TECHNICAL AND FINANCIAL PERFORMANCE OF POWER SECTOR  
A COMPARISON BETWEEN INDIA AND KENYA

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ABSTRACT

One of the major objectives of power sector reforms in the developing countries like India and Kenya was to resolve the technical and financial viability of the electricity utilities. Appreciating the problems faced by both of the countries on energy issues and challenges, one has to have a statement on the technical and financial performance in the context of rising demands for energy.

This paper compares the technical and financial performance between the two countries. It also highlights some of the emerging opportunities and challenges ahead. The research is based on the secondary data sources using the sources from the publications of Indian Planning Commission, Central Electricity Regulatory Commission (India), Ministry of Power (Kenya), Kenya Electricity Regulatory Commission (KERC), Kenya Power & Lighting Company (KPLC), and Economic Surveys for various years. We use simple percentage averages to carry out the comparison. The period of study is 10 years as from 2000-01 to 2009-10.

The paper concludes that the plant load factor, Tariff Structure for both the countries is not sustainable though India seems to do better than Kenya as its economies of scale is larger. Kenya seems to have better cost recovery as compared to India. Further the subsidy provided by respective governments was inadequate. Also Transmission and Distribution Losses for both countries remains to be high as compared to the World Bank recommended of less than 15 percent. The decision on the tariff should be taken only on the basis of sound economic principles as emphasized in the Electricity Tariff policy for both countries. This would not only help the utilities but also the consumers in enjoying the reliable and improved quality of service and cheap connection rates.
INTRODUCTION

The process of power sector reform was initiated in the early 1990’s in both the two countries. This came as a result of the economic decline of various sectors of the developing countries which forced World Bank and other financial institutions like IMF to demand for the same from these countries. The reform exercise was expected to turn around the technical and financial viability of the electricity utilities. The restructuring process in power sector has brought dramatic changes in industry, ownership, organization and regulation. One of the major objectives of the power sector reforms in both the countries was to resolve the technical and financial viability of the electricity utilities. Appreciating the problems faced by both countries on energy opportunities and challenges, one has to have a statement on the technical and financial performance in the context of rising demands for energy.

OBJECTIVES

i) To compare the technical and financial performance for the utilities of both countries.

ii) To analyze the challenges and opportunities ahead for energy sector for the two countries.

RESEARCH METHODOLOGY

The objectives of the study is to have a comparison on the technical and financial performance of the power sector for the purpose of finding out which utility has done better than the other after the initiation of the reform in this sector and also review some of the opportunities and challenges faced by both the countries during this process. India is one of the growing markets in the world while Kenya is the economic hub of Eastern Africa and it is aspiring to reach the middle income countries by the year 2030. To achieve this, there is need to enhance the power sector as it is one of the driving force towards economic development. Hence it is appropriate for conducting such a study to find out the opportunities and challenges head for both the countries. India and Kenya unbundled their power sector and allowed private participation in the sector in early 1990’s. The opening up of the sector has resulted a number of positive effects. First, the power supply companies were forced to enter into competition to improve the quality of their services and to adopt trade settlement procedures in line with the best book keeping and accounting procedures in line with the best practices of the world. Secondly, Transparency, Governance and information flows has improved in both the countries. Third, The sector has been able to attract private investors hence reducing governments burden to invest in them for both the countries. However, there are some negative effects in the form of demand and supply activities in both countries.

To asses the impact of reforms in both the countries, secondary data from various institutions like, Planning Commission (GOI), Central Electricity Authority, Ministry of Energy (GOI), Kenya Power and Lighting Company, KenGen, Ministry of Planning (GOK), and Ministry of Energy (GOK) has been used. Simple percentages and averages for various parameters like, Transmission and Distribution Losses, Installed Capacity, Plant Load Factor, Per capita Consumption, Cost Recovery, Profit and Loss, and Tariff allocation to various sectors have been used for comparison purpose. The study uses Times series data which covers a period of 10 years as from 2000-01 to 2009-10.

The impact of the reforms on the power sector has always remained a hot issue of debate and discussion world over. India and Kenya are not exceptions to this controversy and the issue has gained importance among the economists, regulators, researchers and academicians. Two main bodies of theories exist in literature explaining the relationship between reforms and performance of the power sector. These are:
1. A ‘Destabilizing forces’ hypothesis, that predicts that reforms will improve the technical and financial performance of the power sector.

2. A ‘Non-destabilization’ hypothesis that says reforms have no impact on the technical and financial performance of the power sector.

