



Lagos State Government Energy Initiatives

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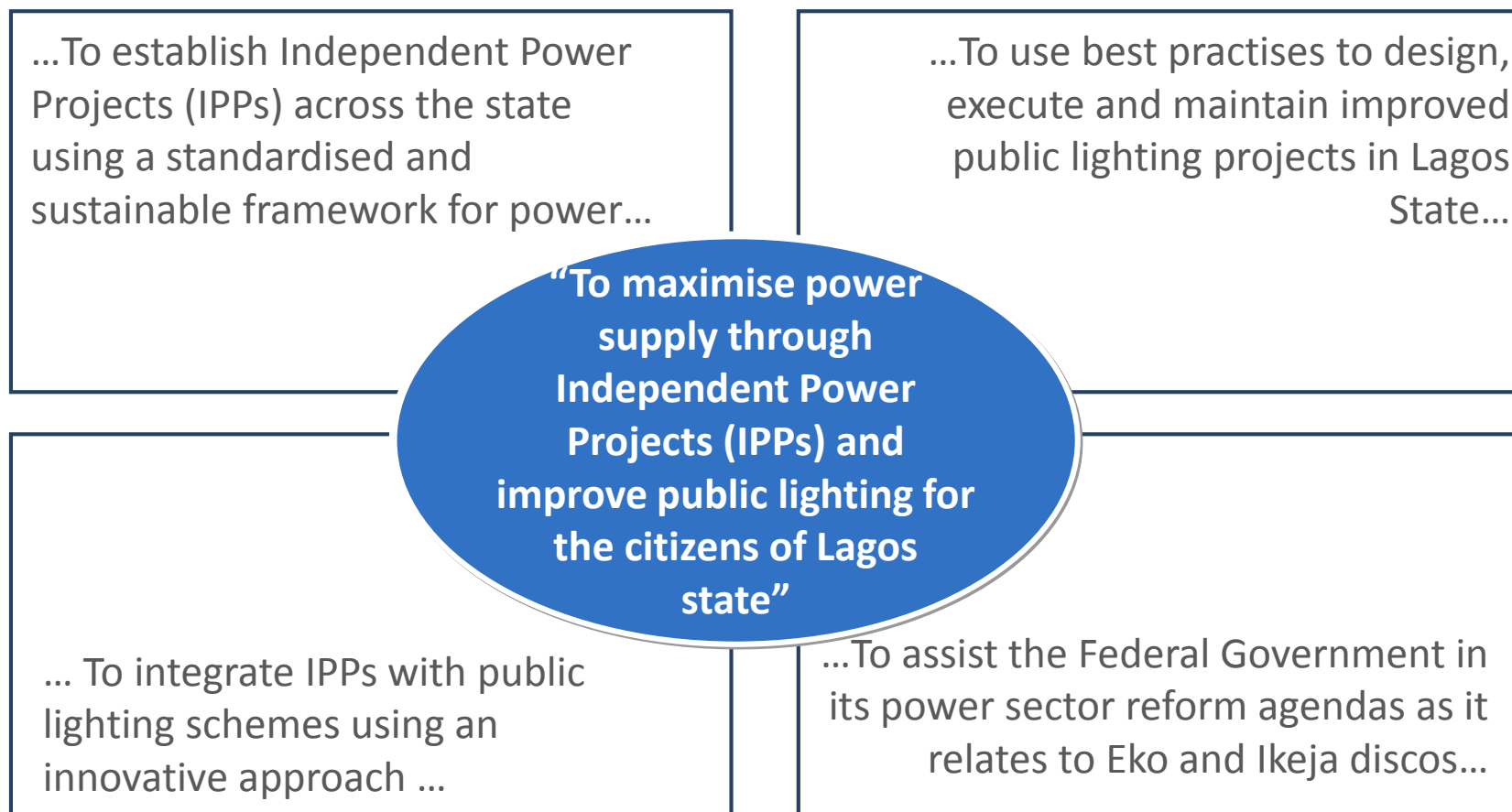


The Lagos State Electricity Board (LSEB)

is the implementing agency under the Lagos State Ministry of Energy and Mineral Resources (MEMR) responsible for Energy Development, Independent Power Projects and Public Lighting for Lagos State.



