

The International Oil Companies

Richard Gordon considers the prospects and challenges ahead

This essay briefly discusses the future of the international oil companies (IOCs) with the focus on four central prospects or challenges that they must address in the coming decade. The IOCs are an extraordinarily diverse group – far too diverse to allow generalisations that will apply equally to every company. As such, this discussion will be limited to the publicly traded, globally diversified oil and gas companies – a category that is customarily reserved for the likes of ExxonMobil, Shell, Chevron, BP, Total, ConocoPhillips and ENI.

There are four industry-wide (or macro level) processes at work that are likely to serve as significant sources of future opportunity for the IOCs to not only survive but to prosper. To be sure, the IOCs face many challenges. In the extreme case, it is believed that they are an endangered species. Others suggest that they must radically evolve to survive. It is beyond doubt that there are serious challenges facing the IOCs. Cut-throat competition is and always has been the norm in the industry and, in view of recent high oil and natural gas prices, competition is bound to intensify. How companies respond to higher prices will have a great deal to do with their long-term performance.

The macro forces at work today are: re-emergent integration and its uses as a source of competitive advantage, the continuing development of the international trade in natural gas, the growing role of the industrial oil and gas economy in future energy supply, and the progressive role that technology and its application in high risk environments plays to redefine the resource base.

Re-Emergent Integration

After an extended period of retreat, arguments for an integrated investment strategy have re-emerged in recent years. The integrated strategy includes the traditional combination of E&P with refining and marketing as a means of capturing higher margins for crude production. Upgraders for Canadian oil sand bitumen production or for Venezuelan Orinoco projects and the risk that imbalances in heavy oil supply and upgrading capacity can cause wide swings in margins illustrate the continuing value of specific forms of integrated strategy. However, the logic of integrated asset strategies reflects two key other functions: integration as a profit centre in its own right and as an enabler of upstream resource development.

Integrated assets can serve a key role as a profit centre through the revenues earned in processing or transporting other companies' oil or gas output or not having to pay a third party to handle one's own output. These revenues are enhanced when the provision of services to third parties enables economies of scale in infrastructure, results in lower unit costs for the investing company's

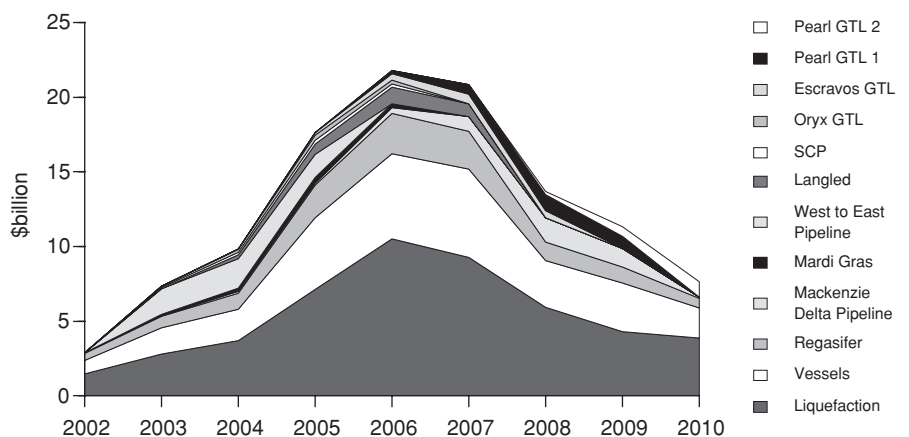
production and ultimately increases recoverable reserves.

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An important analytic problem will become clear as the role of integrated investments in major world class resource projects rises – the line between upstream and downstream is blurring and the composition of a company's earnings may change substantially. Conventional measures of upstream earnings and the associated performance metrics used widely in the financial community are diminishing in value and can be misleading. The problem is that these conventional measures treat the upstream as a divisible business segment in an increasingly inter-related investment portfolio.

