

As Middle East goes nuclear, global warming goes critical

By *Brian Parkin*

The UN Security Council decision of 20 July permitting Iran to proceed with a civil nuclear programme was greeted with a number of predictable responses. For Obama and the US negotiating team it was an outstanding success in diplomacy and peace-brokering in preparation for a phase of the reconfiguring of military and economic relations in the wider Middle East region- in particular a possible shift way the Gulf OPEC producers as the world energy hub. For Benjamin Netanyahu and majority Israeli opinion it was no more than a betrayal that would leave Israel at the mercy of a nuclear armed Iran in the near future; a prospect that could only be anticipated with a pre-emptive armed response. And for Saudi Arabia it was a blow against its ongoing ambitions to destroy the perceived threat from its Shia mortal enemy to the north.

But aside from the headline geo-political noise it is important that the Iran nuclear deal is taken both within the context of dangerously rising imperialist tensions, and, as importantly, the looming catastrophe of global warming to which more cheap hydrocarbons further contribute to a run-away point of no return. Here we will attempt to demonstrate how the headlong drive to uncontrollable climate change is inextricably tied into a crisis of global capitalism and its increasingly fitful phase of late imperialism.



Arak IR-40 Heavy Water Reactor, Iran. (cc).

1. OPEC and the oil price crisis

Virtually overnight in early January 2015 the price of world traded crude oil dropped by 50%. For the high cost producers this was bad news. But as long as it seemed to be a market blip then most producers could take a 'hit'. Initially the oil price 'shock' seemed to be a short-term over-supply problem caused by evidence of global recessionary trends and signs of a Chinese economic slow-down. Yet on closer examination it was clear that the OPEC¹ states led by Saudi Arabia were actually increasing output in order to drive down prices.

The reasons for this seemingly counter-intuitive behaviour have since become clear:

1. OPEC, and Saudi Arabia in particular, were attempting to recover market share by driving out the more high cost US shale oil and gas² producers- most of them debt financed- and thus eliminating the competition from 'unconventional' hydrocarbon fuels³.
2. Saudi Arabia also intended to use sustained low oil prices to destabilise the economy of Iran, which although an OPEC member state, is nevertheless a relatively high cost producer⁴.

The sustained low oil price- currently just below \$50 dollars per barrel is now beginning to hit high cost US producers hard but the impact on some OPEC states dependent by up to 90% on oil or gas export revenues is starting to tell. But here a seemingly paradoxical 'fix' comes into play: although the high cost states are losing dollar revenues, they have to produce even more in order to maintain their income. With its very considerable petroleum derived reserves Saudi Arabia increased oil production because it could and it *wanted to*. And as the price fell as a consequence, the other, less well-endowed producers increased production because they *needed to*. The result, as never before, has been the hydrocarbon markets awash with cheap petroleum and other fuels just at a point when the world urgently needs to kick its high octane carbon habit.

2. Iran's case for nuclear power

Iran has been seeking access to nuclear technology for over 30 years. Although initially more driven by military than civil nuclear ambitions, the post-Iran/Iraq war period of international quarantine and subsequent sanctions has brought about a shift in priorities.

¹ OPEC. Organisation of Petroleum Exporting Countries- a 12 member cartel comprising Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela.

² All fossil fuels are traded on the basis of oil- and in particular two grades (N Sea Brent and West Texas Intermediate) providing price bands effectively coupling coal and gas to the daily traded price of oil.

³ Hydrocarbons- fossil fuels with a molecular structure of carbon bonded by hydrogen atoms. This includes oil, natural gas (methane) and 'condensate' gas- a naturally occurring wet gas that is liquid at ambient temperature. Hydrocarbons do not include coal, anthracite and lignite.

⁴ Several of the bigger OPEC producers have high production costs, among them Nigeria, Venezuela, Iran and Algeria.

Now Iran wants nuclear technology for power generation purposes and is prepared to submit to quite invasive UN inspections to get it. And a quick look at the ramshackle state of the country's power generation and distribution sectors is enough to know why. With 78 million people- of whom 60% are under 30 years old- Iran is second in size only to Egypt in the wider MENA⁵ region. Also in terms of industrial activity Iran is by far the most economically developed and diversified. Also with the highest regional literacy rates and the greatest proportion of women attending university- at 58%, then by most standards Iran is a highly developed society.

