
SRI LANKA'S PETROLEUM INDUSTRY:**Policy, Organization and Challenges***Dr. R.H.S. Samaratunga¹*

ABSTRACT

Global petroleum demand is around 90/mbd of which about 50 percent is consumed in OECD countries. Sri Lanka's petroleum product consumption is minuscule compared with the global demand. The country has long been an import dependent consumer of petroleum products and spends about 24 percent of the import value on them at present (2011). The Ceylon Petroleum Corporation (CPC) has long been a monopoly provider of petroleum products to the local market. However, another player was added to create a duopoly in the petroleum product distribution market in 2003. Several subsectors of petroleum industry have been liberalized since the 1990s with a view to build a competitive environment in the industry. Emerging trends in the industry indicate that the regulating the country's petroleum industry is an important area of concern. As seen in many other countries, transport sector is the largest consumer of oil in Sri Lanka. CPC was able meet the total petroleum product demand of the country through its only refinery in the 1970s. Petroleum product demand in the country has been rapidly rising since the 1980s. Hence, the largest quantum of petroleum supplies to the local market has to come from imported refined product sources as the supply capacity of the CPC's refinery remained fixed. Ensuring petroleum supply stabilities in a manner to support the ongoing rapid socio-economic transformation of the country has been placed high on the current petroleum policy agenda. Government pricing policy for the industry has been consistent since 2005 in which frequent price adjustments in tandem with international price movements has been abandoned. Various petroleum products including fuel oil for electricity generation have been an area of major concern as those supplies have mostly been subsidized creating difficulties in managing CPC during the last several years.

Key words : Ceylon Petroleum Cooperation (CPC), Petroleum Production, Petroleum Policy

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1.0 Introduction

Sri Lanka has been an import dependent consumer of petroleum products for a long time. Compared with the global demand, its requirement is miniscule. Hence, like many developing countries, Sri Lanka is a price taker in this market. Sri Lanka imports about US \$. 6.0 billion worth of petroleum products- crude oil, refined petroleum products and other petroleum-based products. In comparison to the country's total expenditure on imports, petroleum products imports accounts for about 24 percent at present (2011). This analysis begins with briefly outlining the petroleum market scenario at the global level. The analysis focuses primarily on the examination of the Sri Lanka's petroleum industry's policy, and organization and the industry's challenges are also examined briefly followed by concluding remarks at the end.

2.0 Global Scenario in Brief

Estimates of recoverable petroleum resources have been revised upwardly although the limits of exploitation have always been a matter of concern to many. Technological advances have helped explore many new areas with a lot of success stories as well. Advances in energy saving technologies and diversification of energy sources too have been taking place at a rapid rate resulting in stabilizing oil markets to a greater extent (OPEC, 2012)². On the supply side, rapidly developing shale gas industry and its popular usage if proved successful, would lead to reduce demand for energy in respect of all relevant replaceable other energy sources including petroleum in the long run, resulting in reduction of prices as well. In addition, there are challenges especially on the demand side emanating in general from ongoing global economic situation - heightened risks stemming from the Euro-zone debt crisis in particular, and slowing of economic growth prospects in many parts of the developing world affecting the prospects of petroleum demand at least in the medium term.

Fossil fuel is the dominant source of energy, which accounts for 87 percent (2012) of the world's primary energy demand. This will not be substantially altered in the coming decade. But the structure of the primary energy demands may undergo changes with the increasing use of natural gas beyond a decade ahead. Global oil demand at present (2012) stands around 90/mbd.³, 50 percent of which is accounted for by the countries in the Organization for Economic Cooperation and Development (OECD) followed by 44 percent from developing countries and 6 percent from

² Besides, OPEC in general indicates that "the world has more than enough oil resources to satisfy consumers demand for decades" (OPEC, 2012: 2).

³ It has been estimated that annual oil demand will rise by 0.8 percent (The Economist, 2013: 22).

