

# MEC Report on Generation and Distribution FY 2023-FY 2024

## Background

This report is a compilation of data from FY 2023 and FY 2024 with data from the MEC power plant and the MEC Billing Department, along with calculations of Generation and Distribution Key Performance Indicators: System Load Factor (SLF), System Capacity Factor (SCF), System Availability Factor (SAF), and Distribution Losses. Please refer to the Annex for the detailed breakdown of data and calculations for each month. MEC has been experiencing challenges as aging engines and thus discontinuing the use of two Engines, and MEC's strategic move to rent six rental backup generators from Aggreko rental units to bolster the island's power stability effectively addressing past fluctuations in electricity provision. This initiative has proven effective as can be seen from the numbers below.

## 1.1 Generation

### 1.1.1 System Load Factor (SLF)

$$\text{SLF} = \frac{\text{Energy Available For Sale (kWh)}}{\text{MAX Demand (kW)} * 8760}$$

The System Load Factor (SLF) is the Energy Available for Sale (kWh) divided by the peak demand over a period. In this report the period is the fiscal year.

The SLF is an indicator of the utilization of production capacity. Production capacity is maintained to provide for peak demand. A lower SLF indicates a load profile with a greater peak compared to the average load and a lower utilization of production capacity.

A high SLF implies a relatively flat demand profile and higher capacity utilization. This generally indicates an efficient use of production resources. However, a high SLF could result from limiting peak demand by regular load shedding due to insufficient reliable production capacity. In this instance the high SLF does not indicate an improved performance but is rather a symptom of insufficient reliable production capacity to meet the demand.

The minimum LF deemed acceptable is 50% while a benchmark of 80% is set for Pacific Island Utilities. Demand side management strategies, time of use tariffs, peak lopping and demand shifting strategies can be adopted to limit the peak demand and improve the LF. This is expected to be an increasingly important activity in Pacific power sector policies.

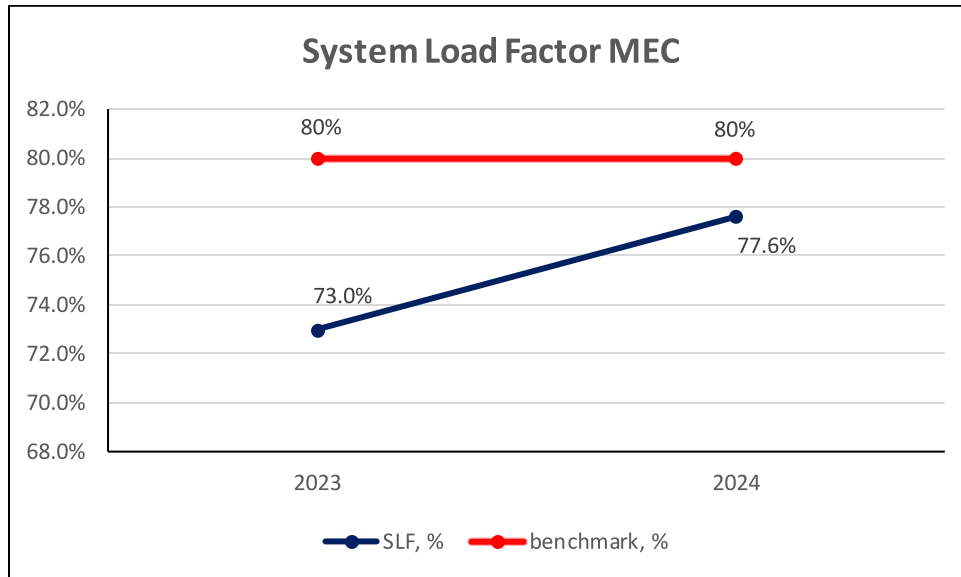
MEC's SLF is within this range for FY 2023 and FY2024 thus meeting the demand of its customers.

**The SLF slightly increased from 73% in FY 2023 to 77.6% in FY 2024. This slight increase is reflected in the normal increase in load consumption.** As energy delivered increases, the energy consumed increases as well. The max demand increased from 9,700 kW to 10,000 kW. The Energy available for sale, or the total energy delivered to distribution increased from 62,035,510 kWh in FY 2023 to 68,009,090 kWh in FY 2024. We can infer from these numbers that the SLF increase can be attributed to the adjustment of delivering more energy to account for the slight increase in demand.

