



Possible Us-Iran Military Conflict and Its Implications upon Global Sustainable Development

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Abstract

Energy is one of the most basic of human needs. The accomplishments of civilization have largely been achieved through the increasingly efficient and extensive harnessing of various forms of energy to extend human capabilities and ingenuity. Providing adequate and affordable energy is essential for eradicating poverty, improving human welfare, and raising living standards worldwide. The Persian Gulf is regarded as the energy headquarters of the world since the region holds over 65% of the global oil reserves and contributes to nearly 28% of the world oil supplies. Despite its crucial role in propelling the economic growth of the world over the last sixty years, the region has traditionally experienced a volatile geo-strategic environment. The article focuses on the escalating tension between the United States and Iran. It highlights the broader socio-economical implications of a possible military conflict between the two countries.

Keywords: Persian Gulf, Sustainable development, Fossil fuel, Energy security

1. Introduction

With the growing world population and people's innate aspirations for improved life, the paramount global challenge in the new century would be sustaining economic growth within the constraints of the planet's limited natural resources. The population growth and the inevitable need to expand economic output would place enormous demands on the stock of natural and environmental resources. Poor and inadequate access to secure and affordable energy is one of the major concerns for sustainable development. There appears to be a global consensus that provision of secure, affordable and socially acceptable energy services is a prerequisite for eradicating poverty in order to achieve the Millennium Development Goals (MDGs), as also concluded at the Earth Summit 2002. More than 1.6 billion people – nearly one quarter of the world's population - have no access to electricity. If the MDGs target is to be reached, 500 million more people would need to be electrified by 2015.

Since the beginning of the twentieth century oil has been a crucial factor in the economic growth of the world. Its importance is more pronounced with the spread of transportation. The global oil reserves are extremely localized. The fact - less than 15% of the countries in the world are self sufficient in their oil needs - results in two groups: net importers and net exporters of oil. The interdependence between these groups plays a significant role in shaping global economic and political developments. Persian Gulf is the most prominent energy centre of the world as it contributes to 28% of the current global oil requirements while holding 65% of the total oil reserves in the world as shown in Fig. 1. The Persian Gulf region also has a long history of geo-strategic conflicts. Four out of the five richest countries in the world in terms of oil reserves: Saudi Arabia, Iran, Iraq and Kuwait, jointly holding over 55% of global oil reserves, come from this region and have directly experienced warfare within last three decades. Another major crisis appears to

be approaching the region as senior US officials are repeatedly issuing warnings over use of force against Iran for a number of reasons, particularly if the country continues its nuclear program.

2. Energy and Sustainable Development

Energy is the backbone of human activities. Provision of sufficient, secure and affordable energy is crucial for the sustainability of modern societies. The accomplishments of civilization have largely been achieved through the increasingly efficient and extensive harnessing of various forms of energy to extend human capabilities and ingenuity. Providing adequate and affordable energy is essential for eradicating poverty, improving human welfare, and raising living standards worldwide. Availability of energy in any country has a strong relationship with its economic and social stability. The per capita energy consumption is an index used to measure the prosperity of any society as also indicated in Fig. 2 (Christian Kornevall. 2004). Easy access to adequate energy is crucial for continued human development. Throughout the course of history, with the evolution of civilizations, the human demand for energy has continuously risen. Of present, key factors driving the growth in energy demand include increasing human population, modernization and urbanization (Muneer, T., & Asif, M. 2007).

Statistics suggest that during the 20th century urban population in the world experienced a rapid growth as shown in Table 1 (Charles Hirschman. 2008). By 2007, world population grew to over 6.6 billion. World population in 2008, for the first time in history, nearly half of global population will be living in urban areas. By 2030, out of the total estimated population of around 8 billion, 5 billion would be living in urban areas. Figures also indicate that most of the urbanization is set to take place in the lesser developed part of the world - by the same time, the towns and cities of the developing world will make up 81 per cent of urban population.

