

## Review of The Global Oil And Gas Industry: A Concise Journey From Ancient Time to Modern World

By

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### Abstract

*This paper relies on available literature to embark on a historical journey regarding the discovery, development and use of petroleum and other hydrocarbon related energy resources by humankind. The author traces the exploration and usage of oil and gas from the ancient world down to the modern oil and gas industry which began in America and spread to other parts of the world. Based on this concise, and yet detailed, global historical review of the oil and gas industry, the paper concludes that so long as some alternative sources of energy are not discovered in economically large scale, hydrocarbons will continue to have their enormous dominance and influence on the world's economy, politics and other social activities for many years to come.*

### Introduction

The relevance of oil and gas energy to the activities of humankind, as well as the significant influence they have on the economies of both oil producing and oil importing countries, can never be overstressed. Oil and gas have far-reaching influence on the politics of these countries and the world at large. The discovery of oil and gas has brought about staggering advancement to industrial growth worldwide, and has helped ease transportation at both international and local levels. At household level, oil and gas energies have made life easy for mankind in such areas as cooking, heating, provision of electricity, local mobility and many more<sup>1</sup>. Thus, petroleum and its related products as sources of energy are nowhere near being replaced in the contemporary world<sup>2</sup>.

Since, the modern discovery of petroleum in the fourth quarter of the nineteenth century, petroleum has been the major source of energy for humankind. The 2011 Fortune Global 500 ranking of world corporations further concretizes this assertion. According to this ranking, among the ten top world biggest companies, six are oil and gas companies, and out of these six, five have subsidiaries operating in different parts of the globe (see Table 1). Petroleum is not only useful to the modern world, but to the ancient world of humankind also, though its usefulness and the environmental impacts of its exploration and production are much more significant in the modern world. The use of petroleum has lasted for thousands of years through the history of this world, evolving over time to become an integral part of today's world economy.

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<sup>1</sup> Bastianoni, S., Campbell, D., Susani, L. & Tiezzi, E., 2005. The Solar Transformity of Oil and Petroleum Natural Gas. *Ecological Modelling*, Volume 186

<sup>2</sup> Yergin, D., 2008. *The Price: The Epic Quest for Oil, Money and Power*. New York: Free Press.

**Table 1: Fortune Global 500 Ranking of World Largest Companies**

Company	Industry	Revenue (in billions)	Rank
Wal-Mart Store	Supermarkets	421,849	1 <sup>st</sup>
Royal Dutch Shell	Oil & Gas	378,152	2 <sup>nd</sup>
Exxon Mobil	Oil & Gas	354,674	3 <sup>rd</sup>
British Petroleum (BP)	Oil & Gas	308,928	4 <sup>th</sup>
Sinopect Group	Oil & Gas	273,422	5 <sup>th</sup>
China National Petroleum	Oil & Gas	240,192	6 <sup>th</sup>
State Grid	Power	226,294	7 <sup>th</sup>
Toyota Motor	Automobile	221,760	8 <sup>th</sup>
Japan Post Holdings	Delivery	203,958	9 <sup>th</sup>
Chevron	Oil & Gas	196,337	10 <sup>th</sup>

Source: CNNMoney, [http://money.cnn.com/magazines/fortune/global500/2011/full\\_list/](http://money.cnn.com/magazines/fortune/global500/2011/full_list/)

The paper is structured as follows. Section two discusses the origin of hydrocarbons, especially crude oil and natural gas. Section three traces the history of oil and gas industry from the antique period to the modern contemporary global oil and gas industry<sup>3</sup>. Section five concludes the review.

### 1. Origin of Hydrocarbons

The three major kinds of fossil fuels - coal, oil and natural gas - were formed over millions of years ago. Fossils could be described as the remains of animals or plants preserved from an earlier era inside rocky or other geological structures<sup>4</sup>. The era these fossil fuels were formed is called the 'carboniferous period' which derives its name from carbon, the principal element in coal, oil and natural gas<sup>5</sup>. Organic theory is the most widely acceptable explanation for the origin of petroleum, which proposes that oil and natural gas (hydrocarbons) originate from the remains of plants and animals that lived millions of years ago<sup>6</sup>. Over these millions of years, the deposits of plants and animals along with particles of eroded igneous rock underwent some bacterial and chemical changes, under intensive heat to form hydrocarbons<sup>7 8</sup>. In this connection, Bastianoni et al (2005) provides three stages under which naftogenesis – petroleum formation – takes place. These stages are: (i) photosynthesis (ii) bacterial degradation and diagenesis (iii) catagenesis. These phases are briefly explained as follows:

<sup>3</sup>In the African Oil and Gas Industry subsection of section 3, detailed history of the Nigerian oil and gas industry is provided.

<sup>4</sup>Whitney, G., 2009. Fossil Fuels. *Microsoft Student [DVD]*, pp. Redmond, WA: Microsoft Corporation.

<sup>5</sup>Energy-Quest, 2010. *Energy Story: Fossil Fuels - Coal, Oil and Natural Gas*. [Online] Available at: <http://www.energyquest.ca.gov/story/chapter08.html> [Accessed 25 April 2010].

<sup>6</sup>Wright, C. J. & Gallun, R. A., 2008. *Fundamentals of Oil and Gas Accounting*. 5th ed. Oklahoma: Penn Well Corporation.

<sup>7</sup>Ibid.

<sup>8</sup>Bastianoni, S., Campbel, D., Susani, L. & Tiezzi, E., 2005, Op Cit.

- i. **Photosynthesis:** The energy inherent in crude oil and natural gas has its origin from solar energy stored during photosynthesis in plants that formed the hydrocarbons<sup>9 10 11</sup>. By means of photosynthesis, the plants deposited at the bottom of sea or beneath the earth crust, stored solar energy while they were alive. This solar energy transformed to chemical energy through the reduction of atmospheric carbon (CO<sub>2</sub>)<sup>12</sup>. For photosynthetic plants and animals to be capable of being transformed into petroleum they must be existing in almost enclosed marine area; grown in biomass (for example a gulf or lagoon) and the area's exchange of water with the open sea must be very limited<sup>13</sup>. These conditions made it favourable for diagenesis to have taken place in the areas of the world where petroleum resources are located.
- ii. **Bacterial degradation and diagenesis:** This stage begins with bacterial degradation, a process whereby the organic biomasses deposited at the bottom of a sea are broken down into simple compounds. These simple compounds are then transformed into kerogen by means of diagenesis. Thus, diagenesis is a process whereby kerogen (a solid, waxy, organic substance) is formed because of pressure and heat from the earth, exerted on the remains of degraded biomasses.
- iii. **Catagenesis and Oil Formation:** Catagenesis, a stage that involves formation of oil and gaseous hydrocarbon from Kerogen, is the next phase in petroleum formation after diagenesis. The formation of petroleum from kerogen is a function of the intensity of heat coming from deep down the earth. In this respect, it is observed that in this phase kerogen converts to oil and natural gas at 2km to 6km depth below the earth surface, under a temperature ranging from 50° to 115° centigrade<sup>14</sup>.