LSEB is setting a vision comprising of one bold goal with four supporting elements





ENERGY EFFICIENT PROJECTS EXECUTED BY LASG

Independent Power Projects

PROJECTS	AKUTE POWER	ISLAND POWER	ALAUSA POWER
DESCRIPTION	12.15 MW plant runs on natural Gas. The plant supplies power to the Akute Intake Facility of Lagos Water Corporation (LWC)	10 MW plant runs on Compressed Natural Gas (CNG) with diesel back up.	To construct a 10.4 MW plant that will run on natural gas and supply power to the Alausa Secretariat and environs
STATUS	OPERATIONAL	OPERATIONAL	IN CONSTRUCTION
FEATURES	<p>The Akute Intake Facility is responsible for 80% of water supply in Lagos</p> <p>LWC can now pump over 130 million gallons of water daily</p> <p>Prior to this power plant 12MW of diesel generators were being used inefficiently.</p>	<p>The plant provided 24hrs power supply to Courts, Hospitals and Street lights within Lagos Island</p> <p>IPP2 - the expansion of the distribution network to include additional LASG facilities is due to be completed in May 2013.</p> <p>Prior to this power plant 25MW of diesel generators were being used inefficiently.</p>	<p>The project will provide 24 hr power to the Secretariat therefore allow LASG to function more effective</p> <p>The project will eradicate the use of at least 14MW of diesel generators.</p>



LAGOS STATE ENERGY AUDIT PROGRAM





The LASG, through its implementation agency LSEB, set up the Lagos State energy audit program with the goal of creating a comprehensive database of energy/power consumption within the state.

Objectives of the audit program are:

- To educate and create awareness regarding energy usage, consumption patterns, and conservation opportunities.
- To document existing conditions for planning purposes.
- To give information on Health and safety issues with regards to pollution and carbon emissions from self generation.
- To capture data on the amount and condition of public lighting on Lagos State streets.
- To capture data that will assist Eko and Ikeja distribution companies.



The audit captured the following data :

- i) Property and street identification.
- ii) Generator(s) size/ backup generator(s) size.
- iii) Type and quantity of electrical appliances used at location.
- iv) Transformer rating within the area.
- v) Daily PHCN coverage in hours and in kWh.
- vi) Daily usage of generators (in hours) and amount spent on fuel monthly.
- vii) Amount of additional power required in kVA.
- viii) How much the location is willing to pay for electricity.
- ix) Perception of Quantity and Quality of PHCN Power Supply.
- x) Willingness for alternative power (IPP).



Figure 3: Map of Magodo I showing Zoning

Zone A	Zone B	Zone C	Zone D	Zone E	Zone F
REGISTRY CLOSE	BABALOLA ADEDEJI AVENUE	UWA CLOSE	IKUMOWORO STREET	IYANA OLUDO DRIVE	BANKOLE STREET
SCIENCE ROAD	BAPTIST CHURCH STREET		JOSEPH AJAYI CLOSE	JOHN OLANRELE STREET	BAYO ADESINA ROAD
SENATE CRESCENT	CELESTIAL CHURCH STREET		KALEJAYE DABSI STREET	JULIUS GBIGBI STREET	BIDDUN BERD AVENUE
SOCIAL SCIENCE ROAD	CELESTIAL CHURCH STREET		LATEEF BELLO STREET	MAYOD CLOSE	OLATUNJI STREET
TOLULOPE CLOSE	DIPO OYEWOLE DRIVE		MAGODO ROAD	OLAIYA OLADEJI STREET	OLORUNMI STREET
UNILAG ESTATE ROAD	DURO AJAYI STREET		MUYIWA ALDER STREET	OSHORUN ROAD	OREMEJI STREET
	FASHOG BON CLOSE		NEW WORLD STREET	PHILIP OJEDOKUN DRIVE	SEGUN MARU STREET
	FOLARIN STREET		OBAFEMI OMOWAYE STREET	RASAK BELLO STREET	UNITY ESTATE
	GBELEGBO STREET		OLADIMEJI STREET	SAMUEL OLAOLU CLOSE	
	JAMIU OLOTO STREET		OLANIRETI FASAN STREET	TENDER CARE CLOSE	
	JIMOH SHOBOWALE STREET		OPEYEMI CRESCENT		
	JOY AKPUGO CLOSE		OSHO AROGA STREET		
	KOLAWOLE AINA STREET		OTUN ARAROMI STREET		
	MODUJE AMELE STREET		PHILIP DENNIS CLOSE		