Yet Iran is barely sufficient in domestic power production with winter peak times of demand punctuated with rota power cuts and with 30% of its populated areas without reliable power supply. Presently around 400 separate 'generating units' make up just under 70GWe⁶ which means that a dispersed and poorly integrated power system will have a low overall efficiency and reliability. Subsequently with a large number of ageing 'power units' and a margin of only 3%, power supply will be insecure.

A major problem for Iran as an oil and gas export revenue dependent economy is the sheer amount of annual hydrocarbon output that has to go into domestic power production- currently 45%. With 58% of Iran's power coming from gas, 40.8% from heavy fuel oil and the rest from diesel generating sets, the retail cost of power has to be heavily subsidised with power costs of 8 cents per kw/hour being priced at 1.6 cents to the consumer⁷.

For the 'modernisers' in the Iranian leadership the case for new nuclear base-load generating capacity is two-pronged:

- **firstly** to release the massive proportion of hydrocarbon output 'wasted' on domestic energy production and redirect it into more lucrative exports,
- and **secondly** to use a reliable non-fossil source of power production to modernise the overall Iranian economy.

There is also a **third** dimension to this strategy which is that by increasing oil and gas exports, the ensuing revenues can be directed into large scale investments in the extraction, storage, refining and pipelines infrastructure so neglected in the long years of war, embargoes and sanctions. An illustration of the present problem is the amount of natural gas now being injected into oil wells in order to maintain production pressure. This wasteful redirection of gas (the injected gas tends to remain trapped in the oil bearing strata) is yet another loss of Iran's export earning potential⁸.

⁵ MENA. Middle East and North Africa. As a non-Arab state on the Caspian Sea, Iran is on the Northern margins of this region.

⁶ GWe. Gigawatts of electrical capacity. A standard measure of a power station output is measured in Megawatts- one thousand watts. A Gigawatt is one million watts.

⁷ IEA. International Energy Agency. World Energy Outlook 2014.

⁸ Isis Almedia, Bloomberg, 15 July 2015.

3. Exporting climate crisis

In terms of restoring Iran's hydrocarbons export earnings, a relatively quick fix will be the completion of the so-far stalled pipeline and **LNG (Liquefied Natural Gas)** projects which although restoring the country's economic fortunes will make a significant contribution to global warming emissions.

In recent years Iran's hydrocarbon reserves estimates have been progressively upgraded. This has in part been due to the depletion of some reserves elsewhere whilst Iran's output has been constrained by a combination of embargoes and investment starvation. Certainly in terms of gas, Iran with most output going into domestic power generation, industrial and household distribution⁹ and oil well injection, the volume remaining for exports is paltry¹⁰. In 2014 82% of Iran's export earnings came from hydrocarbons of which 78% were from crude oil and condensates and only 8% from gas- with 90% of those gas exports now going to more 'sanctions friendly' Turkey¹¹. According to the latest energy intelligence data Iran could be set to dominate the world gas market which is being increasingly stimulated by gas in some countries displacing coal as the fuel of choice in power generation.

Table 1. World gas reserves. Estimates 2014. (Trillion cubic metres)¹².

Russia	47.8
Iran	33.8
Qatar	25.07
US	8.73
Saudi Arabia	8.23
Turkmenistan	7.5
UA Emirates	6.09
Venezuela	5.57
Nigeria	5.18
Algeria	4.5

An even more recent estimate has revised these figures:

Table 2. Top four natural gas reserves (Trillion cu/m)¹³.

Iran	34.0
Russia	32.6
Qatar	25.0
US	9.7

In addition to Iran's dominant position regarding gas reserves, its oil reserves are now ranked as the fourth biggest¹⁴ in the world which in terms of combined hydrocarbon resources places it in an emerging dominant position. These estimates are now providing a

⁹ *ibid.* On current estimates non-power generation demand for gas within Iran is set to double every decade to 2030.

¹⁰ *ibid.*

¹¹ *ibid.* Also Stephen O'Rourke, Wood Mackenzie, Middle East Bulletin, 2014.