Eurasia. Nearly two thirds of oil supplies come from the non-OPEC countries and the remainder is from the OPEC countries. In the 1950s, 85 percent of global oil reserves were in the hands of seven big oil companies.⁴ However, over 90 percent of global oil reserves are controlled at present by national oil companies (The Economist, 2103: 22). Demand for petroleum products from energy deficient large developing countries like India and China has been on the increase for the last 2-3 decades. However, the growth of global demand is roughly equivalent between OECD and non-OECD over the last three decades. In general, about 60 percent of demand for oil in the world comes from the transport sector (road, air and sea). It has been indicated that oil demand in the developing countries will increase faster in many using-sectors (transport, agro chemicals, and residential, commercial, industrial sectors) over the next several decades. But oil demand for electricity generation will come down from the next decade as a result of increased usage of non-oil sources (OPEC, 2012).⁵

Long term prices of petroleum products have been on the increase over the last several decades- in part reflecting the increase of demand as well as short term influencing factors as well. In the current scenario, weaker world demand consequent on the slow pace of recovery in the major OECD economies has led to a reduced demand for petroleum in the recent years⁶. On the contrary, heightened tension in the Middle Eastern area has created uncertainties on the supply side. Both these trends work in opposite direction. Besides, additional supply of crude oil by major suppliers, particularly by Saudi Arabia in the context of overall supply side uncertainties and recent downward stock adjustments in particular by major consumers have also led to create stabilities on the supply side in the short term. Also, having experienced several oil price hikes over the last several decades, the present trend of rising prices began since the late 1990s. It peaked in June 2008 having hit the highest ever recorded price of a barrel of crude oil (ie. US \$ 147). Although it has come down immediately afterwards due primarily to the weak demand on account of financial and economic crisis situation in most OECD countries, prices of petroleum products are generally on the increase in the context of rising global consumption, constraints on the expansion of production and slower supply side response from alternative sources of energy (Figure 1). In 2012, price of petroleum products moved up in the first quarter and there has been a downward price trend in the second quarter. Thereafter, prices have increased to the level of the first quarter of the year and remained stable since then. Being a vital commodity, demand at least in the short term is price inelastic resulting in a proportionate rise in the expenditure of the importing countries.

⁴ Seven major oil companies are: British Petroleum, Esso, Gulf Oil, Mobil, Royal Dutch Shell, SoCal and Texaco.

⁵ There are however, other predictions which indicate that the oil demand will come down as a result of substitution by other sources like shale gas (The Economist, 2013: 11).

⁶ This has been the case in several countries in the European Union eg. Portugal, Spain, Greece etc.