After being formed, the crude petroleum moves upwards through sedimentary layers until they become enclosed in an impervious layer of rocks called trap. Hence the name petroleum or rock oil, derived from the Latin words *petra*, meaning 'rock' and *oleum*, meaning 'oil'<sup>15</sup>. It is argued that for production of petroleum to be feasible there has to be adequately large quantity of hydrocarbons to the extent that the financial benefit outweighs the cost involved<sup>16</sup>. Such trapped accumulation of hydrocarbons in economic quantity is referred to as a reservoir. Four conditions, which must be present before a reservoir is formed, are identified<sup>17</sup>. These are:

- A source: remains of plants and animals deposits in biomass should exist;
- Existence of bacterial activity to facilitate transformation of the organic biomass into kerogen;

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<sup>9</sup> Tissot, B. P. & Welte, D. H., 1978. *Petroleum Formation and Occurrences: A new Approach to Oil and Gas Exploration*. New York: Springer Link.

<sup>10</sup> Bastianoni, S., Campbel, D., Susani, L. & Tiezzi, E., 2005, Op Cit.

<sup>11</sup> North, F. K., 1985. *Petroleum Geology*. Mass: Allen & Unwin.

<sup>12</sup> Zhang, J.-J., 2008. Debate Over the Origin of Petroleum: A Reply to WAN Lan-sheng's Paper. *Petroleum Exploration and Development*, 35(1).

<sup>13</sup> Tissot, B. P. & Welte, D. H., 1978, Op Sit.

<sup>14</sup> Ibid.

<sup>15</sup> American Petroleum Institute (API), 2010. *All About Petroleum - As Old As History*. [Online] Available at: [http://classroom-energy.org/oil\\_natural\\_gas/progress\\_through\\_petroleum/petroleum/aboutpetroleum02.html](http://classroom-energy.org/oil_natural_gas/progress_through_petroleum/petroleum/aboutpetroleum02.html) [Accessed 25th March 2010].

<sup>16</sup> Wright, C. J. & Gallun, R. A., 2008, Op Sit

<sup>17</sup> Ibid.

- Presence of heat and pressure to enable catagenesis to take place; and
- Presence of porous, permeable and impervious rocks to act as a trap.

Crude Oil is a fossil fuel, which is formed from the remains of plants and animals millions of years ago, consisting of complicated mixture of compounds, which are mostly hydrocarbons. It is noted that when pumped up from the underground reservoirs, crude petroleum looks thick, dark and smelly containing up to 95% hydrocarbon elements<sup>18</sup>. It oozes to the surface of the earth through fault lines, fissures or cracks where it accumulates as tar, asphalt or bitumen<sup>19 20</sup>. Note that crude petroleum is usually found along with associated natural gas.

Natural gas composes of deposits of gas beneath the earth crust, in either liquefied or gaseous form mainly made up of methane<sup>21</sup>. Natural gas is so light that it is described as being lighter than air<sup>22</sup>. Natural gas is described as a mixture of gaseous substances formed and trapped either alone, or along with crude oil within the earth crust with methane as its major constituent<sup>23</sup>. In this light, natural gas may occur as either associated or non-associated. Non-associated natural gas occurs alone in a reservoir that does not contain crude oil while associated natural gas occurs together with crude oil in the same reservoir. As stated in the preceding paragraph methane is the major component of natural gas. However, in spite of the dominance of methane, other elements such as ethane, propane, carbon dioxide, nitrogen and hydrogen sulphide can also be found in natural gas depending on the source of the gas<sup>24</sup>.

## 2. Historical Overview of the Global Oil and Gas Industry

### 3.1 Ancient Oil and Gas Industry

Petroleum has been useful to humankind for so many years that American Petroleum Institute remarks that “the usefulness of hydrocarbons to humankind is as old as history”<sup>25</sup>. In ancient time, crude oil was being used by human beings for different purposes. For example, ancient man used crude petroleum as water repellent. That is, they used petroleum as a substance or material to prevent water from entering unwelcome places. In addition, ancient man used petroleum for binding things together, because of its sticky property. Five thousand years ago Sumerians, Mesopotamians and Egyptians made use of petroleum for several purposes. During this period, the inhabitants of Sumeria made use of asphalt to fix pictures and designs on walls and floors, while in Mesopotamia people used bitumen to help construct water canals<sup>26 27</sup>. They also used it as sealant in the joints of wooden boats to enable hitch free water transportation<sup>28</sup>. The Egyptians used pitch and asphalts to grease chariots, preserve and keep intact dead bodies

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<sup>18</sup> Webb, P. & Mc.Intyre, B., 1990. *Oil and Gas Exploration Production*. Perth: Hadson Energy Limited.

<sup>19</sup> API, 2010, Op Sit.

<sup>20</sup> North, F. K., 1985, Op Sit.

<sup>21</sup> Bastianoni, S., Campbell, D., Susani, L. & Tiezzi, E., 2005, Op Sit.

<sup>22</sup> Energy-Quest, 2010. *Energy Story: Fossil Fuels - Coal, Oil and Natural Gas*. [Online] Available at: <http://www.energyquest.ca.gov/story/chapter08.html> [Accessed 25 April 2010].

<sup>23</sup> Anderson, R. O., 1984. *Fundamentals of Petroleum Industry*. Norman: University of Oklahoma Press.

<sup>24</sup> Ibid.

<sup>25</sup> API, 2010, Op Sit.

<sup>26</sup> Forbes, R. J., 1936. *Bitumen and petroleum in antiquity*. Leiden: E.J. Brill.

<sup>27</sup> Anderson, R. O., 1984, Op Sit.

<sup>28</sup> Forbes, R. J., 1936, Op Sit.

known as mummies. By 1,500 BC, humankind had learnt how to use wick oil lamp for lighting, and the oil being used at this time was crude oil<sup>29</sup>

All these while, humankind had been using crude petroleum that seeped through cracks and fault lines onto the surface of the earth. The first discovery and extraction of petroleum was made by the Chinese around 600 years BC<sup>30</sup>. They did this by chance, while digging salt wells. The Chinese historical records show that around 500 BC, along the Tibatian boarder, oil wells that produced water and natural gas with depth of about 100 feet were being dug. Around 450 BC, Herodotus recorded a description of oil pits located near Babylon, and around 325 BC Alexander the Great, used to scare his war opponents using flames made from petroleum. The Roman warriors made use of blazing objects containing crude petroleum as weapons of war and they were, at that time, also using lamps being lightened up by oil.