¹² US Central Intelligence Agency, *Energy Intelligence Yearbook 2014*, Langley, West Virginia.

¹³ BP Statistical Review of World Energy 2015.

¹⁴ International Energy Agency (IEA), Paris, 2015.

post-sanctions investment rush with \$185bn designated to go into Iranian gas and oil production facilities by 2020¹⁵. Also the **Iranian Gas Corporation** is reported to have secured credit of over \$100bn for immediate gas industry improvements with the aim of increasing gas production from 800mcu/m per day as June 2015 to 1.2bn by 2020¹⁶.

Another development that could see Iran break into farther flung gas markets would be the completion of the above mentioned huge LNG facility at Abadan which on commissioning in 2018 will open up the possibilities of lucrative markets in South East Asia and Japan. Also yet another temporarily suspended project coming back on-line is a trans-continental pipeline development in partnership with Oman, Iraq and Pakistan which, with a northern spur, will feed into the burgeoning markets of the Indian sub-continent and China¹⁷.

In terms of the joint ventures in both oil/gas and nuclear projects, it is probable that Iran will use revenues from hydrocarbon sales- or in the case of China- petroleum or gas credits written into either the construction times or operational lives of the plant. This is currently the case with much of Iran's oil production infrastructure where Royal Dutch Shell, BP, Total and Eni (of Italy) are now entering into contracts from which the return on investment will be in the form of revenues from output. These contracts are expected to come into effect on 15 December 2015¹⁸, after which it is expected that Iran will be able to produce oil at a rate of an extra 1m/bpd¹⁹.

The impact of Iran into full production of both oil and gas is likely to have a two-fold effect. One is that additional capacity on an already glutted market will further depress prices²⁰. And the second is the inevitable stimulus in demand and consumption that continued low fuel prices will create. And on the eve of a world climate summit struggling to get to grips with urgent emissions control agreements that can only be bad news.

4. The regional nuclear domino effect: Saudi Arabia and 'friends'.

To a large extent eclipsed by Iran's more controversial bid for nuclear technology, Saudi Arabia's nuclear ambitions- although well advanced, have largely gone un-noticed²¹. Although its interest in nuclear has been partly driven by fears of an Iran with nuclear weapons at some future date, the Saudi interest has in many ways been a pre-occupation with maximising hydrocarbon production for export earnings. And although much smaller than Iran in terms of population – 25 million compared with Iran's 78 million, the energy load and demand characteristics of Saudi Arabia still means around 25% of oil and gas output being consumed for domestic power needs.

¹⁵ Shadia Nasralla, Reuters 23 July 2015.

¹⁶ Azizollah Ramanzi, deputy head, Iranian Gas Corp. Reported in Wood Mackenzie, *ibid*.

¹⁷ Chatham House, un-attributable source March 2015, London.

¹⁸ Oil and Energy Insider. Energy Intelligence report, 11 August 2015

¹⁹ OPEC Quarterly Oil Report July 2015. This showed that Iran produced 2.86bpd throughout June 2015 and also boosted sales by releasing stocks onto the market in anticipation of a further easing of sanctions.

²⁰ Anjil Raval, 'Iran's return to oil market will weigh on crude prices', *Financial Times* 14 July 2015.

²¹ 'Saudis make oil and nuclear deal with Russia', *Northern Star*, Issue 12, 27 July 2015, p.6.

With its population being largely located in the South East desert region of the Arabian Peninsula and mainly living in new modern, high energy consuming cities, Saudi Arabia has a high energy demand per head of population. Power demand for air-conditioning is actually higher than the winter energy demand per capita of most North European countries and when the absence of any substantial natural aquifer resource is added, the power for water desalination plants represents a high year-round cost.

In the kaleidoscope of inter-imperialist rivalries in the region combined with the increased uncertainties of world energy markets, Saudi Arabia has been vying for advantage- both as the dominant hydrocarbon player in OPEC but also for its leadership position in the Muslim world through the control of the sacred Muslim sites of Mecca and Medina and through its use of Sunni Wahhabi Muslim charities to spread largesse far and wide to the poorer regions of Islam.

