive a share of FTP equal to their share of Profit Oil. When it applies, the rate of FTP varies between 10% and 20%.

After FTP, the contractors recover their costs from the revenue available after FTP. In some PSCs, contractors can also recover an "Investment Credit". The level of the Investment Credit depends on the water depth and the age of the reservoir, but typically it is 17% to 20%. The Investment Credit is assumed not to apply for the example in Figure 1. In Directorate General of Oil & Gas, 2006, most PSCs offered do not include an investment credit.

The revenue remaining after FTP and cost recovery is Profit Oil, which is split between the State and the contractors in different proportions depending on location and type of development. Typically, under conventional contracts, the Contractors receive 15% of Profit Oil after tax. If the overall tax rate is 44%, then the Contractors would receive 26.7857% before tax. (15% divided by (1 – 44%)) and the state would receive the remainder (73.2143%). The rate of 44% is the overall tax rate if income tax is 30%, dividend tax is 20%, and all income after tax is paid as dividends.

The right hand side of Figure 1 shows that the contractors' revenue consists of the contractors' share of FTP (if any) plus cost recovery and finally the contractors' share of Profit Oil. The right hand side also sets out other Government charges paid by the contractors. These include income tax. Finally, the revenue remaining after deducting all taxes and costs is the net cash flow to the contractors.

Some PSCs might differ from that illustrated in Figure 1 (see, for instance, BPMIGAS Model Contract 2002). However, the differences are likely to be in the details rather than in the fundamental structure.

The derivation of the components of State Contractor Take in Figure 1 is given in at the bottom of 1. This is a simplified illustration for which we assume that DMO is zero and that Operating Costs, as defined in the PSC, exclude the depreciation of tangible capital costs.

The Effect of Domestic Market Obligation

Although as a simplification DMO is not shown in Figure 1, many Indonesian PSCs incorporate Domestic Market Obligation (DMO). Under the DMO provisions, the contractors are obliged to sell to Indonesia a portion of their oil at less than market price. The DMO applies after 5 years from the start of production. However, in the first 5 years of production, the PSC terms commit the Contractors to use the oil which would otherwise be subject to DMO to explore in the contract area or in other areas of Indonesia.

The portion of oil subject to DMO is the lower of either 25% or the ratio of the total Indonesian consumption of crude oil divided by the total Indonesian production of crude oil. At the time of writing, the 25% limit would apply and this amount is assumed for this paper. The volume of oil subject to DMO is 25% of the Contractors' entitlement (for instance, 25% of 26.7857% for the example in Figure 1). The revenue obtained from DMO is this volume multiplied by the DMO price, which varies depending on the contract. For the analyses in this paper, we assume that the DMO
price is 25% of the export market price. The DMO requirement is waived if the available revenue after FTP is insufficient to recover costs.

The effect of DMO is to reduce the Contractors' share of Profit Oil significantly below what it otherwise would have been if the Contractors received full market price. For instance, if 25% of the Contractors' volume entitlement (the DMO volume) receives 25% of the market price, then the remaining 75% of the value of the DMO volume goes to the Government instead of the Contractors. This is equivalent to 75% times 25% equals 18.75% of the Contractors' entitlement. Therefore, the DMO will measurably increase the severity of the Indonesian fiscal terms.

THE SEVERITY OF THE INDONESIAN PSC

Figure 1 shows that the overall Government Take in the hypothetical simplified example is over 86%. This compares with the average Government Take internationally of approximately 63% according to IHS Energy's fiscal review 2007 and would rank the Indonesian conventional contracts among the most severe in the world. Other Indonesian contracts, for instance those in frontier areas, with profit shares that are more favourable to the contractors are significantly less severe.

Conventional Indonesian contracts can, in fact, have a higher effective Government Take than the 86.5% shown in Figure 1. Analyses shown later in this paper indicate that the Government Take for conventional Indonesian PSCs is at least 88%. This is because (a) Government Take increases for less profitable developments and (b) the analysis in Figure 1 is simplified because it does not take into account Domestic Market Obligation and any detailed working of the cost recovery mechanism.

