



# POWER SUPPLY MONITORING SYSTEM TRAINING MANUAL V1.0

Ibadan Electricity Distribution Company



**STATISTICAL DASHBOARD**



**INTERRUPTION READING**



**READING REPORT**



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## Introduction

Today, technology is evolving at an increasingly fast pace. As a business owner, it is important to keep up with technological advances to remain profitable and efficient. IBEDC as an organization is adopting technology to improve efficiency in its internal operations and processes.

A power supply management System (also called “PSMS”) is a robust application designed to help plan, monitor, and for energy management. The application is designed to enable employees to carry out their daily operations like Interruption reading, Hours of interruption, reading reports, and energy management amongst other functions.

Psms Manager will help IBEDC as a business to :

1. Increase the reliability of its operations due to analytics-based capacity planning and KPI monitoring.
2. Improve quality management and regulatory compliance due to standardized operational processes and visibility into operational workflows.
3. Mitigate operational risks due and to improved operations monitoring, availability of tools to raise alerts on operational issues and then collaborate on their resolution.
4. Reduce reporting latency due to automated collation and analysis of operational data.
5. Improve productivity and collaboration of employees involved in field operations due to automated requests and communication tools.

For proper understanding of the PSMS environment, the diagram below shows the PSMS dashboard after login. Each module of the application is detailed on the left-hand side of the dashboard. Navigation within the application is easy and user friendly.

## FEEDER MONITORING DASHBOARD

The dashboard gives the statistical information of all the feeders in a region chosen.

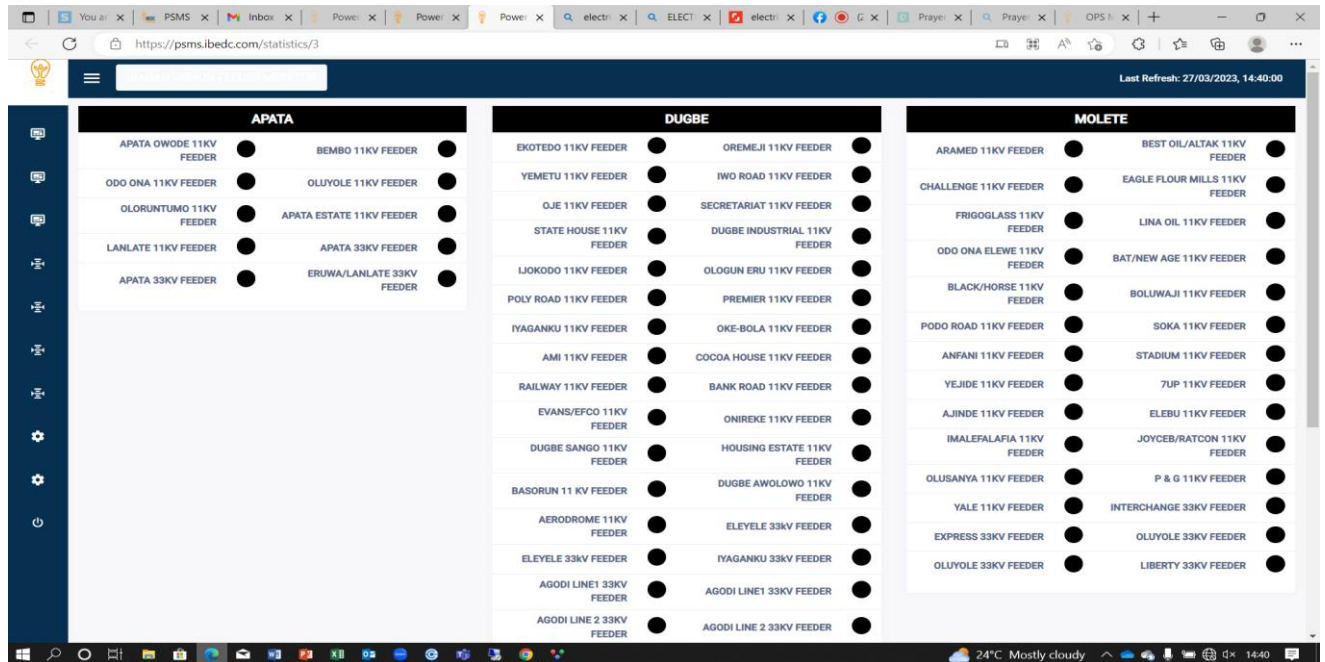
The following steps are to be taken to get a feeder statistical information:

1. On the Menu, Click on **Dashboard**

On Mobile



## On Web



The screenshot shows the IBEDC PMSMS web application interface. The top navigation bar includes a search bar and a 'Last Refresh: 27/03/2023, 14:40:00' timestamp. The main content area is divided into three columns, each representing a different feeder area: APATA, DUGBE, and MOLETE. Each column contains a list of feeders, each with a status indicator (a circle with a dot). The feeders are listed as follows:

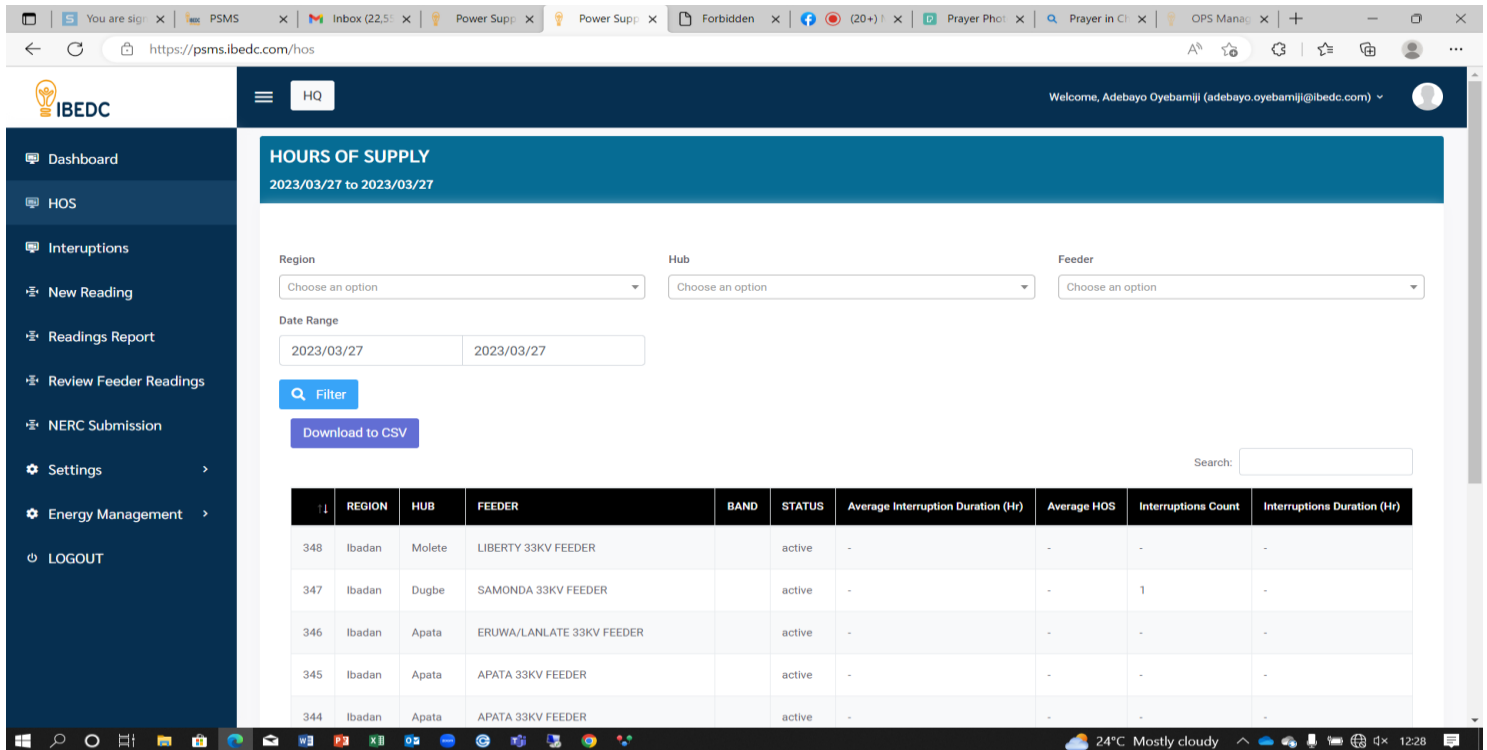
APATA	DUGBE	MOLETE
APATA OWODE 11KV FEEDER	EKOTEDO 11KV FEEDER	ARAMED 11KV FEEDER
BEMBO 11KV FEEDER	OREMEJI 11KV FEEDER	BEST OIL/ALTAK 11KV FEEDER
ODO ONA 11KV FEEDER	YEMETU 11KV FEEDER	CHALLENGE 11KV FEEDER
OLURUNTUMO 11KV FEEDER	OJE 11KV FEEDER	FRIGOGLOSS 11KV FEEDER
APATA ESTATE 11KV FEEDER	STATE HOUSE 11KV FEEDER	LINA OIL 11KV FEEDER
LANLATE 11KV FEEDER	DUGBE INDUSTRIAL 11KV FEEDER	ODO ONA ELEWE 11KV FEEDER
APATA 33KV FEEDER	LOGUN ERU 11KV FEEDER	BAT/NEW AGE 11KV FEEDER
ERUWA/LANLATE 33KV FEEDER	PREMIER 11KV FEEDER	BLACK/HORSE 11KV FEEDER
	OKE-BOLA 11KV FEEDER	BOLUWAJI 11KV FEEDER
	COCOA HOUSE 11KV FEEDER	PODO ROAD 11KV FEEDER
	BANK ROAD 11KV FEEDER	SOKA 11KV FEEDER
	ONIREKE 11KV FEEDER	ANFANI 11KV FEEDER
	HOUSING ESTATE 11KV FEEDER	YEJIDE 11KV FEEDER
	DUGBE AWOLOWO 11KV FEEDER	AJINDE 11KV FEEDER
	ELEYELE 33KV FEEDER	IMALEFALAFIA 11KV FEEDER
	YAGANKU 33KV FEEDER	JOYCEB/RATCON 11KV FEEDER
	AGODI LINE1 33KV FEEDER	OLUSANYA 11KV FEEDER
	AGODI LINE 2 33KV FEEDER	YALE 11KV FEEDER
		INTERCHANGE 33KV FEEDER
		EXPRESS 33KV FEEDER
		OLUYOLE 33KV FEEDER
		LIBERTY 33KV FEEDER

### 2. Click on the feeder

The feeder list is for you to record your hourly reading while the record interruption is for you to record interruption both planned and unplanned.

