



## The Changing Dynamics of the Oil & Gas Industry

Since its discovery, petroleum has played a prominent role in the growth of the world economy and in the quality of life of societies around the world. It will continue to do so in the future. The world has changed considerably over the last century and the pace of change will continue to accelerate into the future as the world population grows. Looking ahead to 2030 or 2050, how will the O&G industry evolve and what might be the consequences for the stakeholders?

### Global Mega Trends Impacting the O&G Industry

The four mega trends below will greatly influence the O&G Industry:

1. **Demographics:** It is forecast that, on its current trajectory, the world population will grow from over 6bn today to 8bn by 2030 and will reach 9bn in 2050, with most of the population growth occurring in the developing world. This is coupled with an ageing population in the developed world and relatively young population in the developing countries.
2. **Globalisation and differential GDP growth between developing and developed world:** This will create a greater demand pull for resources to the developing world coupled with a shift in the geopolitical landscape. GDP per capita is forecast to triple by 2030 in China and India, which will bring their 2.5bn population much higher up the energy ladder.
3. **Energy Consumption:** If current trends continue, energy demand will double by 2050. By 2030 energy demand is expected to rise by 40% to 16.6 billion tonnes of oil equivalent per year. Over 95% of the increased demand is from non-OECD countries, mainly China and India.
4. **Climate Change and Sustainability:** Greater demand for energy will lead to more pollution problems and force society to look for "earth friendly" solutions to greenhouse gases (carbon dioxide—CO<sub>2</sub>) and other pollutants.

## O&G Industry will continue to be important part of the future “Energy Mix”

Globally today, about 90% of the energy supply comes from fossil fuels and 10% is nuclear. Fossil fuels will continue to play an important role, but with rising levels of CO<sub>2</sub>—for which there are no easy or cheap answers—the world will have to look for alternative sources of energy, technological solutions and more efficient ways to produce and use energy.

Even if we assume that fossil fuels will provide

around 60% of global energy in 2050, oil and gas will still be important source of energy. Furthermore, if the past was about coal and oil, the future will be increasingly about gas. It is abundant from conventional sources and from large finds of shale gas as well. It is also a clean source of energy, given that it does not produce CO<sub>2</sub> as a by-product. Oil will continue to dominate as a transportation fuel but the demand for bio-fuels as part of the mix will increase.

## O&G Industry’s Changing Dynamics

### • No Easy Oil

The challenge of meeting a 40% increase in demand over the next 20 years may seem daunting and it is. But over the past 20 years, the industry has achieved an increase of 50%. In 1981, the world’s oil reserves were 700 billion barrels. By 2011, oil reserves had risen to 1,650 billion barrels. In the intervening period about 800 billion barrels were consumed. (Source: BP) However, the new finds are increasingly in remote geographies and difficult environments, such as deep under water or from unconventional sources like shale oil and shale gas. In short, there is an adequate supply of O&G for future needs, but the new projects will be larger, more remote and complex and enabled by innovations and advances in technology. The associated risks are also higher. Consequently, the nature of programme management is changing, becoming more complex, involving new partnerships, sharing risks, managing operational risks, etc.

### • Changing Supply-Demand Landscape

The USA is the single largest consumer of oil and consequently an importer of oil and gas products. However, this picture has dramatically changed during the last three to five years due to the recovery of shale oil and gas brought about by new technologies: horizontal drilling and hydraulic fracturing (“fracking”). It is now forecast that the USA will become self-sufficient by 2020, eliminating its reliance on OPEC supplies. Furthermore, the availability of cheap gas in the USA will revolutionize the industries which depend on it: chemicals, agriculture and pharmaceuticals.

In contrast, China and India, which are not rich in indigenous oil and gas, will require larger imports to sustain their growth rates. This means that OPEC supplies will increasingly be directed to the East.

The geo-political landscape will change as a result.

### • Greater Role of China and India on the O&G Landscape

National oil companies (NOCs) from both China and India are beginning to acquire oil and gas resources around the world. They are ambitious and clearly want control over the resources rather than merely depend on buying oil and gas on open markets. This trend will accelerate. NOCs from MENA and Eastern Europe/Asia will form complex partnerships/relationships with India and China.

In the first nine months of 2012, Asian NOCs spent almost US\$37bn acquiring assets outside their home markets, more than double the \$16bn spent in this area for all of 2011. (Source: E&Y NOC Monitor, Q3 2012.)