In 2013 Saudi prince Bandar bin Sultan met Russia's Vladimir Putin to explore the possibility of cooperating on matters of mutual interest – not the least of which being how to contain Iran's huge oil and gas potential in the post-sanctions era. Of concern to both of them was the prospect of the markets being overwhelmed by US shale production: for the Saudi's the loss of North American oil markets and for Russia the prospect of US shale-derived LNG (Liquefied Natural Gas) challenging its prospective European market.



Prince Bandar bin Sultan meets Vladimir Putin in 2013 (cc).

For any of these things to work, Saudi Arabia was going to risk the wrath of the US regarding an oil price war, whilst for Russia, the price to be paid would be a withdrawal

from Iran's nuclear programme in which it had been the principal technical vendor²² with already advanced preparations for two VVER reactor stations at sites on the Gulf coast. This would also mean Russia having to abandon its nuclear cooperation with Iran as well as cease its support for the Assad regime in Syria. And with certainty this would create a nuclear business opportunity for China. This did indeed happen when on 22 July Iran's Atomic Energy Agency struck a deal with China to build two twin-reactor stations at Makran on the Gulf of Oman²³. The reactor design is a Pressurised Water Reactor (PWR) of the 'Hualong One' - a tried and tested third generation model which has the enviable reputation to date of not yet having a major system failure. As far as we know. The next day it was announced that Iran had also put out a tender for two further stations based on the same design²⁴.

But by way of compensation for the probable loss of future Iranian nuclear business, it seems that Saudi Arabia has offered Russia much more. In June 2015 Saudi Arabia confirmed an order for two twin reactor stations from Russia's Rosatom state owned nuclear development agency who in the initial \$10bn phase will be a 49% stakeholder²⁵. In the meantime Russia has also agreed to partner Saudi Arabia to the full extent of its nuclear ambitions which will total 21 Gigawatts of capacity. On the basis of the standard VVER compact PWR²⁶ design the overall programme will entail 30 reactors in 15 station sites²⁷. In April 2015 Russia was also involved in negotiations with Turkey, Egypt, Jordan and Algeria regarding nuclear programmes. Then on 14th April Turkey announced a \$20bn deal with Russia for a four reactor development at Akkuyu on the Mediterranean coast²⁸.

These developments mean that the wider MENA region will be unique in being the only part of the world where nuclear power is growing. And where nuclear capacity is installed it will not result in a reduction of hydrocarbon production. It will simply reduce domestic consumption, thus allowing a growth in exports and with the new revenues, further investment in the hydrocarbon infrastructure which in turn will lead to greater export volumes.

Calculating the fuel equivalents for installed nuclear capacity is difficult – largely because nuclear stations rarely perform to specification both in terms of attained output or planned availability. But if we give the new Saudi reactors the benefit of the doubt and assume an 80% load factor and a 70%²⁹ availability, then on the basis of net calorific values we can obtain the following:

²² Russia had built Iran's first twin-reactor nuclear power station at Bushehr which under UN sanctions was unable to receive fuel.

²³ *International Business Times*, New York, 22 July 2015.

²⁴ *Indo-Asian News Service*, 23 July 2015.

²⁵ Micha'el Tanchum, 'China Iran deal spur to Russian nuclear agreement with Saudi Arabia', *The Diplomat Magazine*, 31 July 2015.

²⁶ This design is fully approved and licensed by the International Atomic Energy Agency (IAEA).

²⁷ Due to the very high demand for secondary circuit cooling water and with the Peninsula having no river sources, Saudi Arabia nuclear stations will have to be located at coastal sites.

²⁸ *World Politics Review*, 23 April 2015.

²⁹ These performance data are based on current IAEA performance assessments of this reactor type.

Table 3. Nuclear fuels displacement effect. 21 Gwe planned Saudi Arabia nuclear capacity.

21Gwe capacity by fuel equivalent³⁰ per annum.