Around 100 years AD Plutarch gave description of crude petroleum gushing from the earth at a place close to Kirku in the present day Iraq<sup>31</sup>. By 347 AD the Chinese local oil and gas industry had developed considerably, because oil wells up to 800 feet were being drilled using bits connected to bamboo poles<sup>32</sup>. By 1500 AD, it even reached an extent that the Chinese were drilling oil wells of more than 2,000 feet depth<sup>33</sup>. They also invented extensive pipeline transportation system to pump oil and natural gas from the wells up to the earth surface<sup>34</sup>. During this same period oil, being used to provide street lights at the Polish city of Crosno, was said to be oozing out of the earth onto the surface at the Carpathian Mountains<sup>35</sup>. In the 13th century Marco Polo, one of the greatest world explorers, reported that he had witnessed mining of crude petroleum that was seeping out of the earth at Baku, Persia (part of the former Soviet Union). By the middle of 1590's non-too-deep trenches were being dug at Baku, the present-day Azerbaijan<sup>36</sup>.

Human beings did not realize the importance of petroleum as a commercial commodity until after the defeat of Khanat of Persia by Peter the great of Russia in 1723<sup>37</sup>. Peter gave opportunity for private firms to explore, extract and refine oil from Baku oil field, which they sold and remitted certain percentage of the sales proceeds to the royal crown<sup>38</sup>. Mean while a new historic era of oil revolution was about to begin in a country, far away from Russia, which was to lay the foundation for a new international oil and gas industry.

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<sup>29</sup> Yergin, D., 2008, Op Sit.

<sup>30</sup> Business Education Research Association (BERA), 2006. *History of Oil and Gas Industry*. [Online] Available at: <http://www.loc.gov/rr/business/BERA/issue5/history.html#ancient> [Accessed 6 April 2010].

<sup>31</sup> Yergin, D., 2008. *The Price: The Epic Quest for Oil, Money and Power*. New York: Free Press.

<sup>32</sup> Forbes, R. J., 1936, Op Sit.

<sup>33</sup> Asbury, H., 1942. *The Golden Flood: An informal History of America's First Oil Field*. New York: Alfred A. Knopf.

<sup>34</sup> BERA, 2006, Op Sit.

<sup>35</sup> Forbes, R. J., 1936, Op Sit.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> Yergin, D., 2008, Op Sit.

### **3.2 Modern Oil and Gas Industry**

Modern oil and gas industry began in America in the nineteenth century. During the first quarter of this century, individual oil producers constructed dams in western Pennsylvania at a place called Creek where petroleum was known to be deposited<sup>39</sup>. This made it possible for the crude oil to float on the water surface. The floating oil was then collected using blankets spread on the water surface to soak up the oil which was eventually retrieved and sold at \$2 per gallon<sup>40</sup>. Moreover, around this same period, people in California distilled crude petroleum from spontaneous seeps and used it for lighting up religious places<sup>41</sup>.

#### **3.2.1 United State of America: The Emergence of Modern Oil and Gas Industry**

George Bissell and his co-venturers laid the seed, which was to germinate into globally pervasive oil and gas industry, which was also to become a very influential industry in the history of humankind. While passing through Pennsylvania, Bissell noticed how merchants extracted crude oil from dams using oil-soaked blankets, and a few months after that he saw a sample of the same rock oil in a professor's office at Dartmouth College Hanover, New Hampshire, being tested as a medicine<sup>42</sup>. Having seen rock oil twice, Bissell surmised that it could be used as an illuminant<sup>43</sup>. He put together a group of investors and the service of a reputable Yale Chemist, Professor Benjamin Silliman, was employed to analyze and report on the possibility of using rock oil as an illuminant. Silliman accepted the project, which was to be completed in three months at \$526.08 (equivalent to the present day \$5,000)<sup>44</sup>. He finished the report, dated April 16, 1855, and submitted to the investors what marked the beginning of modern oil and gas industry. Put more succinctly by a historian, the outcome of Professor Silliman's investigation was a turning point in the establishment of petroleum business<sup>45</sup>. In the report to his clients, he explained that rock oil could be induced to various levels of boiling, hence capable of being distilled to form several other fractions or elements all made up of carbon and hydrogen, one of which was highly qualitative illuminant<sup>46</sup>. Thus, the outcomes of Silliman's report invoked by the curiosity of Bissell informed the formation of the first oil and Gas Company in America, called Pennsylvania Rock Oil Company. That was how modern petroleum industry started.

Inspired by advertisement displayed in the shop of a drug seller and salt miner, called Samuel, Bissell conceived of an idea on how rock oil was to be extracted from the earth by drilling (Asbury, 1942). Although the investors had the capital to start up the project, made possible by the Silliman's report, many people felt that the idea was not only risky, but also crazy (Asbury, 1942). Finally, they employed the service of the famous Edwin L. Drake to carry out the tricky assignment and after persistence, drudgery and hard work; Drake struck oil on the 27<sup>th</sup> August, 1859<sup>47</sup>. It is observed that "indeed all the other elements – refining, experience with kerosene,

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<sup>39</sup> Cone, A. & John, W. R., 1970. *Petrolia: A Brief History of Pennsylvania Petroleum Region*. New York: D. Appleton.

<sup>40</sup> Yergin, D., 2008, Op Sit.

<sup>41</sup> Ibid.

<sup>42</sup> Ibid.

<sup>43</sup> Ibid.

<sup>44</sup> Asbury, H., 1942, Op Sit.

<sup>45</sup> Yergin, D., 2008, Op Sit.

<sup>46</sup> Cone, A. & John, W. R., 1970, Op Sit.

<sup>47</sup> Yergin, D., 2008, Op Sit.

and right kind of lamp – were in place when Drake proved, through drilling, the final requirement for new industry; the availability of supply<sup>48</sup>. About five wells were drilled producing oil in the valley called Creek in north Pennsylvania, just 15 months after Drake’s discovery and proof that oil could be drilled and pumped from the earth. And, by 1860 fifteen refineries were constructed in the region, as a result of which production increased from 450,000 barrels in 1860 to 3,000,000 barrels in 1862<sup>49</sup>. This tremendous increase in supply forced down the price of oil from \$10 per barrel to as low as 10 cents per barrel<sup>50</sup>. Although, many producers were devastated, but this had caused kerosene to replace other competing products such as whale oil and coal gas, in the market. Recall that Silliman stated in his report that rock oil could be used to produce several other products one of which was a highly, qualitative illuminant. This illuminant was none other than kerosene. Thus, kerosene at that time was the main product, and other products were considered unwanted by-products usually disposed of in the sea and creeks at night<sup>51</sup>. Oil industry in America, before the emergence of Standard Oil Company, had been chaotic, consisting of several small-scale producers and was characterized by very fluctuating and volatile prices. Thus, there was confusion, instability and uncertainty in the industry. Standard Oil brought order and stability to the industry and expanded the market of kerosene beyond American borders. In February 1865, John D. Rockefeller bought out his partner in an auction that resulted from a dispute between them over business expansion, which Rockefeller won at \$72,500<sup>52</sup>. The bidding that took place in an office for a short while marked the beginning of global oil and gas industry and gave birth to a tremendous giant, Standard Oil Company.