Zone A	Zone B	Zone C	Zone D	Zone E	Zone F
ADMINISTRATION STREET	ABUDU ODUSANYA STREET	ADEBISI ODERINDE STREET	ALHAJI RASAK BISHI STREET	ADENUGBA STREET	ADE ADETOBA STREET
COUNCIL CRESCENT	ADEBIYI STREET	AYO FASUGBA STREET	BABAJIDE AWOLESI AVENUE	ADIGUN AVENUE	ADEBOLA JUBRIL CLOSE
EDUCATION CLOSE	AIMASIKO STREET	DEACON LAJA DEILE STREET	CHURCH STREET	AYODELE IPAYE STREET	ADETAYO AKINTAYO STREET
ENGINEERING CLOSE	AJIROBAKE CLOSE	GATEWAY CRESCENT	FRED UTOMI STREET	CHIEF NAJUM NIYE STREET	AJIDAHUN CLOSE
ENVIRONMENTAL CRESCENT	AKINBODE CLOSE	OGUNSONA STREET	GBOLAHAN AKINMUDA STREET	EMMANUEL AKWE CLOSE	ALHAJI AKEEM ODUMOSU CRESCENT
HUMANITIES STREET	AYODELE CLOSE	OSUADE OYEDIRAN STREET	GBOLAHAN BAKARE STREET	FIYIN DAMMY KASIM STREET	ALHAJI LAWAL CLOSE
LAW CLOSE	AYODELE FANOIKI AVENUE	PEGGY OSHIBOGUN STREET	IBRAHIM OSHO STREET	FUNMI ALAKA DRIVE	AYINMODUN CLOSE



LAGOS STATE ENERGY AUDIT PROGRAM

Energy Audit Summary - Magodo Area		Magodo I		Magodo II		TOTAL	
Number of Occupied Locations Surveyed		1,723		1,553		3,276	
Number of Zones		6		3		9	
Distribution Capacity							
Name of Feeders		Isheri		Owulade, Shangisha, Emmanuel Keshi		Isheri, Owulade, Shangisha, Emmanuel Keshi	
PHCN Installed Distribution Capacity (KVA)		7,800		23,000		30,800	
Number of Distribution Transformers (Public & Dedicated)		17		54		71	
Installed Capacity (Generating Sets and Fuel Consumption)							
Number of Generating Sets		2,860		1,796		4,656	
		Petrol	Diesel	Petrol	Diesel	Petrol	Diesel
		1,955	905	611	1,185	2,566	2,090
Average number of Generating Sets per Location		1.7		1.2		1.4	
Installed Capacity of Generating Sets (KVA)		16,936		34,304		51,240	
		Petrol	Diesel	Petrol	Diesel	Petrol	Diesel
		32%	68%	10%	90%	17%	83%
Daily Fuel Consumption (Litres)		20,770		36,878		57,648	
		Petrol	Diesel	Petrol	Diesel	Petrol	Diesel
		11,630	9,140	8,519	28,359	20,149	37,499
Daily Amount Spent on Fuel (petrol @ 97L, diesel @ 160L)		₦ 2.6M		₦5.4M		₦8M	
Energy Consumption and Carbon dioxide (CO₂) emissions							
Daily Energy Consumption (kWh)		49,792		116,702		166,494	
Average self-generation tariff per kWh		₦ 52.22		₦ 46.27		₦ 48.05	
Daily CO ₂ emission as a result of self-generation (lbs)		65,029		152,413		217,442	
Percent of locations interested in off grid solutions (IPP)		80%		75%		78%	
Potential daily revenue/market size (at ₦12.75/kWh)		₦ 0.63M		₦ 1.49M		₦ 2.12M	
Percentage of streets with Streetlights		11%		42%		28%	
Number of Streetlights		60		397		457	
Condition of Street lights		Good		Bad		Good	
		45%	55%	87%	13%	66%	34%