The second driving factor is the strategic role of integration as a means to commercialise resources. This

Figure 1: Investment in Selected Major Infrastructure and Integrated Asset Projects



Source: Gordon Energy Solutions estimates

is a key driver behind the massive infrastructure projects worldwide, liquefied natural gas (LNG), heavy oil and gas-to-liquids (GTL). Key examples are infrastructure projects in the Caspian (CPC, BTC, SCP), China (West to East Gas Pipeline and LNG terminals), prospective pipelines from East Siberia to Asia, the Bolivia/Brazil gas pipeline, the Mardi Gras pipeline system in the deepwater Gulf of Mexico, LNG from the Barents Sea, the Canadian Arctic and Alaskan North Slope gas projects. Each of these examples illustrates both the magnitude of capital investments required to undertake these projects and the potentially massive volumes of resources that can be accessed only through these investments.

“the line between upstream and downstream is blurring”

Figure 1 shows a projection of infrastructure and integrated asset capital spending related to selected gas mega-projects. These projects are intended to show the comparative magnitude of the integrated asset investment programme. Consider, for example, that Shell’s worldwide upstream capital and exploration spending planned for 2006 is \$15 billion and ExxonMobil’s is approximately \$12.5 billion.

Integrated strategies offer the IOCs

substantial long-term opportunities for at least three key reasons. First, a substantial portion of the IOCs competitors exclude themselves from these large integrated projects either because they choose to be E&P companies only or because they lack the capital and human resources to compete. Second, a substantial number of potential competitors lack the underlying depth in their asset portfolios to enable them to be major players in these large projects. Third, in more than a few cases the IOCs are the holders of substantial legacy resources that were discovered many years previously but remain unexploited, i.e., the IOC internalises the full economic return associated with the integrated project.

The International Gas Business

A central question confronting the large IOCs is how can they achieve sustainable earnings growth in a slow growing oil market with production from a high decline rate resource? (This same challenge is now haunting the doorsteps of many national oil companies (NOCs) and goes a long way towards explaining why many of these NOCs are looking outside their host countries for growth opportunities.)

By definition, the upstream contribution to earnings per share (EPS) will equal the product of boe output per share and earnings per boe produced. The rate of growth of upstream EPS equals the sum of the percentage

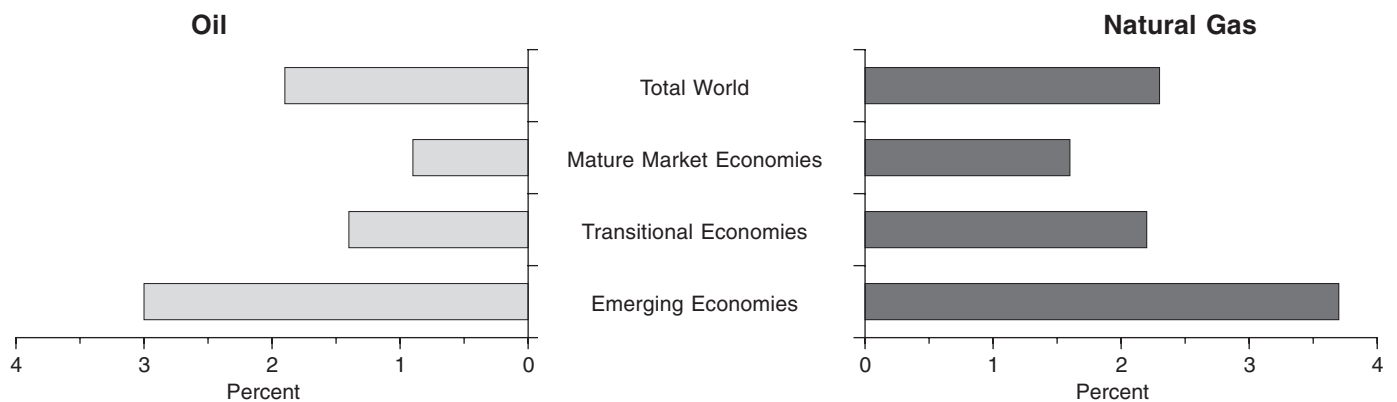
growth rate of output per share and earnings per boe. These simple identities do much to explain the pendulum-like swings of consensus in IOCs’ strategy between cost cutting and production growth since 1986.