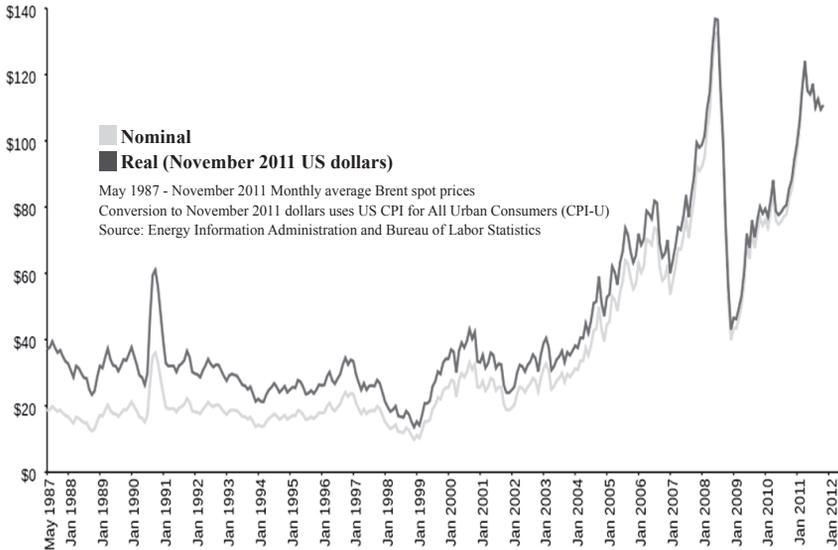


Figure 1

3.0 Sri Lanka' Petroleum Industry: Policy and Organization

Sri Lanka has long been an import dependent consumer of petroleum products. Having commenced its import mostly for lighting purposes, country's consumption of petroleum products has widened to include many sectors over the years: transport, electricity generation, industrial purposes (agriculture, fisheries, manufacturing) etc. Imports have largely been from a few countries in the Middle East to begin with. Coming from the British colonial days, the country's petroleum distribution market has been dominated by an oligopoly of multinational enterprises like Caltex, Mobil, and Shell etc. With the establishment of the Ceylon Petroleum Corporation (CPC) as the state monopoly by an act of Parliament in 1961, the domination of multinationals in the affairs of petroleum import and distribution came to an end. Establishment of state owned enterprises, having nationalized entities of national importance was the pattern mostly in the newly independent developing countries in the 1950s and 1960s. Besides, the economic policy at that time promoted self-reliance and controlling commanding heights by the state being part of the development strategy.

3.1 Policy

As Sri Lanka does not produce petroleum, it has to import petroleum

products in the context of other domestic source of energy (eg. hydro electricity) being insufficient to meet country's demand. In line with the prevailing conditions, Sri Lanka's petroleum industry operated in a free market environment to a greater extent during the British colonial times. Besides, the demand for petroleum products at that time was limited to a few products and the importation of petroleum products remained unrestricted. Moreover, import, storage and distribution and retail sales were the key dimensions of the colonial policy towards the industry. The colonial government here did not however, intervene into any of these activities. Government intervention was restricted primarily to taxation at the point of importation. Investment in the petroleum infrastructure at the Colombo sea port, storage facilities around Colombo, regional storage facilities, retail marketing infrastructure were accordingly developed by the key petroleum companies engaged in the Sri Lanka's market. It should however, be noted that as it was convenient and cost effective for long distance transportation by rail, all the facilities of storage and distribution systems of petroleum products were developed around the railway lines. Besides, the distribution infrastructure of the industry was developed mostly around urban centers and in particular to cater to the needs of the plantation industry of the country. Further, rural areas were not considered important as those areas were found to be not lucrative, in the context of profit motives of the multinationals of the then petroleum industry.

It was from the very beginning unfettered importation of the refined oil by private companies was one of the key elements of the colonial policy. As major multinational oil companies were in general based on the major producing centers of the empire and oil wells were owned by those companies, refining crude oil has been concentrated largely on those producing countries. Hence, it was more profitable for these multinationals oil companies to distribute refined oil rather than importing crude oil for refining purpose enabling their distribution locally. Hence, refining crude oil in the country was not considered important either by the colonial government or by the companies operating in the Sri Lanka market. This could have been due to Sri Lanka market being small and consequently, development of the refinery infrastructure involving huge investment might not have been profitable for those companies engaged in the market. Besides, it might have been easier for those companies to have intra-company transfer of petroleum products catering to a small market like Sri Lanka.

As the Second World War was in progress, the international navigation was disrupted in the Indian Ocean too. Sri Lanka being located in a key conflict region, securing petroleum products in the country with no disruption was found to be a difficult task during the war time. Policy priority in this sector at that time was to secure petroleum products both for meeting requirements

of the empire's regional activities and for uninterrupted supplies within the country. Considering the emerging requirements of the day, additional storage facilities along with allied infrastructure were constructed in the Trincomalee harbor by the British Admiralty on a long term lease given by the then Colonial government here. In a way, this measure has ensured the supply stability within the country for several decades to come. As has been the practice, colonial government in general allowed the pricing of the petroleum products to be decided by the importing companies themselves.⁷

