

Petroleum and Energy Policy in Iran

CYRUS BINA

Iran, a major oil producing and exporting country, also imports gasoline because of inadequate refining capacity and rising petrol consumption. This article examines the problems faced by an economy dependent on the export of crude oil and gas, that are compounded by the dilemmas of rising domestic consumption, a significant decline in productive capacity, burdensome energy subsidies and economic sanctions imposed by the United States.

The socio-economic evolution and political economy of petroleum in Iran (and similarly in west Asia, north Africa and Latin America) can be divided into three stages of development: (1) the colonial oil concessions of 1901-50, (2) the transitional period of 1950-72, and (3) the globalisation (and decartelisation) of oil since 1974 (Bina 1985, 2006). Today, contrary to orthodoxy and its manifold popular presentation in the media, there is no longer a “cartel” or a “monopoly” in the presently globalised (crude) oil industry (Bina 1989a, 1990, 2008a and Bina and Vo 2007).

The Islamic Republic emerged in 1979, nearly half a dozen years after the world-wide restructuring of the oil industry in the early 1970s. Hence the converging irony of globalisation and emergence of the seemingly contrary regime right from the outset. The new regime also inherited a severe disruption and deterioration in the production of oil while at the same time initiating a populist policy of self-reliance, including a lessening of the economy’s dependence on production and export of oil. Yet, the Islamic Republic was in desperate need of further revenue from this very source during the eight excruciating years of war with Iraq (Fesharaki 1985). Thus, neither the diversification of foreign exchange earnings nor genuine conservation of natural resources or diversification of the economy as a whole seemed feasible during the first decade of the new regime. As a consequence, the rentier character of the Iranian state was squarely imprinted on to the new regime early on, during the 1980-88 war period, and, given the desperate need for foreign exchange earnings to reconstruct the battered post-war economy, the early political pledges remained unfulfilled. As a result, the new regime has not only been unable to stamp out the rentier character of the ancien régime but has embraced it remarkably by default.

The decade of the 1980s turned out to be a disaster both domestically and internationally for Iran. Aside from the war, the United States (us) embargo, motivated by the occupation of the us embassy (1980-81), set the stage for isolation and weakening of Iran’s economy. Oil production, while recovering from its initial trickle, nevertheless hovered around 2.26 million barrels per day (b/d) in the period 1981-89 – at 40% of the production peak in the mid-1970s. Oil exports, recovering from 7,15,000 b/d in 1981, averaged around 1.6 million b/d in the same period. Oil revenues (all in nominal dollars) in the 1980s recovered from \$10 billion in 1981, peaked at \$20.3 billion in 1983, and then sharply dropped to \$5.9 billion in 1986, before a slight recovery to an average of \$9.7 billion at the end of the decade. The greater part of volatility in Iran’s oil revenue, however, is due to price fluctuation rather than fluctuation in the quantity of output in this decade (Bina 1991).

In retrospect and with unimpeachable corroborating evidence, the sharp decline in the 1986 oil revenues can be attributed to the one-two punch assault strategy on Iran’s oil installations by Saddam Hussein and the simultaneous action by Saudi Arabia to pull the plug on the trickling Iranian oil revenues – both of which were evidently sanctioned by the Reagan administration. Hence the task of the “swing producer”, who swung short (to boost oil revenues of the Arab brethren vis-à-vis Iran’s in relative terms) and then swung long (to create the opposite effect, thus squeezing Iran’s oil revenues in relative terms). The nominal price of oil declined well below the \$10 mark in 1986 and – in the view of the unforgivable global oil market that also wreaked havoc on the us oilfields in Texas and Oklahoma – this self-injurious act of “swinging” by Saudi Arabia was finally abandoned. Thus to say that Saudi’s “swing” was primarily directed at Russian oil in view of the ongoing Soviet glasnost is not credible.

And, worse, clinging to such exceptions and making false generalisation as to “oil monopoly”, based on tautological conception of “OPEC cartel” – as orthodox (and even heterodox and radical) economists, international relations specialists, and their uncritical counterparts in the media

This article was originally intended to be published as a commissioned entry in *Iran Today: Encyclopedia of Life in the Islamic Republic*, Greenwood Press, 2008.