For its part, given the fact that Majuro's load profile has not changed, the demand growth in FY2024 is a consequence of the increase in overall consumption on the island.

	Total Energy Delivered to Distribution (kWh)	Max Demand (kW)	SLF (%)
<b>FY 2023</b>	62,035,510	9,700	73.01%
<b>FY 2024</b>	68,009,090	10,000	77.64%

	FY 2023	FY 2024
<b>SLF, %</b>	<b>73.0%</b>	<b>77.6%</b>
<b>PPA Benchmark, %</b>	<b>80%</b>	<b>80%</b>



### 1.1.2 System Capacity Factor (SCF)

$$SCF = \frac{\text{Energy Available For Sale (kWh)}}{\text{Available Capacity (kW)} * 8760}$$

System Capacity factor (SCF) is also an indicator of effectiveness in relation to the use of generation resources. It is a similar measure to SLF. Where SLF measures average power as a percentage of maximum demand, SCF measures average power demand as a percentage of installed firm capacity. The lower the SCF the greater the production reserve capacity available to provide for demand when

production units are taken out of service for maintenance purposes or for repairs due to faults. It also may suggest over investment in production capacity which situation is best avoided.

A higher CF indicates a peak demand that approaches available production capacity.

This may cause difficulties in scheduling maintenance for the generating plants and may result in load shedding during peak load periods when generators are taken out of service due to faults.

The investment in production capacity is determined by the power security policy adopted by the utility.

The minimum production capacity is determined by the power security policy adopted based on experience concerning reliability, the cost of investment and expectations regarding the lifespan of the firm production equipment. Installing more capacity than required would be an inefficient way of utilizing a utilities financial resources, while, underinvesting may compromise the reliability of power supply.

**MEC's SCF was 60.9% for FY 2023, and 58.1% for FY 2024, while the PPA Benchmark is >40%.**

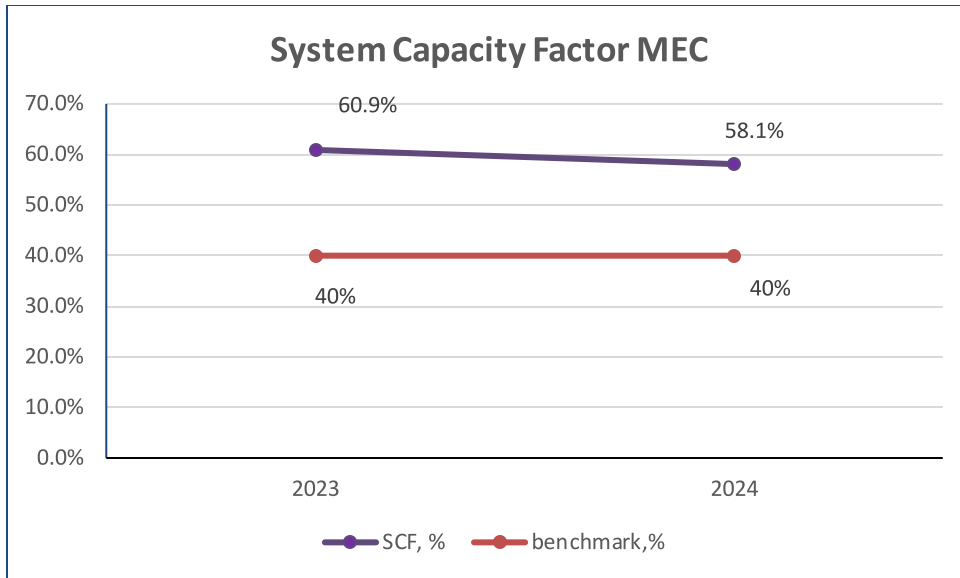
Two aging units were discontinued in FY 2023. Since April 2024, 6 Aggreko rental units have been added to the capacity, while an extra seventh engine was rented in August 2024. While there is an increase in engines, some generators are idle due to high reserve. The Energy available for sale, or the total energy delivered to distribution increased from 62,035,510 kWh in FY 2023 to 68,009,090 kWh in FY 2024. The average available capacity increased from 11,625 kW in FY 23 to 13,375 in FY24. The SCF decreased slightly from 60.92% in FY 23 to 58.05% in FY 24.