Even after the independence in 1948, policy towards country's petroleum industry had remained unchanged until the end of 1950s decade. However, there had been a decisive shift in the government policy towards country's petroleum industry in the early 1960s. In fact, the coalition governments led by the Sri Lanka Freedom Party since the mid-1950s wanted key industries and economic assets to be under the direct control of the government. In accordance with the said policy, in 1961, it was decided to take over the petroleum industry being part of nationalization move by the then government. Accordingly, a government monopoly was created in 1961 by an act of Parliament for the management of the industry by establishing the fully government owned Ceylon Petroleum Corporation (CPC). Thereafter, all downstream activities- import, export, storage, transportation, wholesale and retail trade activities were entrusted with CPC. Assets of the private sector oligopolistic companies of the industry were taken over and entrusted with the newly created CPC effectively ending private sector activities in the industry. Petroleum import, storage, distribution and marketing and export were managed by the Ceylon Petroleum Corporation since then for nearly four subsequent decades. However, private companies were allowed to operate in petroleum based agro chemicals industries and accordingly, imports and distribution of such products by the private companies were allowed while CPC too operated in those markets as a new entrant. Petroleum infrastructure facilities at Trincomalee was also taken over by the government and kept under the possession and usage of CPC. Accordingly, policy objective to create a monopoly under the government for the entire industry had been achieved by the mid 1960s. Consequent on the creation of the government monopoly, pricing of key petroleum products were reserved for the government not by the CPC. Besides, management of the quality standards also became the responsibility of CPC. After the nationalization of the industry, government also took initiative to ensure island wide coverage of distribution of key petroleum products. Being part of the government policy, import of petroleum products had been put under the licensing regime by the 1960s

⁷ Seemingly, it was based on a simple formula. The local sales prices of petroleum products consist of three elements: (a) cost of imports (b) taxes at the point of importation and (c) a reasonable profit for the local company engaged in distribution here. However, as importation was undertaken on the basis of the intra-company activity, transfer pricing could have been decided at the will of the parent company.

and continued until today.

There has been a decisive departure of the policy towards the industry in 1969. It had been the policy of the government to import and distribute refined petroleum products hitherto. Moving away from this policy, the first refinery for processing imported crude oil was commissioned at Sapugaskanda in 1969⁸. This policy initiative made the country's supply of petroleum products more secured and the industry to be more profitable. Relevant infrastructure was also built along with the refinery. The scale of the operation and the capacity of the refinery was such that it was able to meet the country's entire requirements of key petroleum products for the subsequent decade⁹. With the refinery was added to the industry, the country's petroleum supply has had two sources: domestically refined petroleum products and internationally procured refined petroleum products.

Since the 1970s, CPC being the monopoly operator in the Sri Lanka market was able to enlarge the portfolio of its operation: importation of crude oil and refined oil, storage and distribution and retail trade. Besides, many products were added to the distribution and retail trade by CPC: agro chemicals, chemical fertilizer, Liquid Petroleum Gas, Naphtha, synthetic fiber, etc. With the refinery operation, bitumen for road construction was partly supplied by CPC. Further, sale of lubricating oil and bunkering oil for sea vessels was found to be increasingly profitable for CPC by the late 1970s.

The decade following the liberalization policies being introduced to the country with the change of government in 1977, did not see significant changes in the policy towards the petroleum industry. There had been several initiatives to upgrade several functional areas of the refinery including the establishment of JET A 1 producing unit in the 1980s. However, since the 1990s, policy towards industry began to undergo several changes in a manner to increase competition having introduced deregulatory measures since the mid-1990s. While retaining monopoly status for key petroleum products by CPC, competition was brought into the distribution market in respect of several categories of petroleum products. In particular, private sector activity in lubricant, synthetic fiber and bunkering oil subsectors was allowed under privatization on an initiative taken in the early 1990s. In addition, operation of LP gas importation and distribution was also allowed later in which retail sales have been undertaken by entities outside CPC.

There has been a significant move by the government in 2003 to bring in another participant into the petroleum industry's key products market with a

⁸ Important steps towards establishing a refinery, including, mooted of the project, feasibility study, tender invitation and evaluation etc were completed by the first half of 1960s decade (CPC, 1994).

⁹ Even by the early 1990s, the refinery was able to meet 90 percent of the country's petroleum demand (CPC, 1994)

view to increase competition. Accordingly, the Lanka Indian Oil Company (LIOC) was set up and allowed importation and retail distribution of key petroleum products: diesel, petrol, bitumen etc (Table 1). The storage units - Kolonnawa and Muturajawela storage were made a common usage facility by establishing a separate company - the Ceylon Petroleum Storage Terminals Limited (CPSTL) with the joint participation of government/CPC and LIOC. However, pricing decisions of products sold by LIOC are made on its own and have remained independent. Yet, since CPC being the leader in the market, LIOC's maneuverability in the market has so far been limited. With the overall policy changes initiated by various governments over the years, the structure of the industrial organization has changed drastically.