LAGOS STATE ENERGY AND ENVIRONMENTAL CONSERVATION AWARENESS CAMPAIGN





LAGOS STATE ENERGY AND ENVIRONMENTAL CONSERVATION AWARENESS CAMPAIGN

Current Situation

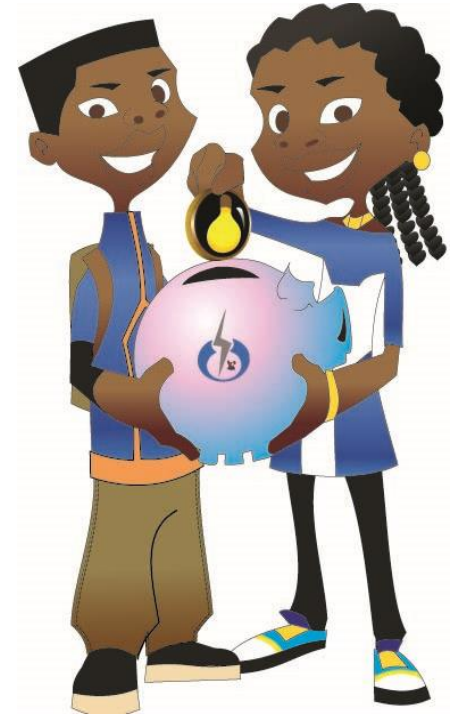
- Approximately 1% of Lagosians currently practice Energy Conservation.
- At peak, approximately 1000MW of Electrical Power is supplied to Lagos state from the grid.
- Lagos has a population of over 18million people.
- Current energy levels are insufficient but still being wasted at the same time.
- Energy Wastage is mostly common within the Lower income citizens.



LAGOS STATE ENERGY AND ENVIRONMENTAL CONSERVATION AWARENESS CAMPAIGN

The Purpose of the Awareness Campaign is to enlighten Lagosians on:

- Understanding Energy and Electrical terms
- Current Energy Consumption
- Minimising Energy Wastage
- Different Sources of Electrical Power
- Improved Energy Consumption Habits
- How using less energy will save them money



LAGOS STATE ENERGY AND ENVIRONMENTAL CONSERVATION AWARENESS CAMPAIGN



Q. What is Energy Conservation?

A. Energy Conservation is the practice of reducing energy consumption by becoming energy efficient. Practicing energy conservation helps you save money as well as preserve energy for future use

TOP 10 TIPS FOR ENERGY CONSERVATION AND SAVING MONEY

- 1. CALCULATE YOUR HOUSEHOLD ENERGY CONSUMPTION**
Calculate your household energy consumption by using the Lagos State Energy and Emissions Calculator at www.lseb.gov.ng. Understanding your household energy consumption will allow you to plan and implement appropriate energy conservation methods that suit your lifestyle.
- 2. LIGHTING**
Switch off unnecessary lighting. Make full use of daylight - ensure windows are cleaned and curtains opened
- 3. ENERGY SAVING BULBS**
Switch from conventional to energy saving bulbs
- 4. REUSE AND RECYCLE**
Reuse and recycle paper
- 5. APPLIANCES AND EQUIPMENT**
 - a. Switch on air conditioners, microwaves and other appliances only when required.
 - b. Switch off equipment when not in use. No more standby
- 6. TIMERS**
Setting timers can provide significant energy savings on equipment such as television sets.
- 7. NATURAL VENTILATION**
Avoid using the air conditioner by making use of natural ventilation i.e. opening windows
- 8. CHANGE THE SETTINGS**
Adjust time and temperatures settings to ensure cooling settings match occupancy patterns
- 9. SAVING WATER**
 - a. Ensure taps are turned off completely
 - b. Take short showers or bath with a bucket of water rather than long baths
 - c. Brush with a glass of water instead of letting the tap run
- 10. TRANSPORTATION**
Plan your journeys to use the least amount of vehicles or take effective public transportation such as the Bus Rapid Transit (BRT) or Water ferries.

