CONSUMER ENERGY USE & CUSTOMER EDUCATION IN NIGERIA

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ELECTRICITY AVAILABILITY

- Currently electricity access in Nigeria is relatively low, with an estimated less than half of the population connected to the national grid (60.4% in the urban area and 16.1% in the rural area). In other words, the majority of households are not served by the national grid network and this means the majority of rural and poor households are not served by the national electricity system.

POVERTY RATE

Figure 4-3: Poverty Rate for various years (%)[17]

Year	Non-Poor	Moderately Poor	Extremely Poor
1980	72.8	21.0	6.2
1985	53.7	34.2	12.1
1992	57.3	28.9	13.9
1996	34.4	36.3	29.3
2004	43.3	32.4	22.0
2010	31.0	30.3	38.7

Source: National Bureau of Statistics (2010): *Nigeria Poverty Profile, 2010*; p. 12., CPCS Estimates

Households with less than one-third of total Household Per Capita expenditure are Core Poor (Extremely Poor), while those with greater than one-third of total expenditure but less than two-thirds of the total expenditure are Moderately Poor (National Bureau of Statistics (2010): Nigeria Poverty Profile, 2010; p. 10).

PRICE OF ELECTRICITY vs. CONSUMPTION LEVELS

- The MYTO II tariff categorises five customer groups: Residential (R class), commercial (C class), Industrial (D class), Special and street lighting (S class) over the 11 distribution zones (11 distribution companies).

- These groups are further divided into subclasses of 1,2,3 etc (Eg. R1, R2, R3). With the associated fixed charge on every class. * (whether you consume or not)

- If customers are made to understand that electricity prices will continue to go up it could change behaviour.
    - *Diesel Generators – N150 per litre
    - *Cost reflective tariffs doesn't necessarily = Consume less !

ENERGY USE PATTERNS

- Household energy usage is intimately linked to the lifestyle and associated cultural and demographic factors relating to the household.

- These factors are very subjective and not easily defined with any degree of precision.

- Nonetheless, there are broad patterns or trends discernible amongst household in particular regions of the country. (More cooling in hot northern states, More industrial activities in the south western states)

ENERGY USE PATTERNS

- A broad account of typical daily activity schedules of households in Nigeria based on demographics considers the following activities which make up the bulk of energy demand.

- Cooking; Water heating; Lighting; Brown goods (TV, computers etc); Refrigeration and other sundry electrical appliances

- Its also changing with the increasing use of solar panels and inverters

PUBLIC ENLIGHTENMENT

- It has not been straightforward or easy to counter misconceptions, acknowledge the reasons for past failures and reassure business, individual consumers and policymakers that Energy Efficiency is important. Behavioral changes take time !

- The huge metering gap across the industry is a major issue.

- EE would go a long way in closing the demand – supply gap and much can be done to reduce consumption especially for the R & C class (behavioral changes) & D class (machine retrofits).