3.2 Organization

Since the nationalization in 1961, management of the country's petroleum industry had largely been under the responsibility of the Ceylon Petroleum Corporation until 2003. Many types of petroleum products were produced/imported by CPC and distributed until that time. Industry and CPC was basically the same except in the instance where (a) CPC has had the licensed distributors for retail distribution of products island-wide and (b) there were private sector involvement in agro chemical importation and distribution. In 2003, CPC's monopoly in respect of import and distribution came to an end after a substantial proportion of the country's petroleum distribution was given to the Lanka Indian Oil Company (LIOC). Since then import and distribution of key petroleum products became a duopoly. These duopolistic organizations have their own distribution network in the island. Primarily since then, many players have entered into the importation and distribution market of several categories (eg. lubricants, bunkering fuel, and bitumen) of petroleum products. There have been a lot of interests shown by both local and foreign parties to enter into the market of various product categories since the 1990s. Accordingly, lubricant and bunkering fuel markets have been opened for the private sector since then.¹⁰ Besides, there has been a rapid rise of demand for various petroleum products over the last several decades. Import of petroleum products has always been under licensing of the Department of Import and Export Control. During the period under the CPCs monopoly, maintenance of quality standards of products was in the main assured by the monopolist, but once the liberalization has taken place, work towards maintenance of quality standards for the entire product range is yet to be systematically administered.¹¹ This indicates that regulating the petroleum industry is an important area of concern.

¹⁰ There has been a lot of interest by local and foreign private sector parties for the importation and distribution of bitumen in the context of the demand growth on account of massive road construction work island-wide as well as for re-export purposes in the recent years.

¹¹ Regulatory activities of the petroleum market are the responsibility of the Public Utilities Commission of Sri Lanka (PUCSL) and revision of the enabling legislations to give effect to those regulatory work are underway at present.

Table 1: Market Structure of Petroleum Product Distribution

| Period | Products | Market structure | Market players |
|---------------|----------------|------------------|----------------------|
| Prior to 1961 | All products | Oligopoly | Caltex, Mobil, Shell |
| 1961-2003 | All products* | Monopoly | CPC |
| 2003 to date | Petrol, diesel | Duopoly | CPC, LIOC |
| | Aviation fuel | Monopoly | CPC |

* except bunkering fuel and lubricants since 1990s

Note: kerosene has solely been under CPC as it is sold under a heavy subsidy.

Several parties were allowed importation of Bitumen in 2103 under licensing.

The structure of the petroleum market organization have undergone drastic changes since the 1990s in which government initiatives were more in line with the liberalization of the selected product categories. The key areas of private sector involvement in these moves were centered on two products namely marine fuel (bunkering) and lubricants. There are seven players in the marine fuel supply market including LIOC whereas there are nine players in the lubricant market in which one company is the market leader having a dominant market share.¹² CPC has been the monopoly suppliers of kerosene in the market. Yet, its consumption has been going down over the years primarily due to the rapid electrification program. Besides, as kerosene is sold below the cost (ie. subsidized), no player is interested in supplying this product to the domestic market and the volume of kerosene being produced at present at the refinery is in general sufficient to meet the country requirement.

Petroleum Gas (PG), one of the key products of the output range of a petroleum refinery has not been a subject of discussion in relation to petroleum industry in Sri Lanka as it is used to be treated alone.¹³ Just like other petroleum products, gas requirement of the country is met from imported sources. Unlike many other petroleum products, gas is largely consumed in households in the urban sector and in industries. Gas distribution to begin with was a private monopoly prior to the 1960s, which became a state monopoly later. Once again, it was privatized in the 1990s creating a monopoly. At present, country's PG distribution market is a duopoly: government owned Litro and privately owned Laugfs.