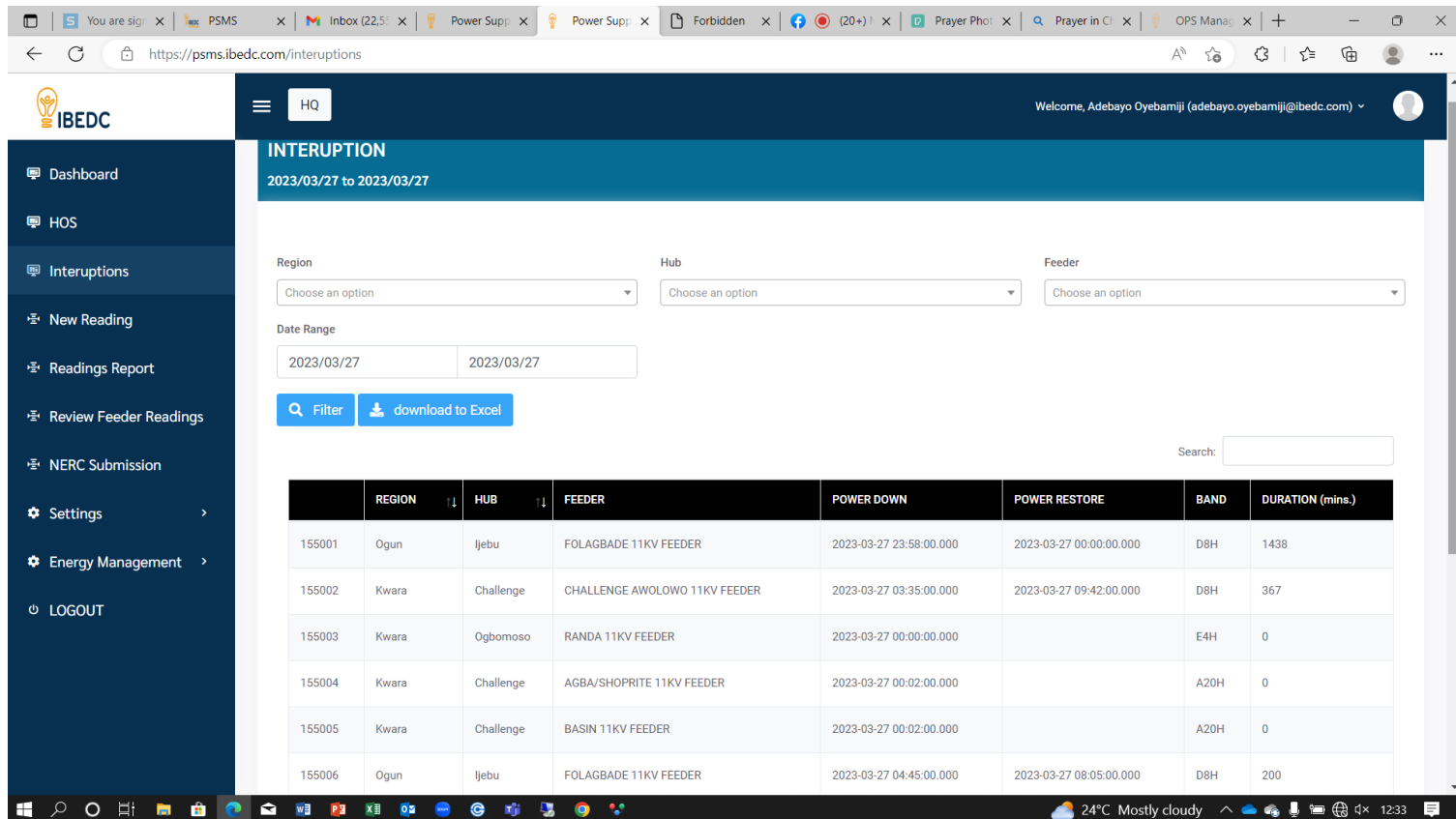
When you want to record hourly readings for a certain feeder, select that feeder in the list of feeders on your dashboard.

## HOS MODULES



The HOS module shows the information of each feeder: It shows the region and business hub where the feeders belong, it also shows the information on the Interruption count, the Average hours of supply, and the duration at which the interruption occurs.