THE EFFECT OF PSC COMPONENTS ON FIELD DEVELOPMENT DECISIONS

The Effect of FTP

As mentioned above, one of the causes of the increase in Government Take as field developments become less profitable is the effect of FTP. The before take net cash flow shown in Figure 1 is the Gross Revenue of $200 less the Operating costs of $10. In Figure 1, the FTP is $20, which is 10% of the Gross revenue. Like any royalty, FTP takes no account of costs. Therefore, as we increase the Operating costs, the net cash flow becomes lower, yet the FTP remains the same and consumes a greater portion of the net cash flow. As a result, the overall Government Take as a percentage of before take net cash flow becomes larger until it renders the field uneconomic.

Figure 2 illustrates this for the fiscal terms shown in Figure 1. Figure 2 shows that as the net cash flow falls, Government Take increases until it reaches 100%, at which point FTP consumes all the available net cash flow and makes the development unprofitable. Without FTP the field would continue production. We can conclude that FTP has the potential to distort investment decisions, especially for marginal fields with low net cash flow. In many Indonesian PSCs the effective rate of FTP to the Government is larger than 10% (approaching 15% in some cases) and the potential to distort investment decisions is greater.

Cost Recovery Effects

Indonesian PSCs allows the Contractors to recover Operating Costs from revenue available after FTP. Operating costs consist of "Non-capital Costs" plus the depreciation of "Capital Costs" plus any unrecovered costs from previous years. Non-capital Costs are effectively annual production costs plus
intangible drilling costs. Capital Costs are tangible costs associated with assets with a life greater than one year. They include amongst other things production facilities, transport and equipment costs.

Capital costs generally represent a significant portion of the costs of field development. In addition, they represent up-front risk capital, spent before any revenue from production is received. Under Indonesian PSCs these are recovered over several years through depreciation. The depreciation method and the depreciation period depend on the type of asset and the PSC in question. For instance, production facilities might be depreciated on a declining balance basis over 5 years. Transport equipment might be depreciated over 9 years. In other words, the Contractors must wait several years to obtain full cost recovery of their up-front risk capital. For profitable field developments, this requirement might not be onerous, because the Contractors' share of Profit Oil might be sufficient to recover quickly the costs not recovered through the cost recovery mechanism. However, for marginal projects, the effect of the delay in recovering costs might have a considerable bearing on the economics of the field development decision. In other words, depreciation for cost recovery penalises marginal developments more so than it does profitable developments and, again, might contribute to a decision not to develop a marginal discovery that might otherwise be economic.

These investment decision distorting features in Indonesian PSCs are to some extent offset in some contracts by the investment credit and the ability to include interest on debt at commercial rates.

First-generation Indonesian PSCs (from 1965 to 1975) had a 40% cost recovery ceiling provision, which means that the revenue available for cost recovery is limited to 40% of the revenue in the project. Present-day PSCs have an implicit cost recovery ceiling because FTP reduces the revenue available for cost recovery in any one year, increasing the likelihood that some costs will be unrecovered and carried forward for recovery in following years. Generally speaking, cost recovery ceilings act in a similar way to depreciation for cost recovery because they limit the ability of the Contractors to recover quickly their up-front risk capital. This might have a detrimental effect on field development decisions, particularly for marginal discoveries. Any future move to introduce cost recovery ceilings explicitly into Indonesian PSCs should take this into account.

**THE ECONOMICS OF THE INDONESIAN PSC**

In the following we analyse the effect of example existing Indonesian PSC terms on the economics of developing a set of hypothetical fields offshore Indonesia in shallow water. However, the location and type of development are not material to the discussion because we focus on how the fiscal structure of Indonesian PSCs affects development decisions for a range of fields.

The assumptions made for the analysis are set out below.