Coal	52.5 million tonnes
Oil	40 million tonnes or 293.2 million barrels
Gas	31 million tonnes oil equivalent or 1,935.12 billion cubic metres

By opting for nuclear power Saudi Arabia (and its friends and Iranian foe) are taking a considerable risk. Certainly a very large base-load capacity is useful for round the clock power demand for continuous processes such as petroleum refineries and LNG terminals. And certainly for Saudi Arabia which is the hub of the Gulf Cooperation Council states shared grid, there is the prospect of power sales to its other hydrocarbon neighbours. But as with all nuclear programmes to date, back-end radiological waste costs and environmental impact and safety implications are unlikely to have been factored in. And as the real cost of its nuclear choice becomes apparent, then covering the cost through bigger oil or gas export revenues is bound to ramp-up production.

5. Saudi Arabia: counting the cost of US wrath

According to many analysts, Saudi Arabia is about to pay the price of the oil price war against US shale producers as well as its continued role in destabilising the MENA region through prosecuting its proxy war against Iran in particular and Shia Islam in general. Some of the same analysts are also suggesting that under Saudi leadership OPEC is becoming a busted flush³¹.

Saudi Arabia is almost unbelievably now on the verge of a major fiscal crisis as its economy enters both recession, and for the first time ever, a budget deficit. On its 2015 current account a deficit had grown within six months to 20% of GDP- or \$140bn. Entirely petroleum generated reserves which stood at \$737bn in August 2014 fell to \$672 by July 2015 and are now estimated to be falling at \$12bn per month.

In an economy which has no income from income tax, interest on dividends, internal corporation tax or VAT, this is bound to impact hard on domestic finances. Hitherto subsidies have pegged electricity at 1.3 cents/kw hour and petrol at the forecourt has sold at 12 cents/litre. Petroleum surpluses have also bankrolled the tradition of Wahhabi 'charity' which has done so much to keep the lid on social tensions as well as spread the House of Saud's influence elsewhere in Islam.

³⁰ Figures based on net calorific values of fuels as follows:

Coal	40 kw/kg
Fuel oil	43.6 kw/kg
Natural gas	51.6 kw/kg

³¹ *Bank of America. Interim Energy Digest, New York July 2015.*

In anticipation of largely US 'unconventional' oil and gas making inroads into the European markets, whilst at the same time denying Gulf oil or gas a share of the North American market, Saudi Arabia took a gamble by driving down world oil prices by increasing output to 10.6m barrels per day. And using its dominant position within OPEC it encouraged the other petroleum states to do likewise. In a short time much high cost production was either capped or in the case of many US shale debt financed projects, bankruptcy threatened.

By February 2015 the low oil price had taken some significant scalps. Projects in Northern Siberia were suspended, deep-water exploration in the Gulf of Mexico was all but abandoned, the Canadian tar sands were put on hold, deep-water exploration in Brazilian waters was suspended and the North East Atlantic (Scotland) exploration and developments were halted. According to one analyst³² the oil 'majors' between them had abandoned some 46 large scale projects amounting to a \$200bn of investments.

But the Saudi gamble has in many ways been at best a pyrrhic victory. The US shale sector has proved to be more resilient and although the US rig count has fallen from 1,068 in Oct 2014 to 664 by July 2015, output in June reached a record high of 9.6m barrels per day³³. And although many small drillers have gone bust, this has meant a considerable availability of cost written-down rig equipment which the bigger producers have cashed in on. This has seen rig costs per barrel come down from \$8 to just \$2.78 which has seen output rise over 30% above the June 2009 level³⁴. It is now estimated that with a sustained oil price as low as \$55 per barrel most US shale producers could at least break even.

US shale producers have also been able to benefit from a number of technical innovations³⁵ as well as increasing the number of wells per platform up to 10- which according to some industry sources has resulted in savings of \$300,000 per well³⁶. This has resulted in drilling cost savings of 50% with further cuts of 30% in the near future. Also drilling times have been cut drastically with a 18,000 ft deep well in the Permian Marcellus Shale of the Appalachian basin being cut from 30 to 16 days³⁷.

Saudi Arabia's price war gamble has had a number of unintended outcomes. Firstly it has exposed how high cost and vulnerable many OPEC producers actually are and the extent to which they have been forced to the edge of ruin within just nine months. Secondly this development has brought into question the long-term viability of OPEC as well as the fitness of an increasingly capricious Saudi Arabia to lead it. And thirdly it has shown how

³² Wood Mackenzie, May 2015.