## INTERRUPTION MODULE

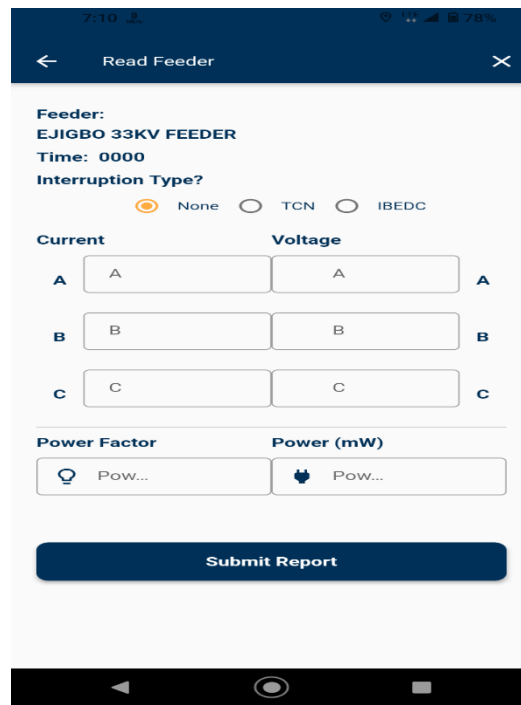


The screenshot displays the IBEDC Interruption Module interface. The top navigation bar includes the IBEDC logo, a user profile dropdown, and a welcome message. The left sidebar contains a menu with options: Dashboard, HOS, Interruptions (selected), New Reading, Readings Report, Review Feeder Readings, NERC Submission, Settings, Energy Management, and LOGOUT. The main content area is titled "INTERUPTION" and shows a date range of "2023/03/27 to 2023/03/27". Below this, there are filters for Region, Hub, and Feeder, all set to "Choose an option". A date range filter is also present, showing "2023/03/27" to "2023/03/27". A "Filter" button and a "download to Excel" button are visible. A search bar is located on the right side of the table. The table lists six power interruptions with the following data:

	REGION	HUB	FEEDER	POWER DOWN	POWER RESTORE	BAND	DURATION (mins.)
155001	Ogun	Ijebu	FOLAGBADE 11KV FEEDER	2023-03-27 23:58:00.000	2023-03-27 00:00:00.000	D8H	1438
155002	Kwara	Challenge	CHALLENGE AWOLOWO 11KV FEEDER	2023-03-27 03:35:00.000	2023-03-27 09:42:00.000	D8H	367
155003	Kwara	Ogbomoso	RANDA 11KV FEEDER	2023-03-27 00:00:00.000		E4H	0
155004	Kwara	Challenge	AGBA/SHOPRITE 11KV FEEDER	2023-03-27 00:02:00.000		A20H	0
155005	Kwara	Challenge	BASIN 11KV FEEDER	2023-03-27 00:02:00.000		A20H	0
155006	Ogun	Ijebu	FOLAGBADE 11KV FEEDER	2023-03-27 04:45:00.000	2023-03-27 08:05:00.000	D8H	200

The Interruption modules give a report of the feeders with their respective bands and the time at which it is not energized(Interruption) and the time it is restored(power restored), the calculation of the duration in minutes is gotten from the differences in hours of interruption(power down) and when it is energized (power restored).

## NEW READING MODULE



PSMS captures readings from Ami Database and as well takes manual readings entered by the DSO.

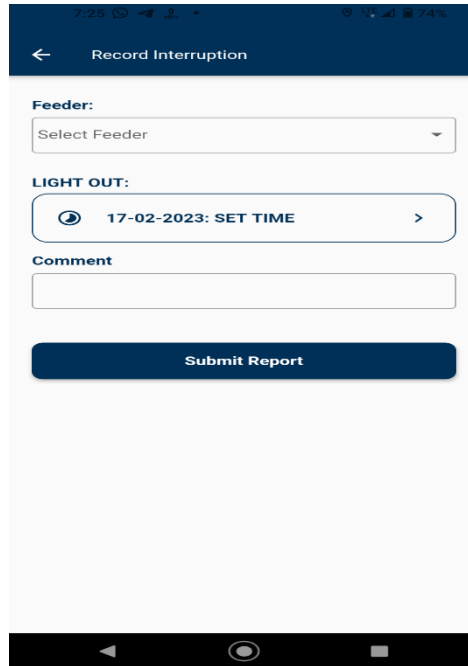
Interruption type: Select if it's None, TCN, or IBEDC

When no interruption on the feeder selects None, if there is, select if the outage is from TCN or IBEDC.

1. Current & Voltage: If the light is available input the current and voltage reading, when light is not available, after selecting the interruption type in bullet 1 above, you will not be able to select the current but you can still input Voltage.
2. Power factor: Input your power factor too. Then submit the report.