*Fiscal Assumptions for Example Existing Indonesian PSC*

- FTP: 10% of gross revenue to the State. None to the Contractors
- Cost recovery: All tangible costs depreciated by declining balance over 5 years
- All other costs recovered immediately if revenue is available
- Abandonment costs recovered during field life
- No investment credit
- DMO price: 25% of market price
- Profit sharing: 26.7857% to the Contractors and 73.2143% to the Government
- Income tax: 44% of taxable income
Field Development Assumptions

Field sizes - Up to 250 MMbbl stand alone
Peak field rates - From 30% to 15% of reserves for small to large fields respectively
Development costs - From US$9MM to US$20MM in real terms per thousand barrel of oil per day at peak production.
Production costs - Annual real costs = 7% of total real development costs in real terms
Abandonment costs - Costs in real terms = 20% of real development costs

Economic Assumptions

Discounting - Net present values are in nominal terms using a discount rate of 10%.
Base year for costs - Real costs and oil price are in US$2008 terms
Escalation - 3% per year on oil price and costs
Oil price - From US$30 to US$90 per barrel in real terms

Results of Analyses

Based on the assumptions set out above, our cash flow analyses for a range of field size and oil price scenarios give the results shown in Figure 3. Figure 3 shows the net present value (NPV) of field development before and after Government Take. It gives an indication of the extent to which the fiscal regime distorts investment decisions. The NPV before take takes into account field sizes, production profiles, costs and oil price. The NPV after take is based on the same factors, but shows the effect of Government Take.

The figure shows that only those scenarios with a before take NPV of more than about US$500 MM are economic after take. Theoretically such discoveries would not be developed purely because of the effects of those elements of the fiscal terms that are based on parameters other than the NPV of net cash flow. In other words, the regime is not flexible in the case of low-profitability marginal discoveries and might cause them to be rejected for development unless the PSC terms are renegotiated. If fields are rejected for development, then the Government Take is zero.

The Government Take is the sum of the effects of FTP, DMO, profit sharing and tax. For the field development scenarios analysed in Figure 3 it ranges from approximately 88% for profitable developments to over 100% for the less profitable developments.

COMPARISON WITH THE ECONOMICS OF PROFITABILITY-BASED FISCAL TERMS

We also carried out analyses of the same set of field developments under the terms of a hypothetical example fiscal regime. The regime has more flexibility than the example existing Indonesian PSC while allowing for a similar level of Government Take at high levels of profitability. The hypothetical alternative regime is designed purely to allow us to compare the flexibility of the
Indonesian PSC terms. The terms for this alternative are one example of many hypothetical examples. Other alternatives might achieve a similar objective. We are not proposing this particular regime for Indonesia. The design is simply to illustrate the effects of an economically flexible set of fiscal terms against which to compare the Indonesian PSC terms. The terms assumed for the hypothetical alternative regime are set out below.

*Fiscal Assumptions for Example Hypothetical Alternative PSC terms*

<table>
<thead>
<tr>
<th>FTP</th>
<th>Zero</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost recovery</td>
<td>Costs are immediately recoverable if sufficient revenue is available</td>
</tr>
<tr>
<td></td>
<td>No cost recovery ceiling</td>
</tr>
<tr>
<td></td>
<td>Abandonment costs recovered during field life</td>
</tr>
<tr>
<td></td>
<td>No investment credit</td>
</tr>
<tr>
<td>DMO price</td>
<td>No DMO</td>
</tr>
<tr>
<td>Profit sharing</td>
<td>Based on the rate of return of the Contractors’ net cash flow up to the previous year. Rate of return – Contractors’ share – Government Share</td>
</tr>
<tr>
<td></td>
<td>Less than 5.0% - 80% - 20%</td>
</tr>
<tr>
<td></td>
<td>5.0% to 7.5% - 60% - 40%</td>
</tr>
<tr>
<td></td>
<td>7.5% to 10.0% - 50% - 50%</td>
</tr>
<tr>
<td></td>
<td>10.0% to 12.5% - 40% - 60%</td>
</tr>
<tr>
<td></td>
<td>12.5% to 15% - 30% - 70%</td>
</tr>
<tr>
<td></td>
<td>15.0% to 17.5% - 20% - 80%</td>
</tr>
<tr>
<td></td>
<td>17.5% to 20% - 10% - 90%</td>
</tr>
<tr>
<td></td>
<td>Above 20% - 5% - 95%</td>
</tr>
</tbody>
</table>

Income tax | Zero |

The example alternative regime has only one component of Government Take – profit sharing. The latter has decreasing Contractors’ shares of profit oil as the rate of return of the project increases. The hypothetical regime might be less than ideal and ignores any administrative or political aspects of implementation, but is designed so that all projects that have a positive NPV before take also have a positive NPV after take. The regime is also designed to give similar levels of Government Take as the example existing Indonesian PSC for profitable developments. The regime might be improved to allow greater Contractor Take to make the terms less severe and more internationally competitive.