³³ Rex Tillerson, *Exxon Mobil Quarterly Report*, August 2015.

³⁴ Wood Mackenzie, *ibid*.

³⁵ Enhanced Oil recovery (EOR) methods such as Plasma Pulse Technology is now being deployed for 'revisiting' existing well and 'unclogging' oil-bearing strata, thus avoiding repeat the high capital costs of opening up new wells. At a later stage (when higher costs permit) further EOR like high pressure CO₂ injection may be considered.

³⁶ John Hess, CEO Hess Corporation. Quoted in *Oilprice.com* July 2015.

³⁷ Pioneer Natural Resources. Quoted in *Daily Telegraph* 5 August 2015.

resilient and potentially long-term³⁸ the US shale sector has proven to be³⁹. A recent survey of the Permian basin of West Texas has revealed a field that could yield between 5-6 mb/per day and could hold reserves in excess of the giant Ghawar field in Saudi Arabia⁴⁰.

But the oil price gamble plus a more wayward foreign policy drift has probably done much to undermine the trust between Saudi Arabia and the US. Hence in all probability Obama's nuclear diplomacy initiative with Iran and the drift towards a reliance on Iran for training anti-ISIS Shia militia in Iraq. More recently the sudden and bloody assault on Yemen and the increased tendency of Saudi Arabia to use armed force as a first resort must be worrying US strategists who through Obama's 'strong power'⁴¹ variant of the Munroe doctrine have clearly been placing more effort on diplomacy – albeit a diplomacy backed up by drone strikes if necessary.

Some analysts⁴² have gone so far as to suggest that Saudi Arabia, largely of its own making, is about to see a strategic realignment take place in and around the MENA region in which a triangulation of power will emerge with Turkey, Iran and Israel exerting the diplomatic and economic tensions in a largely post-OPEC period. In such a scenario Iran possibly in alliance with Qatar and Oman (through the joint development of the giant North and South Sars gas fields they share beneath the Persian Gulf) would become the dominant hydrocarbon power, possibly managing the governance of a Shia eastern Iraq as a protectorate.

It is already rumoured that in anticipation of such developments the Gulf Cooperation Council is planning an alternative triangulation of power based on a more easterly GCC-Turkey-Pakistan axis.

In the meantime Saudi Arabia's foreign policy drift to Russia and its possibly long-term and futile grudge match against the US shale oil and gas sectors is bound to further distance it from Washington. But whatever the medium-term developments, we are likely to see a heightening of competition within the global hydrocarbon markets that in holding down prices is bound to drive both production and consumption of oil and gas in the opposite direction of the global CO₂ targets needed to arrest an already accelerating trend to irreversible global warming.

³⁸ An interesting and so far unpublished paper on the 'shale revolution' by Jonny Jones, 'What the Frack? Behind the shale revolution', 2013, has examined the possible impact of unconventional oil and gas; both on the traditional producers and also regarding the long-term impact on fossil fuel economics. Unfortunately this draft was written before the oil price crash of early 2015.

³⁹ Gaurav Agnihtri, 'The Saudi oil price war is back-firing', *Oilprice.com* 6 August 2015.

⁴⁰ Pioneer Natural Resources. Report quoted in *Daily Telegraph*, 5 August 2015.

⁴¹ A doctrine of 'strong power' was what Obama used to allay Israeli concerns over the Iran nuclear power deal. Probably in order to give Obama a lasting place in the history books, more sycophantic supporters have hailed strong power as the 'Obama doctrine'.

⁴² For instance see Ambrose Evans-Pritchard of the *Daily Telegraph*.

6. Imperialist dimensions of a hotter world



Ludvig Nobel's Branobel company, Bakhany, near Baku, early 1900s.

When J A Hobson first penned the term *Imperialism* in 1899, Otto Benz had just invented the reciprocating internal combustion engine powered by 'benzole'- an oil derived fuel and Joseph Djugashvili (Stalin) had yet to start his career as a fund raising bank robber in the oilfields of the Caucasus around Baku on behalf of the Russian Social Democratic Labour party. Teddy Roosevelt had just fought a war with Mexico over it and William Knox D'Arcy was rummaging the wilderness of Persia on behalf of the British government in order to appropriate it⁴³.