Between 1865 and 1870, it was estimated that American refineries produced kerosene three times more than what the market needed<sup>53</sup>. Consequently, the industry witnessed a drastic fall in the average retail price of kerosene. There were, of course, attempts by the producers to contain the situation by restricting production and supply, but to no avail. In this respect it is observed that “there were far too many producers to organize any meaningful restraints<sup>54</sup>”. With the oil industry slumping into an uncontrollable depression, causing both the oil producers and refiners to lose money continuously, Rockefeller and his partner, Henry Flagler, took advantage of the situation and seized control of the industry, exerting their firm grip on it which lasted until the monopolistic power of the giant they created was finally broken by anti-trust law. They achieved this by transforming their partnership into a joint stock company on the 10<sup>th</sup> of January 1870, called Standard Oil Company, together with five other investors. The new company, at that time, already had control of one-tenth of the American oil and gas industry. With the aggressive leadership of Rockefeller who was holding one-quarter of the company’s total paid up share capital, the machineries for putting a firm grasp on the industry were set in place.

A year later, the chaotic situation in the American oil and gas industry continued to deteriorate, plunging the industry further into abyss of panic. In this regard, it is reported that in 1871, a year after the creation of Standard Oil Company, the depression in the then American Oil and gas industry got worse, causing profit margin to disappear altogether while putting many refiners out

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<sup>48</sup> Yergin, D., 2008, (pp 15).

<sup>49</sup> Beeby-Thomson, A., 1961. *Oil Pioneer*. London: Sidgwick and Jackson.

<sup>50</sup> Ibid.

<sup>51</sup> Yergin, D., 2008, Op Sit.

<sup>52</sup> Ibid

<sup>53</sup> Beaton, K., 1955. Dr. Gesner's Kerosene: The Start of American Oil Refining. *Business History Review*, Volume 29.

<sup>54</sup> Yergin, D., 2008, Op Sit, (pp 24).

of business<sup>55</sup>. It was amidst this chaos that Rockefeller had his mind completely made up to consolidate all oil-refining businesses into one enormous business with a view to making oil business safe and profitable. The plan was to first seize control of the leading, dominant refiners and then move down to the smaller ones. By the end of the war, in 1879, the scheme was successful, because standard oil controlled 90% of the US oil-refining sector<sup>56</sup>. Moreover, the company acquired significant control of oil pipeline and transportation, and continued to expand with great and unequalled success in the 1880s through 1890s<sup>57</sup>. During this period, the company incorporated scientific investigation into its activities. Thus, by mid 1880s, Standard Oil was controlling over 80% of US oil marketing and between 1888 and 1891 the company started engaging in oil exploration and production, and captured one-third of US oil production<sup>58</sup>.

It is imperative to state that petroleum marketing had been international since 1861, when a Philadelphian shipper delivered the first shipment of oil to Europe<sup>59</sup>. This opened up a market for the American kerosene and other petroleum related products to the world. Thus, Standard Oil had gone global.

### **3.2.2 Historical Role of Russian Oil and Gas Industry**

Before 1870's development of oil and gas industry in Russia was greatly being impeded by backwardness, remoteness as well as the ineffectiveness and corrupt nature of the Czarist government<sup>60</sup>. Therefore, it was not until in 1870 and beyond that, oil and gas industry in Russia had its first breakthrough for expansion. The Russian government opened up the industry for competitive participation. Major oil wells began to emerge in the Russian oil and gas industry around 1871-1872, and by 1873, more than 200 wells were producing crude oil<sup>61</sup>.

The Nobel family of Russia was arguably associated with success of the Russian oil and gas industry. Ludwid Nobel, a renowned industrialist, went into oil business following an unintentional investment made by his brother, Robert Nobel, using his (Luduwin's) own money<sup>62</sup>. The Nobels' oil and gas company produced half the kerosene being used in Russia, thereby ousting American kerosene from the Russian market, but the Russian kerosene was largely confined to the Russian local market<sup>63</sup>. However, the covert coming of Rothschilds, an influential Jewish banking family, into the Russian oil and gas industry ensured the construction of a rail road from Baku through Caucasus to Batum, a port at the black sea taken over by Russia following its war with Turkey<sup>64</sup>. This opened the door for Russian oil and gas companies to have access to the international oil and gas market and the two Russian oil companies became the major international competitors to Standard Oil. Standard Oil competed with Nobels and

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<sup>55</sup> Yergin, D., 2008, Op Sit.

<sup>56</sup> Ibid.

<sup>57</sup> Ibid.

<sup>58</sup> Beeby-Thomson, A., 1961, Op Sit.

<sup>59</sup> Yergin, D., 2008, Op Sit.

<sup>60</sup> Ibid.

<sup>61</sup> Ibid.

<sup>62</sup> Bergengren, E., 1960. *Alfred Nobel: The man and his work*. London: Thomas Nelson.

<sup>63</sup> Ibid.

<sup>64</sup> Ibid.

Rothschild fiercely for quite some time over the dominance of international market, without success. Having realized the near impossibility of assimilating the Rothschild or Nobels, the giant focused its attention on another emerging oil company operating in Asia, through which the managers of Standard Oil Trust thought they could compete effectively with the Russian companies in Asia. The company was none other than Royal Dutch Shell.

### **3.2.3 Royal Dutch Shell in the East Indies**

Aeilko Jans Zijlker was the founder of Royal Dutch, a company of Netherlands origin. Although Zijlker drilled his first successful well at the Marshy coast of Sumatra in 1885, it is stated that “the Royal Dutch Company was not lunched until 1890, and the first flotation of its stocks was oversubscribed four and a half times<sup>65</sup>”. Unfortunately, Zijlker died in the very year the company was formed and its leadership was entrusted to Baptiste August Kessler<sup>66</sup>. When Kessler assumed control, the company was in shambles and running at loss, but within two years he had turned the company around, and it started making profit with oil production six times more than two years earlier. With Kessler’s perseverance, hard work and leadership abilities, Royal Dutch kept on progressing and expanding to the extent that between 1895 and 1897 the company’s production capacity and sales increased fivefold<sup>67</sup> <sup>68</sup>. The American giant, Standard Oil, had tried severally to take over the control of Royal Dutch but all in vain. Hence, Royal Dutch expanded significantly and independently to become one of the greatest multinational oil companies in the world<sup>69</sup>.

### **3.2.4 British Petroleum and the Persian oil industry**

In the early twentieth century, an English business man, William Knox D’Arcy, became interested in the probable oil wealth in Persia, known today as Iran. D’Arcy was a risk seeker<sup>70</sup>. Propelled by his propensity for risky ventures, he went to Persia and succeeded in obtaining an oil concession to prospect for crude oil in the country. The agreement gave D’Arcy the mandate to prospect for oil in about 75% Persia’s territory over the period of six years<sup>71</sup>. Although, he had encountered tough challenges and difficulties, in the end he had succeeded in establishing the oil and gas industry in the Middle East<sup>72</sup>. When oil was first struck in October 1902, D’Arcy realized that the venture was far too vast and complex to be managed by a sole proprietor. The venture engulfed so much money from D’Arcy to the extent that he became overdrawn to the

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<sup>65</sup> Yergin, D., 2008, Op Sit (pp 57).