www.lseb.gov.ng

LAGOSIANS STOP WASTAGE

Conserve Electricity • Conserve Water • Conserve Energy • Save Money



Lagosians waste over N1.5 billion annually by leaving their computers on standby. Switch off your computer when not in use from the socket.
Conserve Electricity, Save Money.



Lagosians waste over N8 billion annually by using high wattage convention light bulbs. Switch to Energy Saving Bulbs.
Conserve Electricity, Save Money.



Lagosians waste over N5.6 billion annually by boiling more water than they actually require. Only boil the amount of water you require.
Conserve Water, Conserve Electricity, Save Money.



Lagosians waste over N4 billion annually by leaving appliances on standby. Turn off appliances and remove the plug from the socket.
Conserve Electricity, Save Money.



Lagosians waste over N1.2 billion annually from dripping taps. Fix your leaking taps.
Conserve Water, Conserve Electricity, Save Money.

www.lseb.gov.ng

A PRACTICAL GUIDE TO ENERGY CONSERVATION

A LAGOS STATE GOVERNMENT ENERGY INITIATIVE



Q. What is a Watt (W)?

A. A Watt is a measure of total electrical power. 1000watt = 1kilowatt (kW)

Q. What is a kilowatt hour (kWh)?

A. A kWh is a unit of 1000watt of electricity used for one hour. Your electricity bill or pre paid meter is calculated in kWh. On average households in Lagos State pay N12.50 (per kWh) depending on where you live.

Q. How to determine Appliance Wattage Consumption?

A. Wattage consumption can be found on the bottom, back or nameplate of an appliance. A section labelled power input indicates the required wattage for an appliance. In a situation where the power input is not specified the wattage consumption can be calculated by multiplying the appliance voltage by the amps. (Volts x Amps=Watts)

Q. Do all my Appliances use the same amount of Energy?

A. No, a low-wattage appliance that runs continuously may use more total energy each month than a high-wattage unit used occasionally. Do not judge kWh usage only by the wattage rating of the appliance.

Q. How do my appliances affect my Electricity Bill?

A. The number, type and way you use your appliance affect the amount of electricity consumed therefore affecting your electricity bill. Conventional appliances and bulbs consume more energy than energy saving appliances and bulbs. For example: The cost of using an energy saving bulb is 72% less than a conventional light bulb.

www.lseb.gov.ng

SWITCH OFF LIGHTS AND APPLIANCES WHEN NOT IN USE

BEFORE



AFTER

SAVE UP TO N50,000 BY JUST SWITCHING OFF!



Lagos State Electricity Board in Collaboration with OSRAM

www.lseb.gov.ng

HOW MUCH ENERGY DO I CONSUME?

1. Log on to www.lseb.gov.ng and click on "Household Energy and Emissions Calculator" by the top right hand side of the website.

2. Enter location details.



3. Fill in information for the different categories – Select number of appliances from the drop down box. Then click on submit button.