Such references are far from frivolous in that they underline a reality of the modern age: oil was the founding global commodity of imperialism and still as a life-blood of industrial capitalism it remains the stuff over which most blood continues to be shed. Oil whilst transforming much of the technical means of production it is also the stuff of gangsterised client states, despots, tyrants and the cause and curse of arrested development for many producing countries. The 'majors'- the principal corporations that dominate the world hydrocarbon business have annual turn-overs and surplus's that many modest size nation states would envy and they enjoy a privilege of access to the highest levels of government and military authority that circumvents any pretence to democratic accountability. Though

⁴³ Charles More, *Black Gold: Britain and Oil in the Twentieth Century*, London 2009.

environmental responsibility is respectfully nodded to, in practice it is both begrudged and frequently flouted.

The consolidation of the petroleum industry resulted in the formation of massive companies, which although initially locating their business in a particular region, soon became the first truly trans-continental corporations. Central to the well-being of their host nations, these companies inevitably became instruments of government foreign policy. The continual process of consolidation gave rise to corporations in which it was often difficult to distinguish between commercial business and high affairs of state. British Petroleum (BP) started life as a swashbuckling venture as the Anglo Persian Oil Corporation (APOC) in which the Persians had no say. Buying the highest favours in high office APOC was able to persuade one of its earliest imperialist advocates Winston Churchill; the first Sea Lord of the Admiralty to convince the Royal Navy to convert their ships to oil firing. Which they duly did and with APOC having exclusive contract rights⁴⁴.

But the real hey-day of the petroleum period came after World War 2 and the spoils arising from the infamous division of the globe into respective 'spheres of influence' in which the major powers were designated post-colonial fiefdoms. It was in this period of monopoly capitalism that the oil interests of western capitalism morphed into the 'Seven Sisters'⁴⁵, forming an oligopolopoly – a cartel which whilst carving out regions ripe for exploitation, also contrived to minimise exploration and extraction costs whilst fixing the price downstream to the consumer⁴⁶. These arrangements have survived more or less intact despite the passing of the post-war corporatist and mixed economy doctrine of Keynesianism.

The 1973 Yom Kippur war and the subsequent massive oil shock did much to cement further the relations of oil and state and subsequent events up to 2003 and the invasion of Iraq have deepened the symbiotic relationship⁴⁷. But the intervening years have seen concerns regarding energy security compounded with alarm regarding the implications of unfettered carbon emissions. Here again the embrace of oil and state has tightened with governments initially prepared to risk their reputations by endorsing climate change denial⁴⁸, as persists to this day with the US Republican party proud to be the voice of 'big oil'. This particular phase of neoliberal imperialism renders electoral 'power' impotent in the face of the national interest merging seamlessly with the corporate priorities of energy corporations⁴⁹. And where energy corporations fear to tread there are always the recipients of the defence lobby who can provide the latest in hi-tech counter-insurgency kit to quell the occasional rash of local anti-corporate trouble⁵⁰.

In whatever period imperialism had little regard for electoral mandate or sovereignty of the territories to be plundered. But in a period where enemies within and threat from without

⁴⁴ Charles More, *ibid*, pp. 11-22.

⁴⁵ Anthony Barnett, *The Seven Sisters*, 1974

⁴⁶ Timothy Mitchell, *Carbon Democracy: political Power in the Age of Oil*, 2011, revised 2013.

⁴⁷ Greg Pallast, *Vultures Picnic*, 2012. Also Barnett, *ibid*.

⁴⁸ This has been most notable in the case of right-of-centre political parties who have often commissioned quite bogus scientific climate denial 'evidence'.

⁴⁹ Tariq Ali, *The Extreme Centre: A Warning*, 2015, pp. 109-121.

⁵⁰ Haliburton, the oil industry services contractor is reputed to 'employ' more private security personnel in Iraq than the US did between 2006 and 2008.

can be conjured by a compliant media for repetition in the hollowed out democracy of parliamentary chambers, the prospect of reforming the institutions of an 'extreme centre' are negligible. In an age in which an imperialism can at a whim call upon 'the mandate of markets over that of the ballot box'⁵¹, then the insurgency of the masses as the agent of fundamental change is long-overdue.