Cyrus Bina (binac@morris.umn.edu) is with the University of Minnesota (Morris Campus) and a visiting scholar at the University of California, Los Angeles. He is also a member of Economists for Peace and Security, US.

often do – are but an ideological ploy that is mostly motivated by political nostalgia, if not an entirely belligerent (and indeed reactionary) policy against the very epochal *objectivity* of the 1970s decartelisation and globalisation of oil (see Bina 2006; Bina and Vo 2007; Bina 2008).

The passage of the 1987 Petroleum Law was in anticipation of attracting the flow of necessary international investment to the post-war oil industry in Iran. The law is designed to handle the contracts based on what is known as “buyback”, an arrangement that requires the contractors to fund the projects fully, and receive their entire remuneration in terms of an allocated production share in oil till the completion of the “buyback” and the transfer of operation to government in an anticipated number of years. Designating the initial, rather than current, market price of oil for the duration of the “buyback”, however, creates a peculiar set of risks for either of the parties involved. This, nevertheless, can be readily safeguarded by

resorting to an elaborate set of oil swaps and futures market arrangements that would offset the probable losses.

This is a powerful example of globalisation of oil and thus the mutuality of competition reflected in the interaction of ownership of capital and ownership of (subsurface) oil reserves across the globe – regardless of legal representation of the latter as public or private (Bina 1989b). By the same token and despite the misleading orthodox oil literature, this principle also applies to direct “equity” and “joint-venture”, in which “lease” and “ownership” (of oil reserves) are not the same and thus must be treated separately. Thus, it is logically, economically, and politically obtuse to think that the company’s so-called discovery (as contingent right of private usage) is independent of the enduring and inherent right of public ownership (Bina 1992). The first series of buyback projects in Iran was operationalised in the small-scale Sirri (offshore) oilfields, and subsequently

contracts were awarded to France’s Total and Italy’s ENI to boost production in offshore Droud, certain natural gas fields near Khārg island, and offshore Balāl field in the late 1990s (*Petroleum Intelligence Weekly*, various issues).

By August 1988 the ceasefire was in place but the war damages, particularly against Iran’s major oil installations, were horrendous. Crude oil production infrastructures, refining facilities, and export terminals were all in need of major repairs. Nevertheless, the average oil production was increased from 2.15 million b/d in the 1980s to 3.47 million b/d in the 1990s – a rise of 61%. The average figures for oil exports for the 1980s and 1990s were, respectively, 1.49 million b/d and 2.5 million b/d – a rise of 68%. On average, the comparative proportions of oil production for export (as opposed to domestic consumption) were 69% and 72%, respectively, for the 1980s and 1990s. As for the annual average oil revenue, the Iranian government earned \$12.38 billion

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IHDS was jointly organized by researchers from the University of Maryland and the National Council of Applied Economic Research (NCAER), New Delhi. It was funded by the U.S. National Institutes of Health.

and \$15 billion, respectively, in the 1980s and 1990s – an increase of about 21%.

Balancing Demand and Production

However, the rise of the average annual foreign exchange earnings of the Islamic Republic accounts only for about 31% of an increase in the corresponding average quantity of the oil exports in the 1980s and 1990s. This is a significant result which primarily reflects a rather stable and depressed level of global oil prices in the 1990s. In the aftermath of war, the government planned for adding refining capacity for domestic consumption and expanding crude oil and gas production for exports by reaching out to establish contacts with western companies, including us oil and energy companies. While these efforts led to some progress, the newly imposed sanctions by the Clinton administration in 1995 explicitly prohibited us companies and their subsidiaries from financing and developing petroleum resources in Iran. To make matters worse, the Iran-Libya Sanctions Act (ILSA), passed by the US Congress in 1996 (and renewed by the Bush administration for five more years in July 2001), extended the jurisdiction of such sanctions to non-us companies which invest more than \$20 million annually in the petroleum sector in Iran (us Department of Energy).

