

Third IPTC Focuses on Future Energy Needs

John Donnelly, *JPT* Editor

The third International Petroleum Technology Conference (IPTC), and the first one in Asia, brought together leaders from national oil companies (NOCs) and international oil companies (IOCs), service companies, and academia to discuss the challenges of meeting the world's future energy needs. The global economic recession, which already is having an impact on planned upstream projects, was a focus of many of the discussions.

Opening the conference were comments from IPTC Executive Committee Cochairmen Tan Sri Dato' Seri Mohd Hassan Marican, President and Chief Executive Officer (CEO) of Malaysian NOC Petronas, and Mark Albers, Senior Vice President of ExxonMobil and Malaysian Prime Minister Dato' Seri Abdullah Hj. Ahmad Badawi (see sidebar). Petronas' CEO assessed the state of the industry since the last IPTC a year ago, when oil was valued at more than USD 100/bbl.

"Recent events should cause us to rethink the energy landscape," he said. Oil consumption is projected to fall by

0.2% next year but long-term demand remains healthy. "Our industry will still be challenged to offer a reliable supply of energy at a reasonable price," he said.

Hydrocarbons will continue to satisfy the bulk of global demand going forward. "The question is how much of our reserves can be recovered, at what pace, and at what cost?" he said. More sophisticated technologies will be indispensable not only to produce more oil but to do it more efficiently and with a lower environmental impact. In addition, "technology is only as good as the people who operate it," he said, noting the demographic and technical staffing challenges that face the oil and gas industry.

The multidisciplinary IPTC—sponsored by SPE and three other leading oil and gas associations—attracted attendance of more than 4,000. IPTC is an annual conference, alternating between Middle East and Asia locations. The first two conferences were held in Doha and Dubai, respectively, while this one was held in Kuala Lumpur with Petronas as the host organization.

Prices Have Fallen, But Stakes Remain High

Participants in the conference's opening plenary session, titled "High Price, High Cost, High Stakes," agreed that while oil prices have fallen considerably, the costs of doing business and the stakes for the industry remain high.

Seven industry experts, representing IOCs and NOCs, offered insights into the current economic environment and what it means for the industry going forward. Price cycles in the oil and gas industry are routine, said Tim Cejka, President of ExxonMobil Exploration and one of the moderators of the plenary session, "but I have never seen anything but high stakes." The industry must continue to focus on the long term, he said, because projections still show that the world will need 50% more energy by the year 2030. "Our job, as an industry, is to provide energy for the world," no matter the price cycles, he added.

Ramlan Malek, Vice President of Exploration & Production (E&P) for Petronas, evaluated the situation the industry faces today vs. what it appeared to face just a few months ago. Although oil and gas demand is now declining and prices have fallen from a peak of USD 147/bbl to under USD 50/bbl, operating costs remain high and the talent shortage still appears to exist. E&P costs remain high because of existing contractual obligations. The industry now confronts several challenges, including whether to defer or proceed



Tan Sri Dato' Seri Mohd Hassan Marican, President and CEO, Petronas, during the opening ceremony.

with certain projects. More emphasis must be placed on cost management and containment going forward, he said.

Nasser Al-Jaidah, CEO of Qatar Petroleum, added that whatever the price of oil, energy security and geopolitical stability questions will continue to center on the Middle East, where the bulk of the world's oil reserves lie. That will continue to present problems for the industry because of existing ethnic and border tensions, he said.

High stakes and high costs appear to be a given, agreed Jean-Marie Masset, Senior Vice President Geosciences for Total. By 2030, 75% of the world's energy supply will come from fossil fuels, of which 35% will be oil and 22% gas. "These are the high stakes for the industry," he said.

Raw material costs have risen sharply in recent years, including for steel, casing and tubing, and drilling plat-

forms, he added. Production costs are also increasing, especially for unconventional resource development, including ultradeepwater, enhanced oil recovery, extra-heavy oil, Arctic development, and oil shales. Those rising costs and projected global demand numbers suggest that the future oil price will not remain low.