4. Average monthly household energy consumption displayed.



www.lseb.gov.ng

ENERGY CONSERVATION FLYER



LAGOS STATE ENERGY AND ENVIRONMENTAL CONSERVATION AWARENESS CAMPAIGN



For more information visit
www.lseb.gov.ng
A Lagos State Government Energy Initiative

SWITCH OFF



Take the time to
SWITCH OFF Your
Lights and other
Appliances when you
leave the Room



For more information visit
www.lseb.gov.ng
A Lagos State Government Energy Initiative

TURN OFF



CONSERVE WATER

- a. Ensure taps are turned off completely
- b. Take short showers or bath with a bucket of water rather than long baths
- c. Brush with a glass of water instead of letting the tap run

Conserve water, Conserve Energy, Save Money



ADVERTS



LAGOS STATE ENERGY AND ENVIRONMENTAL CONSERVATION AWARENESS CAMPAIGN



For more information visit
www.lseb.gov.ng
A Lagos State Government Energy Initiative

TOP 10

ENERGY CONSERVATION TIPS



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Setting timers can provide significant energy savings on equipment such as television sets.



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8. CHANGE THE SETTINGS

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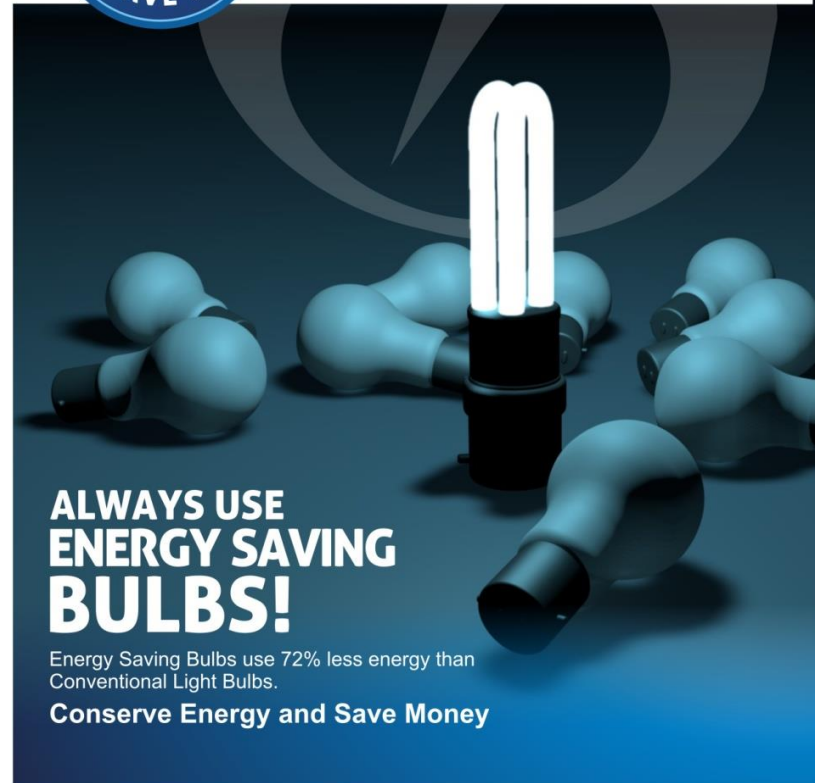


10. TRANSPORTATION

Plan your journeys to use the least amount of vehicles or take effective public transportation such as the Bus Rapid Transit (BRT) or Water ferries.



For more information visit
www.lseb.gov.ng
A Lagos State Government Energy Initiative



ALWAYS USE ENERGY SAVING BULBS!

Energy Saving Bulbs use 72% less energy than Conventional Light Bulbs.

Conserve Energy and Save Money



LAGOS STATE GOVERNMENT
MINISTRY OF ENERGY AND MINERAL RESOURCES



LAGOS STATE
ELECTRICITY
BOARD



LAGOS STATE GOVERNMENT
MINISTRY OF ENERGY AND MINERAL RESOURCES



LAGOS STATE
ELECTRICITY
BOARD

ADVERTS/ POSTERS



LAGOS STATE ENERGY AND ENVIRONMENTAL CONSERVATION AWARENESS CAMPAIGN

For more information visit www.lseb.gov.ng
A Lagos State Government Energy Initiative

CALCULATE YOUR HOUSEHOLD ENERGY CONSUMPTION

Lagos State Government has developed The Lagos State Household Energy and Emissions Calculator. The calculator is an online self help tool that allows Lagosians calculate their estimated monthly household Energy usage and Carbon emissions by simply providing the number of appliances within their household.