Record Interruption: You can record interruption any time of the day, when you click on record interruption, the display will be like the image below

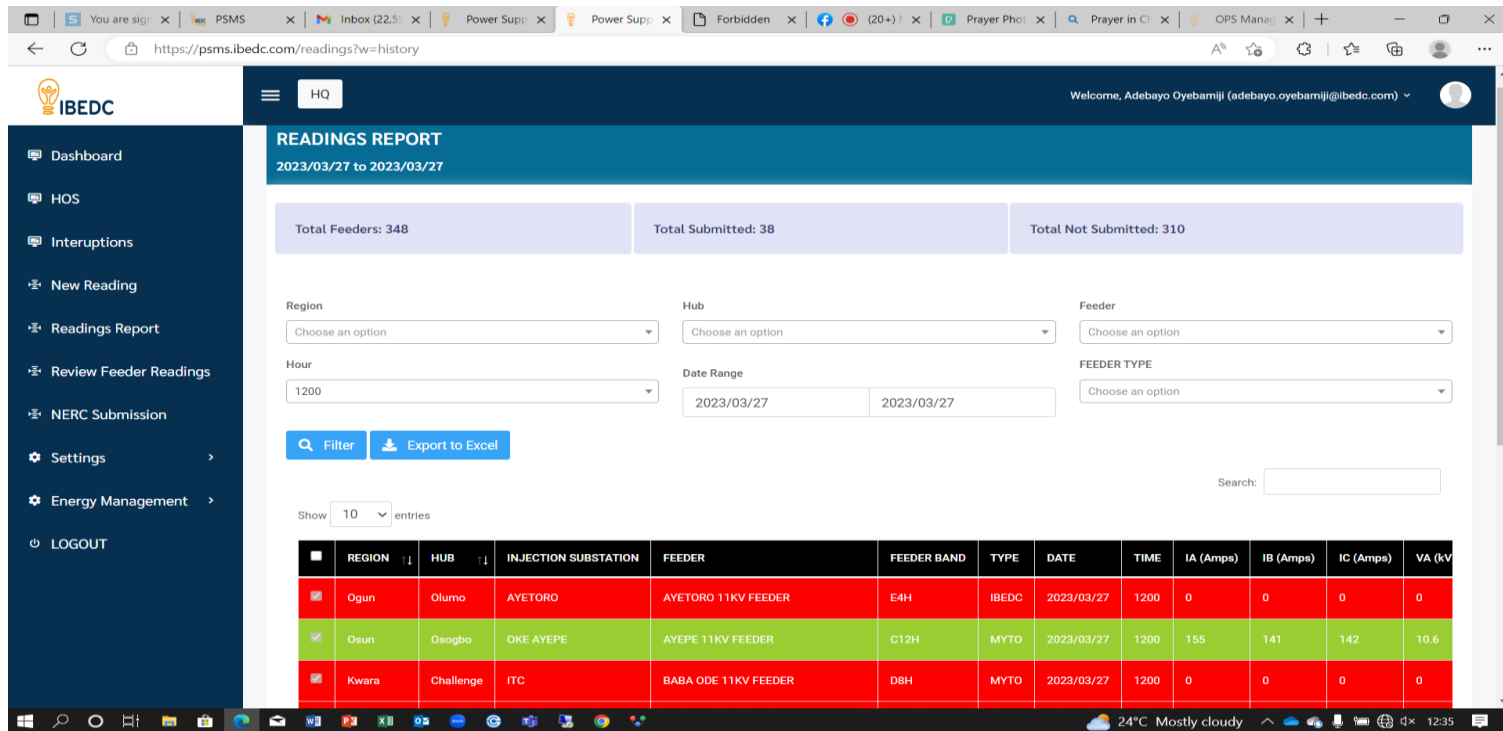




The screenshot shows a mobile application interface for recording a power interruption. At the top, there is a dark blue header with a back arrow and the text "Record Interruption". Below this, the form is divided into sections: "Feeder:" with a dropdown menu labeled "Select Feeder"; "LIGHT OUT:" with a button showing a clock icon, the date "17-02-2023: SET TIME", and a right arrow; "Comment" with a text input field; and a large dark blue "Submit Report" button at the bottom. The status bar at the top shows the time 7:25, signal strength, and battery level at 74%.

Then select the feeder type, input the time the light out occurred, and when the light is restored input the time the light is restored.

## READINGS REPORT



**READINGS REPORT**  
2023/03/27 to 2023/03/27

Total Feeders: 348    Total Submitted: 38    Total Not Submitted: 310

Region:     Hub:     Feeder:

Hour:     Date Range:  to     FEEDER TYPE:

Show  entries

	REGION	HUB	INJECTION SUBSTATION	FEEDER	FEEDER BAND	TYPE	DATE	TIME	IA (Amps)	IB (Amps)	IC (Amps)	VA (kV)
	Ogun	Olumo	AYETORO	AYETORO 11KV FEEDER	E4H	IBEDC	2023/03/27	1200	0	0	0	0
	Osun	Osoogbo	OKE AYEPE	AYEPE 11KV FEEDER	C12H	MYTO	2023/03/27	1200	155	141	142	10.6
	Kwara	Challenge	ITC	BABA ODE 11KV FEEDER	D8H	MYTO	2023/03/27	1200	0	0	0	0