Times of market turbulence offer hidden opportunities, said panelist Hugo Repsold, E&P Strategy and Portfolio General Manager for Brazilian NOC Petrobras. Companies that are best situated to weather economic downturns are those that

- Have a high-quality E&P portfolio
- Have solid positions throughout the supply chain so are able to decrease marginal costs
- Have strong fundamentals that allow them to grow through mergers and acquisitions during the period

Malaysian Prime Minister Assesses Global Energy Security

The Prime Minister of Malaysia, Dato' Seri Abdullah Hj. Ahmad Badawi, officially opened the IPTC, warning that the global economic recession should not delay much-needed energy investment. The Prime Minister noted how dramatically the energy landscape has changed in just the past few months because of the economic downturn. This "perfect economic storm" has created new challenges for both governments and industry, Badawi said.

"In the current environment of sharply reduced liquidity, lower demand, and lower prices, companies have far less incentive toward investing in new energy supplies. Combined with still-growing demand for energy, today's underinvestment may lead to another period of high oil price volatility in the future," he warned. "We must understand that the environment for the oil and gas industry is set to grow more challenging in the coming years. Given the essential importance of this industry to the quality of life for billions of people around the world, we must anticipate the future and plan for the difficult days ahead."

Three key challenges must be confronted to secure a sustainable energy future, Badawi said.

- Energy security must be based on a collective effort of all nations and IOCs and NOCs must find new ways to form mutually beneficial relationships.

- Investment in technology and innovation, including unconventional resources, must continue because global energy demand in the medium and long term will continue to grow.

- Companies should play a stronger role in developing education curricula to ensure that they get the graduates they need, and they should expand the role they play in improving education.

"The oil and gas industry will be facing tremendous challenges ahead," he said. "I believe that it will be critical for the industry to place greater emphasis on energy security through partnerships, technology investment, and human capital development. Time is of the essence. The industry must ensure that these important initiatives are put in place now, so that the challenges of the next few decades can be met with confidence."



Dato' Seri Abdullah Hj. Ahmad Badawi, Prime Minister of Malaysia, delivers an address during the opening ceremony.

Cooperation between NOCs and IOCs will be critical, he said. "There are some who predict greater marginalization of the IOCs as competition intensifies between industry players for limited access to resources, and that IOCs will increasingly find themselves being restricted to difficult frontier regions, where greater technical complexity demands greater levels of expertise," he said. "I believe that such a scenario would be counterproductive to the future of global energy security. Instead NOCs and IOCs must find new ways to strike meaningful and mutually beneficial alliances. As development efforts focus on extracting resources in increasingly challenging areas, the ability to forge strong partnerships, leveraging on respective strengths, will be essential to the successful development of such resources."

Awards Honor Project Integration Expertise

The Sakhalin-1 project earned the Excellence in Project Integration Award from the committees and sponsoring societies of the IPTC during a special ceremony at the conference.

Each year, the IPTC highlights projects that have demonstrated exceptional teamwork and innovation. These megaprojects, which involve both NOCs and IOCs and represent investment of more than USD 1 billion equivalent, have shown excellence throughout the entire value chain and exemplified strong teamwork; solid geoscience and engineering skill; outstanding facilities engineering practices; and strong health, safety, and environmental and human resources practices.

Sakhalin-1 was recognized for successfully integrating geoscience knowledge; reservoir and production engineering; construction and facilities engineering practices; safety, health, and environmental processes; human resources policies; community programs; and overall project teamwork. "We are extremely proud of the Sakhalin-1 project achievements," said Mark Albers, Senior Vice President, ExxonMobil. "The Sakhalin-1 project is one of the largest energy investments in Russia and is a testament to international cooperation to successfully execute this project in one of the most challenging arctic environments in the world in a safe and environmentally responsible manner."