The growth-trends of population and energy demand are complimenting those of the urbanization. According to the United Nations estimates, world population, 6.5 billion in 2005, is to grow to 9.1 billion by 2050. Most of the population growth will take place mostly in the developing world – Asia and Africa. The International Energy Outlook projects strong growth for worldwide energy demand up to 2025. In the IEO2005 mid-term outlook, the emerging economies account for nearly two-thirds of the increase in world energy use, surpassing energy use in the mature market economies for the first time in 2020. In 2025, energy demand in the emerging economies is expected to exceed that of the mature market economies by 9%. Much of the growth in energy demand among the emerging economies is expected to occur in emerging Asia, which includes China and India; demand in this region is projected to more than double over the forecast period. Primary energy consumption in the emerging economies as a whole is projected to grow at an average annual rate of 3.2% up to 2025. In contrast, in the mature market economies—where energy consumption patterns are well established—energy use is expected to grow at a much slower average rate of 1.1% per year over the same period. In the transitional economies of Eastern Europe and the former Soviet Union, growth in energy demand is projected to average 1.6% per year. The total world consumption of marketed energy is expected to expand by 57% over the 2002–2025 time period (Muneer, T., & Asif, M. 2007).

With the growing world population and people's innate aspirations for improved life, a central and collective global issue in the new century will be sustaining economic growth within the constraints of our planet's limited natural resources while at the same time preserving our environment, thus ensuring sustainable development.

3. Global Energy Challenges

Different forms of energy that are being employed worldwide to meet human energy requirements can be broadly classified into three types: fossil fuel, nuclear power and renewables. The world energy market is predominantly led by fossil fuels that contribute to nearly 80% of the total supplies. Renewable energy and nuclear power are, respectively meeting 13.5% and 6.5% of the total energy needs (IEA. 2007). The present global energy scenario faces four major challenges: depletion of fossil fuel reserves, climate change, energy security concerns and rising fuel prices, as discussed under.

3.1 Depleting fossil fuel reserves

World ultimate conventional oil reserves are estimated at 2000 billion barrels. This is the amount of production that would have been produced when production eventually ceases. According to the Organization of the Petroleum Exporting Countries (OPEC) February 2008 report, the global daily consumption of oil is to rise from 85.8 million barrels in 2007 to 87 million barrels in 2008 (OPEC. 2008). Different countries are at different stages of their reserve depletion curves. Some, such as the United States, are past their midpoint and are in terminal decline, where as others are close to midpoint such as UK and Norway. However, the five major Gulf producers—Saudi Arabia, Iraq, Iran, Kuwait and United Arab Emirates - are at an early stage of depletion and can exert a swing role, making up the difference between world demand and what others can supply. The expert consensus is that the world's midpoint of reserve depletion will be reached when 1000 billion barrels of oil have been produced—that is to say, half the ultimate reserves of 2000 billion barrels. It is estimated that around 1000 billion barrels have already been consumed and 1000 billion barrels of proven oil reserves are left in the world (Asif, M., Currie, J., & Muneer, T. 2007).

3.2 Climate change

The global climate has changed dramatically over the last century. Climatic changes driven by human activities, in particular the production of greenhouse gas emissions (GHG), directly impact the environment. Energy sector has a key role in this regard since energy during its production, distribution and consumption is responsible for producing environmentally harmful substances. During energy use, varied stresses are created on the natural environment, some of which have global implications like the global warming while others cause local impacts such as their effect on human health and ecology. Coal exploration and mining, for example, causes land degradation through subsidence and mine fires. The impact of mining on forest areas is of particular concern. Similarly, with onshore oil and gas production drilling waste fluids, drilling waste solids, produced water and volatile organics exhibit the potential to contaminate surrounding water bodies. For the last 150 years, industry has been releasing CO₂ into the atmosphere at a rate of millions of times greater than the rate at which it was originally accumulated underground. Deforestation alone has been responsible for around 20 Gt of carbon since 1800 (Muneer, T., Asif, M., & Munawwar, S. 2004). The mean global surface temperature has increased by 0.4–0.8 °C in the last century above the baseline of 14 °C. If nothing is done, global temperatures could rise by up to 6 °C by 2100 (R. Sims. 2004). If GHG emissions are unabated, natural catastrophes inflicting damage to ecology of the planet and its inhabitants are expected to occur more frequently and intensely in future. Physical infrastructure will be damaged, particularly by sea-level rise and by extreme weather events. Water resources will be affected as precipitation and evaporation patterns change around the world. The way to repair the already inflicted damages of global warming and a rather safe escape from the anticipated threats is an immediate change in the overall energy sector. There needs to be a global drive on two fundamental fronts: firstly to conserve energy and to increase the efficiency of existing energy resources, secondly to switch the energy systems from existing energy resources to renewables that are clean and environment friendly.