Figure 2 illustrates the problem of attaining significant growth in the oil segment and the perceived opportunity presenting itself in natural gas. The projected rate of growth in oil consumption is less than 2 percent per year worldwide and less than 1 percent in the mature economies where a substantial portion of refining and marketing assets is located. This low rate of growth of worldwide consumption caps the growth rate in total oil production that can be achieved without driving oil prices down.

“the opportunity is to shift one’s growth focus from oil to natural gas”

The opportunity illustrated in Figure 2 is that natural gas consumption is projected to grow more rapidly than oil in every market. In short, the opportunity is to shift one’s growth focus from oil to natural gas – a strategy recently announced by Chevron and one that ExxonMobil has been aggressively pursuing in Qatar since the two companies merged. The result is also a more stable production profile than offered by a conventional oil

Figure 2: Projected Average Annual Rate of Growth in Oil and Natural Gas Consumption by Region, 2002–2005



Source: US Department of Energy 2005 International Energy Outlook Reference Case

focus. This stability reduces near-term reserve additions required to increase output at any targeted rate and, thereby, relieves pressures on the new ventures programmes. Not shown in Figure 2 is the prospect of declining or stagnant natural gas production in the key mature economy markets of North America and Europe which implies a market need for gas imports that will be growing more rapidly than the consumption growth outlook suggests.

The international component of the world gas industry is rapidly growing. This requires the construction of an extensive, integrated infrastructure. The trend is likely to cause a change in the balance of power within the group of producing countries and between oil and gas resources. Consider, for example, Qatar’s goal to produce 77 mmtpa of LNG for export by 2012 – an energy equivalent of 1.9 million barrels per day (not to mention the substantial liquids output associated with this gas production). Nigerian LNG capacity from its first five trains is 17 mmtpa (roughly 2.5 bcf/d gas inlet and energy equivalent output of 378 mb/d) with the 4 mmtpa Train 6 to come in 2007 and new liquefaction plants in various stages.

“what is the planned long-term role of North America in the company’s strategy and profits?”

Access to the key gas-consuming markets in Asia, the United States and Europe becomes a potentially important competitive advantage that is dependent on access to regasification plant capacity in these markets just as much as it is linked to resource ownership. A comparison of major international gas projects outside the Middle East suggests a strong advantage held by the IOCs due to their legacy resources. Notable examples include the NW Shelf and Gorgon in Australia, associated gas supplies to Nigerian LNG being drawn from old legacy assets in the Delta, and Angola

LNG which will draw its feedstock from associated gas produced from deepwater discoveries.

For a number of years the consensus among the IOCs has clearly been that North American upstream assets are, primarily, a source of cash flow to be reinvested in other regions of the world where growth prospects are more robust. This general pattern of withdrawal (especially from onshore North American plays) extended into the ranks of the second tier IOCs and created an opportunity for smaller E&P companies to acquire producing assets from the IOCs. Recent conditions in the North American natural gas market have triggered a major strategic question for IOCs. Specifically, what is the planned long-term role of North America in the company’s strategy and profits? Is North America’s role in future IOC profits that of a market outlet for natural gas resources located elsewhere in the world or is North America also a major long-term source of supply of natural gas? A reversal in previous plans to gradually reduce or exit North American E&P will generate substantial pressures on the IOCs to undertake major acquisitions. Despite its potential North Slope and Mackenzie Delta gas projects, ConocoPhillips’ North American position outside the Arctic was not an apparent growth sector for the