Exxon Neftegas, an ExxonMobil affiliate, holds a 30% interest in and operates the multibillion dollar Sakhalin-1 project. The costurers in the project include the Japanese consortium Sodeco (30%), the Indian state-owned oil company Oil and Natural Gas Corporation (ONGC) Videsh (20%), and affiliates of Rosneft, the Russian state-owned oil company, Sakhalinmorneftegas-Shelf (11.5%) and RN-Astra (8.5%).

Since 2005, the Sakhalin-1 project to develop the Chayvo field in the Sea of Okhotsk has produced more than 157 million bbl of crude oil for export, and it also has been a key supplier of natural gas to Russia's Far East.

The Sakhalin-1 project development involved many accomplishments, ExxonMobil said, including:

- Use of three-dimensional seismology, invented by ExxonMobil, which increased exploration success and reduced finding costs.
- To plan operations in seas with ice 6 ft thick, state-of-the-art computer models, based on 5 years of ice data, calculated ice loads on the offshore production platform.
- The design of the facilities is protective of the Western Gray whale, the Orlan eagle, and other wildlife native to Sakhalin Island.
- Employees have worked more than 80 million hours with industry-leading safety performance.
- Detailed and integrated front-end execution planning, using a phased development strategy and a large module "plug-and-play" approach, allowed the project to capture efficiencies and minimize risk.
- The world's most powerful land-based rig drilled vertically and horizontally beneath the sea floor to the Chayvo field, located 5 to 7 miles offshore to set 17

world records for extended-reach drilling. It also set new records for drilling speed.

- Contracts valued at more than USD 5 billion have been awarded to Russian companies or joint ventures.

- The project has funded more than USD 120 million in Sakhalin infrastructure improvements, including hospitals, clinics, roads, bridges, harbors, airports, and power and water facilities. It also has provided more than USD 3.5 million in charitable contributions to local community organizations, including health, youth, arts, and civic projects.

This year, 14 nominations were submitted for the award from 12 organizations representing projects in 11 countries. Other winners were:

- **First runner-up—Kikeh Development Project, Petronas and Murphy Sabah Oil**

Kikeh, which is Malaysia's first deepwater field, began oil production in August 2007, 5 years after its discovery. The field is located in water depth of approximately 1300 m. The complex deepwater development project marks a major milestone for Petronas and its production-sharing contractor Murphy Oil, the operator of the field.

The Kikeh project was delivered on time and within budget, and involved active participation of local companies at various stages of the project, exposing them to the many aspects of state-of-the-art deepwater technology. This is in line with Petronas' aspiration to position Malaysia as a center for deepwater development in this region.

- **Second runner-up—RasGas Train 5 LNG Project, RasGas Company**

The RasGas Train 5 liquefied natural gas (LNG) project in Doha, Qatar was completed more than 3 months ahead of schedule and under budget. It integrates many elements of the LNG value chain, including reservoir management, well drilling and completions, onshore and offshore facility design and construction, facility completions and commissioning, and commercial and shipping arrangements. RasGas Train 5 leveraged new technology, existing offshore and onshore infrastructure, and economies of scale to optimize costs and maximize execution efficiency.



The Sakhalin-1 project.

- Have good project and cost management skills

“The next generation of outperforming companies will be those who can benefit from the current business scenario,” he added.

Many Factors Complicate NOC–IOC Relations

The evolving relationship between IOCs and NOCs was explored during a panel session titled “Complex Relationships.” Participants from NOCs, IOCs, and academia offered their perspectives of some of the different factors and impediments involved in developing these partnerships.

Two representatives of NOCs described the complexities that private companies may have working in their countries. Do Van Hau, Vice President of the PetroVietnam Group, said the role of the NOC has changed in his country during the past decade. PetroVietnam is no longer a regulator but is a bridge between the government and an IOC.

Companies wishing to do business in Vietnam must understand the local culture, he said, which means business relationships are formed on trust, respect, mutual understanding, flexibility, and informality. “Relationships must take time,” he said.