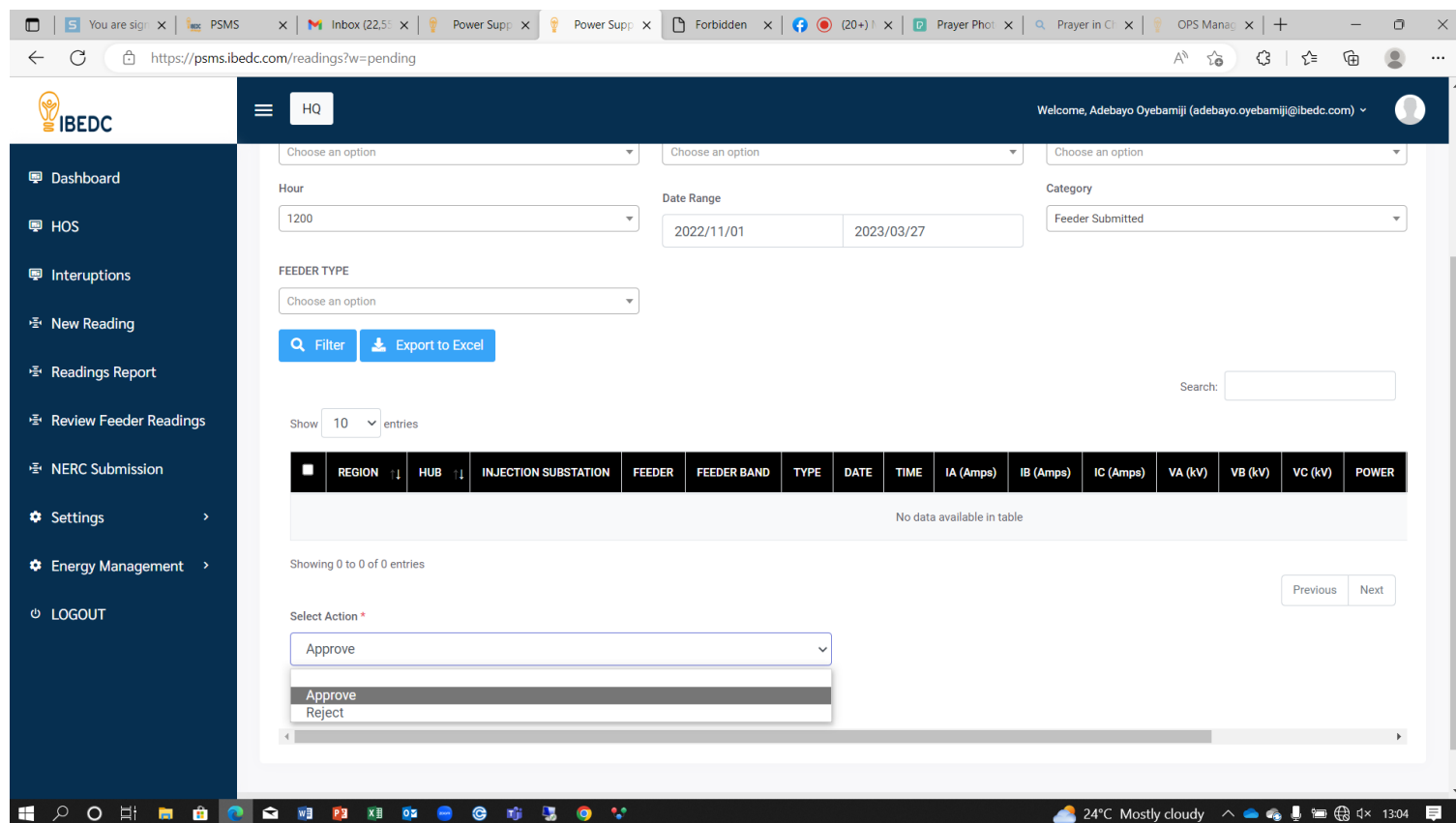


	FEEDER BAND	TYPE	DATE	TIME	IA (Amps)	IB (Amps)	IC (Amps)	VA (kV)	VB (kV)	VC (kV)	POWER	POWER FACTOR	STATUS	USER
11KV FEEDER	C12H	MYTO	2023/03/27	1300	0	0	0	0	0	0	0	0	Pending	Abiola Omotosho
	D8H	MYTO	2023/03/27	1300	0	0	0	0	0	0	0	0	Pending	KAREEM KABIRU
	D8H	MYTO	2023/03/27	1300	0	0	0	12.2	12.2	12.0	0	0	Pending	WASIU ABIOLA
	D8H	MYTO	2023/03/27	1300	0	0	0	12.2	12.2	12.0	0	0	Pending	WASIU ABIOLA
	E4H	MYTO	2023/03/27	1300	0	0	0	0	0	0	0	0	Pending	FATAI ALIMI
	E4H	MYTO	2023/03/27	1300	0	0	0	0	0	0	0	0	Pending	FATAI ALIMI
	A20H	MYTO	2023/03/27	1300	202	197	208	10.7	10.7	10.6	3.5	0.9	Pending	MUIDEEN ASAFA
	D8H	MYTO	2023/03/27	1300	0	0	0	0	0	0	0	0	Pending	Abiola Omotosho
	D8H	MYTO	2023/03/27	1300	0	0	0	10.7	10.7	10.6	0	0	Pending	MUIDEEN ASAFA

Previous 1 Next

The report gives details information about the feeder: The colour bands signify if the feeder is energized or not, for example, the green colour on Ayepe 11kv feeder signifies that the feeder is currently having a supply with its corresponding current and voltage readings while the red colour bands signify that the feeders are not currently receiving supplies.