**Results of Analyses**

Figure 3 shows the results of the analysis of the hypothetical alternative PSC terms alongside the results of the example existing Indonesian PSC. Several features are evident.

First, the NPV after Government Take is always positive implying that all the fields analysed for the diagram would be developed. Any development that is economic before take will also be economic after take. This is because Government Take is based strictly on the profitability of the project and takes into account both revenues and costs as well as the return on the difference between them. The latter is the basis for making a commercial decision whether or not to develop.

Second, for very profitable developments, the NPVs are smaller than the example existing Indonesian PSC. The latter point is an artefact of the particular percentages used for the profit sharing.
tranches. Depending on Government policy, less onerous terms could be used instead. This would enhance Indonesia's attractiveness as a place for oil and gas investment.

The Government Take for the example hypothetical alternative regime is simply the Government share of profit oil. For the field development scenarios analysed in Figure 3 it ranges from approximately 95% for profitable developments to approximately 50% for the less profitable developments.

CONCLUSIONS

The terms of the existing Indonesian PSCs for conventional areas (the so-called 85-15 contracts) are onerous on an international comparison. However, the terms for other Indonesian PSCs are less severe — for instance, those for frontier areas.

The terms of the existing Indonesian PSCs are also inflexible, especially for low-profitability, marginal discoveries. Government Take is higher for such developments than it is for more profitable developments. In other words, the terms of the PSCs hinder the development of marginal fields. The reason is that the terms contain elements that are not based on project profitability. An example is FTP, which is levied on gross revenue regardless of the costs of development.

As Indonesian conventional geological basins mature, the larger reservoirs are developed and produced first, leaving the smaller reservoirs unexploited. The smaller reservoirs are likely to be more numerous than the larger reservoirs and collectively could contain significant volumes of oil. If the PSC terms prevent their development, then either the terms will need to be re-negotiated or Indonesia's long term production of oil will be less than optimal.

Alternative fiscal terms based on project profitability promise to avoid this difficulty. Such terms are inherently flexible. The example hypothetical regime used in this paper illustrates how such a regime could affect field development decisions and how this compares with the existing Indonesian PSC terms. We are not proposing this particular regime for Indonesia. Rather we are showing one illustration of the effects of economically flexible terms. The terms allow the development of all discoveries that are economic before Government Take. They avoid the need to re-negotiate terms. They also avoid the need to have different terms for different areas of the country or the have separate terms for oil and gas. This paper gives one example of such alternative terms (based on project rate of return). Other alternatives could achieve the same result, provided they are based strictly on project profitability. The Government Take from an undeveloped field is zero and therefore more flexible fiscal terms that automatically allow marginal fields to be developed benefit both Contractors and the Government.

