

# The end of national oil companies

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It is a well-known fact that National Oil Companies (NOCs) have become dominant actors in the oil and gas industry. Of the world's 50 top oil companies, 31 are state-owned; 19 fully, eight majority and four partially, according to the 2010 Petroleum Intelligence Weekly Rank. NOCs' growing influence proceeds not only from their controlling most of the world's oil and gas reserves and production, but also from their increasing financial strength. The PFC Energy list of the Top 50 Largest Listed Energy Firms shows that integrated NOCs presently account for 32 per cent of the total combined value of the 50 largest public integrated energy companies – whereas in 2001, they represented a meagre 1 per cent.

Widely diverse as they are, many NOCs have undoubtedly attained the financial, technological and managerial level of development required to engage in large, complex projects. Closing the gap between their means and those of International Oil Companies (IOCs) has allowed NOCs to compete successfully with the latter in both their home countries and abroad.

Nowadays NOCs play an important role as investors in the sector. According to the GlobalData report Outlook 2010 – Global Oil and Gas Capital Expenditure, published in 2009, and in spite of the economic downturn, listed NOCs invested US\$323 billion to develop their activities at home and abroad. This figure is expected to reach US\$375 billion in 2010. According to Ernst & Young's analysis, Investing for the Upturn, by 2015, based on current estimates, the largest NOCs will have invested close to US\$600 billion.

Likewise, NOCs are expected to contribute a sizeable share of the new production capacity in the coming decade. According to PFC Energy, a significant amount of the crude output will come from the so-called BRINK countries (Brazil, Russia, Iraq, Nigeria and Kazakhstan) that are estimated to contribute a 3.5 million barrel per day increase by 2015.

## The challenge and the context

Apart from having the responsibility of exploiting reserves of hydrocarbons and, in many cases, guaranteeing energy security, NOCs also play a significant role in contributing to the growth of their home countries by fostering economic prosperity. They contribute strongly to the expansion of local suppliers and technological capabilities, the development of qualified human resources, the implementation of social programmes and the deployment of advanced technologies and know-how.

Without a doubt, NOCs have transformed themselves into the most important actors in the energy sector. They have the power and legitimacy required to perform such a role. Still, there is a crucial question to be answered, namely: how can NOCs help to address one of the biggest problems facing humanity?

Can NOCs contribute to guaranteeing a sustainable, reliable and affordable supply of energy to our planet?

This is, in fact, a most urgent matter to be dealt with and a good way of depicting the seriousness of the situation is the analysis of the five mega-trends recognised by the UN in its 2009 General Assembly as a global reality that requires a global response: population growth, urbanisation, migration and food, climate change and water and energy insecurity. All five trends are strikingly associated with the way we produce, distribute and consume energy. Therefore, they have a direct impact in the complexity of the environment in which NOCs operate.

The world population is expected to grow at an average annual rate of 1 per cent, from 6.5 billion in 2007 to 8.7 billion in 2030 (UNPD 2009). Besides which, populations are most likely going to concentrate in urban areas. Projections indicate that nine cities will be housing more than 20 million people by 2020 and 70 per cent of the world's population will be living in urban areas by 2050. Such growth poses a most serious challenge to an energy sector that has been unable to provide enough services to the present world population. In fact, current energy poverty affects 2.5 billion people who have no access to modern fuels for cooking and heating, and 1.5 billion who have to do without electricity, a situation that inhibits social, human and economic development. Demographics clearly affect the size and pattern of energy demand.

In addition to population growth, rising income and dietary changes are increasing demand for food. According to the Food and Agriculture Organisation (FAO), food production should increase by 70 per cent to feed a larger, richer, and more urban population, alongside improvements in its distribution to reduce the amount of people suffering from hunger – there are over a billion people in such a condition. The current food system relies heavily on huge amounts of fossil fuels, from planting, irrigation, feeding and harvesting, through to processing, distribution and packaging but, at the same time, it is one of the greatest producers of greenhouse gases (GHGs). Ironically, one of the serious risks of the food industry is global warming, with its environmental threats to agriculture, many of which are caused by the current agriculture pattern itself.

Water resources are already under considerable pressure. Currently, apart from the huge amount of people who are threatened by water shortages, there are 1.4 billion without access to safe drinking water and 2.5 billion who lack basic sanitation (WHO, 2007). Large amounts of energy are required to provide water for people's basic needs but, contradictorily, a huge amount of water is required for energy generation.