There is added complexity to doing business in Vietnam, he said, because of confusion surrounding local laws and regulations. Businesses have difficulty understanding some laws because the interpretations of them often changes. In addition, there have been frequent and unexpected changes

in the country’s legal framework, and some regulations overlap and even contradict each other, he added.

Likewise, Sergio Guaso, Vice President for New E&P Contracts for Mexican state oil company Pemex, said that, despite new energy legislation, the state will continue to own all reserves and production, hampering private investment beyond service contracts. Pemex must navigate the interests of the Congress, political parties, labor unions, and the public, and the Congress plays a major role in the company’s operations and planning. New energy reforms do give Pemex more autonomy, however, he said.

Rob Franklin, Vice President Production, Europe Caspian Russia, for ExxonMobil, said host countries need to provide a predictable, stable political and economic environment in which to operate. Host nations should realize that strong partnerships between NOCs and IOCs translate into more revenue for the host government and more energy for the world. The trend in some countries toward extreme nationalism could have a long-term impact on the energy landscape, he said.

A good partnership essentially means that both sides come to the table in a commercial relationship that makes sense to both, said Michelle Michot Foss, Chief Energy Economist for the Jackson School of Geosciences at the University of Texas at Austin. There is a correlation between NOC performance and strong public governance, corporate governance, and fiscal regimes in place. There is also an inverse relationship between NOC performance and high obligations to their governments. “Governments have to

NOC–IOC Partnerships Crucial, ExxonMobil Executive Says

NOCs and IOCs must work together if the oil and gas industry is to meet the world’s future energy challenges, a top ExxonMobil executive said during a Topical Luncheon address on the second day of the conference.

Mark Albers, Senior Vice President of ExxonMobil, said global demand will continue to rise despite the current economic downturn, and that that necessitates NOCs and IOCs collaborating and cooperating to supply the globe with energy. “During turbulent economic times, strong partnerships are more important than ever,” he said.

Both IOCs and NOCs bring different strengths to the table, he said. “Neither IOCs nor NOCs can go it alone,” he added. Any partnership must take into account the goals and needs of the host nation. “It starts with the L word—listening—listening to each others’ views,” he said.

Even though several NOCs have essentially become “international NOCs” during the past few years, venturing beyond their countries to develop reserves, IOCs bring several unique talents to any partnership, Albers said. IOCs have technical expertise to tap previously undeveloped reserves, and also bring excellent project management skills that can ensure efficiencies. IOCs also contribute to host nations through training and employing the local workforce, developing infrastructure, and transferring knowledge, he said. “Delivering maximum value” to host countries and NOCs “is all about successfully integrating all of these components,” he added.



Albers

Albers cited two major projects in which ExxonMobil and NOCs successfully participated. ExxonMobil and Qatar Petroleum have worked together to develop the world’s largest nonassociated gas field, making Qatar the world’s largest supplier of LNG. The RasGas Train 5 LNG project came on line last year ahead of schedule

and under budget. The project leveraged new technology, existing onshore and offshore infrastructure, and economies of scale to optimize costs and maximize efficiency.

A second cooperative project involved ExxonMobil, Rosneft, ONGC, and Sodeco in developing phase one of the Sakhalin offshore field development in Russia. The project, one of the largest foreign direct investments in Russia, consists of multiple offshore fields and is operated by Exxon Neftegas. The company employed extended-reach drilling and shipping technologies, revised pipeline routes, trained local residents, and gave two-thirds of the construction work to Russian companies. The project created 13,000 local jobs. First oil was achieved in 2005 and peak production was reached last year.

Both the Qatar and Sakhalin projects highlight the expertise an IOC can bring to a complex development, Albers said. Strong, long-lasting partnerships between NOCs and IOCs must always involve mutual respect and understanding and utilize each others’ strengths, he added.

think hard about how their hydrocarbons resources are being managed,” she said.