<sup>66</sup> Owen, E. W., 1975. *Trek of the Oil Finders: A History of Exploration for Oil*. American Association of Petroleum Geologist: Tulsa.

<sup>67</sup> Ibid.

<sup>68</sup> Yergin, D., 2008, Op Sit.

<sup>69</sup> Royal Dutch Shell is the operator in the Nigerian oil and gas industry. It operates in Nigeria via SPDC of Nigeria which remains the largest oil and gas company in Nigeria to date.

<sup>70</sup> Yergin (2008) reports that

<sup>71</sup> Ferrier, R. W., 1982. *The history of the British Petroleum Company: The developing years*. Cambridge: Cambridge University Press.

<sup>72</sup> It is imperative to mention that about two decades prior to D’Arcy’s obtaining a concession in Iran, the founding owner of Reuters news had been the first to secure oil concession in the region on two occasions. However Reuters did not succeed in discovering any oil due to a number of bottle-necks associated with the Persian internal politics and the rivalry between Russia and Britain which in the end led to the withdrawal of the concession (See Yergin, 2008).

tune of 177,000 pounds sterling.<sup>73</sup> To add more salt to the wound, oil yields from the two producing wells declined so significantly that exploration had to be diverted to other areas. Thus, D'Arcy's oil business in Persia was on the brink of failure. Having realized the imminent consequences of D'Arcy's failure in relation to its struggle with Russia over control of Persia, the British government rescued the venture and facilitated a merger between D'Arcy and Burmah Oil (an oil company of Scottish origin). This led to the emergence of a new entity known as Concession Syndicate (Corley, 1983)<sup>74</sup>. Burmah Oil had very nearly brought the venture to an end, due to many unsuccessful efforts to discover oil between 1903 and 1908, when suddenly oil was struck in commercial quantity in 1908. In 1909 the stakeholders of the Concession Syndicate agreed to form a public limited company known as Anglo-Persian Oil Company to take over the operation from the Concession Syndicate. After some years Anglo-Persian Oil Company found itself in financial difficulties again. Meanwhile an imminent threat of attack from Germany propelled the British Navy to seek to advance the technology of its ships in order to consolidate the British Royal supremacy. Thus, the British Royal Navy under the leadership of Churchill came to the inevitable conclusion that speedy ships powered by petroleum oil had to be built. However, affordable price, security of supply, and a deal with reliable supplier must be ensured. In order to ensure reasonable control of these three factors, British government acquired 51% interest in the collapsing Anglo-Persian Oil Company, thereby rescuing the company for the second time<sup>75</sup>. Later the company, now called British Petroleum, successfully expanded its activities globally to become one of the biggest oil and gas companies in the world.

### ***3.2.5 Invention of internal combustion machines – Rise of the markets of other hydrocarbons***

At the beginning of the twentieth century (1900s), the perfection of lighting from electricity had a very significant negative impact on the demand for kerosene, the major product of the then oil and gas industry<sup>76</sup>. This clearly spelt an imminent doom for not only the American oil and gas industry, but also the global industry. It was previously mentioned that other petroleum products such as gasoline, gas, diesel etc. produced jointly with kerosene were just by-products usually disposed of at night in seas or rivers. Consequently, the possible demise of the kerosene market as an illuminant meant that the oil and gas industry was on the brink of collapse. At this very point in time, an unexpected event unfolded and rekindled the bright future of oil and gas industry. Thus, the invention of internal combustion machines, for example automobiles and factory machineries etc., opened up a lucrative market for the other nearly valueless petroleum products<sup>77</sup>. Consequently, gasoline, gas, diesel, lubricants etc. became valuable and marketable, thereby enabling the resurgence of oil and gas industry.

### ***3.2.6 The Demise of Standard Oil and Rise of the Seven Sisters***

For about 20 years, Standard Oil dominated oil and gas industry in both American and to a very significant extent the international level. The company became so powerful that it could control prices both locally and internationally, to the detriment of consumers and other oil companies. As such, the

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<sup>73</sup> Ferrier, R. W., 1982, Op Sit.

<sup>74</sup> Corley, T. A., 1983. *A history of the Burmah Oil Company*. London: Heinemann.

<sup>75</sup> Ibid.

<sup>76</sup> Asbury, H., 1942, Op Sit.

<sup>77</sup> Yergin, D., 2008, Op Sit.

United States federal court ordered the dismantling of Standard Oil into 34 distinct companies, following the enactment of antitrust law in 1909<sup>78</sup>. This brought about the end of the Standard Oil's monopolistic power, especially in America. However, the global dominance of oil and gas industry created by Rockefeller through the machineries of Standard Oil continued.

Consequently, America was responsible for more than 50% of the world's oil production<sup>79</sup>. At the global level, oil and gas industry continued to evolve. Other important multinational oil companies, for example Texaco, Turkish Petroleum Company etc, began to appear on the international scene. Thus, the pioneer multinational oil companies in the history of modern oil and gas industry are listed in Table 2

**Table 2. Pioneer Multinational oil and Gas Companies**

<b>Oil Company</b>	<b>Year Founded</b>
Standard Oil Company	1870
Gulf Oil	1890
Texaco	1901
Royal Dutch Shell	1890
Anglo-Persian Oil Company (Now British Petroleum)	1909
Turkish Petroleum Company	1910

Source: [www.loc.gov/rr/business/issue5/History.html](http://www.loc.gov/rr/business/issue5/History.html) 2010

Although, Standard Oil was broken up into thirty four companies, the most prominent multinationals among them are Standard Oil of California (now Chevron), Standard Oil of New Jersey (Changed to Esso, then later to Exxon), and Standard Oil of New York (which became Mobil). These three American-based multinational oil companies together with British Petroleum (BP), Gulf Oil, Royal Dutch Shell and Texaco were known as the 'Seven Sisters'. However, these sisters are currently no longer seven but five, for Texaco and Chevron merged resulting in formation of ChevronTexaco (now Chevron Corporation), and Exxon merged with Mobil to form a new and bigger company called ExxonMobil. Up to the early 20<sup>th</sup> century, global oil production was dominated by three regions, namely America, Russia and Dutch East Indies. However, the middle and the tail end of the 20<sup>th</sup> century witnessed the emergence of other world regions - Middle East, Africa, Asia and Europe - with huge deposit of oil reserves and this changed the balance in the international oil and gas reserves.

<sup>78</sup> Nringhurst, B., 1979. *Antitrust and The Oil Monopoly: The Standard Oil Case*. Westport, Conn: Greenwood Press.