METERING CHALLENGE
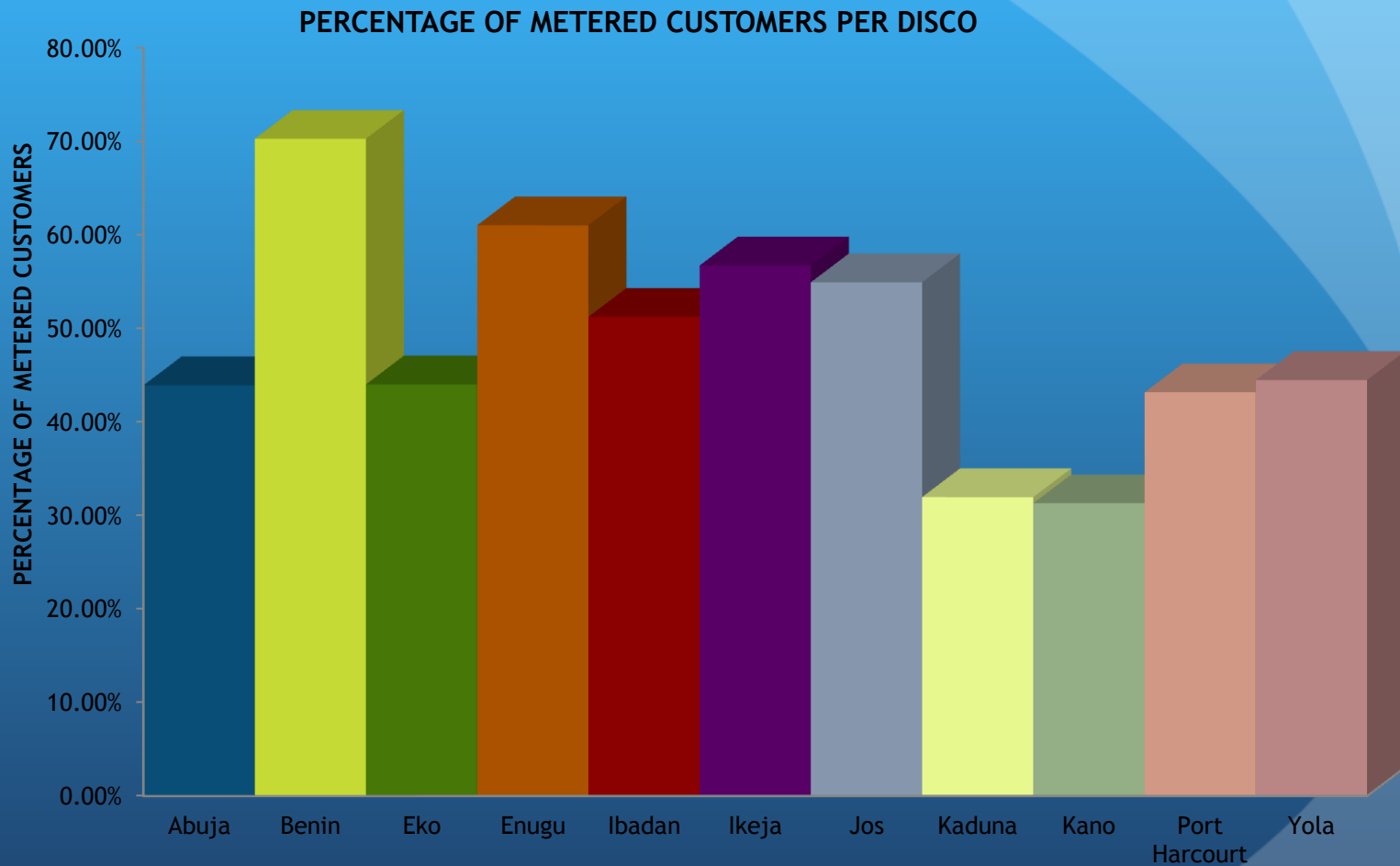

PERCENTAGE OF METERED CUSTOMERS PER DISCO

Table of Percentage of metered customers per Disco
Source: NERC Metering Committee Report May 2012

CONSUMER BEHAVIOUR

- A lot of energy is wasted because households, public and private offices and industries use more energy than is actually necessary to fulfil their needs. The reason is that many Nigerians exhibit unwholesome practices that lead to energy wastage.

- For example Nigerians rarely turn off their outdoor lighting during the day. This is particularly very common in commercial and residential areas of major cities including public institutions such as universities, government ministries, hospitals etc.

- SUSTAINED CONSUMER ELIGHTENMENT IS VERY ESSENTIAL!

Power Usage by Average Nigerian household

Incandescent Bulb
50W
6 hrs
9kWh

Laptop
100W
Avg. 8 hrs per day
15kWh

Iron
1000W
Avg. 1 hour / day
30kWh

Water Heater
2000W
30 Mins / per day
30 kWh

Ceiling Fan
75W
Avg. 7 hrs / day
15.75kWh

Split Air Con
950W
8 hrs / day
228 kWh

Microwave Oven
1000W
Avg. 3hrs of multiple use / day
5kWh

Kettle
2000W
Avg. 30mins of multiple use / day
10 kWh

Fridge
600W
24 hours
432kwh

HOUSEHOLD ELECTRICITY USAGE PATTERN

Study by Ogbonna et al (2011) conducted in Jos (mid sized city) suggests the typical Nigerian household has 3 distinct demand peak periods namely:

- 6am – 9am (water heating, cooking, lightning)
- 2pm – 3pm (cooking, air-conditioning)
- 8pm – 9pm (cooking, air-conditioning, entertainment, lighting)

In addition to refrigeration

*Little difference compared to weekends

BOTTLENECKS TO IMPLEMENTING EE PROGRAMS

- No National Policy on EE & DSM yet.

- Efficiency of Appliances

- Bad habits of wasting electricity

- Poor building design

- Inefficient lighting

- Little financial incentives to consumers

- Pricing of Energy Efficient CFLs and appliances

- Further exacerbated by the proliferation of inexpensive and inferior counterfeit, imported appliances with no standards or labels.

NERC EFFORTS & OUTREACH INITIATIVES

- Recently commissioned an EE/DSM consultancy and survey.

- Power Consumer Assemblies (Town hall meetings) – used to enlighten the public on the reforms as well as efficient use of electricity.

- Radio & Tv adverts - regularly used by the Commission to sensitise the public on Energy Efficiency and other matters.

- Planning a National Efficiency Labelling System derived from a clear energy efficiency framework.

SOLUTIONS ?

- Including an EE charge on customer bills wouldn't be a good idea at this point in the reform.

- Engaging stakeholders such as NOA, Discos, Customers etc is very necessary in order to shift public opinion and consumption behavior.

- Making it an issue of National Pride to consume less energy.

THANK YOU