Unconventional Resources to Play Key Role

Current known oil and gas reserves are available to meet global demand growth, but unconventional resources will need to be tapped in the next decade, panelists participating in a roundtable on the second day of the conference agreed. Officials from Saudi Aramco, Petrobras, Petronas, Total, and China National Petroleum Corp. discussed the future global supply/demand balance in a standing-room-only session titled, “Sustaining Production Rates to Meet Future Demand.”

Saudi Arabia, the world’s key oil supplier, has embarked upon a significant expansion plan, said Abdulla Al Naim, Vice President Petroleum Engineering and Development for Saudi Aramco. His company currently has 96 producing fields with 320 reservoirs and 260 billion bbl in proved reserves. Saudi Arabia’s current oil output stands at 11.3 million BOPD but will reach 12 million BOPD by the end of next year, he said.

Three new projects will have come on line by the end of this year with the largest being Khurais, which will have a capacity of 1.2 million BOPD of oil and 350 MMscf/D of gas, Naim said. This project involves a complex of three fields and will involve the drilling of more than 300 horizontal wells.

The use of technology has been key to developing the Shaybah gas field, which came on line in July 2008. Maximum reservoir contact technology increased well productivity, lowered drawdown, and improved sweep and ultimate recovery, he said.

Aramco’s plans to produce more in the future will depend on developing competent technical staff, Naim said. To this

end, the company is building an Upstream Professional Development Center, to open in 2010, which will have state-of-the-art training facilities. “We have an optimistic view of the future and are confident that our expansion projects will help meet future global demand,” he said.

Brazil is also in the midst of aggressive expansion plans, thanks in part to exciting discoveries offshore southeastern Brazil, said panelist Hugo Repsold, E&P Strategy and Portfolio General Manager for Petrobras. The company has discovered 18.3 billion BOE in reserves since 2002 at offshore fields in Santos, Campos, Espirito Santo, and Sergipe Alagoas areas.

The company’s upstream capital spending plan will total USD 54.6 billion from 2008 to 2012, he said, of which USD 9.3 billion will be for exploration and USD 45 billion will go for development. Recent offshore discoveries in presalt provinces entail several challenges, he said, because those discoveries are further down the coast than previous ones and lack infrastructure development around them, contain deeper reservoirs, have huge salt layers above the reservoirs, and will tax existing subsea technologies.

Charles Mattenet, Senior Vice President, Asia and Far East, for Total predicted that it will be difficult to meet global demand growth with conventional resources in 5 to 15 years, requiring development of unconventional plays. The biggest unconventional plays are extra-heavy oil, oil shales, heavy oil, sour gas, deep-buried reservoirs, and tight gas, he said.

Examining the demand side of the supply/demand equation may be as important as the supply side, said Wan Zulkiflee Wan Ariffin, Vice President of Gas Business for Petronas. “Demand management is crucial to ensure that adequate supplies can be sustained,” he said. Several components make up a competent demand management program, he said, including:

Environment Pavilion Highlights Climate Change Issues

New to this year’s IPTC was the Environment Pavilion, designed to draw attention to and promote discussion of climate change issues and how the petroleum industry is addressing both environmental challenges and the need to provide the world with energy. Both petroleum and auto industry innovations were in the spotlight.

The pavilion in the exhibition hall featured booths from 11 organizations, anchored by spaces occupied by Petronas, ExxonMobil, and Shell. Presentations were made each day of the conference, with a format that encouraged discussion. Videos provided by exhibitors and that focused on environmental issues played on the main screen at the pavilion throughout the day. The presentations covered a wide range of topics and highlighted petroleum industry actions designed to mitigate climate change.

Also participating were two automotive companies, Toyota and Mitsubishi, which showed off hybrid electric vehicles. Plug-in hybrids offer the promise of a substantial reduction in carbon emissions.

The IPTC Executive Committee added the Environment Pavilion to this year’s conference to highlight the fact that

sustainable approaches to fueling the energy needs of the future are going to require innovation from both producers and consumers and will be a critical issue for both the industry and society in the future.



An electric car on display at the Environment Pavilion.