3.3 Energy security

Energy security is a key addition in the catalogue of the challenges facing the global energy scenario. In the energy-dependant modern age, prosperity in any society is subject to an adequate and consistent provision of energy - the socio-economics of all countries greatly depend on secure supplies of energy. Energy security means consistent availability of sufficient energy in various forms at affordable prices. These conditions must prevail over the long term if energy is to contribute to sustainable development. Fossil fuels in general and oil in particular (contributing 36% of the global energy requirements) is extremely localized in nature. Attention to energy security is critical because of the uneven distribution of the fossil fuel resources on which most countries currently rely. The Persian Gulf region, housing nearly over 65% of the world oil reserves, as a whole has quite a volatile geopolitical situation as it has seen a number of conflicts over past few decades. The oil factor cannot be ruled out in some of the major conflicts in the area. There are serious reservations regarding security of oil; production and supply channels of some of the Middle-Eastern countries like Iraq that is the second largest oil-producing country in the world, are regarded as the legitimate targets of radical elements because of various internal and external conflicts.

3.4 Surging oil prices

In recent years, the volatile global oil market has been experiencing consistently surging oil prices (as shown in Fig. 3) affecting the socio-economic conditions across the world. Crude oil price for a barrel, standing at US\$66.4 on average in 2007 has grown to nearly US\$140 in June 2008, recording an over 90% increment within last few months. There are a number of factors considered to be responsible for the surging price trend such as growing demand for oil especially in emerging economies such as China and India, receding excess production capacity and weak position of US\$. Political unrest, military conflicts and extreme weather events are also amongst the factors that have traditionally played their role in causing rapid rise in global oil prices. The track record of oil prices indicate that several such issues like Yom Kippur War (1973), Iranian Revolution (1979), Iran/Iraq War (1980), First Gulf War (1991), unrest in Venezuela (2002) and Second Gulf War (2003) have all contributed to a rapid increment in crude oil price. The vulnerability of oil market has grown to such an extent that incidents of much smaller scale are capable of adversely affecting it. For example, in August 2005, the oil prices were noticed to make an immediate jump from US\$57 to more than US\$65 at the news of the death of King Fahad-the late king of Saudi Arabia [11]. Similarly, on 27 March 2008, crude oil prices jumped from \$102/barrel to \$108/barrel, just because a pipe line was sabotaged in Basra (Iraq).

4. Possible US-Iran Military Conflict and Energy Prices

The traditionally volatile US-Iran relationships are heading towards an all time low. Over the last few years, the US has been expressing reservations over Iran's nuclear program and alleged support for extremist groups in the region. The state of the Union address of the President Bush on 29 January 2009, declaring Iran, Iraq and North Korea as an "axis of evil" explain the sourness of the US-Iran relationship. Referring to the three countries, Bush said "States like these, and their terrorist allies, constitute an axis of evil, arming to threaten the peace of the world. By seeking weapons of mass destruction, these regimes pose a grave and growing danger". The underlying tensions between the two countries have heightened since the US invasion of Iraq in 2003. The US has continuously been imposing economic and military