REFERENCES


BPMIGAS, 2002, Model PSC
Project cash flow

Gross Revenue
$200.0

FTP
to State
+ $20.0

10%

Cost Recovery
$10.0

Profit Oil to State
+ $124.5

73.2143%

Profit Oil
$170.0

Income tax
+ $20.0

Government Take =
$164.5 = 86.5%
of before tax net cash flow

Government cash flow

- Operating costs
- $10.0

Contractors cash flow

- $10.0

+ FTP to Contractors
0.0

+ Cost Recovery
+ $10.0

+ Profit Oil to Contractors
+ $45.5

= After tax net cash flow to Contractors
= $25.5

Explanation of simplified example calculations

| Gross revenue | $200 assumed |
| Operating costs | $10 assumed. As a simplification, this excludes depreciation of capital costs |
| FTP | Assume FTP = 10% of gross revenue. FTP = $200 * 10% = $20 |
| Cost recovery | Minimum of operating costs and (Gross rev less FTP) = Min($10, $180) = $10 |
| Profit Oil (PO) | Gross revenue less FTP less cost recovery |
| PO to Contractors | PO * share of PO = PO * share of PO after tax / (1 – tax rate) |
| | = PO * 15% / (1 - 44%) = PO * 26.7857% = 170 * 26.7857% = $45.5 |
| PO to State | PO * share of PO = PO * (100% - 26.7857%) = PO * 73.2143% |
| | = $170 * 73.2143% = $124.5 |
| Income tax | Tax rate * (– Operating costs + Share of FTP + Cost recovery + PO to State) |
| | = 44% * (-$10 + $0 + $10 + $45.5) = $20 |
| After tax net cash flow | - Operating costs + Share of FTP + Cost recovery + PO to Contractors – income tax |
| Government Take | (FTP to State + PO to State + Income tax) / (Gross revenue - Operating costs) |
| | = ($20 + $124.5 + $20) / ($200 - $10) = $164.5 / $190 = 86.5% |

Figure 1. Structure of conventional Indonesian PSC with hypothetical example calculations.
Figure 2. The effect of FTP on Government Take as net cash flow decreases.

Figure 3. Fiscal efficiency - NPV before and after Government Take.
To respect confidentiality, details are minimised unless in the public domain. All information is from the Geosolutions Asia Weekly Exploration Bulletin. Ongoing wells are not included.

To date, 2008 has been fairly quiet in terms of new exploratory wells spudded. And as the 3rd quarter ends, it is apparent that the 2008 year-end totals will be less than 2007 - despite the best efforts of all concerned to maintain the activity levels of last year. Rig availability and day rates are among some of the obvious challenges, but I must leave speculation to other forums.

The highlights of the period are briefly discussed below.

**SUMATRA**

Onshore drilling has again continued at brisk levels in the Central and South Sumatra basins, with South Sumatra continuing to be by far the most active region in Indonesia. Offshore activity in Aceh, North Sumatra resumed during this period (see below).

In the North Sumatra Basin, operator Transworld drilled the Gurame 1X gas appraisal using the Ensco 1 barge. Sampling and logging programmes proved the shallow Seurula and Keutapang sandstones to be water wet, while the presence of hydrocarbons was seen in two zones of the Baong Formation. However, log analysis revealed that the formation displayed low permeability characteristics and is tight at this location.

Only a single operator has been active in the Central Sumatra Basin. Chevron’s latest exploration programme in the Rokan PSC yielded a run of oil discoveries, with wildcats Ganda 1, Pilar 1, Retak 1 and Sihangat 1.

In the South Sumatra Basin, PT Pertamina drilled the successful RCD C-2 oil and gas appraisal. But its Talang Jimar Deep 1 resulted in non-commercial oil.

PetroChina continued its long-term drilling programme in the Jabung PSC, with the following active wells reported for the period: Limpah 1 (non-commercial oil), Merta 1 (gas in TAF), Ruku 1 (dry), Sabar 2 (long term test), Siantang 1 (to test) and West Betara 6 (to test).

Elsewhere, PT Pertamina/Talisman drilled oil appraisal Metur 3 in the OK JOA. PT Sele Raya drilled a successful delineation of
the SE Siera 1 oil discovery (700 bo/d from ABF sands) in the Merangin II PSC, followed by an oil discovery in ABF sands at West Belani 1.

Finally, PT Tiarabumi's Sampoeerna 1 wildcat in the West Air Komering PSC resulted in an oil discovery from an unspecified interval.

JAVA
Offshore in the West Java Sea, CNOOC drilled two exploration wells in the OSES PSC using the Bohai IV jack-up, Mila 3 (gas shows in TAF) and Nirmala 1 (oil shows in TAF).

In the East Java Basin, offshore activity continued with two operators active. In the Bulu PSC, PEARL completed its drilling of the Lengo 1 wildcat using the Rani Woro jack-up, resulting in a Kujung gas discovery. Press releases stated that wireline logs and downhole sampling indicated the presence of gas over a gross interval of 42 m. The well was flow tested up to 12.8 MMcf/d. Further to the east, PT Easco's Borobudur 1 wildcard drilled using the Energy Searcher drillship, encountered non-commercial oil in Ngimbang sands.