Events Focus on Young Professionals, Students

Several events at IPTC highlighted the importance of young professionals and students to the future of the oil and gas industry.

A workshop for young professionals—those 35 years old and younger—titled “Energizing the Industry” involved speakers from the industry and team-building exercises. Speakers at the event included Liam Mallon, Chairman of ExxonMobil Subsidiaries in Malaysia; Dan Taylor, Account Manager with Halliburton; and S. Ramamurthy, SIS Operations Manager for Schlumberger. Mallon delivered the keynote address on the topic of “Expat Challenges: What to Expect.” Taylor addressed the shortage of human resources in the industry and Ramamurthy discussed “How to Say No to Your Boss.”

Participants in the workshop were later broken up into six groups, with each team given 90 minutes to build a bridge out of ordinary items such as newspapers. Participants also gathered in small groups to discuss topics such as diversity, social responsibility, the industry’s image, and filling the knowledge gap.

For students, an “Education Days” program hosted 112 high school students from seven Malaysian states, and an “Education Week” program brought in 100 university students from 28 countries.

The purpose of the IPTC Education Week was to give students in their final year of undergraduate study a clear insight into the petroleum industry, give them a chance to meet with their peers and industry leaders, and to participate in discussions about the future direction for them and the oil and gas industry. Nominations for the program were received from students from 73 institutions in 32 countries, with the top 100 students chosen to participate.

The students worked on project groups, shared ideas and best practices, discussed issues, and brainstormed solutions. The topic assignments included:

- Coalbed methane development in an arid environment
- Oilfield development in a developing country
- Sustainable energy development on an island
- Deepwater oil and gas development
- Offshore gas development with high CO₂ levels
- Onshore oil field with high water cut
- Large oil field in an environmentally sensitive area
- Exploration planning to minimize exploration failure
- Remote oil and gas development
- Fuels for the future

Students also attended presentations by industry executives and young professionals, toured the exhibition, and took field trips.

- A robust national energy policy
- Unregulated fuel prices
- The encouragement of technology innovation
- The encouragement of consumer conservation

Liu Zhenwu, Deputy Chief Technology Officer for China National Petroleum Corp., called for more balance in global energy consumption. Currently, developing countries make up 60% of the world’s population but consume approximately 30% of the world’s energy supplies. China in the future must focus on developing its resources, he said. Only 29% of its oil resources and 12% of gas resources have been proved.

Climate Change Rising in Importance

How the oil and gas industry should view and handle climate change issues was the subject of another panel discussion that offered a variety of viewpoints and representatives from NOCs and IOCs, academia, and other industries.

Climate change is a “deep, long-term issue,” said Brian Flannery, Science Strategy and Programs Manager for ExxonMobil, and the oil and gas industry has the twin challenge of mitigating environmental risks while supplying energy to the world. Regulatory and policy frameworks will need to be developed that allow innovation in the marketplace, enable trade, encourage investment in technology, and support technology transfer, he said. “It will take decades and there will still be more to be done even then,” he added.

Regulatory frameworks should ensure that the cost of carbon be predictable and uniform across the economy, maximize the use of markets, promote global participation, minimize complexity, and maximize transparency, he said.

Flannery said ExxonMobil and nine other institutions are currently working with Stanford University on the “Global Climate and Energy Project” whose mission is to conduct fundamental and precommercial research on climate change. The program currently is in its fifth year and has funding for 10 years. More than 40 programs are under way in the project involving research on such issues as renewables, carbon capture and storage, and hydrogen use.

Climate change is “the key challenge for our generation,” said Graeme Sweeney, Executive Vice President of Future Fuels and CO₂ for Shell. Although hydrocarbons will continue to play the leading role in satisfying future energy demand, the industry will also need to emphasize renewables and “unprecedented efficiency gains.”