Understanding your household energy consumption will allow you to plan and implement appropriate energy conservation methods that suit your lifestyle.

Online access to Household Energy Calculator

LAGOS STATE GOVERNMENT

EXECUTIVE MINISTERS LOCAL GOVERNMENTS PARASTATALS MEDIA NEWS CONTACT

Mr. Babatunde Raji Fashola, SAN
Governor of Lagos State

Clip Of The Moment
GOV. FASHOLA, FIRST LADY, PARASTATALS ADEBOYE, OTHERS AT LAGOS STATE 2013 ANNUAL THANKSGIVING SERVICE

LATEST NEWS AND EVENTS

FASHOLA CONDOLES WITH LATE DEACON OSHITELUSO FAMILI...

LAGOS ADVISES LAGOSIANS TO OBTAIN YELLOW FEVER, POLI...

BELLO URGES LAGOSIAN TO GUARD AGAINST ENVIRONMENTAL...

MY VISION FOR LAGOS IS A PLANNED SAFE, PREDICTABLE...

FASHOLA CALLS ON FG TO RELOCATE RISKY FACILITIES F...

LAGOS STATE ELECTRICITY BOARD

HOME POWER PROJECTS PUBLIC LIGHTING ENERGY AWARENESS REPORTS & DOWNLOADS

Household Energy and Emissions Calculator

The household energy and emissions calculator can be used to closely estimate your household energy and emissions costs.

Please fill all the form fields for instant computed results.

Public Lighting Standards Report on Road Projects

LSEB has developed this Public Lighting Standards report on road projects for Lagos State which covers best practices for public lighting installations and maintenance.

please click to download



LAGOS STATE

POWER KIDS





www.lagospowerkids.gov.ng





ENERGY EFFICIENT PROJECTS EXECUTED BY LAGOS STATE GOVERNMENT





ENERGY EFFICIENT PROJECTS EXECUTED BY LASG

Project Description – Solar Power Station for Lagos State Electricity Board Offices

Location: Ikeja GRA

MDA: LSEB

Features:

- 250watts monocrystalline photovoltaic modules (panels) x 60 units
- 200ah AGM, VRLA MF, DC, Electric cell Accumulators (batteries) x 48 units
- Outback MPPT Digital display solar charge regulator 48v-80amps x 4 units
- 3 kw 48v Outback power inverter with digital display functions cascaded x 4 units

Impact:

- LSEB offices now runs between 72 – 83% on solar energy
- LSEB generators downsized from 100kVA to 50Kva thus reducing diesel consumption





ENERGY EFFICIENT PROJECTS EXECUTED BY LASG

Project Description – Isolo Industrial estate electrification project

Location: Isolo

MDA: Ministry of Commerce and Industry

Features:

- Modern power house
- Dedicated 500kva transformer
- Installed generators – 300Kva x 1, 100Kva x 1, 50 Kva x 1
- Pre paid meter x 25 units
- Perimeter lighting for security

Impact:

- Guaranteed 24hrs Power supply for the entire estate
- 24 diesel and 10 petrol generators will be eradicated
- Considerable reductions in ambient air and noise pollution





Project Description – Retrofitting Alausa Secretariat with Energy Efficient light fittings

Location: Alausa, Ikeja

MDA: Ministry of Environment

Features:

- Retrofitting 6670 conventional lights bulbs (60watts) to energy saving CFL bulbs (15watts)
- Retrofitting 9937 light fittings to energy efficient fluorescent fittings

Impact:

- Energy saved monthly : 3398.98 KWh
- CO₂ emissions saved monthly : 4,439.07 lbs
- Monthly savings: N2.85m
- The lighting in the Secretariat is much brighter





Thank you for listening