### • Technology and Innovation Continue to be the Key Enablers

Throughout history, technology advancements in the upstream oil and gas business have opened up new frontiers (e.g., Seismic 3D), enabled safer operations, enhanced oil and gas recovery from existing fields and increased energy efficiency. In the downstream business (e.g., refining and marketing), technology has increased and upgraded the capacity of the oil barrel and has met the increasing demands of environmental legislation.

Rapid advancements in technology will continue to engineer further growth in oil and gas. Super computers and complex data processing will enable new discoveries. Smart devices will enable improved operational management and better risk management. Advanced materials will offer safer operations in difficult terrain. Manufacturing technologies will improve the applications of new materials and collaborative technologies will enable new ways of managing complex global projects.

## • Society, Policy and Regulatory Framework

Following Exxon Valdez, Shell Brent Spar, and more recently BP's Gulf of Mexico incidents, the public has been left scared. The world is now much more critical of the oil industry.

The oil industry has been reporting societal performance for sometime but the demands will increase even more. Greater consultation and approval with myriad stakeholders on new complex projects will become a standard pre-requisite process. Projects will have to be shown to be transparent and accountable on employee rights, to include environmental protection and community relations, etc. Even when NOCs are leading development in their own backyards, their international partners will demand this to protect their own reputations. Regulatory frameworks and licences to operate will be increasingly more stringent and demanding.



## Impact of These on O&G Companies and Their People

In this fast-changing and complex world, to be successful, future leaders will need to have:

- Global Awareness: Anticipating the next change and setting the strategy
- Change Management: Making and remaking organisations
- Relationship Building: Ambassador for the organisation
- Innovation: Doing things differently
- Multicultural Awareness, Team Building and Coaching: Working with diverse workforce and values
- Manage Complexity and Provide Sound Judgment

## How MCE can Help You

MCE has a pool of Senior Associates with O&G industry experience in senior leadership roles, who can work with senior management teams or with individuals. They have worked in different countries and with culturally diverse teams to bring about strategic transformations. They provide their expertise in variety of ways:

- Open Enrolment programs for individual managers
- In-House management development programs

## • New Relationships and Business Models

The early evolution of the oil industry was shaped by the international oil companies (IOCs) or super-majors who led discoveries and introduced new technologies. Towards the end of the last century, NOCs such as KPC and Saudi Aramco started to become prominent. Today, these established NOCs are also developing their own technologies, as exemplified by Saudi Aramco's expertise in enhanced oil recovery, Petrobras's deep-water knowhow, etc.

At the same time, international oilfield services companies (IOSCs) like Schlumberger and Halliburton have increased the "bandwidth" of services they provide and have also become important players.

Looking ahead, with the emergence of Chinese and Indian oil companies that want to buy assets or have direct control of larger and more complex projects in difficult geographies, the roles and relationships of the different parties will also change. As a result, the financing and risk-sharing models for new discoveries will change.

### Workshops relevant to the Upstream O&G Industry include:

- [The 5-Day Mini-MBA for the Oil and Gas Industry](#)
- [Leadership for Senior Managers](#)
- [Leadership for Post-Merger and Acquisition Integration](#)
- [Developing Leadership](#)
- [Managing Strategic Alliances and Partnership](#)
- [Project Management: The Fundamentals](#)
- [Managing Risk in Projects](#)
- [Project Management Accounting](#)
- [Strategic Finance for Senior Finance Executives](#)
- [Budgeting, Forecasting and Cash Flow Management](#)
- [Fundamentals of Finance and Accounting](#)
- [Communicating to Your Senior Management](#)

### In addition, we can propose the following capabilities In-House:

- Trend-scanning, scenario planning and strategic planning
- Technology trends and innovation
- Partnerships, strategic alliances, mergers and acquisitions
- Aligning people to execute the strategy
- Leading and managing change
- International negotiations
- Stakeholder management
- Finance and accounting skills for the oil and gas industry
- Managing diverse, cross-cultural teams
- Programme management, complex projects and risk management
- Mentoring and business coaching for individual executives

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## About Management Centre Europe

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Management Centre Europe (MCE) is the largest provider of organizational, management development and strategy execution programmes for international companies, wherever they have operations. We enable individual managers and management teams to deliver on their strategic goals, through open enrolment workshops, in-company workshops, advising, business coaching and mentoring, and a variety of tools, assessments, and simulations.

For more information, visit [www.mce-ama.com](http://www.mce-ama.com)

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