“We will need solutions that take care of energy security and climate change,” he said. One of the most promising solutions is carbon capture and storage, he said. “It is not the only one, but it is a major one,” he added. The industry should offer major assistance to countries trying to develop commercially viable carbon capture and storage projects. “This issue will require extensive knowledge sharing,” he said.

Ian Duncan, Associate Director for Earth and Environment Systems at the Bureau of Economic Geology at the University of Texas at Austin, agreed that carbon capture and storage holds tremendous potential, for both the industry and society. The technology is routinely practiced in Texas’ Permian Basin, he said. The industry currently injects 30 million tons of CO₂ annually in the Permian Basin, 80% of the CO₂ injected in the world. The industry should draw on experiences here in developing future projects, he added.



The IPTC Cochairs and representatives from the conference's sponsoring organizations included, from left, Phil Christie, President, European Association of Geoscientists and Engineers; Mark Albers, Senior Vice President, ExxonMobil; Leo Roodhart, 2009 SPE President; Tan Sri Dato' Seri Mohd Hassan Marican, President and Chief Executive, Petronas; and Scott W. Tinker, President, American Association of Petroleum Geologists.

Chow Kok Kee, Managing Director for The Sustainable Technology Resource Center, reminded the industry of the high stakes involved in mitigating climate change. The issue has tremendous implications socioeconomically and for the global water supply, he said, which will particularly affect developing countries. "It is important to understand that early action is needed in regard to climate change, and it is important to understand the great impact locally that climate change will have," he said.

Technical Papers Cover Wide Range

The conference featured more than 300 technical presentations in more than 50 specialized technical sessions on exploration, development, and production; reservoir issues; midstream gas; industry issues; and project management. Some strong papers at this year's conference included:

- In "A Monte Carlo Approach to Value of Information Evaluation," authors from the International Research Institute of Stavanger focused on a value of information methodology used for determining whether further information should be collected before making a decision. To overcome simplifications introduced in typical evaluations, a Monte Carlo approach was used that increased computational complexity but allowed for a full uncertainty description of range variables such as oil in place and that can be integrated with quantitative prospect evaluation methods.

- In "Sustainable Development and Social Responsibility: Key Factors for Positive Impact of International Petroleum Agreements," authors from the University of Texas at Austin reported on a case study in Nigeria. The results of the study demonstrate that companies that focus on sustainable development and social responsibility can have a very positive impact on a community as well as raise their standing in the country. The authors also contend that successful results can be achieved through less effort than many think.

