

Iraq's Energy Strategy: A Mid and Long Term View

Keynote Speech by:

Thamir A. Ghadhban

Chairman of the Advisory Commission

Office of the Prime Minister

Iraq

Iraq Petroleum 2010 – CWC

London 29-30 November 2010

Mr. Chairman,

Distinguished participants,

Ladies and Gentlemen,

It is a great pleasure for me to be present again at the Iraq Petroleum conference to talk about Iraq's energy strategy over the medium and long terms. Important political and energy developments have taken place since we met here in London last year, and we stand today at the beginning of a new and important development which should see a new government taking over by year end. And as you well know, political changes bring in the potential for change in the energy sector and create a momentum for further improvements on past policies.

I will start with a quick review of the political developments over the past few years, and I will then attempt to offer a diagnosis of the current shortcomings of the Iraqi energy sector and I will offer what I believe are the fundamental principles that constitute the foundation of Iraq's future hydrocarbon strategy with emphasis on the upstream oil and gas strategy as it relates to those recent developments.

The period after the change of regime in 2003 was marked by developments that resulted into two distinct phases:

The first phase was characterized by a step by step approach towards democracy, governed by the short-lived governments starting with the Governing Council (July 2003-1st June 2004), then the Interim Government (1st June 2004 – May 2005) and the Transitional government (16 May 2005-22 May 2006). The Interim government was tasked with carrying the first democratic election of the National Assembly whose main task was the drafting of a new constitution while the Transitional government's main mandate was organizing a national referendum for the new constitution and carrying a general election for the Council of Representatives.

The second phase was to be a prelude to the socio-political normalization in the country with an elected government lasting for a full parliamentary term of 4 years during which a set of agreed-on processes, stipulated in the 2005 constitution, were to take place. Many of the tasks have been achieved, including the passing of legislations and the establishment of various institutions. However, a number of important tasks proved difficult, among them constitutional amendments and normalization, the census and the referendum on Kirkuk and the rest of the disputed areas.

The previous government was faced with immense challenges, the most difficult of them was security, combating terrorism and enforcing law and order, in addition to other challenges related to the economy of the country such as high unemployment, inflation, corruption and wide spread poverty. The country was suffering from deteriorated services resulting in power cuts, shortages in oil products, poor health and poor education and insufficient potable water supply. In spite of the immense difficulties and great sacrifices and suffering by the people of Iraq, the country has moved forward with major improvements in security and measurable economic achievements.

One of the most significant developments during the past few years, especially after the adoption of the new constitution, was the acceptance by various politicians of the need for economic

reform, for a market economy and the need to encourage direct foreign investment in all sectors. Furthermore, there has been a growing understanding of the need for the economic development of the country and the departure from an economy solely dependent on oil and that runs on subsidies.

The fact that each of the first three governments lasted for less or just over one year, coupled with the abnormality of the whole situation prevailing in the country at the time, made it impossible to come up with meaningful plans, even annual plans, let alone planning of long-term strategies. Because the first two years of the term of the outgoing government were marked by severe deterioration of security, it was not possible to put in place a 5-year plan, although a number of ministries such as oil and electricity came up with quick indicative plans. But even the annual plans were not well thought of and annual budgets were not fully spent due to low government spending capacity as well as cumbersome procedures and regulations.

It was only in 2008 that a call for long-term planning was taken seriously, leading to the National Development Plan of 2010-2014. A two-year and then three-year budget strategy (2010-2012) instead of annual budgets were produced and adopted. In 2009 the Advisory Commission at the prime minister's office started to work on an Integrated National Energy Strategy with the assistance of the World Bank which provided a grant and technical support.

In formulating the country's future energy strategy in general and oil and gas in particular, a number of key factors have to be considered starting with assessing and understanding the current status of the energy sector in the country, medium to long term goals of the National Development Plan and the country's future strategic objectives.

The current energy scene reflects a sector that is in a dire situation on most fronts. Here are a few examples:

- Oil production and export rates throughout the years since the fall of regime are still below highs attained in 1990 and 1979 on one hand, and are always below planned annual rates on the other. This does not undervalue the efforts exerted by the local staff and working under extremely difficult and dangerous environment in order to maintain and increase production and export rates. The average production rate for this year so far is 2.335 million b/d while exports stand at 1.875 million b/d. That's about 93% of the planned export target for 2010. The Iraq federal region of Kurdistan's production is estimated at close to 100,000 b/d.
- Revenues generated from crude oil sales, though constituted the major contribution to the treasury, are still well below what the country needs to meet its requirement for providing better services, improving the infrastructures and developing the economy. Total oil revenues generated during the period from 2006 until the 1st of November 2010 amount to more than US \$ 230 billion.
- Gas supplies needed for power generation, industrial feeds and fuel are insufficient while gas continues to be flared. Present gas production is 1,700 MMcf/d out of which only 1,000 MMcf/d is utilized, while some 700 MMcf/d is flared.