<sup>79</sup> Ibid.

### ***3.2.7 The European Oil and Gas Industry***

Historically, the first location in Europe known to have commercial quantities of oil, since around 1600s, was Romania. Romania had remained a major source of hydrocarbon energy supply to European countries for over 200 years<sup>80</sup>.

In the modern time, development of oil and gas industry in Europe started on a small scale in Turkey in the 1920s<sup>81</sup>. It was not until the 1960s that earnest exploration in the North Sea commenced. North Sea is one of the important locations in Europe where enormous deposits of oil and gas exist. Discovery of first commercial deposit of natural gas was made in Netherlands in the late 1950s. In 1961, oil was discovered in commercial quantity at the North Sea, and more oil reservoirs continued to be discovered thereafter<sup>82</sup>.

British Petroleum discovered oil in the North Sea area off the East Anglia in 1965. This discovery seemed to offer Britain a way out of its escalating economic crises during this period. A few years later the North Sea oil deposit began to attract other companies from America and other part of Europe. By mid 80's there were over one hundred oil fields in the region, and Great Britain had become a crude oil net exporter. Further growth of the oil and gas industry in the country was more evident when the country also became a net exporter of natural gas in the 90s. Prominent locations in the North Sea with significant deposits of oil and gas include Aberdeen (regarded as the oil capital of Europe), Yarmouth, Shetland and the Northern Isle of Orkney. Production of oil and gas in the North Sea reached its zenith in 2001 and began to decline thereafter to the extent that Britain became a net importer. North Sea is presently at its mature exploration and production stage. However, oil and gas companies are still able to produce considerable volumes of oil and gas, owing to sophisticated technological advancements.

### ***3.2.8 The Influence of Middle East***

Back in the year 1918 Major Frank Holmes, a mining engineer of New Zealand origin picked up information from an Arab trader concerning oil seepages at the Arabian coast of the Persian Gulf. This led Holmes to become obsessed with exploring for hydrocarbons in the Arabian Gulf. Consequently, when Holmes found himself in Basra, part of the present day Iraq, he used the opportunity to learn more about petroleum deposits in the region. Holmes went from one Arab ruler to the next, seeking to convince them about the lucrative prospect for exploration and production in the region, while simultaneously trying to bag as many oil concessions as he could. Holmes managed to secure concessions in different parts of the Arabian Gulf including Bahrain, Kuwait, eastern part of Saudi Arabia and Baghdad. When Holmes was ready to commence prospecting for petroleum he could not get finance from the London financial market. Similarly, his effort in the US met with several rejections. The major reasons for the reluctance of investors to invest in oil exploration ventures in the Arabian Gulf were twofold. First, the Anglo Persian Company was convinced that the chances of discovering oil in the Arabian part of the Gulf were almost nonexistent. Second, a geological report compiled by a well-respected professor of geology clearly ruled out the possibility of commercial deposits of petroleum in the region. Finally, Gulf Oil, an American company, expressed interest to invest in oil prospecting in

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<sup>80</sup> BERA, 2006, Op Sit.

<sup>81</sup> Owen, E. W., 1975, Op Sit.

<sup>82</sup> Yergin, D., 2008, Op Sit.

Bahrain, consistent with its plan for global diversification. so the company agreed to work with Holmes Group. Later Gulf Oil became part of the Turkish Petroleum Company, and could not operate directly in Bahrain due to “red line restriction”. Gulf Oil entered into partnership with Standard oil of California and a joint venture company called Bahrain Petroleum Company was formed which struck oil in 1931. This marked the beginning of oil discoveries in the Arabian Gulf.

Exploration of oil in the Middle East saw the beginning of oil production in Persia (now Iran), Bahrain, Oman, Yemen, Saudi Arabia, Kuwait, Iraq and Qatar. Thus, Oil production in the Middle East commenced between 1930 and 1940<sup>83</sup>. Oil was first discovered in Bahrain in 1931 and in 1938 oil was discovered at Burgan field in southern Kuwait and Saudi Arabia<sup>84</sup>. In 1948, the astonishing Ghawar oil field was discovered in Saudi Arabia, which remains the largest oil field in the world to date<sup>85</sup>. The field measures 280km long and 30km wide. As at 2010 total cumulative production from the field was 65 billion barrels, and the field’s average daily production amounts 5 million barrels<sup>86</sup>.

### **3.2.10 The African Oil and Gas Industry**

Between 1940 and 1960, Africa became known as the new frontier for world oil. In particular, oil was not discovered in economic quantities in the region until in the 1950s. At that time oil was discovered in such countries as Egypt, Algeria, Nigeria, Libya and Angola. France was the first western country to focus its attention on oil prospecting in Africa. It specifically concentrated on the Algerian deserts among its controlled African territories. Thus, the first oil field in Africa was discovered in the ancient Egypt as far back as 1869. However, production did not take up in earnest until in 1910. While oil was discovered in both Algeria and Nigeria in 1956, it was struck in Libya three years later, i.e. in 1959<sup>87</sup> <sup>88</sup>. While oil was discovered in Angola in 1955 at Benfica field in Kwanza Basin, discovery in economic quantities was not confirmed until 1959. These are the pioneer countries where oil was first discovered in large quantities in Africa.

History of the Nigerian oil and gas industry could be traced back to the colonial era. The first company to search and prospect for crude petroleum in Nigeria was Nigerian Bitumen Corporation, a company of German origin. The company commenced prospecting for oil in 1908. The prospecting came to an abrupt stop in 1914 as a result of the eruption of First World War. In the same year British colonial petroleum law, The Mineral Oil Ordinance of 1914, was adopted in Nigeria, which vested the right to search for, win and work mineral oil only in British corporations or companies controlled by British subjects.<sup>89</sup> Oil prospecting did not resume until

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<sup>83</sup> Dickson, H. R., 1956. *Kuwait and her neighbors*. London: George Allen & Unwin.

<sup>84</sup> Dann, U., 1988. *The great powers in the Middle East, 1919-1939*. London: Holmes & Meier.

<sup>85</sup> Ibid.

<sup>86</sup> Fischbuch, B., and Keith, T., 2010. Still going strong: 62-year-old super-giant Ghawar oil field as productive as ever [Online] Available at: [http://www.saudiaramco/content/dam/Publications/Dimensions\\_Expo/GhawarStillNo1.pdf](http://www.saudiaramco/content/dam/Publications/Dimensions_Expo/GhawarStillNo1.pdf) [Accessed 15 May 2013].

<sup>87</sup> Yergin, D., 2008, Op Sit.

<sup>88</sup> Geo-Help, 2010. *History of the World Petroleum Industry (Key Dates)*. [Online] Available at: <http://www.geohelp.net/world.html> [Accessed 15 March 2010].