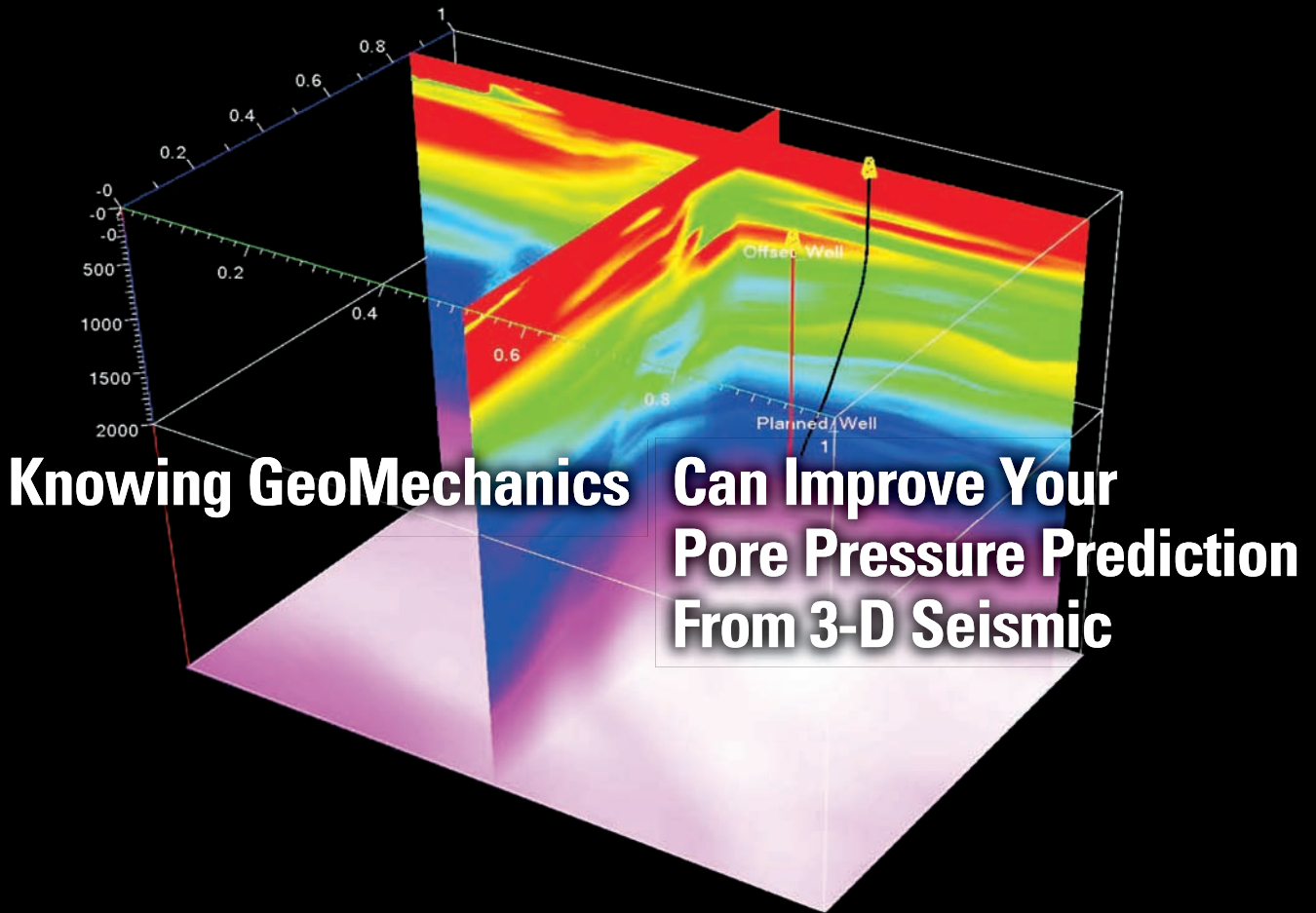
- Authors from ExxonMobil tackled the issue of the time that engineers and geoscientists spend looking for, getting access to, and manipulating data and information. The paper, "Improvements in the Management of Structured and Unstructured Data," takes a look at business practices and information technology tools that can be used to reduce that time and better manage the explosion in available industry data. They began analyzing the situation at their own company beginning in 2003 and concluded that a breakthrough level of improvements in this area are possible and sustainable through an integrated approach that builds on a system of global standards and processes.

- Five authors from ExxonMobil Indonesia reported on how their company worked with the Indonesia Heritage Foundation to provide support to a program that establishes preschools in villages across North Aceh, Indonesia. The paper, titled "A Case Study of a Successful Children's Education Program—The Semai Benih Bangsa Program in Aceh, Indonesia," noted that the company has supported more than 200 preschools in the area involving more than 4,000 children. ExxonMobil also donated books and training programs for teachers. Cooperating and collaborating with the local community is essential to ensuring the success of any development program, the authors conclude.

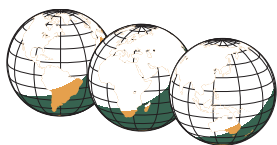
- In "The State of Optimum Value Testing—The Vision and the Reality," authors from Shell argue that optimal value testing is gaining favor against traditional drillstem tests for in-situ measurement of dynamic reservoir properties such as permeability and drainage volume. Optimal value testing refers to any testing method that yields fit-for-purpose results at the lowest cost and the lowest impact on health, safety, and the environment. The wireline formation tester solution has emerged as the best answer in many cases, so the paper focuses on its strengths, weaknesses, and potential opportunities.

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