- The inferior quality of oil products produced, in particular gasoline, which are well below international specification, in addition to the poor distribution network as well as poor services. About 600,000 b/d of crude oil is refined nationally into products, of which 40% is fuel oil.
- Electricity generation is way below what is required and cannot cope with the rising demand, resulting in prolonged power cuts that could exceed 12 hours per day in summer. This causes extreme suffering to the people due to the very harsh weather, especially in summer when temperature could exceed 50 degrees Celsius, in addition to the adverse effect on the country's economy. The present available generating capacity is between 6,000 and 7,000 Megawatt which is about 50% of demand. The country is importing electricity from Turkey and Iran at a daily rate close to 900 Megawatts.

The energy scene that I have just outlined provoked calls two years ago for a radical review of targets, policies, plans and management of the energy sector. Such a review has already started recently with serious debates within government and society. The oil and gas bid rounds, and various steps taken to introduce foreign investment in the upstream and downstream as well as in the power generation sector are some early results of this debate.

In my view what Iraq needs now is a medium and long term strategy for the energy sector. Here are the cornerstones for a national strategy as I see it and in order of priority:

1. A quick and steady ramp up of oil production and export capacity to levels commensurate with the country's need for increasing revenue and the country's proven oil reserves. I expect we will achieve a production capacity of at least 8 million b/d within the next 6 to 7 years. Actual production rates during this period and the years after shall be shaped by a number of factors, such as global energy fundamentals, call on OPEC supply, and of course maximization of the country's revenues. I shall stress here that Iraq shall always play a responsible and constructive role to provide ample oil and gas supplies to world markets and shall work for markets stability and for a fair oil price.
2. Sufficient supply of natural gas and gas liquids for the growing demand for power generation, fuel for households, industrial feed for the petrochemical and fertilizer industries as well as required gas volumes to fuel industrial plants. I expect about 5,000 MMcf/d of dry gas will be required as fuel to supply the projected demand for power generation within the next decade.
3. Sustainable supplies of all types of oil products of international specification with improved modern supply services. The Iraqi population is growing at a rate of 2.8% per annum. Per capita consumption of oil products is currently below regional average, but it's expected to grow at a higher rate once economic activity increases with time and the standard of living improves. Therefore, in order to meet future rising demand, the refining capacity has to be doubled in the next five years. Four modern refineries in Kerbala, Amara, Kirkuk and Nassiriya with a total throughput capacity of 740,000 b/d are in different stages of planning and design. Iraq is currently seeking for investors to build and operate them.

4. Developing a marketing strategy that takes into consideration the increased crude oil availability as a result of the two bid rounds while at the same time balance between directly marketed oil and oil lifted and marketed by IOCs in the form of payment. This strategy would take into consideration the global supply and demand balance and the continued shift to higher-demand markets in Asia. This strategy should also take into consideration a potential increase in the contribution of heavy oil to the oil mix as well as the introduction of extra light crude from the Yamama reservoirs.

Furthermore, the brown and green oil fields that are being developed shall provide four types of crudes: heavy, medium, regular and light with an API ranging from 18 to 42 degrees, with a varying range of sulphur content as well. Marketing of such oil with emphasis on revenue maximization is yet another strategic issue that got to be resolved. Blending of different types in the right ratios and directed to the right markets with the required marketing flexibility is an important decision too. It shall influence major decisions and spending as an outcome of infrastructure requirements and flexibility in surface facility required.

Our marketing strategy should also account for the possibility to export gas by pipeline to neighboring countries and beyond, or as LNG.

5. Maximization of revenues not just as a result of the direct ramp up of production and export capacities of oil and gas but also by capturing the upside through a better utilization of the hydrocarbon resources and the linked industries.
6. Provide dependable oil and gas and petroleum products storage, and transportation networks with capacities that are in line with future development plans and that provide additional spare capacities. Such infrastructure is vital to provide sustainable and uninterrupted supplies of hydrocarbons internally and for export as well. Major pipelines and storage depots are going to be constructed during the next five years to provide an evacuation system for all oil and gas planned to be produced from all fields under first, second and third bid rounds. Two contracts have already been signed to lay down two major offshore pipelines with three single point moorings system in the Arabian Gulf. A third pipeline with one SPM financed by the Japanese loan to Iraq is to follow soon leading to more than doubling the current available export capacity.