For the period 2000-05, the average oil production is estimated at 3.69 million b/d, which shows an average of 220,000 daily barrels or nearly 6% above the 1990s daily average, yet Iran's average oil exports (2.4 million b/d) declined by 100,000 daily barrels in this period. The annual average oil revenue (in current dollars) earned by the government, in the same respective decades, increased from \$15 billion to \$29.13 billion – an increase of 94% that is primarily due to the increase in global oil prices during 2000-05. However, the estimated proportions of daily domestic oil consumption for the 1990s and the first half of the current decade are respectively 28% (export 72%) and 35% (export 65%). This shows that (proportionately) there has been a 25% rise in the amount of average daily domestic oil consumption vis-à-vis daily oil exports since 2000 – which correspondingly translates to a considerable loss of foreign

exchange earnings due to excessive domestic use of oil (OPEC 2005).

It is not implausible, therefore, to recognise and anticipate the emerging predicament of the regime in balancing the production and consumption of energy, and thus resorting to nuclear energy as a possible option. And, it is not illegitimate to think that Iran needs to pursue this option if it chooses to do so without hassle and hoopla, particularly from the countries that not only obtained nuclear power on a mass scale but also possess a nuclear arsenal that can blow the entire planet hundred, if not thousand, of times over. Besides, Iran is a signatory to the nuclear non-proliferation treaty (NPT) and has certainly more legitimacy to produce nuclear materials for peace or, for that matter, for deterrence, than either India or Israel or North Korea or Pakistan – which are not signatories to the NPT. However, based on the National Intelligence Estimate released by American intelligence agencies on 3 December 2007, Iran does not make nuclear bombs and has no programme for building nuclear weapons (*New York Times*, 4 December 2007). Yet, George Bush, who knew well that this report is coming out, did not give up on the campaign of misinformation and cited “Iran's pursuit of nuclear weapons as the rationale for an aggressive foreign policy as an attempt to head off World War III.” This finding also reveals (by implication) the tip of the ulterior motives of the Bush-Cheney administration (and its neo-conservative/powerbase) in respect to “altering” geography and the political map of west Asia (Bina 2004, 2008a). Therefore, this particular issue (as other issues related to Iran's sovereignty) must be understood within a much larger global context than the limited context of the (Iranian) regime's political disposition and spectacle that have so far been played out in public.

Energy Reserves

Iran's estimated proven oil reserves averaged 57 billion barrels in the first half of the 1980s, before being upgraded to about 93 billion for the period 1986-99; these reserves were gradually upgraded to just below 100 billion barrels in 2000 and 2001, before being revised upward again to 131 billion (in 2002) and to 136.3 billion

barrels (in 2005) – nearly 12% of world's proven oil reserves. The median figures of Iran's proven natural gas reserves for the 1980s, 1990s, and the 2000-05 period are respectively 14, 20.7, and 26.7 cubic metres – second only to Russia's, and according to 2005 estimates, about 16% of the world's proven natural gas reserves (OPEC 2005).

Iran has 40 producing oilfields (27 onshore and 13 offshore) the majority of which are located in the province of Khuzestan, the south-western part of the country. The majority of Iran's oilfields exhibit a natural decline rate of just under 10% per year. These fields are in dire need of technical repair, upgrading, and adequate enhanced oil recovery (EOR), such as water, chemical, and gas re-injection subsequent to proper unitisation of reservoirs. Timing is often a critical factor, since the loss of pressure and prolonged delay may lead to the loss of ultimate recovery. The present oil recovery rate in Iran's oilfields is estimated at about 25% as compared to the world average of 35%.