Onshore, in PT Pertamina/PetroChina's Tuban JOA, Bogomiring Baru 1 resulted in non-commercial oil from Ngrayong sands, while the South Bungoh 1 wildcard resulted in a gas discovery from Tuban sands. In ExxonMobil's Cepu PSC, a successful delineation of the Jambaran gas field was completed.

KUTAI BASIN
Offshore, Salamander followed earlier appraisal well Tutung Alpha 1 with testing of TA-1 and the drilling of TA-2ST in its Bontang PSC using the Ensco 1 barge. Salamander stated that TA-1 was tested across two zones in the Middle Miocene Pulubalang Formation sandstones. DST 1 in a low permeability zone flowed 1 MMcf/d and 67 bc/d, while DST 2 flowed 14 MMcf/d and 475 bc/d. TA-2 was not tested. Evaluation of the three wells drilled on the structure is now underway.

In the Mahakam Offshore PSC, Total drilled a successful gas delineation at Tunu Great South 2 using the Raissa barge.

PAPUA
Onshore in the Salawati Basin, PT Pertamina's Klamono Utara W-1 tested gas at 19.5 MMcf/d from the Kais Formation.

SERAM
Exploration continued on Seram, with CITIC's drilling campaign underway. Nief Utara A-1 flowed 640 bo/d from Manusela Formation carbonates and has since been put on production. Delineation well Nief Utara A-2 followed and flowed 372 bo/d. The delineation campaign continues with well A-3. Meanwhile wildcard Dawang 1 encountered gas in the Plio-Pleistocene Fufa Formation, but further evaluation of the discovery is required.

TIMOR SEA
Finally, Inpex completed its appraisal drilling programme on the Abadi Field in the Masela PSC, using the Ocean General semisub and has now submitted a revised POD based on the results. The final well was Abadi 6 (gas).
## Global E&P Calendar

### Calendar of Events 2008-2009

#### Exhibitions, Conferences & Forums

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<td><strong>E&amp;P Tech Asia 2008</strong></td>
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<td><strong>17th International Oil &amp; Gas Industry Exhibition &amp; Conference (OSEA 2008)</strong></td>
<td>Singapore</td>
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<td><strong>International Petroleum Technology Conference</strong></td>
<td>Kuala Lumpur SPE</td>
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<td><strong>Petroleum 2009 (8th International Oil &amp; Gas Conference and Exhibition)</strong></td>
<td>New Delhi ONGC</td>
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<td>Jan 20-21</td>
<td><strong>The Gas Pipeline &amp; Infrastructure Developments Conference</strong></td>
<td>Brisbane IIR Conferences</td>
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<td>Feb 16-18</td>
<td><strong>Asian INOC Congress (with pre congress seminar/golf day)</strong></td>
<td>Kuala Lumpur Strategic Business Networks</td>
<td>email: <a href="mailto:soomi@strategabilzint.com">soomi@strategabilzint.com</a></td>
<td><a href="http://www.iqpc.com.sg">http://www.iqpc.com.sg</a></td>
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<td>Feb 17-18</td>
<td><strong>Produced Water Treatment 2009</strong></td>
<td>Kuala Lumpur IGPC</td>
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<td><strong>Australasia Oil &amp; Gas Exhibition &amp; Conference</strong></td>
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<td><strong>SEG International Conference &amp; Exhibition</strong></td>
<td>Adelaide Australian Society Exploration Geophysics</td>
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<td><strong>Contract Management for Oil &amp; Gas</strong></td>
<td>Jakarta Marcus Evans</td>
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<td><strong>OPTA Conference &amp; Exhibition 2009</strong></td>
<td>Singapore Hydrocarbon Asia &amp; PetroWin</td>
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<td>Beijing Centre for Management Technology (CMT)</td>
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<td><strong>2nd CBM (Coalbed Methane) World</strong></td>
<td>Jakarta Centre for Management Technology (CMT)</td>
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<td>Mar 24-27</td>
<td><strong>DEPOT &quot;Optimizing storage, transportation and distribution to meet Asia's rising oil &amp; petrochemical demands&quot;</strong></td>
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<td>Apr 28-May 2</td>
<td><strong>AAGP Hedberg Conference &quot;Variations in Fluvial-Deltaic and Coastal Reservoirs Deposited in Tropical Environments&quot;</strong></td>
<td>Jakarta AAGP</td>
<td>Marcus Evans</td>
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<td>May 5-7</td>
<td>33rd IPA Annual Convention and Exhibition</td>
<td>Jakarta IPA Secretariat</td>
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<td>Aug 4-5</td>
<td><strong>SPE Asia Pacific Health, Safety, Security and Environment Conference and Exhibition</strong></td>
<td>Jakarta SPE</td>
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<td>Aug 4-5</td>
<td><strong>SPE Asia Pacific Oil and Gas Conference and Exhibition</strong></td>
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<td>Sep 14-17</td>
<td><strong>&quot;SAGE 2009 Conference &quot;Southeast Asian Gateway Evolution&quot; (focusing on geological history and biological diversity)&quot;</strong></td>
<td>London Royal Holloway University of London</td>
<td>Marcus Evans</td>
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### TRAINING COURSES AND WORKSHOPS