Based on the above-mentioned two cases, the former hypothesis states that reforms are to open for the private investors who at the end may end up exploiting the consumers as they will be benefiting themselves. The latter hypothesis in each case is based on the belief that introduction of the reforms leads to more competitive market, enhance information flow and thus improve the investment choices for the investors. It also enhances the transparency, quality of services and reduces the costs of generating electricity which at last may lead to decline in tariffs.

Someone has rightly pointed, “Don’t use theory unless you understand the principles. Use whatever you learn.” As impact of reforms is a burning issue so it is the right time to revisit issues regarding the impact of reforms on the technical and financial performance of the power sector of the two countries India and Kenya. This paper is divided into four parts, part I contains introduction, objectives, research methodology, and, review of literature. Part II contains the analysis and findings. Part III contains challenges and opportunities for both the countries. Part IV contains recommendations and conclusion.

REVIEW OF LITERATURE

Because of the above stated interpretations about the impact of reforms on the host country’s power sector, various studies have been carried out to lay at rest the debate of which hypothesis holds in reality. In this study an attempt is made to re-examine the results of the existing studies with respect to the impact of reforms on the technical and financial performance of the Indian and Kenyan power sector

ARNE JACOBSON (2007) found out that, Market-based rural electrification with solar energy is increasingly common in developing countries. The article revolves around three main claims about solar electrification in Kenya’s unsubsidized market; (i) The benefits of solar electrification are captured primarily by the rural middle class, (ii) solar electricity plays a modest role in supporting economically productive and education-related activities, but “connective” applications such as television, radio, and cellular telephone charging often receive a higher priority.(iii) solar electrification is more closely tied to increased television use, the expansion of markets, more rural-urban communication, and other processes that increase rural-urban connectivity than to poverty alleviation, sustainable development, of the appropriate technology development.

Abdullah& Markandya (2007) investigated one major impending issue in the rural electrification programmes in rural Kenya; that’s high connection payments. In their paper they used estimates obtained from a stated preference study, namely a contingent valuation method completed in 2007, to examine the willingness to pay to connect to the grid-electricity and photovoltaic services. They found out that the government needs to reform the energy subsidies, increase market ownership and performance of the private suppliers, establish financial schemes and create markets that vary according to social-economic and demographic groups.

A.R. Bhalerao (2005-2006). The development of small hydropower around the world is on the increase. Much of the world has huge potential to further develop the resources. Small hydro offers a wide range of benefits especially for rural areas in developing countries. The resources are environmentally responsible and have substantial economic
advantages. In a recent world Energy Council (WEC) report, it has been reported that small hydropower stations throughout the world will generate power of 34000Mw capacity in the world if power potential is exploited. It contributes to 50% of installed power. The power demand of far flung areas can be met suitably by harnessing the local streams and canal falls through construction of small/mini/micro hydro station instead of extending transmission lines to these areas. The installed capacity for hydroelectric station is decided on economic consideration of benefits and associated costs. The benefits of hydroelectric station are the energy produced, which is the function of the installed power capacity.

Bo nuke .M. John (2008) According to his study on analysis of some economic aspects of electricity supply in Kenya, the study dealt with technical efficiency and economic performance of the industry. He used secondary data collected from utility reports, annual reports, and ministry of energy reports, World Bank Reports, National Development reports and Annual Economic Surveys. Semi-log equation that takes the form \( p_t = p_0 (1+r)^t \) to determine the overall rate of expansion of the power system compound generation, number of connection was applied along with compound growth model. He found out that: Governments across the Globe initiated reforms and restructured electricity sector. Experience of restructuring and reforms in power sector in various countries have mixed results. The California reform experience shows that free market-system failed to deliver. The main reason to restructure electric sector was to reduce prices, the target which was never achieved. The experience of reforms and restructuring of developing countries shows that reforms have not achieved the objectives of restructuring and reforms of power sector. Kenya is highly representative of developing nations, particularly in Sub-Saharan Africa. The overwhelming dependence on biomass energy combined with a problematic and expensive fossil fuel sector all point to a need for new alternatives. Also typical was the lack of any significance electricity grid outside the main urban centers.

Electric Power Act 1997 has established provisions for autonomy of the Electricity Regulatory Board (ERB), but it was found that there exist some loopholes in legal and regulatory framework which enable the government to interfere with the affairs of ERB. With restructuring power sector in Kenya, Independent Power Producers were allowed to participate in power generation. It was found that most of these Independent power producers are foreign owned companies. Power sector being strategic industry it should not be left at the hands of only foreign owned companies. Local private owned should be encouraged to participate in power generation.