7. Climate change

In the course of the energy wars and crises of the past 30 years we have seen hundreds of thousands killed, millions displaced, battlefields irradiated with depleted uranium, aquifers exhausted and polluted, oil field fires burn out of control for months on end and river deltas such as the Niger – previously rich ecosystems of great biodiversity with nutrients capable of supporting abundant agriculture – polluted beyond repair.

For countries like Nigeria – the biggest and potentially richest economy in Africa, the position of being a client state to the Shell petroleum company is both a blessing and a curse⁵². A blessing in that it tantalises the people with the promise of jobs and a better life. And a curse in that only a few will prosper and the shanty town twilight zone between the rural poverty they flee and the bright lights of the city they yearn becomes a degraded and permanent reality. Yet in such a situation oil and gas – resources well beyond their immediate control – appear to offer the only possible means to economic progress and a better life.

The reason for saying this is to point out how sanctimonious environmentalists may sound when we decry such people's dependency on hydrocarbons that are the cause of environmental damage – and all the more so when they point to the desolation of their own local environment which is part of the cost of extracting the minerals that developed societies seemingly benefit from. So it is at two levels – both the local and the global – where the challenge of chronic poverty and environmental degradation must be met.

The enormity of the environmental crisis now confronting humanity needs little elaboration here. But what needs to be said is that the knowledge of the problem has eventually penetrated the more sceptical of quasi-scientific bodies such as the **International Energy Agency**⁵³ (IEA). Now conceding global warming as a real and present threat it places much more emphasis on energy conservation and efficiency. However their forecasts for 2014-40 in terms of fuel production and usage against a back-ground of proven levels of global temperature rise are alarming.

⁵¹ Mario Draghi, European Central Bank, speech on the need for deficit control 2011.

⁵² Nigeria as a high-cost OPEC member state has suffered enormously from the oil price collapse of Jan 2015. The country presently has an inflation rate of c.60% but for some essentials such as clean bottled water, the rate of inflation is around 300%. Under the stewardship of Shell Nigeria's markets have shifted to South East Asia where gulf producers, now excluded from North American markets, are now competing for market share and at a lower price that Nigeria can produce at.

⁵³ The IEA is the energy advisory body to the OECD. In terms of regular summaries on the world's energy resources and industries its *World Energy Outlook* is an invaluable resource. But it is only recently that the IEA have begun to caution on the consequences of unregulated energy production. Also for most of its climate modelling, the IEA relies on data from the International Panel on Climate Change (IPCC).

In their latest offering the IEA proposes a central case in which:

- Energy demand will grow by 37% to 2040 with a projected annual growth of 1.1%
- The world supply of oil will rise by 14 million barrels per day until 2040
- By the mid-2020s the main source of oil will slip back to the MENA region
- In all major regions except Europe there will be a 50% increase in natural gas production to 2040
- Combined UN efforts to curb CO₂ emissions will fall short of the 2°C target
- Emissions will rise by 20% to 2040
- Current emissions now put the world on track for a **3.6°C** rise in global temperature
- Even by reducing carbon fuels by 25% now we would still fall 50% short of limiting temperature increase to 2°C
- US shale gas will continue year on growth until mid-2030's
- Gas will grow and be sustained at **5 trillion cubic metres per year** to 2040
- World electricity demand is set to increase by **80%** during period 2015-40
- Power station CO₂ emissions will rise from 13.2 gigatonnes to **15.4 gt** by 2040.⁵⁴

It is clear from the IEA 'New Policies Scenario' which although optimistic in reaching some kind of global accord, the long-term prospect on offer is at best an upward and seemingly unstoppable rise in global temperature. It is equally clear that under the continued stewardship of rapacious capitalism that the global greenhouse we inhabit is fast becoming a madhouse.

Capitalism long ago became incapable of ensuring human well-being. Now through the wilful mismanagement of our planet the time has come to relieve it of any future responsibilities.

Brian Parkin, Leeds, August 2015.

⁵⁴ IEA. *World Energy Outlook 2015 Factsheet*. www.worldenergyoutlook.org