After the successful ending of the terrorism, the country has witnessed a continuous and unprecedented economic growth which is evident in all areas of the country. As such, the demand for petroleum products in line with the increased performance of multitude of economic activities has

¹² CPC is yet to move into marine fuel supply market whereas both LIOC and CPC are in the lubricant market.

¹³ Although the use of Natural Gas (NG) has been considered important at the policy level, a program for its introduction is yet to be designed. However, it should be noted that its initial investment cost is substantially high.

been rapidly rising. Hence, petroleum entities have the task of ensuring uninterrupted supplies everywhere in the country and this responsibility has become increasingly important for ensuring the ongoing rapid socio-economic transformation of the country. This aspect has been an important dimension of the government policy as well.

4.0 Supply, Demand and Challenges

Sri Lanka has long been an importer of refined products for domestic consumption. But, after the refinery was commissioned in 1969, the dependence on imported refined products came down drastically for many categories of petroleum products. In some years until the end of the 1980s, the entirety of domestic demand has been met from the local production at the refinery. However, this situation has changed since the late 1980s. As such, country's demand for petroleum products has been rising at a rapid rate since the 1990s in both volume and value terms. The domestic petroleum demand at present is around 4200 Mn. liters a year (2011), out of which roughly a third is met from locally refined imported crude oil. The remainder is imported as refined products. Of the total expenditure on petroleum imports about 62.5 percent is spent on refined products whereas expenditure on crude oil is 37.5 percent (2011)¹⁴. The quantities of refined petroleum products, in particular petrol, have grown at the rate of 10 percent during 2007-11 period whereas kerosene demand has gone down over the same period on an average of 2 percent a year.

Table 2: Importation of Petroleum (1980-2011)

| Year | Value US \$/Mn | % of Exports | % of Imports |
|------|----------------|--------------|--------------|
| 1980 | 449 | 42.7 | 21.9 |
| 1985 | 398 | 37.4 | 20.4 |
| 1990 | 357 | 18.0 | 13.2 |
| 1995 | 387 | 10.2 | 7.3 |
| 2000 | 901 | 16.3 | 12.3 |
| 2005 | 1655 | 26.1 | 18.7 |
| 2006 | 2070 | 30.1 | 20.2 |
| 2007 | 2516 | 32.9 | 22.3 |
| 2008 | 3392 | 41.8 | 24.1 |
| 2009 | 2184 | 30.8 | 21.4 |
| 2010 | 3041 | 35.4 | 22.6 |
| 2011 | 4795 | 45.4 | 23.7 |

Source: CBSL, Annual Reports

¹⁴ This situation may change, as the Sri Lanka's key supplier of crude oil, Iran has faced with restrictions on its export of crude oil since the second half of 2012 due to ongoing sanctions. Accordingly, Sri Lanka has to look for alternative supplies.

A decade ago, a larger part of fuel oil, entirety of kerosene, about 40 percent of diesel and about two third of petrol came from the refinery. But, the contribution of the refinery to meet the local demand has come down over the years except for kerosene. Hence, the increase of domestic demand has basically met from the imported products. Accordingly, the country has spent an increasing proportion of its import bill on the importation of refined petroleum products.

Changes in the structure of supply along with the rising domestic demand and international prices too contributed to the increase of country's expenditure on petroleum. Petroleum bill has more than doubled during the last three years (2009-2011). Over 45 percent of country's value of merchandise exports and nearly 24 percent of country's total import bill is spent to the importation of petroleum (please see Table 2). The global trend after the late 1990s indicates that there is an increase of prices on long term basis, reflecting the increase of global consumption and limits of global production. Hence, if the current domestic trend is to continue, increasingly a large proportion of resources have to be set apart for the import of petroleum.