Pre-reforms (1989-90) to 1996-97) the growth rate of both installed capacity, transmission and distribution network were slow this is due lack of capital, as donor agencies like World Bank were reluctant to provide finance to public companies and insisting on privatization. Post-reforms 1996-97 to 2005-06 the growth rate of both installed capacity and transmission and distribution network were higher and faster. The study concluded that; privatizing would not lead to lower prices. Transparency and governance to be stressed, Governance role remains critical in providing electricity for lighting and heating in the household. Provision of subsidies in rural electrification is a must.

Berg et al. (2000) Energy Industry remains a “utility” for public service and so government regulation is still essential. This regulation may remain internal within government e.g. within a government ministry, or may be established as an independent body without immediate government control. If the latter, then government legislates accordingly, usually, to establish a regulation for the reform of energy supply, to establish a regulation for the public service, in the manner of judge or sheriff who interprets adjudicates and takes action to uphold law. The regulator is usually empowered to prevent market abuse; ensure good service and transparency of essential information, limit unjustified company profit and reduce environmental harm. The method of operation is usually to issue license
related to the following functions (i) setting performance standards. (ii) Monitoring the performance of regulated firms. (ii) Establishing the level and structure of tariffs. (iv) Establishing a uniform accounting system.

Elbaradei (2007) in his view he stated that global energy security means fulfilling the energy needs of all countries and peoples—including the one-quarter of fellow human beings who have no access to modern energy systems. The organization for economic cooperation and Development (OECD), International Energy Agency reports that if current consumption trends and government policies continue, we will see a 53% increase in global energy consumption by 2030 and 70% of the coming growth in demand will be from developing countries. It has also said that the increased use of nuclear power would help to meet the increase in energy demand, enhance the security of energy supplies and mitigate carbon emissions. The isolated and stand-alone system of power generation and distribution were combined to reap the benefits of the economies of scale and scope.

Government of India, (2008) in a paper published on the Indian Journal of power and River Valley Development, found out that the primary issue hampering the Indian power sector is the high T&D losses that threaten to exceed 25% compared to less than 15% for developing nations. The ongoing reform initiatives should help the country to take the Indian power sector towards a new paradigm. Apart from considering the fuel and other deterministic cost elements, the utilities have to account for various risks, especially, the various optimization purposes like power purchase decision, expansion planning, production costing, operation planning and maintenance schedule of generating units.

Continued public ownership of established electricity supply systems has a downward. The state utilities become huge organizations, which Governments find expensive and hard to control. Often, further public finance is restricted as other government expenditure take priority. The introduction of new technology, capital and market enterprise is handicapped and may be barred. In general consumers may not receive the service they expect. At such stage, government may call the help of private sector, either to manage government owned installations or to purchase and operate plant and lines. Consequently, there is worldwide trend to privatization and liberalization of state owned utilities and services for competition and consumer choice (Hunt et al, 1996).

A critical review of decade long electricity reforms are at length highlighted by Ajay and MORRIS (2009). Who found out that, AT &C and T&D losses defined on the energy flows outside of agriculture were closely monitored. Transmission losses need to be separated from distribution losses. Currently, the magnitude of distribution losses is not clear with A T&C loss being end product of technical losses, commercial losses and collection efficiency. While reporting input and realizing energy, traded energy traded should be excluded as it can bias the measure and technical, non-technical losses and collection efficiency need to be separately measured consistently. One of the problem areas in this is the presence of billing on assessed basis. Regulators have yet not been able to either from baseline estimates of all the three relevant measures of efficiency in most cases or do not have confidence in the same. Greater thrust on the same is required by segregating technical losses through first estimating technical losses feeder wise through simulation or through feeders having no commercial losses and then subtracting it from A T&C losses to arrive at a product of commercial collection efficiency.