sanctions against Iran for a number of years (Matthew Moore. 2007). Imposing one of the recent bids of US sanctions on Iran, on 25 October 2007, the US Secretary of State Condoleezza Rice accused Iran of "pursuing nuclear technologies that can lead to a nuclear weapon; building dangerous ballistic missiles; supporting Shia militants in Iraq and terrorists in Iraq, Afghanistan, Lebanon and the Palestinian territories; and denying the existence of a fellow member of the United Nations, threatening to wipe Israel off the map" (CNN. 2007). Barack Obama, in his first speech since securing the Democratic presidential nomination, warned Iran to stop its nuclear program. Speaking to the American Israel Public Affairs Committee in the first week of June 2008, Obama pledged "I will do everything in my power, everything, to prevent Iran from obtaining nuclear weapons." (Arutz Sheva. 2008). Earlier, the Republican presidential nominee, Senator John McCain, voiced similar thoughts about Iran saying "There'd be a broad range of sanctions and punishments to the Iranians to help try to convince them that their activities - particularly development of nuclear weapons - is not a beneficial goal to seek" (CNN. 2008). Iran is also rapidly being alienated as the Western Countries and the United Nations, responding to US calls, have also imposed wide ranging sanctions on Iran (Blair, D. 2008).

There are now increased talks of military preparations in the final stages for a strike against Iran. On April 25th, the U.S.'s top military officer, chairman of the Joint Chiefs of Staff, Adm. Michael Mullen, said that the U.S. is planning for "potential military courses of action" against Iran. Similar reports have been aired by the Russian news service RIA Novosti that the U.S. has completed preparations for a military strike against Iran (Rabkin, D. 2008). The recent deployment of the second US aircraft carrier in the region is quite understandable in the context of these policy statements on part of US officials. Robert Gates, the US defence secretary has said the deployment of a second aircraft carrier to the Gulf could serve as a "reminder" to Iran of American resolve to defend its interests in the region. CBS News has also reported that the Pentagon has ordered commanders to explore options for attacking Iran and that the state department was formulating an ultimatum calling on Iran to stop arms smuggling into Iraq (Guardian. 2008) (Khalid, M. 2008).

Iran at the same time remains to be equally defying claiming its nuclear program to be of peaceful nature unlike being interpreted by the US and its allies. Typical characteristics of Iran such as 65 million people with a reasonable qualification level, abundant natural resources (including the second largest oil reserves in the world), reasonable industrial base, near decade-long combat experience in 1980s and a proud history of thousands of years, promise a strong geo-strategic status in the region.

5. Discussion

The Strait of Hormuz is a vitally important international waterway that connects the Persian Gulf with the Gulf of Oman into the Indian Ocean. It is the main passageway for oil exports from the Persian Gulf countries (i.e. Iran, Iraq, Kuwait, Saudi Arabia, Qatar, and the United Arab Emirates) - in 2006, around 17 million barrels of oil traveled through the Strait of Hormuz every day, accounting for 20 percent of the total world supplies. If the discussed threat of a US-Iran military confrontation becomes a reality, it could easily lead to a global socio-economic crisis. With Iran holding a strong geo-strategic position around the Strait of Hormuz secure supplies of oil through the Strait can not be guaranteed. The fears of serious threats to global energy security are supported by statements on part of some of the leading Iranian officials - referring to the possible use of force on part of US against Iran, Iranian officials have time and again threatened that they may resort to the "oil weapon" if necessary. The Iranian threat to exercise "oil weapon" is quite open ended that is generally being interpreted as anything that could be used to stop or hinder the flow of the much-needed oil to the international markets. This could include a wide range of actions that intentionally stop or seriously reduce the flow of oil from the Persian Gulf to the main consumption centers (Diba, A. 2008). Iran's former chief nuclear negotiator and head of the Supreme National Security Council, Ali Larijani, made Iranian intentions in this regard very clear as he said. "We do not want to use the oil weapon. It is them who would impose it upon us... we will react in a way that would be painful for them ... Do not force us to do something that will make people shiver in the cold" (Tisdall, S. 2008). Similarly, Iran's Supreme Leader, Ayatollah Ali Khamenei, has threatened to shut the strait in response to U.S. military pressure. His naval commanders claim to have an array of high-tech weapons including a super-speed torpedoes and a sonar-evading, anti-ship missile (MSNBC, 2008).