Two factors have an impact on the decrease of SCF in FY 2024:

- 1) Adding the generators to the power system that are in reserve for a relatively long time.
- 2) Frequent and long outages in the MEC power system leading to generator downtime and thus reducing their overall production.

	Total Energy Delivered to Distribution (kWh)	Total Diesel Generation Available Capacity (kW)	Average Available Capacity (kW)	SCF (%)
<b>FY 2023</b>	62,035,510	139,500	11,625	60.92%
<b>FY 2024</b>	68,009,090	160,500	13,375	58.05%

	FY 2023	FY 2024
<b>SCF, %</b>	60.9%	58.1%
<b>PPA Benchmark, %</b>	>40%	>40%



### 1.1.3 System Availability Factor

$$\text{SAF} = \frac{\text{Available Hours(AH) The time units are producing energy}}{\text{Period Hours (PH) total clock time units are capable of producing energy}}$$

The System Availability Factor (SAF) is an indicator of how well a power plant is operated and maintained. It is determined by the actual hours the unit is available for production divided by the maximum available hours for the period. Because power plants need to be taken out of service for routine maintenance an AF of 100% is not achievable. The type of power plant and its mode of operation may affect the AF. For a base load diesel power plant, with higher running hours more routine maintenance would be required and subsequently resulting in a lower AF. For such power plant an AF between 90% and 95% is expected. For a plant that is operated less frequently the AF should be a little higher.

A higher-than-expected AF may mean the plant is not being sufficiently maintained and this could lead to more frequent breakdown in the near future. A lower AF indicates more frequent breakdowns and outages for repairs as a result of poor maintenance and operation protocols.

#### MEC's SAF was 60.9% in FY 2023 and 65.1% in FY 2024

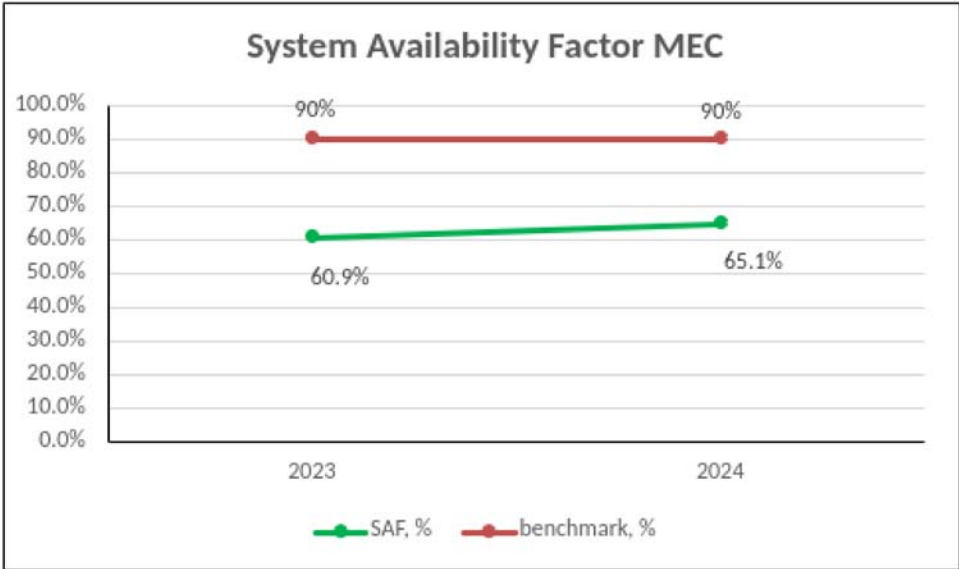
As it was mentioned, significant reserve capacity has been added to the system which is not used to full capacity, and therefore there is enough number of engines to meet the demand of the customers. Any higher usage is not necessary at this point as this is an island and this is the demand which the plant is providing.

On the other hand, the runtime of engines has increased, which indicates the following factors:

- 1) More energy is produced by generators.
- 2) Engines have become more reliable, they are not taken out for overhauls often and for a long time.