The problem is compounded when oil discovery has not yet been turned into timely exploration and tangible reserve development capable of replacing the lost production on a regular basis. Iran needs to add as much as 400,000 daily barrels of new oil annually in order to maintain the current level of oil production. However, the burden of us sanctions and political pressures on the economy, particularly Iran's oil sector, cannot be underestimated (*Financial Times*, various issues). These sanctions produced their own opposite effects not only in the direction of consolidation and adaptability of the regime but also, in a strange play of dialectic, led to the resilience of the Iranian people who have been the de facto target of these sanctions themselves, and who paid a heavy political price through us interference and isolation of the country. This, of course, is the tip of the blunder relative to what has all along (short of a bloody coup d'état) been contemplated by the Bush administration, namely, either pondering over the carpet-bombing of the country by way of deception or invading and hacking off the country into one hell of an Iraq irrespective of the legal, moral, and global consequences – and remain oblivious to the awesome and tragic

repercussions and, of course, payback (Bina 2007, Bina and Gardiner 2008).

New Project Development

Since 1995, the ironic timing of the US sanctions against oil industry, Iran has found several sizeable (even giant) oil-fields either by utilising its own technical expertise or by utilising the technical know-how of a number of non-American oil exploration and development companies via joint operations. One of these operations is the Dārkhovin oilfield near the major refining city of Ābādān at the mouth of the Persian Gulf, and a deal of \$1 billion in a five and half year buyback for its development was signed with ENI of Italy in 2001. This field (3 to 5 billion barrels) has already started to produce 50,000 b/d in July 2005 and is expected to reach 160,000 b/d in 2007. There are other new development fields of minor size, such as the five Henjām fields, in the Hormuz region; and some 10 additional fields which are planned to enhance production in the southern provinces and which are in need of nearly \$7 billion investment for extension and development.

The largest oil discovery in 30 years was made onshore in south-western Iran, known as Āzādegān in 1999. This field has an estimated potential production of 300,000 to 400,000 b/d for 20 years (*International Herald Tribune*, various issues). However, Japan, which had obtained an exclusive negotiating position to develop the field in 2004, has now been pressured by the Bush administration to stall the project, and the proposed \$2.5 billion drilling is now on hold vis-à-vis the proxy nuclear standoff with Iran – quid pro quo. Iran was in talks with France's Total and Norway's Statoil, and is now planning to negotiate with China and Russia to jointly develop this giant field, which promises to add just short of 30 billion barrels of proven oil reserves (from some 70 billion barrels of oil in-place) in a span of 20 years to the world's dwindling supply. In 2001, Iran has made another significant oil discovery, named Dasht-e Ābādān in the vicinity of Ābādān. This oil find is reportedly comparable in size with that of Āzādegān. There are also recent smaller discoveries, such as Anārān oilfield in Khuzestan, by Norsk Hydro. This field contains estimated reserves of 2 billion barrels and can produce 100,000

b/d by 2010 (*Middle East Economic Survey*, various issues).

Iran's proven natural gas reserves were estimated at 27.58 trillion cubic metres (974 trillion cubic feet [tcf]) in 2005, nearly 65% of which is located in non-associated fields and has not yet been developed. Major natural gas fields include South Pārs (280-500 tcf), North Pārs (50 tcf), and Kangān-Nār (24 tcf) – all in the southern part of the country. Natural gas treatment and processing plants include Kangān-Nār, Aghar-Dālān, Ahwāz, Marun-4, Bid-Boland, and Asaluyeh. Natural gas accounts for nearly half of Iran's domestic energy consumption, and the government is subsidising it in order to reduce and finally replace fuel oil, kerosene, and liquefied petroleum gas consumption. However, the government's primary objective is to develop the vast natural gas reserves for export. The exploration and development of natural gas from the offshore Persian Gulf continental shelf is not without border dispute or over- and/or horizontal-drilling of joint reservoirs. An example of the former is the dispute between Iran, on the one hand, and Saudi Arabia and Kuwait, on the other, over Dorra natural gas field. This field was unilaterally claimed by Saudi Arabia and Kuwait in a bilateral agreement between the two in July 2000. An example of the second case is Qatar's exploitation of the linked North Field and Iran's South Pārs natural gas field in 1991, while the latter started much later and worried about the rapid dissipation of reservoir, including the possible impact of over- and horizontal-drilling (National Iranian Oil Company, web site).