Based on lessons learned from past experience, new export pipelines should be laid down across neighboring countries in addition to our present offshore outlets in the Arabian Gulf despite the extra cost that it entails. The council of ministers has already approved the extension of the old agreement between Iraq and Turkey for another 15 years, subject to ratification by parliament. Talks continue with Syria to lay down a new 42 inch pipeline to the Mediterranean with a capacity of 1.5 million b/d in addition to utilizing existing old pipelines that could provide an export capacity of 300,000 b/d. Another addition could be a smaller diameter pipeline heading west to Jordan to provide it with the necessary crude for domestic demand. Pipelines in transit countries could be owned and operated by the same country or by a private third party.

It is also strategically important to build additional south-north transportation capacity of up to 2 million b/d to provide the country with the flexibility to move oil northwards and westwards to the Mediterranean export outlets in Turkey and Syria. Such flexibility would allow production in the south to continue in the case of unforeseen problems in the Arabian Gulf that may limit or stop traffic through the Strait of Hormuz, in addition to allowing for increased supplies to the European Markets and North America when required. It's also an option that can be reverted to when price differentials favor such marketing policy. Such south-north option would also make sure that associated gas production continues at a higher rate when exports through the Gulf are curtailed. It may be of interest to investors that such projects could be offered as investment opportunities on BOO basis.

7. The country should enhance its free gas (or non-associated gas) production capacity. It has already started doing so when it launched the 3rd bid round to develop the three discovered gas fields of Akkas, Mansouriah and Siba. With oil reserves now put at 143 billion barrels, I estimate that free gas is now just over 10% of total gas reserves, excluding cap gas. Since the country's probable gas reserves amount to 160 TCF, we should focus our efforts on converting some of this to proven reserves in order to raise the percentage of free gas. Following the discovery of Akkas, field studies which included the reprocessing of old seismic data as well data from old wells pointed to high potentiality of older rocks containing gas and condensate in the western desert. The strategy calls for exploring for gas in the western desert as well as the region between the Euphrates, the Tigris and the Syrian borders (north of the Western Desert). Any gas discoveries in that region shall be developed and we can envisage the birth of a new and substantial gas province around Akkas that shall supply the country with much needed gas. Such strategy would also support a viable gas export project to Europe.
8. Reserves replacement is to be taken seriously from a strategic planning point of view. As the country has embarked on a substantial program to build up Iraq's crude oil and gas production capacity in cooperation with international oil companies, the fifteen oil fields to be developed and produced in accordance with the twelve contracts contain some 100 billion barrels of proven reserves based on the reserves revision released by the MOO. If those fields are depleted in accordance with contractual and development plans then it's estimated that some 15 billion barrels of oil would be produced during the build up period of six to seven years to be followed by some 30 billion barrels during the plateau period of 7 years then 25 billion barrels in the remaining decline period until the end of contract. This means a cumulative of some 70 billion barrels is estimated to be depleted in the next 20 years. This amounts to about 50% of the country's present proven reserves. From a purely planning point of view, a medium and low production scenario of 75% and 50% production performance would result in 52.5 and 37.5 billion barrels depletion respectively. Based on the above and in order to maintain the country's leading position in proven reserves ownership and to sustain high production capacity for a much longer period beyond 2030, and the fact that Iraq is the least explored country among the big producers in the world, an exploration effort to convert probable reserves to proven reserves is going to be necessary in the coming years. Many exploration blocks with very

high potential already exist in many regions in the country. Work may be conducted by our national Oil Exploration Company together with the Iraqi Drilling Co. It is also possible for foreign companies to work together with our national companies through different types of arrangements to be formulated by the MOO.

It goes without saying that building qualified manpower is a must in order to achieve the strategy, and I mean building skills in all aspects: managerial, technical, legal, and financial. Oil contracts signed with IOCs stipulated training Iraqis and imposed spending commitments for that. What we need now is to focus on building capacities and create the work environment that would help produce leaders to carry out this long term strategy and enable Iraqis to become active players in the international arena.

This in my view is the basis of an energy strategy for any future government starting with the next one which should see the light shortly. The next government will no doubt build on the successes of the outgoing one, but will also have a long list of pending issues to resolve. This includes reaching a settlement with the KRG over oil produced from the Kurdistan region, legislating the long awaited oil and gas law as well as the revenue sharing law, and recreating Iraq National Oil Co (INOC).

With this Iraq should be on the right track to become a major and dependable oil and gas exporter. I expect that within the next two decades Iraq will be one of the leading oil producers in the world, while it continues to build a strong democracy and a prosperous society.

At the end I would like to thank CWC for giving us this opportunity to meet here and discuss this important topic. Thank you, ladies and gentlemen, for your attention.