Lighting and Appliance Demand

This lever controls the sub-levers listed in the table, the ambition levels are for the end year 2050 and Units of Index are relative to 2015.

Lighting and appliances energy demand for the building sector is one of the Nigeria's peak electricity load. In 2015, the residential buildings accounts for about 67% of total electricity supplied to the sector, while non-residential buildings accounts for 33%. The current technologies employed for lighting and appliances are not efficient and energy saving, they consume high energy and a lot of waste in terms of usage. With the rising contribution of service sector to the economy, the energy demand in this sector will continue to increase.

But with the current effort of government introducing efficiency measures through smart metering and replacement of efficient lighting technology and appliances, the peak demand is expected to decline and energy intensity will reduce by 2050.

Key Interactions:

Efficiency measures in technology replacement will reduce the rate of electricity demand and hence reduces the energy requirements and further reduce emission from generation.

Level 1

Assumes 100% access to electricity by 2050 with peak demand in lighting and appliances use, the energy consumption will continue to increase due to use of in-efficient lighting appliances.

Level 2

Assumes a significant reduction in energy demand of about 20% due to replacement of about 50% of inefficient lighting and appliances with energy saving ones, strict smart metering and new building codes introduced and hence the reduction in energy intensity.

Level 3

Assumes a 100% replacement with LEDs will further decrease the energy consumption for lighting to about 50% and a ban on use and importation of inefficient (energy star) appliances.

Level 4

Assumes total elimination of inefficient appliances and replacement of lighting bulbs with all LEDs, strict compliance with new buildings design regulations to accommodate behavioral change option for day lighting utilizations.

Default Timing Start Year: 2015 End Year: 2050

Sub-levers	Units	2015	Level 1	Level 2	Level 3	Level 4
Services Demand	Units	2015	Level 1	Level 2	Level 3	Level 4
Domestic Lighting	Index	0.50	2.00	1.50	1.25	1.00
Non-Domestic Lighting	Index	0.50	1.50	1.25	1.10	1.00
Domestic Appliances	Index	0.50	2.00	1.50	1.25	1.00
Non Domestic Appliances	Index	0.5	1.5	1.25	1.1	1
Energy Intensity	Unit					
Domestic Lighting	Index	0. 25	2.00	1.50	1.25	1.00
Non Domestic Lighting	Index	0.25	2.00	1.50	1.25	1.00
Domestic Appliances	Index	0.35	2.00	1.50	1.25	1.00
Non Domestic Appliances	Index	0.35	2.00	1.50	1.25	1.00