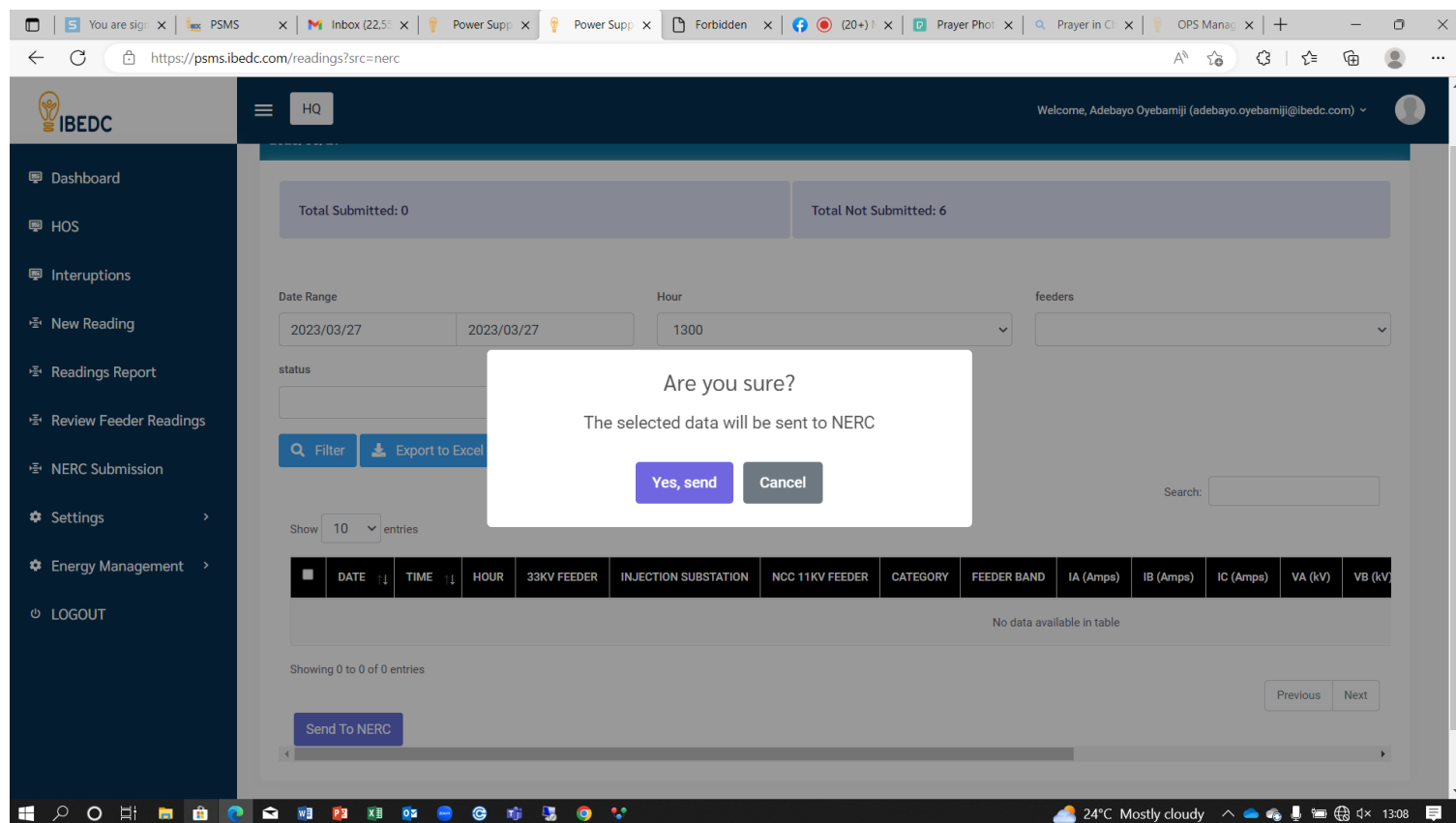
## REVIEW FEEDER READINGS



The screenshot displays the 'Review Feeder Readings' page in the IBEDC Psms system. The interface is divided into a sidebar and a main content area. The sidebar contains navigation links: Dashboard, HOS, Interruptions, New Reading, Readings Report, Review Feeder Readings, NERC Submission, Settings, Energy Management, and LOGOUT. The main content area features a header with the user's name and a welcome message. Below the header, there are several filter sections: 'Choose an option' for the first filter, 'Hour' set to 1200, 'Date Range' from 2022/11/01 to 2023/03/27, and 'Category' set to Feeder Submitted. A 'FEEDER TYPE' dropdown is also present. Below these filters are 'Filter' and 'Export to Excel' buttons. A search bar is located on the right. The table below the filters shows no data, with a message 'No data available in table'. At the bottom, a 'Select Action' dropdown is open, showing 'Approve' and 'Reject' options.