There are about three dozen significant buyback agreements in the process in respect to the development of South Pārs field (in a total of 28 phases) or other fields with various European, South Korean, and Chinese companies. The total size of the international investment in the gas projects is over \$20 billion. There are negotiations with India on liquefied natural gas (LNG) exports, which is also tied to the development of the bountiful Yādāvarān oilfield. And, among others, there is a 20-year natural gas delivery agreement with Armenia. However, the most promising investment is

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the 2004 oil and gas deal with China, being worth nearly \$100 billion, involving the development and delivery of some 10 million tonnes of Iranian LNG annually for 25 years (*China Daily*, 31 October 2004). This agreement also includes the development of Yādāvarān oilfield that similarly allows Chinese to buy 150,000 b/d of Iranian crude at market rates for 25 years. With all these potential developments, however, Iran is barely holding on its own as time is of the essence for rejuvenation of its battered and beleaguered petroleum industry.

Burdensome Energy Subsidies

Finally, there is a staggering rise in domestic demand for food and energy. This stems, on the one hand, from the overwhelming population increase of nearly two and half times that of the pre-revolutionary period, and on the other from the sheer political motivation for checking the domestic opposition and quelling the outside political agitation (including us pressure and intrusion). These have led to the maintaining of heavy subsidies in the energy sector – the upshot of which is the critical lack of public infrastructure and the utter misuse of petroleum. At the same time, due to the critical limitation of refining capacity combined with unrelenting subsidies, the country is now depending on heavy import of gasoline. The demand for gasoline is forecasted to grow just over 11% per annum.

The cost of gasoline is reportedly under 40 cents per gallon in Iran. In 2005, Iran imported nearly 38% of its total domestic gasoline consumption. The estimates for 2006 and 2007 gasoline imports are approaching the 41%-44% mark. Iran is spending nearly \$30 billion annually on subsidising, including gasoline and natural gas, to domestic consumers. In January 2005, the Majles decided to freeze domestic prices of all fuels, including gasoline, at their 2003 levels. In March 2006, the Majles reduced the budget for gasoline imports from over \$4 billion to \$2.5 billion (*Oil and Gas Journal*, various issues; *Financial Express* web site). As of September 2006, the government has introduced a two-tier system of rationing whereby shortages can be dealt with in

the interim. In the longer term, of course, the elimination of energy subsidies – in conjunction with building an energy-efficient and environment-friendly economic infrastructure – beginning with a sufficient public transportation – is certainly a better option.

There remains a twin problem at the heart of Iran's rentier state and its semi-diversified economy: (1) the economy is dependent on the export of crude oil and gas, the price of which is at the mercy of the global market, and (2) the economic policy is lopsided, namely, there is a significant decline (relative to the previous regime) in the ratio of oil exports to oil production, having to do with rising domestic consumption and the burdensome energy subsidies – aside from us sanctions. The value of petroleum exports was nearly 25% of the gross domestic product and 50% of the government budget in 2005. During the period 1970-78, the ratios of oil exports to oil production were 85% to 90%; whereas in the period 1982-2005 the same ratios fluctuated between 59% and 76% – without any appreciable difference during the war years. As a consequence, there is well over 20% proportionate decline in the utilisation of oil as a prime source of foreign-exchange earnings under the Islamic Republic in Iran. Here, the staggering population increase, combined with a significant decline of Iran's oil productive capacity – aggravated by the long and unrelenting us economic sanctions – appears to have been the culprit. In addition, the absence of adequate diversification and the paucity of effort in building sufficient up to date industrial infrastructure have turned this major oil producing country to an importer of gasoline and other refined products for well over one-thirds of its domestic consumption (Bina 2008b).

The events in which the price of oil surpassed the threshold of \$145 in the summer of 2008, and its subsequent decline to some \$55 in November 2008, have not changed the fact that neither the unexpected increase nor the precipitous decrease in the price of oil is helpful for a country whose economic lifeblood is dependent on the export of oil. This is particularly true for Iran whose macroeconomic policies and development

planning are so manifestly at the mercy of global markets.

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