Amongst the most prominent likely consequences of the conflict would be disruption in oil supplies through Strait of Hormuz and jump in oil prices. Based upon the fact that in the 1970s, a reduction of supply by just 5% caused a price increase of more than 400%, estimates suggest that a reduction of as little as 10-15% could cripple global economy (Howden, D. 2007). The fact that the discussed US-Iran conflict has a tendency to interrupt supplies as much as over 20%, oil prices can experience even a higher growth to that during the 1970s.

The phenomenon of soaring oil prices coupled with disruption in supplies can also lead to internal unrest and political instability in many countries. It would result into increased gap between rich and poor thus heightening the risk of internal conflict within under developed countries. Those at the top of the economic ladder would be able to procure

basic necessities of life whereas those at the bottom would find access to vital commodities of life such as food and shelter even harder.

In case of similar circumstances created by a shortage of oil supplies, Michael Klare warns that “Poor will find themselves in an increasingly desperate situation – and thus more inclined to heed the exhortations of demagogues, fundamentalists, and extremists who promise to relieve their suffering through revolt or ethnic partition” (Klare, M. 2002). Analysts also warn that the supply shortages could lead easily to disturbing scenes of mass unrest and the situation could spin out of control and turn into a complete meltdown of societies (Seager, A. 2007).

Another crucial implication of the issue would be a stressful food scenario. Already, the soaring fuel prices are being considered partly responsible for the ongoing food crisis- in many parts of the world including USA, Brazil, India and Southern African countries, the growing trend of biofuel production at the cost of food crops is being regarded as one of the key phenomenon’s having contributed to the food crisis especially with regards to price hike with wheat, maize and rice.

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Table 1. Growing trend of urbanization in the world

Year	World population (billions)	Urban population	
		(billions)	% of the world total
1900	1.6	0.22	13.8
2000	6.1	2.8	46.0