Kumar Surinder, (1985), pointed out that the pricing policy should be based on social—economic principles and tariff making should be depolarized.
Onyango, Njeru, Omori (2009) According to their joint study on regulatory and competition related reforms in Kenya’s power and petroleum sectors with the objectives of assessing Kenya’s national competition policy Vis-a-Vis the energy sector, regulations did a cross-sectional survey between January and February 2009 in four clustered regions namely; Nairobi region, Western region and Mount Kenya region, based on KPLC’s administrative geographical boundaries. Data was collected through structural questionnaires and information was analyzed using combination of statistical and qualitative methods based on key study parameters. The study found out that: (i) State-owned public utilities continue to play a dominant role in generation, transmission and distribution of electric power despite increased participation of private sector following the regulatory reforms; (ii) Structural weaknesses in coordination and implementation of competition-related regulations hinder competitive pricing in provision of electricity and petroleum services; (iii) Shortages of technical expertise within the regulatory authorities hinder effective implementation and enforcement of existing laws and regulations; (iv) There is poor coordination amongst statutory bodies during enforcement of desired regulations, especially those related to quality and standards; (v) Poor physical infrastructures for transportation, refining and storage of petroleum products hinder efficiency in service provision. The study concluded that there is need to strengthen the regulatory system in the energy sector both for increasing investor confidence and enhancing consumer protection. It also suggested among others, greater political and financial autonomy of regulators as a means of supporting the intentions of the reforms and ensuring that the domestic market for energy contributes sustainability, competitiveness and security of supply. Secondly; monitoring and evaluation as well as accurate collection of data on the basis for designing regulatory and liberalization policies and also enforcement actions under both the national competition laws as well as regional approaches to competition.

(Pollit, 2009) Found out that electricity reform in the EU is basically an application of the theory of competitive markets in the context of an industry that has a number of vertically related stages of production, some of which have natural monopolies.

Session Paper No 2 of (2005) this paper reveals that, “Privatization of state corporations and investments,” the NARC Government reiterated its role of being a facilitator for private sector led economic growth and investment. It proposed privatization strategy to be an integral part of the public sector reforms that are to be implemented by government to spur the recovery of the Kenyan economy; improve the social economic indicators and help Kenya to move toward the millennium development Goals (MDGs). It stated “Through outright privatization and various forms of public private partnerships, the Government intends to mobilize resources to rehabilitate.

Stern, (2000) said that many developed countries have increasingly unbundled their electricity industries, separating generation from transmission, or at least separating generation from dispatch via the introduction of Independent System Operators (ISOs) Such models have been implemented successfully in some middle income countries and are now developing more widely for instance in Latin America – Chile 1978-1988; Argentina -1992; In Africa – Senegal, Uganda and Nigeria. In some cases, (particularly Central and Eastern Europe, China and Africa) transmission has been separated from generation but Supply competition is restricted to monopsony purchase by a single buyer who on-sells via a bulk supply tariff to distribution companies. This model has many advantages as a transitional model in countries (a) where distribution companies are not commercialized and/or financially weak; and (b) where some consumers (typically households are/or small farmers) pay prices for electricity that are substantially below operating costs.
However, the model also has disadvantages, not least regarding: (a) the payment risks imposed on the transmission company and (b) the stringent regulatory requirements necessary for efficient operation and investment. Regulatory difficulties with a single buyer model can be acute especially in imperfect markets and governance issues.

(World Bank 2008:21) Rural electrification provides proper path for small business activities and influences people to buy needful domestic and entertainment appliances such as T.V; radio, cell phone and much more. As far as rural electrification and economic aspect is concerned, several past studies found that one of the important factors behind low connection rates for the poor is that electricity becomes available in a community, the poor may not be able to afford the service a high connection charges are a frequent barrier.

World Bank Report (2004) The report suggested that in Kenya there was limited access to modern energy services, only 15 per cent of the population had access to electricity, and the access rate was only about 4 per cent in rural areas. This was too low as compared to 32 per cent in other African countries.

### TABLE 1: ENERGY AVAILABILITY (IN GWH) AND TRANSMISSION AND DISTRIBUTION LOSSES IN PERCENTAGES FOR THE TWO COUNTRIES.

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<tbody>
<tr>
<td>India</td>
<td>510,343</td>
<td>544,619</td>
<td>576,18 E</td>
<td>611,86 E</td>
<td>538,78</td>
<td>685,49</td>
<td>707,88</td>
</tr>
<tr>
<td>Kenya</td>
<td>4564</td>
<td>4750</td>
<td>5035</td>
<td>5347</td>
<td>5697</td>
<td>6169</td>
<td>6385</td>
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Table 1 Shows that the Transmission and Distribution Losses in the Indian power sector have decreased in the period 2002-03 to 2008-09 from 32.54 percent to 25.47 percent. While that of Kenya power sector as also decreased from 21.0 percent to 16.6 percent in the same period. In comparison, India has a decline of 7.07 percent which is greater than that of Kenya of 4.4 percent within the same period. In comparison to the World Bank’s recommendations of 10 percent still these percentages remains above high which calls for need to find better ways of bringing them down.