Since 2005 government pricing policy of petroleum products has been consistent in which the policy of frequent price adjustments was abandoned and adjustments were affected taking all relevant policies including the subsidy elements of various products properly into consideration. Accordingly, from January 2005 to date there have been several downward and upward adjustments of prices. It should however, be noted that, there has been an upward movement of long term international prices with short term fluctuations as well. Though with a time lag, and in tandem with international changes, Sri Lanka too adjusted its price structure of petroleum products as has been the case of all petroleum importing countries. It should be noted that Sri Lanka is a price taker in the petroleum market as its demand represents a very small quantum compared with that of the global demand. It has been the practice that those prices have been in the main, adjusted in most instances, together not in isolation of one or two products. Accordingly, depending on the government policy directives, CPC has revised the selling prices of its products. In the event that CPC's upward price revisions are long delayed, LIOC however, has followed its own ways of price revisions.

Since the very beginning in the 1960s, petroleum imports and distributions have been heavily regulated by the state. Pricing in particular has been under the state control to a greater extent even today. Since the performance of the petroleum industry has a direct bearing on the performance of economic activities, the government has never allowed pricing to be made at will of the supplier. However, this situation has changed with creation

of duopolistic market structure in 2003 in respect of several petroleum products in which LOIC has been allowed to change prices in response to changes in the international market prices and based on the company's internal requirements. As CPC is still in control of the largest market share of the country's petroleum distribution, the state has a significant control over the petroleum industry.

CPC's has been providing electricity generating entities with relevant categories of oil for electricity generation for decades. Electricity generation on oil occupies an increasing proportion since the 1990s, as the increase of demand for electricity has to be met from the thermal power. This is primarily due to the fact that Sri Lanka, in general, has reached the full capacity of the large scale hydro based electricity generation by now. Besides, as there are no other sources of electricity generation of significant magnitude at this stage, only available avenue for meeting the increasing demand, is to work on oil based electricity generation.¹⁵ This requires importation of relevant categories of petroleum products by CPC. As electricity pricing is also regulated and subsidized, this matter has to be examined from a broader perspective. Although this situation is also interwoven with CPC's financial status, present arrangement has undoubtedly ensured stability in the electricity supply program of the country. Complexity of interdependent relationship between CPC and the agencies of electricity generation has been highlighted by policymaker over the years. However, thermal power being increasingly expensive, CPC should have to make relevant adjustments in advance to maintain its efficiencies and policy makers have to examine other possible sources of energy taking a long term view.

Import expenditure on petroleum in 2011 was US \$ 4.8 billion against US \$ 2.2 billion in 2009. They represented 24 percent and 21 percent from the total import expenditure in the respective years. This is not different from the ratio that existed in the late 1970s which was around 25 percent of the value of total imports. Crude oil formed the bulk (92 percent) and the refined products accounted for only a small proportion (08 percent) of the total value of imports of petroleum products in the 1970s. But today the structure of petroleum imports is basically reversed where a substantial proportion (65 percent) of country's expenditure on petroleum is spent on the refined products against 35 percent on crude oil imports in 2011 (CBSL: 2012). This was the result of two key factors acted in combination: (a) rising demand for petroleum products and (b) fixed processing capacity of the refinery leading to import more and more refined products for the purpose of meeting the increasing demand. As such, with the higher growth

¹⁵ Coal based electricity generation program of the Ceylon Electricity Board currently in place could reduce the demand for fuel oil to some extent after the medium term.

performance of the economy, demand for petroleum products will also rise and the rising demand will be met increasingly from the imported refined products in the current arrangement.

When the refinery was built in the late 1960s, its aim was to process Iranian type of light crude oil. Sri Lanka has since been importing crude oil largely from Iran and only a minor proportion from Saudi Arabia was taken later. However, these two countries have been the major crude oil suppliers over the years. Since the 1970s, several other countries with new found crude oil came to the export market, although many of those types of crude oil cannot match the technical specifications of the country's refinery. Since the refinery was built with the state-of-the-art technology of the 1960s, processing other types of crude oil requires modern technology. Besides, the infusion of new technology could certainly improve the efficiencies of CPC as well. It should however, be noted that it requires a huge capital outlays from the part of government. Yet, in order to ensure market stability while meeting the national security concerns and environmental norms, modernization of the existing refinery has become an imperative.