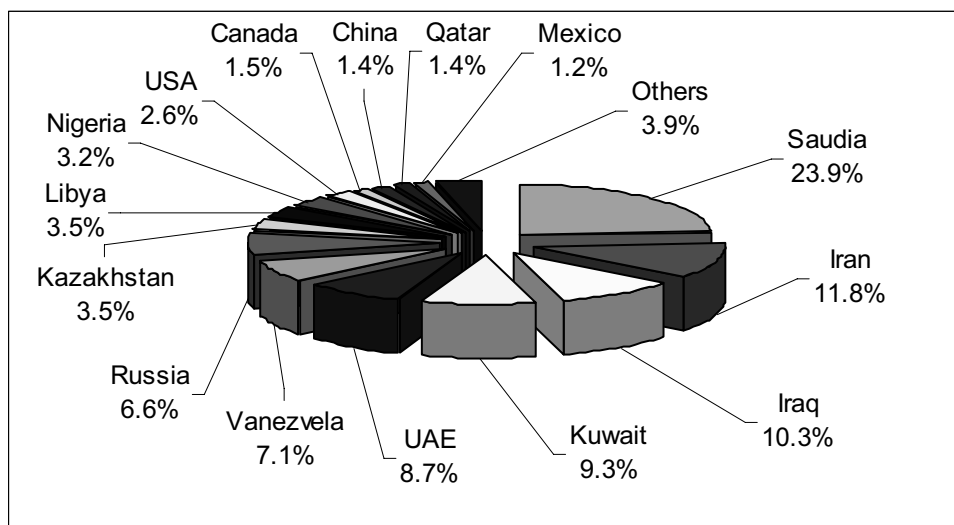


Figure 1. Distribution of Global Oil Reserves

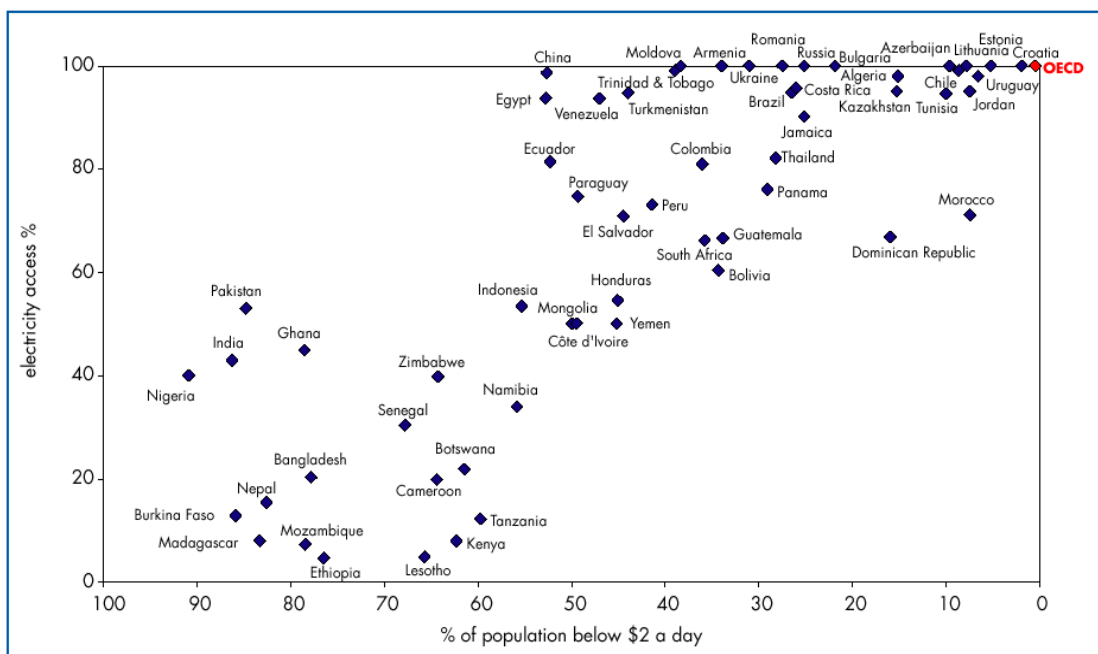


Figure 2. Relationship between access to electricity and economic prosperity

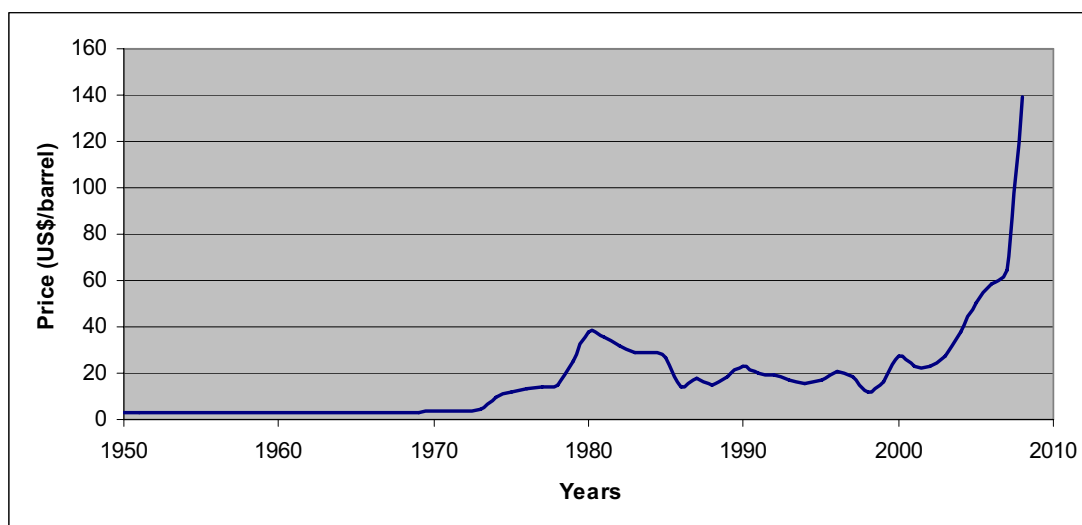


Figure 3. Crude oil prices in historical perspective (nominal)