According to the IEA Referenced Scenario, primary energy demand will grow 1.5 per cent annually between 2007 and 2030, which means an overall increase of 40 per cent. ►





◀ Although all sources of energy will grow in this period, fossil fuels will continue to be the dominant source of primary energy worldwide. Their share in the energy matrix is expected to fall marginally from 81 to 80 per cent. In 2030, oil will remain the single largest fuel with a share of 30 per cent of the fuel mix, coal being the second, with 29 per cent. Renewable energies are the fastest growing energy source but, coming from a small base, their share will not exceed 2 per cent.

### **National Oil Companies should move away from their historical oil and gas business into a wider portfolio involving renewables and other sources of energy**

If there is no significant change in the patterns of consumption and the way energy is produced, energy-related CO<sub>2</sub> emissions will increase, driving a rise in the global temperature that could reach up to 6°C (World Energy Outlook, 2008). The Intergovernmental Panel on Climate Change (IPCC) states that some of the predicted effects of an increase in global temperature over 2°C include extreme heat and drought, sea level rises and a decrease in water and food supply. For each 4°C of warming, world GDP could experience a reduction of between 1 and 5 per cent. To avoid irreversible changes in the global climate, GHG concentration should be limited to 450 parts per million (ppm) of CO<sub>2</sub> – equivalent.

### **Energy is at the root of many problems and must therefore be at the heart of the solution**

In the face of this reality, it is clear that the current energy trends are not sustainable. We are going against the sustainability concept by looking only after present needs while leaving problems and their solutions to future generations. A change in our current pattern of energy consumption is of crucial importance to sustainable development. Cheap energy, subsidies, easy access to credit and globalisation encourage excessive consumption. Both consumers and producers, represented by international country organisations are failing to come up with global solutions for these important issues. The lack of success of the Kyoto Protocol and the failure to arrive at a substitute treaty at the COP 15 Conference in Copenhagen last December, clearly illustrate the level of fragmentation in which the global energy sector has to perform.

In order to shift the current trends in energy consumption into a more sustainable energy industry we need a new, global energy architecture where all countries are committed to the change. Such an institutional framework would allow for a better coordination of efforts towards balancing energy

sources, developing new technologies, mitigating effects on the environment, alleviating energy poverty and promoting the rational, efficient use of energy along the lines of initiatives like that of the International Energy Forum (IEF).

Given the urgency of the situation, some immediate actions aimed at paving the way for a sustainable energy future cannot wait for the consolidation of a new global energy architecture. Firstly, it is imperative to shift into a more rational and efficient use of energy, capable of producing considerable immediate benefits. According to McKinsey Global Institute, just by using or deploying known technologies the world could save up to 63 million barrels of oil equivalent per day out of the projected daily consumption for 2020. In parallel, there is a need to accelerate the development of new energy sources in order to achieve a balanced sustainable world energy matrix in the long term.

Success in implementing the two above mentioned actions requires huge amount of resources. According to the IEA, reaching the 450 ppm Scenario will require an investment of US\$36.1 trillion in energy-supply infrastructure for the period 2010-2030. Investing such a huge amount of money represents a grand challenge for the sector. However, the two recent financial and economic crises (2008-09 and 2010) have shown the international community is able to coordinate efforts to tackle a common problem, provided there is enough political will.

### **New vision**

Given the depicted circumstances, the actors that currently fulfil the conditions to play a leading role are the NOCs. Supported by their governments, NOCs have the legitimacy and the power to implement the necessary courses of action: promoting a rational, efficient use of energy and developing a balanced, sustainable world energy matrix. In so doing, NOCs become empowered agents in the promotion of a sustainable energy future. Consequently NOCs should move away from their historical oil and gas business into a wider portfolio involving renewables and other sources of energy: solar, eolic, geothermal, nuclear, biomass and waste, tide and wave, and hydro, among others.

The above entails a complete change in the vision and mission of NOCs, as well as in their strategies and business models. NOCs should conceive themselves as actual energy companies so as to make a decisive contribution to attaining a sustainable energy future.

The moves that some NOCs are already making in that direction, transforming themselves into energy companies, would seem to indicate that we are on the verge of witnessing the end of the era of National Oil Companies and the rise of the new era of National Energy Companies – NECs. □