

## Understanding Electricity Prices – MYTO for the Layman (July 2011)

Much has been said about the expected increase in electricity tariffs (prices) from an average of N5 per unit of electricity (kilowatt hour) in 2007 to an average of N10 per unit of electricity (kilowatt hour) in 2011. This increase is not a review of prices but the latest in a series of annual adjustments that have been occurring since 1<sup>st</sup> June 2008, yet the Nigerian public is still surprised and confused about it. Prices have been adjusted every year so as to reflect changes in inflation, exchange rate and gas prices. Unfortunately, too little is known about the role of the Nigerian Electricity Regulatory Commission (NERC) in setting electricity tariffs through the regulation known as the Multi-Year Tariff Order (MYTO). This article will attempt to explain the way in which electricity prices are set today, compare it with how it was done previously, and clarify why power supply cannot improve unless there is a significant increase in electricity prices.

MYTO came into force in July 2008, almost three years after the creation of NERC by the Electric Power Sector Reform Act (EPSRA), 2005. The purpose of the MYTO is to set cost-reflective tariffs which will allow the power sector to be properly funded and functional. A “cost-reflective” tariff must consider the costs of generating electricity (generation), transmitting electricity to distribution centres around the country (transmission), and finally distributing it to consumers in homes and workplaces (distribution). An electricity system, even one as weak as Nigeria’s, is a series of large, complicated and interconnected engineering facilities that require various costs in construction, operations and maintenance running into hundreds of billions of Naira every year. The MYTO attempts to reflect all these costs in the consumers’ tariff so as to ensure that the power sector can sustain itself efficiently without requiring Government bailouts or subsidies.

Prior to the establishment of the MYTO regulation, electricity tariffs were set by the Utilities Charges Commission (UCC) and then implemented by the Nigerian Electric Power Authority (later known as the Power Holding Company of Nigeria or PHCN). The exact methodology used is known only to those who worked in those organisations at the time, however we can safely conclude that the approach was not aimed at setting tariffs that placed the full cost of power on the consumers. This was because the PHCN was funded by the Federal Government as a social welfare service. This meant that the sector depended largely on annual budgetary allocations instead of the income from its businesses. Due to the increasingly unreliable power supply over the last two decades, all Nigerians will agree that the dependence of PHCN on Government funds has led to an inefficient system which needed to be changed.

As part of the Federal Government’s efforts to reform the sector, the EPSR Act was passed into law. It was the Act that ordered the creation of NERC and the transformation of NEPA into PHCN in order to prepare the six generation companies (Gencos) and eleven distribution companies (Discos) for privatisation. When the PHCN successor companies are privatised, it will not be possible for them to receive budgetary allocations from the Government. Therefore, it is necessary for cost-reflective tariffs to be in place so that they can fund their operations independently.

Despite irregularities in billing, it is very important for Nigerians to be aware that we have **never** paid the full cost of the electricity we consume. Prior to MYTO, the sector was funded mainly by Government budgetary allocations. When the first MYTO prices were calculated in 2008, it was found that the cost-reflective tariffs were significantly higher than the non-cost-reflective tariffs that Nigerians had become used to. The new tariff would cause what is known as “price or rate shock” which would have negative social and political consequences. For this reason, the Federal Government decided to provide a three (3)-year subsidy (to last from July 2008 to June 2011) which would cover a portion of the cost-reflective tariff in order to ease Nigerians into the next stage in sector reform.

The following table shows the cost of electricity (in Naira per kilowatt hour) according to the 2008 MYTO

and the amount being subsidised (this information is also available on the NERC website: [www.nercng.org](http://www.nercng.org)).

	July 2008	July 2009	July 2010	July 2011
Average consumer tariff	6	7	8.5	10
Amount of subsidy	5.26	5.31	3.43	1.19
<b>ACTUAL calculated tariff</b>	<b>11.26</b>	<b>12.31</b>	<b>11.93</b>	<b>11.19</b>

From the above table it is clear that even at the new price of /KWH, Nigerians are not paying for the full cost of electricity as the actual calculated tariff (after annual Minor Review) for 2011 is N10 per KWH. It may also be useful for the public to be aware of the electricity prices that are applied in our neighbouring countries. The following table shows a comparison of the prices (in Naira per KWH) provided by the Union of Producers, Transporters and Distributors of Electric Power in Africa (UPDEA) as at 2009:

	Chad	Niger	Cameroun	Benin	Ghana	<b>Nigeria</b>
Social Tariff (100kwh/month)	11.07	16.85	17.33	21.60	9.41	<b>1.58</b>
Residential Tariff (600kwh/month)	25.60	16.85	19.10	24.51	12.92	<b>9.68</b>
Commercial Tariff (1800kwh/month)	26.75	20.52	23.55	24.00	21.92	<b>9.66</b>

As we can see from the above table, even amongst our closest and less prosperous neighbours, Nigerians pay much less for electricity than other African countries do. This is even more interesting when you consider that Chad and Benin Republic receive over 80% of their supply from Nigeria. We should not view this as a benefit of the size and strength of our economy but rather, in the light of the poor power supply in this country, we must see it as evidence that our power sector is seriously underfunded.

In the media, there has also been talk of a “Major Review” of the MYTO which will release a new tariff schedule that will be effective from January 2012. The reason for this Major Review is that industry participants (in generation, transmission, and distribution) repeatedly appealed to NERC to conduct a review because the assumptions in the first MYTO model have proven to be too optimistic. The 2008 MYTO projected that by 2011, the Nigerian power sector would be producing 16,000MW of electricity. Unfortunately, we currently have the same 4,000MW that we had in 2008. This means that the 2008 MYTO has not delivered a truly cost-reflective price. The following simple equation will explain why this is so:

### Revenue = Price x Quantity

As we noted earlier, the “revenue” of the power sector is intended to cover all its costs. This requires the combination of “price” (electricity tariff) and the “quantity” of electricity (in MW) to be equal to “revenue”. In order for “price” to fall, “quantity” must increase so that “revenue” can be sufficient to fund the sector. At the moment, the quantity of electricity in Nigeria has not risen significantly over the last three years. Therefore, prices must rise in order to have revenue levels that will allow the sector to function and to grow.

The above is a simple explanation of why there will be a new tariff schedule in January 2012. It is important to note that the Federal Government has once again indicated its willingness to subsidise the sector for a maximum of two years (1<sup>st</sup> June, 2012-1<sup>st</sup> June, 2014). However, the amount and method of administration of the subsidy are still being discussed. NERC may be responsible for identifying the sector’s financial needs, but the final price to be paid by the public is ultimately decided by the Federal Government.

It is important for the public to understand what 1 kilowatt hour (1 KWH) of energy means in real terms. 1 KWH is the energy used to burn 10 light bulbs for a period one hour (if the light bulbs are 100kw each). At the current MYTO tariff, this costs Nigerians an average of N10 per hour. It is useful to compare the cost of electricity to other costs associated with modern living. Below is a table which compares the MYTO tariff to the cost of using mobile phones and the cost of using a generator at home.

Cost	Mobile phone tariff		Generator		MYTO tariff
	N12/min	N35/min	8ltrs of petrol per day	30ltrs of diesel per day	
per hour	720	2100	22	125	<b>10</b>
per minute	12	35	0.37	2.08	<b>0.17</b>
per second	0.2	0.58	0.006	0.035	<b>0.003</b>

The above table shows that when you compare the MYTO tariff with the cost of mobile phones and self-generation of electricity, it is much lower than what we expect. The public may agree that power is more important than mobile phones, and yet the MYTO charge is a small fraction of even the lowest phone tariff in the country. We should also understand that regulated electricity is also much cheaper than self-generated electricity so we should accept and embrace the MYTO tariff as the best option when compared to the alternatives (which are self-generation or darkness)!

This leads us to the question of how the public will handle increased electricity prices without an immediate increase in electricity supply. Those of us who have PHCN meters will have to be more mindful of our electricity consumption. Energy conservation is an important part of energy consumption worldwide. Those who are not yet metered are assured that NERC is working with Discos to implement a programme of delivering and installing hundreds of thousands of prepaid and maximum demand meters to customers. Also, the imminent privatisation will put the generation and distribution of electricity in the hands of private institutions that will have to improve services and overall supply in order to satisfy the terms of their licences and recoup their investments. This will lead to increased “quantity” in the system, which inevitably lead to lower “price” of electricity.

In the mean time, Nigerians should be patient with the power sector reform. After reading this article it should be much clearer why electricity tariffs must increase before they can subsequently decrease. The public should endeavour to educate themselves using the resources available from locations such as the NERC website. Also, NERC has the duty to hold public consultations on the MYTO and has already held one in May of this year. More consultations are planned over the next six months to ensure that the prices to be introduced at this stage of power sector reform have the understanding and full backing of the Nigerian public.