The feeder reading which shows the details of the data captures from AMI and from DSO is then reviewed and approved firstly by the BHM and then by the Dispatch from the Head office.

## NERC SUBMISSION



The screenshot shows the IBEDC PSMS interface for NERC Submission. A confirmation dialog box is displayed in the center, asking "Are you sure?" and stating "The selected data will be sent to NERC". Below the dialog, there is a table with columns: DATE, TIME, HOUR, 33KV FEEDER, INJECTION SUBSTATION, NCC 11KV FEEDER, CATEGORY, FEEDER BAND, IA (Amps), IB (Amps), IC (Amps), VA (kV), and VB (kV). The table is currently empty, showing "No data available in table". At the bottom, there is a "Send To NERC" button and a status bar showing "Showing 0 to 0 of 0 entries".

The Feeder information reviewed and approved by the Business hub manager and the dispatch officer at head office is then been sent to the NERC regulatory from this module. A click on send to NERC prompt the user to confirm if it is to be sent or cancel.

## Energy Management Module

https://psms.ibedc.com/feeders

Dugbe Business Hub

Welcome, Adebayor Oyebamijis (bamijibig@gmail.com)

Filter Export to Excel

Download to CSV

Search:

ID	Feeder Name	Feeder 33	ISS	Region	Hub	Feeder Type	Category	Premium	Min. Voltage	Max. Voltage	Min. Current	Max. Current	Min. Power Factor	Max. Power Factor
53	IYAGANKU 11KV FEEDER	IYAGANKU	IYAGANKU	Ibadan	Dugbe	11KV	MYTO	NO	9	12.5	111.9220324	390	0.6	1
54	OKE-BOLA 11KV FEEDER	IYAGANKU	IYAGANKU	Ibadan	Dugbe	11KV	MYTO	NO	9	12.5	111.2009579	336	0.6	1
339	IYAGANKU 33kv FEEDER		IYAGANKU	Ibadan	Dugbe	33KV	IBEDC	NO						

Showing 1 to 3 of 3 entries

Previous 1 Next

Enable Bulk Disable







https://psms.ibedc.com/feeders

Dugbe Business Hub

Welcome, Adebayor Oyebamijis (bamijibig@gmail.com)

Filter Export to Excel

Search:

Feeder Type	Category	Premium	Min. Voltage	Max. Voltage	Min. Current	Max. Current	Min. Power Factor	Max. Power Factor	Status	Min. Power	Max. Power	Meter Number	Band	Action
11KV	MYTO	NO	9	12.5	111.9220324	390	0.6	1	Active	1.865367207	6.5	200600186214	A20H	 
11KV	MYTO	NO	9	12.5	111.2009579	336	0.6	1	Active	1.853349298	5.6	200600186212	D8H	 
33KV	IBEDC	NO							Active			200600186419		 

Previous 1 Next

The Feeder energy management modules give detailed reports on feeders, information such as feeder type, category, minimum voltage and current, maximum voltage and current, minimum and maximum power factor, meter number, and bands. The click on the green pencil icon shows below image:

The screenshot displays the 'Feeder Management' section of the IBEDC PMS system. The page title is 'Update Feeder' for the 'AKANRAN EXPRESS 11KV FEEDER'. The form includes the following fields:

- feeder\_name**: A text input field containing 'AKANRAN EXPRESS 11KV FEEDER'.
- Region**: A dropdown menu set to 'Oyo'.
- Hubs**: A dropdown menu set to 'Akanran'.
- Service Center**: A dropdown menu set to 'MYTO'.
- ISS**: A dropdown menu set to 'OLORUNSOGO'.
- Feeder 33**: A dropdown menu set to 'NBL'.
- Band**: A dropdown menu set to 'E4H'.
- min Voltage supervisor**: A text input field containing '9'.
- max Voltage supervisor**: A text input field containing '12.5'.
- min current supervisor**: A text input field containing '118.2136307'.
- max current supervisor**: A text input field containing '372'.
- min power supervisor**: A text input field containing '1.970227178'.
- max power supervisor**: A text input field containing '6.2'.
- min power factor supervisor**: A text input field containing '0.6'.
- max power factor supervisor**: A text input field containing '1'.
- min voltage user(DISPATCH ISS)**: A text input field containing '6'.
- max voltage user(DISPATCH ISS)**: A text input field containing '12.5'.
- min current user(DISPATCH ISS)**: A text input field containing '1'.

The left sidebar contains navigation links: Dashboard, HOS, Interruptions, New Reading, Readings Report, Review Feeder Readings, NERC Submission, Settings, Energy Management, and LOGOUT. The top navigation bar shows the user is logged in as 'Adebayo Oyebamiji'.

This shows where the feeder is been tied to region, hubs, and ISS as well as the properties of the feeder.