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<td>Basic Petroleum Technology</td>
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<td>PetroSkills/OGCI</td>
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<td><a href="http://www.petroskills.com">www.petroskills.com</a></td>
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<td>Oil &amp; Gas Accounting</td>
<td>Kuala Lumpur</td>
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<td>Dec 15-16</td>
<td>Advance Seismic Methods for Field Exploration &amp; Development</td>
<td>Sukhothai or</td>
<td>IPA (Dr. S. Sulamone)</td>
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<td>Jan 7-9</td>
<td>Horizontal and Multilateral Wells: Reservoir and Production Aspects (Workshop)</td>
<td>Kuala Lumpur</td>
<td>UNI Strategic</td>
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<td>Jan 12-13</td>
<td>Drilling Essentials for Non-Technical Oil &amp; Gas professionals</td>
<td>Ho Chi Minh</td>
<td>PetroEDGE (Quote SEAPEX or IPA for 5% discount)</td>
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<td>Fundamentals of Petroleum Geology</td>
<td>Kuala Lumpur</td>
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<td>Artificial Lift Design &amp; Optimisation</td>
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<td>Jan 14-16</td>
<td>Technical Report Writing and Presentation Skills for Oil &amp; Gas Engineers</td>
<td>Ho Chi Minh</td>
<td>PetroEDGE (Quote SEAPEX or IPA for 5% discount)</td>
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<td>The Fundamentals of Natural Gas</td>
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<td>Modern Sandface Completion Practices (Seminar)</td>
<td>Singapore</td>
<td>C-SAP Pte Ltd</td>
<td><a href="mailto:Jennifer@csap.net">Jennifer@csap.net</a></td>
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<td>Introduction to E&amp;P for New Engineers &amp; Non-Technical Professionals</td>
<td>Bangkok</td>
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<td>Feb 23-25</td>
<td>High Pressure &amp; High Temperature Wells</td>
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<td>Feb 26-27</td>
<td>Deepwater Well Control</td>
<td>Kuala Lumpur</td>
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Please contact Simon Crellin at Deloitte Petroleum Services if you are aware of any other relevant Oil & Gas industry events in the Asia Pacific region.
Tel: +65 6216 3286, E-mail: sccrellin@deloitte.com
Variations in Fluvial-Deltaic and Coastal Reservoirs Deposited in Tropical Environments
AAPG Hedberg Research Conference First Announcement and Call for Papers
29 April - 2 May, 2009, Four Seasons Hotel, Jakarta

The goals of the conference are two-fold. First is to provide those currently exploring or developing tropical fluvial-deltaic and coastal reservoirs with new insights and methods for improving their interpretation. Second is to stimulate within academia, a desire to begin researching tropical clastic depositional systems. By having both academia and industry representatives in attendance, it is also hoped that academia will have the opportunity to gauge industry willingness to fund that research. Scientists from various disciplines, including geology, geophysics, and reservoir engineering, are invited to participate in this conference.