### TABLE 2: PLANT LOAD FACTOR IN PERCENTAGE OF THERMAL POWER PLANTS: 2001-02 TO 2010-11

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<tbody>
<tr>
<td>India</td>
<td>69.90</td>
<td>72.10</td>
<td>72.70</td>
<td>74.80</td>
<td>73.60</td>
<td>76.80</td>
<td>78.61</td>
<td>77.68</td>
<td>75.08</td>
</tr>
<tr>
<td>Kenya</td>
<td>64.4</td>
<td>69.0</td>
<td>69.4</td>
<td>69.4</td>
<td>68.4</td>
<td>70.9</td>
<td>71.5</td>
<td>69.5</td>
<td>69.1</td>
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electricity in both the countries and this call for both the countries to look for other sources of energy to supplement for the available sources.

**TABLE 3: CONSUMPTION PER CAPITA (KWH)**

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<tbody>
<tr>
<td>India</td>
<td>671.89</td>
<td>717.13</td>
<td>733.54</td>
<td>778.71</td>
</tr>
<tr>
<td>Kenya</td>
<td>140.6</td>
<td>149.3</td>
<td>152.5</td>
<td>156.6</td>
</tr>
</tbody>
</table>

**Source:** Annual Report 2011-12 for India and for Kenya KPLC annual and financial report 2010.

The table 3 indicates that consumption per capita of India is higher as compared to Kenya’s this is because of the obvious reason that India is a large country with large economies of scale as compared to Kenya. It also indicates that India is growing economically faster as compared to Kenya.

**TABLE 4: INSTALLED CAPACITY (MW)**

<table>
<thead>
<tr>
<th>Country</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
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<tbody>
<tr>
<td>India</td>
<td>132,329</td>
<td>143,061</td>
<td>147,965</td>
</tr>
<tr>
<td>Kenya</td>
<td>1268</td>
<td>1310</td>
<td>1345</td>
</tr>
</tbody>
</table>

**Source:** Planning Commission (GOI 2011-12), KPLC Annual Reports 2010.

It is indicated from table 4 that both the countries are doing their best to increase installed capacity each year. This is due to the increasing demand as all these countries are developing. For example Kenyan government plans to rise output to 3,750 MW by 2018 and more than 15,000MW BY 2030.

**TABLE 5: COST OF POWER SUPPLY (KWH)**

<table>
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<tr>
<th>Country</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>India (paisa)</td>
<td>404</td>
<td>462</td>
<td>478</td>
<td>484</td>
</tr>
<tr>
<td>Kenya (Cents)</td>
<td>736.96</td>
<td>748.50</td>
<td>754.88</td>
<td>1171.13</td>
</tr>
</tbody>
</table>

**Source:** Planning Commission (GOI 2011-12), KPLC Annual Reports 2010.

The cost of supply of electricity represents the cost incurred by the utility to supply electricity to ultimate consumers. The components considered for calculations include O&M expenditure, establishment & administration cost, interest payment liability, depreciation, fuel cost and the expenditure on power purchase. The fuel cost incurred by the utilities is accounted for in the calculation of the total cost of supply only in states where the generation and distribution are still integrated under a single company. For states where generation and distribution are unbundled, instead of the fuel cost, the cost of power purchase has been indicated. The average cost of supply per unit of electricity sold has been progressively increasing over the years for both the countries as shown from table 5.
From table 6 we can say that the tariff rates are on the upward trend for both the utilities which indicates that the consumers are being milked to meet the high costs incurred. There is need to involve all the players in the energy sector from the policy makers level, generation stage, transmission and distribution and consumers to come up with practical changes to bring the high tariff regime down.

The level of recovery is measured in terms of sales revenue as a ratio of cost. From table 7 it shows that since 2000-01 to 2006-07 Kenyan Electricity Sector is a head of India in terms of cost recovery this may be attributed to either efficiency in collection or it is screwing the consumer by setting up tariffs which are high.

COMMON CHALLENGES

1. **Increasing Fuel Prices:** Due to international market scenario, both countries are not able to meet cost of power generation because the generators require fuel. Hence it has increased the demand for natural gas and coal for power generation which in return has led to increase in imports to fill the supply void. For example in FY2010-11, India imported almost 8.7 percent of its coal requirement, with Australia and Indonesia contributing approximately 50 percent of India’s total coal import.

2. **Funding for Power Sector:** The nature of the industry is that it does not attract many investors because they find it uncompetitive hence leads the sector to be indebted.