<sup>89</sup> Okonmah, P. D., 1997. Right to a clean environment: the case for the people of oil-producing communities in the Nigerian Delta. *A Journal of African Law*, 41 (1), pp. 43-67

1937 when Shell D'arcy, now called Shell Petroleum Development Company (SPDC) of Nigeria, was given the sole concession rights for the entire Nigerian landscape. Shell kept on prospecting for oil in earnest, but the Second World War interrupted its activities. When the war ended, Shell resumed operation in 1947, but this time around joined by British Petroleum (the then British state owned company) to form Shell-BP.<sup>90</sup> Efforts of twenty years with ₦30,000,000 worth of investment finally yielded fruits. Thus, in 1951 the first oil well drilled by the company did not yield any oil, but five years later the company discovered oil in commercial quantity at Oloibiri in the Niger Delta in 1956.<sup>91</sup> Nonetheless, production and exportation did not commence until after two years. Initial quantity produced and exported was 5,100 barrels of crude oil per day, but this increased steadily to 2,000,000 barrels per day in 1972, and then to 2,400,000 barrels in 1979.<sup>92</sup> In 1972, Nigeria ranked the seventh major oil producer worldwide.

The Shell-BP's sole concession right was broken in the early 1950s, and this gave room for other multinational oil companies such as Gulf, Mobil, Texaco, Chevron, Sunray-Tenneco, Agip Safrap (which later became Elf) to participate. Mobil Oil Corporation started operation in 1955; Texaco Overseas commenced operation in 1961; Safrap (later Elf) and Agip oil both commenced their operations in 1962; Phillips oil started operation in 1963.<sup>93</sup> By 1968, all these companies had discovered and started exporting crude oil in profitable quantities. To date, all these and other smaller oil companies, both local and foreign, are still operating in the Nigerian oil and gas industry, perhaps some of them under different names.

Up to 1968, multinational oil companies were given concession rights to operate in the Nigerian oil and gas industry, but this picture changed when Nigeria became a member of OPEC. Nigeria started making efforts to join OPEC in 1968 and became a full member in 1971. In 1968 OPEC issued its Declaration Statement of Petroleum Policy which encouraged members to enhance their participation in order to have greater control of operations in their oil and gas industries. Influenced by the OPEC policy, the Nigerian government enacted the Petroleum Act of 1969 which drastically modified the nature of the oil mining lease granted to the Multinational Oil Companies operating in Nigeria, thereby giving the Nigerian government the power to acquire equities or majority interests in them.<sup>94</sup>

In order to effectively consolidate its greater participation in the oil and gas industry, the government in 1971 formed the Nigerian National Oil Corporation (NNOC). NNOC was established as government's vehicle for participation in commercial activities of the oil and gas industry. Okonmah<sup>95</sup> observes that aside from being the government adviser on oil and gas issues, NNOC participates in the exploration, production, transportation, refining and marketing of crude petroleum and its related products. By 1973, the Nigerian government had acquired 35% shares in the oil companies by means of the first participation agreement.<sup>96</sup> Conflictingly,

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<sup>90</sup> ibid

<sup>91</sup> ibid

<sup>92</sup> Nigerian National Petroleum Corporation (NNPC), 2010 *Joint Venture Operations (Online)*. Available at: <http://www.nnpcgroup.com/nnpc-business/partners>. (Accessed 12 March 2010)

<sup>93</sup> Okonmah, P. D., Op. Cit.; NNPC ibid

<sup>94</sup> Okonmah, ibid

<sup>95</sup> Op. Cit

<sup>96</sup> NNPC, Op. cit

NNOC was at that time saddled with the responsibility of regulating the oil and gas industry. This was conflicting because NNOC had commercial interest in what it regulated. The industry was being regulated via a unit within NNOC called the Department of Petroleum Resources (DPR). With the creation of Ministry of Petroleum Resources (MPR) in 1975, DPR came under the new ministry.<sup>97</sup> In order to optimize the then scarce human capital in the public sector of the petroleum industry NNOC and MPR were merged in 1977, to form Nigerian National Petroleum Corporation (NNPC). In 1979, Government share in the oil companies rose to 60% by means of third participation agreement between the foreign multinational oil companies and NNPC.<sup>98</sup> The fourth participation agreement, also executed in 1979 saw the nationalization of the BP's share in Shell-BP. this gave NNPC 80% shares leaving Shell with 20% in the joint venture. The name of the company was changed to Shell Development Company of Nigeria (SPDC).

In 1985, the Ministry of Petroleum Resources (MPR) was created, but DPR remained part of NNPC until 1988 when NNPC was commercialized, at which time the DPR was pulled out of NNPC and transferred to MPR. In 1989 NNPC, Shell, Elf and Agip entered into the fifth participation agreement resulting in a joint venture with the following interest NNPC 60%, Shell 30%, Elf 5% and Agip 5%.<sup>99</sup> Indeed, other joint ventures and production sharing arrangements began to emerge thereafter. To date the dominant oil and gas companies operating in Nigeria are mostly joint venture companies and production sharing contracts.

Recent discoveries of oil in other parts of Africa were in Ghana, Cameroon, Chad, Ethiopia, São Tomé and Príncipe, Uganda, Equatorial Guinea, Ivory Coast, Sudan and Niger. Commercial exploration and production of oil commenced in the Equatorial Guinea in 1991. In Gabon, oil was not discovered in large commercial quantity until 1970. Cameroon is regarded as the smallest oil producing country in the Gulf of Guinea with first commercial discovery in 1972, but commercial production started only in 1977. Oil exploration in Chad commenced in the 1970's, and production and export in commercial quantities did not commence until the year 2003 with completion of Chad-Cameroon pipeline project. Oil was first discovered in São Tomé and Príncipe in 1997 and in 2001 an important joint development agreement was signed with Nigeria leading to exploration and production at various offshore locations. In Sudan, oil was initially discovered in the 70's, but production did not start in commercial quantity until in the 90's. Although, oil discovery in Equatorial Guinea was in the 1960's, commercial production and export began only in 1991 and 1997 respectively. Following the discovery of oil resources in Niger Republic in commercial quantity, the country entered the list of African oil producing countries in 2011, when a first refinery was commissioned in Zander.

Oil was discovered in Ivory Coast in the 1970s; production commenced in the 1990's and reached its peak in 2005. Recently, significant oil was discovered at multiple locations in East Africa especially in Uganda, Mozambique, Kenya and Tanzania. Other African countries with record of potential oil reserves are Uganda, Ethiopia and Mauritania.

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<sup>97</sup> Department of Petroleum Resources (DPR), 2009. *About DPR – Historical Background* (Online) Available <http://dprnigeria.com/aboutus.html>.

<sup>98</sup> Op.Cit

<sup>99</sup> NNPC (2010) Op. Cit.