Talks and Papers are being solicited for the following Sessions:

- Tropical Climate, controls on deposition
- Active Tectonic Margins and Accommodation Space Creation
- Mangrove Swamps, reservoir, seal, and/or source
- Tropical Fluvial Deposition and Reservoirs
- Tropical Deltaic and Coastal Deposition and Reservoirs
- Exploration and Development Challenges

Abstract deadline is Dec 2, 2008 and should be submitted to Debbi Boonstra (debbi@aapg.org) and Robert Shoup (rcs@clasticman.com). Abstract format is 1-4 pages and up to 2 figures. Visit the AAPG website http://aapg.org/education/hedberg/jakarta/index.cfm for more details.
IPA Offers Lifetime Membership Program

Earlier this year, the IPA notified members by e-mail of a new option for Lifetime Membership. This is a way to reward loyal members, and recognize their support of the IPA and its activities that benefit those involved in the Indonesia oil and gas industry.

Members in good standing for a minimum of 5 years are eligible. This would provide you with lifetime access to the IPA services you enjoy today, such as:

- regular newsletters
- full web-page access
- member discounts for technical publications, lunch talks, training, field trips, and the annual convention

Contact the IPA via e-mail at ipa@cbn.net.id, to learn how to enroll and take advantage of this program. The benefits will last you a lifetime.
IPA COMPANY MEMBERS

MITRA ENERGY (INDONESIA SIBARU) LTD.
New representative : John Grant - General Manager

PEARL OIL (TUNGKAL) LIMITED
New representative : Andrew Duncan - President

IPA INDIVIDUAL MEMBERS

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                   Fax : +62 (21) 515-1602
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                   Fax : +62 (21) 527-3211

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                   Fax : -
                   Email : agunawan@emgs.com
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Sigit Ari Prabowo
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Tan Eng Hoo - Corporate Services Director
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Fax: +62 (21) 314-9188
E-mail: EngHoo_Tan@po-and-g.com

Toronata Tambun - Sales Manager Asia Pacific
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Email: toro.tambun@bergenofs.no

Yoese Mariam
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Fax: +62 (21) 3483-4648

IPA ASSOCIATE MEMBERS
PT. McDERMOTT INDONESIA
New representative: Mudhito Prakosa - Country Manager
**INDONESIAN PETROLEUM ASSOCIATION**  
MEMBERSHIP APPLICATION/RENEWAL AND CHANGE OF DETAIL FORM

<table>
<thead>
<tr>
<th><strong>LAST NAME (Family Name)</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>FIRST NAME (Forename)</strong></td>
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<tr>
<td><strong>Name of Spouse</strong></td>
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<tr>
<td><strong>Membership No.</strong></td>
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<tr>
<td><strong>COMPANY</strong></td>
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<tr>
<td><strong>POSITION</strong></td>
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<td><strong>ADDRESS</strong></td>
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<td><strong>Postal Code</strong></td>
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<tr>
<td><strong>Telephone</strong></td>
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<td><strong>FAX</strong></td>
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</tbody>
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| **Email**                   |  
| **Previous Company**        |  
| **Previous Position**       |  

| **HOME ADDRESS**            |  
| **Postal Code**             |  
| **HOME TELEPHONE**          |  
| **HOME EMAIL**              |  

Please tick if you **Do Not** want your change of details to be published in the **Ganti Wajah** section of the next IPA Newsletter.

Please complete the above and return it to the IPA office with your dues of US$ 20.00 or Rp. 150,000,- payable to the following address:

**INDONESIAN PETROLEUM ASSOCIATION**  
(Gedung Bursa Elek Indonesia)  
Tower II, 20th Floor (Suite 2001)  
Jl. Jend. Sudirman Kav. 52-53  
Jakarta 12190, Indonesia

**BANGKOK BANK LIMITED**  
Jakarta Branch  
3, Jalan M. H. Thamrin  
Jakarta Pusat - Indonesia

**Attn : Professional Division Committee**

**US$ Account # : 0309-100763-401**  
**Rph Account # : 0309-100763-001**