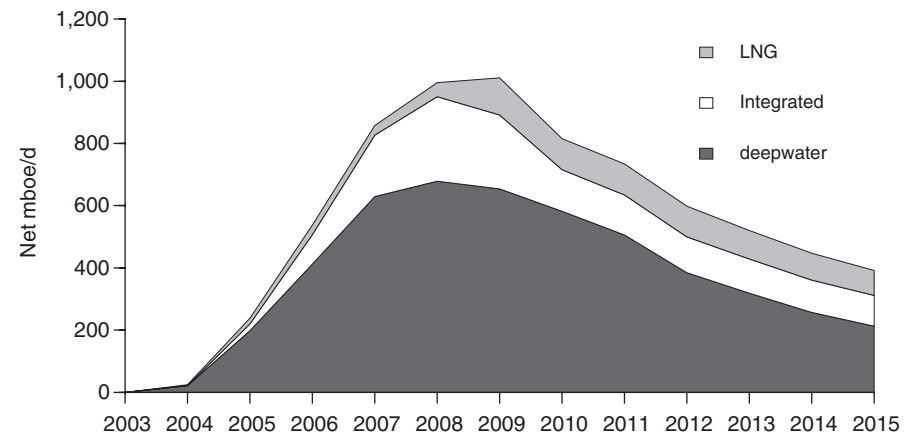
firm. The acquisition of Burlington Resources suggests that a decision has been made in favour of building the supply capability of North American operations. Alternatively, some IOCs may opt to substantially increase their new venture programme efforts in the region. Shell’s recent licensing activity in the USA and Canada suggests that the company has also re-considered its position on North America’s future.

The Industrial Petroleum Economy

Conventional exploration and production operations reflect their mining or extractive industries character. The extractive petroleum economy has unique characteristics including the recurring ‘boom and bust’ cycle. Standing in sharp contrast to the conventional extractive E&P industry and business strategy is an emerging industrial petroleum economy. A number of key areas of IOC operations offer examples of the industrial economy:

- oil sand ventures in Canada as well as the earlier Orinoco projects in Venezuela,
- the proliferation of major LNG ventures among the group in Qatar, Trinidad, West Africa, and Australasia,
- GTL projects and
- enhanced oil recovery (EOR) projects.

Figure 3: BP, Estimated Net Boe Output from Non-Conventional Identifiable New Projects Excluding Wildcards, \$55 WTI Mid-Cycle Price Case



Source: *Gordon Energy Solutions estimates*

Industrial energy projects ameliorate the problem of declining legacy assets, offset the high decline rates typically experienced in conventional E&P investments, and provide constant or nearly constant volumes over long periods of time. The resulting more stable base IOC production provides a potential platform for predictable growth. The potential for efficiency improvements over time is significant, due to de-bottlenecking investments, add-on trains, and an increased likelihood that technological improvements will increase profitability in the future.

Industrial energy projects play to the strengths of the IOCs. They are often brought on-line in phases over time. The project class is typically very large with evidence of very considerable economies of scale and size. The class of ventures is also very capital intensive and usually involves integrated manufacturing processes. All of these characteristics of the industrial petroleum project imply that corporate asset depth, a long time horizon, and engineering and management experience play critical roles.

Technology and the Expanding Frontier Resource Base

At any time, the frontier in the energy industry, i.e., the margin at which commercial viability just barely exists is a diverse and fluid mix of risks and opportunities. Technology expands the resources available to the IOCs by pushing the margin or frontier back, thereby adding resources in areas previously not available such as the deep and ultra-deepwater environment or by increasing the recovery factor on known oil and gas reserves.

this arena will add future new source output (see Figure 3).

But deepwater is really only one of the more highly visible examples of the technology effect. Many other examples exist. For example, frontier gas resources such as coal bed methane and tight gas are rapidly growing in importance in the North American business and, in the process, redefining strategic interests not just of independents but also of the IOCs. ExxonMobil's plan to use multi-zone stimulation technology to fracture large numbers of tight gas zones in Colorado's Piceance Basin or deep gas exploration in the shallow water Gulf of Mexico are two other examples. The Long Lake oil sand project in Alberta combines integrated upgrading investments with a design technique involving the conversion of typically discarded bitumen bottoms into fuel for the steam assisted gravity drainage (SAGD) bitumen production phase.

Each of the factors noted in this essay offers long-term opportunities that match well with the inherent strengths of the IOCs. The potential strategic impact of these forces in favour of the IOCs is greatly enhanced by the fact that the four factors are not independent but, rather, are inter-related and can mutually reinforce each other.



“Industrial energy projects play to the strengths of the IOCs”

The rising role of deepwater and ultra deepwater discoveries is well known and BP offers a stunning example of the degree to which progress in