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**Table 3: Oil Producing Countries in Africa (2012)**

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Country	Production per day in barrels
Nigeria	2,524,000
Algeria	1,875,000
Angola	1,872,000
Libya	1,483,000
Egypt	720,000
Equatorial Guinea	318,000
Congo Brazzaville	292,000
Gabon	242,000
South Africa	181,000
Sudan & South Sudan	121,000
Chad	105,000
Ghana	80,000
Cameroon	64,000
Ivory Coast	39,000
Democratic Republic of Congo	20,000
Zambia	170
Somalia	110

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Source: US Energy Information & Administration

As at the end of 2011 Africa's average oil production was 8,804,400 barrels of crude oil daily which represented 10.44% of the aggregate daily world production. About 85% of Africa's total oil production is accounted for by five African major oil producing countries. These are Nigeria, Libya, Algeria, Egypt and Angola<sup>100</sup>.

### ***3.2.11 The Era of Oil Price Protection***

A unilateral reduction in oil posted price by Standard Oil in 1960 insisted by the then Chairman of the company generated fury on the part of the major oil exporting countries. The major oil exporting countries such as Iran, Venezuela, Saudi Arabia, Kuwait, Iraq and Qatar (as an observer) met in response to the oil price reduction. Among themselves, these countries accounted for 80% oil supply in the world at that time<sup>101</sup>. Their reaction took the form of formation of Organization of Petroleum Exporting Countries (OPEC), and they made the two main purposes of forming the organization clear: First, to defend the posted oil price and second to avoid unilateral reduction of the price by western multinational oil companies.

After the initial back-stepping of oil price reduction, triggered by Standard Oil, by a number of multinational companies culminating in expression of apology to the oil exporting countries,

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<sup>100</sup> MBendi, 2013, Oil and gas in Africa – Overview, [Online] Available at: <http://mbendi.com/indy/oilg/af/p0005.html> [Accessed 25 March 2010].

<sup>101</sup> Dann, U., 1988, Op Sit.

OPEC was later dismissed as toothless dog, and hence not in any way threatening. While the western developed nations, as the major oil consumers, did not take the newly formed organization serious, the multinational oil companies did not attach anymore importance to it than to pretend it did not exist. It is noted that the influence and powers of OPEC were underestimated so much so that “the CIA devoted a mere four lines to the new organization”<sup>102</sup>.

Of course it was evident that in its early period it did not make anymore significant impact than to stop further decrease in the oil price and to avoid making important international decisions concerning oil market without consulting the exporting countries<sup>103</sup>. A notable factor that limited the OPEC power at that time was that the oil reserves in the exporting countries were technically the properties of the multinational oil companies. This vitiated the oil exporting countries ability to make OPEC a powerful tool. Another factor that weakened the effectiveness of OPEC influence was the oil glut created by fierce international competition in the world oil market. This forced the OPEC members to focus on maintaining their share of the market to avoid decreases in revenue. Other political reasons were also at play in deterring OPEC to command cogent influence.

Having realized that the major impediment to its success was lack of control of oil resources by its members, OPEC focused its attention on helping its members gain absolute control of their oil resource. By mid-1970 all OPEC members had obtained significant control of their oil and gas resources. In this regard, it is observed that “...The suddenness with which oil exporting countries had assumed the position formerly held by the international companies ...”<sup>104</sup> left the oil companies and the western developed nations dazed. Thus, the insignificant toothless dog had suddenly developed sharp teeth and, therefore, became powerful and threatening. The OPEC members were so influential and powerful that they determined whether there would be depression or inflation. They also significantly influenced the foreign policies of many powerful nations. It has been noted that the influence of OPEC members reached such an extent that they determined the very autonomy of powerful nations. Although, the era of OPEC greatest influence lasted six years – 1973 to 1978<sup>105</sup> – the organization still wields significant influence over oil prices and international politics surrounding petroleum.

The number of OPEC membership has increased from the initial six members, namely, Iran, Venezuela, Saudi Arabia, Kuwait, Iraq<sup>106</sup> five of which were Arab countries, to the current twelve members. The only non-Arab member was Venezuela, and Qatar was only an observer, but became a member one year later in 1961.

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<sup>102</sup> Dann, U., 1988. *The great powers in the Middle East, 1919-1939*. London: Holmes & Meier, (pp: 24)

<sup>103</sup> Ibid.

<sup>104</sup> Yergin, D., 2008, Op Sit, (pp: 615)

<sup>105</sup> Yergin, D., 2008, Op Sit.

<sup>106</sup> Organization of Petroleum Exporting Countries (OPEC), 2013. Member countries. (Online) Available [www.opec.org/opec\\_web/en/about\\_us/25.htm](http://www.opec.org/opec_web/en/about_us/25.htm) (Accessed 14 May 2012)

Table 4 presents OPEC member countries and the dates they joined the organization.

S/N	Member	Year Joined	Membership Status
1	Algeria	1969	Full member
2	Angola	2007	Full member
3	Ecuador	1973	Full member
4	Iran	1960	Founding Member
5	Iraq	1960	Founding Member
6	Kuwait	1960	Founding Member
7	Libya	1962	Full member
8	Nigeria	1971	Full member
9	Qatar	1961	Full member
10	Saudi Arabia	1960	Founding Member
11	United Arab Emirates	1960	Founding Member
12	Venezuela	1960	Founding Member

**Source:** Prepared by the author using information from OPEC website, [www.opec.org/opec\\_web/en/about\\_us/25.htm](http://www.opec.org/opec_web/en/about_us/25.htm).

### 3. Concluding Remarks

Evidence from this historical review shows that petroleum has been tied to the activities of humankind since antiquity. As such hydrocarbon has been useful to humankind since the ancient time. In the modern world the influence of oil and gas energy on the world economy has no doubt been experienced globally in a number of historical economic events, for example recession, economic growth, boom, improved welfare and war. This influence, which was in some instances adverse and favorable in some others, makes oil and gas energy cherished, and yet despised. Oil and gas are indispensable to human existence, especially in the developed world. Even in the lesser developed part of the world, life would be very difficult without hydrocarbon energies. Consistent with this argument it is noted that:

Until some alternative source of Energy is found in sufficient scale, oil will still have far-reaching effects on the global economy; major price movements can fuel economic growth or, contrarily, drive inflation and help kick-start recessions. Today, oil is the only commodity whose doings and controversies are to be found regularly not only on the business page but also on the front page<sup>107</sup>.

Prices of hydrocarbon-related energies have kept rising, and this has been making production more expensive and hence increases in the prices of goods and services. GHG emission, responsible for the present day climate change environmental crisis associated with all hydrocarbons is another undesirable feature of petroleum and natural gas. More so, because of the volatility attached to the price of oil and the multiplier effect of this volatility on the world economy, energy experts have long suggested quest for other energy sources alternative to oil and gas. Although many other alternative sources of energy, both renewable (for example, wind power, solar energy, biofuel energy, geothermal energy) and non-renewable (shale gas, uranium) have been found, yet hydrocarbons remain the most dominant sources of energy for humankind, and this dominance will remain for many years to come.

<sup>107</sup> Yergin, D., 2008, *Op Sit*, (pp pxv).

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