3. **Land Acquisition and Clearance:** In any business enterprise, land is one of the most important factor. It has posed an increasingly significant challenge in the Indian power sector as well as the Kenyan power sector. Land as a basic necessity when it comes to pre-requisites for power generation projects. A lot of projects are either cancelled or delayed due to non-availability of land or difficulties in land acquisition. Another major hurdle post-identification and selection of land is securing the required clearances. Experience indicates that there are problems for land acquisition and securing clearance which include social reasons like opposition from nearby residents due to concerns over loss of land, water and environmental problems. An example is the violence experienced in Tamil Nadu in South India over the nuclear issue and Turkana in the Northern Kenya due to oil discovery.
4. **Exchange Fluctuation Risk:** Due to foreign exchange fluctuation i.e. when the rupee fluctuates against the dollar and payments are made in terms of dollars for fuel internationally it poses a lot of problems. Because they force the domestic prices to increase and this becomes a burden to the consumers.

5. **Problems of Theft, Misuse, Political Interference:** Due to this acts of the people, the sector has experienced much losses in transmission and distribution which has led it to be uneconomical venture. In the cases of both countries transmission and distribution losses are above 15 percent which is the international standards required. Excessive political involvement, populist policies for various governments without considering economic status of the power sector leads to crippling of the sector.

6. **Environmental Problems:** Power plant utilities face difficulties in find location to operate because of environmental challenges. Some requirements of the Ministry of Environment have been set in both countries. This deters the IPPs as they cannot be in a position to meet these standards. For example after 9 years of generation; 100 percent ash utilization for coal plants was also expected to develop ash products and market them.

**OPPORTUNITIES**

1. **Investment Opportunities:** As the economy of both the countries are set to grow and some target is set by various governments for example the 9-10 percent target for India in the next 5 five years and 6-8 percent in case of Kenya. There is hope for the sector as the reform policies have created room for the same. In India the Ministry of Power is believed to have sent its proposal for addition of 76,000 MW of power capacity in the 12 five-year plan to the planning commission. The ministry has set a target of adding 76,000 mw of electricity in the 12th plan (2012-17) and 93,000 mw in the 13th Five-Year plan (2017-2022). Foreign Direct Investment (FDI) up to 100 percent is permitted under automatic route.

2. **Import Opportunities:** Both countries stand better to enjoy cheaper equipments sourcing from China since their prices are quoted at below INR 2 crores/MW compared to price range of INR 2.8-3.2 crores/Mw of domestic OEMs (Infra Line Research). The mega power policy has provided waiver of customs duty on import of supercritical equipments. In July 2011, to further eradicate difficulties faced by developers on furnishing “Certificate from Ministry of Power,” Government of India enabled duty free imports which are likely to continue till 2012.

3. **Investment in Clean Energy:** Close to 55 percent of the installed capacity in India is coal based, as coal is the most abundant fuel available domestically. Coal remains the most undiminished product in India because of the increasing demand. Kenya uses only 0.3 percent coal as petroleum occupies 78 percent of energy use. Development needs to be done to invest in clean technologies which are paramount importance for the countries. India has made some progress in implementing supercritical; pulverized coal combustion, coal gasification technologies. While Kenya which experiences good sunshine throughout the year has taken good steps to invest in solar use technologies to help the rural population.

4. **Increasing Power Consumption:** In line with economic growth rates, the demand for primary energy consumption as well as power has been growing in both the countries as explained by the study. The per capita electricity consumption as shown by the study findings for both countries has been an upward trend. As the counties are heading towards urbanization and industrialization, the energy demand is likely to increase further hence it is an opportunity for the power sector to expand its generation to various forms of energy technologies to meet this demand.
RECOMMENDATIONS

- Both governments to develop major transmission and distribution lines to solve the problems of T&D Losses.
- Energy Regulatory Commission to ensure proper implementation of the available policies.
- Public participation in decision making.
- Unmetered supply should be metered for accountability.
- Decentralization of responsibility.
- Need to venture out to other available technologies so that enough energy can be generated.
- Public awareness on methods of reserving power and its importance.
- Encouraging the private sector to invest in this sector to improve efficiency and quality of services.

CONCLUSION

Both the countries looking forward to achieve the development plans in the near future and always compete with other emerging countries, there is need to take a bold step to step up this sector so that it can drive their economies to level they expect them to be. This can only be achieved if the government and other stake holders take collective responsibility, by that I mean that, consumers to take moral responsibility to ensure proper practices in consumption and government to give proper policy directives.

REFERENCES