A major international issue associated with petroleum supply emerged recently consequent on the new US sanctions imposed against Iran. This situation has led to create many implications on all trading partners of Iran, including Sri Lanka. The refinery at Sapugaskanda can process only a limited range of crude oil similar in properties to that of Iranian light crude oil. It is restrictive as the technology cannot accommodate several other types of crude oil. However, Sri Lanka having understood the current difficulties in this respect is in the process of negotiating with countries, which could provide appropriate crude oil for processing in the refinery. In general, the efficiencies of processing other types of crude oil become somewhat lower compared with that of Iranian light crude oil. This kind of situations pose new challenges for which only way out would be to re-examine the necessities of incorporating new technologies to the refinery process to circumvent issues of similar nature in the future.

Due to reasons obvious to many, working with Gulf and North African countries for the procurement of petroleum and petroleum products has become difficult over the years. Political turmoil has always been common in this region since the second half of the 20th century, leading to create petroleum supply side uncertainties. Even at present, issues associated with sanctions against Iran has also led to changes in crude oil supply not only by Iran but also by the entire Gulf region. This is in part reflected in the price increases of petroleum products and related instabilities. Gulf region export about 20 percent of world oil supplies and about 30 percent

of tank based natural gas supplies. Therefore, it is of importance though difficult for the petroleum industry to get adjusted to cope up with supply side new and emerging realities. As the petroleum resources in the region get depleted intensity of the conflicts in the region will increase. As such, diversifications of import sources away from this region will reduce the supply side risks and ensure stability in the petroleum sector in the country.

5.0 Concluding Remarks

Sri Lanka's policy towards the petroleum industry has undergone significant changes over the years from the total government control over the industry in early the 1960s to the liberalization moves since the 1990s. Industrial structure has also changed from a monopoly to many players at least in several subsectors of the industry. Since the 1990s competitive elements were brought into the industry and many players have entered into various subsectors of the industry. In this process, CPC's monopoly of petroleum importation and distribution has come to an end with the creation of a duopoly market structure in 2003. Although many players have entered the market over the years, CPC continues to hold the dominant position in the industry. Besides, pricing of key petroleum products are still controlled by the government.

Private sector participation in the various subsectors of the petroleum industry has been on the increase since the 1990s and competition among those players in the respective markets has increased. Hence, product standards and pricing in particular require special attention by policy makers. In this context, regulating the industry is required at this stage as a matter of priority for the petroleum industry.

Unless there is a structural change in the electricity generation program, Sri Lanka has to continue to work on oil based power generation to meet the rising demand. In this regard, current oil supply arrangements between CPC and CEB/electricity generating entities have to be reviewed in a manner to ensure efficiencies of CPC.

Larger proportion of country's demand is met from imported refined products, as refinery continues to have a fixed processing capacity. Changing the current situation in a manner to ensure refinery based domestic supplies, requires both the infusion of modern refining technologies and up scaling of the capacity of the refinery.

As there are frequent supply side uncertainties, it is important for the country to examine possibilities of diversification of supply sources to ensure stability of the domestic petroleum supplies.

REFERENCES

- Central Bank of Sri Lanka (....) *Annual Reports* (various years), CBSL, Colombo.
- Ceylon Petroleum Corporation (1994) *Oil Refinery: 25th Anniversary*, Ceylon Petroleum Corporation.
- Department of National Planning (2011) *Introduction of Natural Gas to Meet Energy Needs of Sri Lanka: A Preliminary Study*, March 2011, Colombo
- Ministry of Petroleum Industries (....) *Annual Performance Reports*, (various years) Colombo.
- Organization of Petroleum Exporting Countries (2012) *World Oil Outlook 2102*, OPEC Secretariat, Vienna.
- Sri Lanka Sustainable Energy Authority (2011) *Sri Lanka Energy Balance 2011: An Analysis of the Energy Sector Performance*, Sri Lanka Sustainable Energy Authority
- The Economist (2013) 'The future of oil: yesterday's fuel' *The Economist*,408:8847, p11
- The Economist (2013) 'The global oil industry: supermajordammerung' *The Economist*,408: 8847, pp 22-24.