	Engine Run Time Total (AH)	Period Hours (PH) Total time units capable of producing energy	SAF (%)
FY 2023	23,139	38,016	60.87 %
FY 2024	35,240	54,168	65.06 %

	FY 2023	FY 2024
SAF, %	60.9%	65.1%
PPA Benchmark, %	90%	90%



## 1.2 Distribution

### 1.2.1 Distribution Losses

$$\text{Total Losses} = \text{Est Dist Loss } 5\% + \frac{1 - (\text{Billed Energy (kWh)})}{\text{Energy Delivered to Distribution (kWh)} * 95\%}$$

Network delivery losses are defined as the net generation minus electricity sold, divided by net generation, and expressed as a percentage.

Here, estimated 5% Distribution loss added to commercial losses, which is Energy Billed divided by Energy Delivered to Distribution.

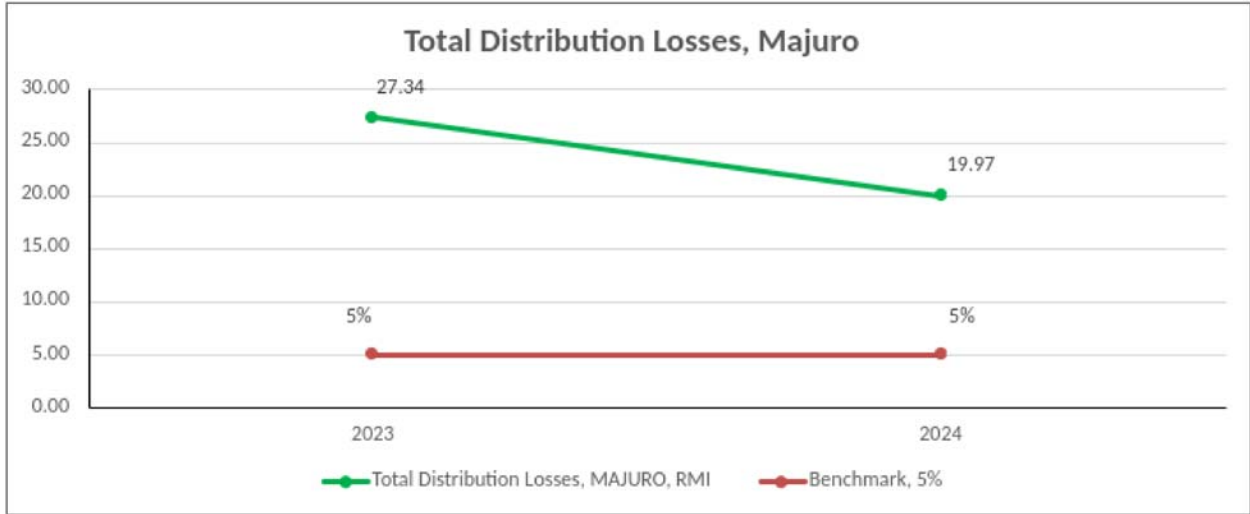
The losses comprise technical and non-technical losses. Technical losses are mainly caused resistance in the network lines and cables which may be exacerbated by imbalances in the currents for each phase and high resistance joints in the distribution system. These depend on distribution voltages, loading, conductor material, physical dimensions and state of conductors.

Non-technical losses are those attributable to electricity used by a consumer but not paid for, including electricity theft, meter reading and accounting errors, unmetered connections, metering errors, etc. This indicator should be below 5% as per PPA for smaller utilities such as MEC.

**The total losses for FY 2023 were 27.34%, which decreased to 19.97% in FY 2024**, showing a good trend of more than 7% loss reduction. This is mainly attributed to the work of the new Revenue Protection Unit at MEC reducing billing errors as there is a 20% increase in billed kWh when comparing FY 2023 (45,770,140) to FY 2024 (54,935,602).

	Total Energy billed, kWh Prepaid & Postpaid, Majuro Only	Total Energy Delivered to Distribution (kWh)	Total Losses (%)
<b>FY 2023</b>	45,770,140	62,035,510	27.34 %
<b>FY 2024</b>	54,935,602	68,009,090	19.97 %

	FY 2023	FY 2024
<b>Total Distribution Losses, MAJURO, RMI</b>	27.34%	19.97%
<b>PPA Benchmark, 5%</b>	5%	5%



## 2 System Average Interruption Duration Index (SAIDI) (hours per customer)

$$\text{SAIDI} = \frac{\text{Total Customer Interruptions Duration Interrupted (cust hr)}}{\text{Total Number of Customers (connections)}}$$

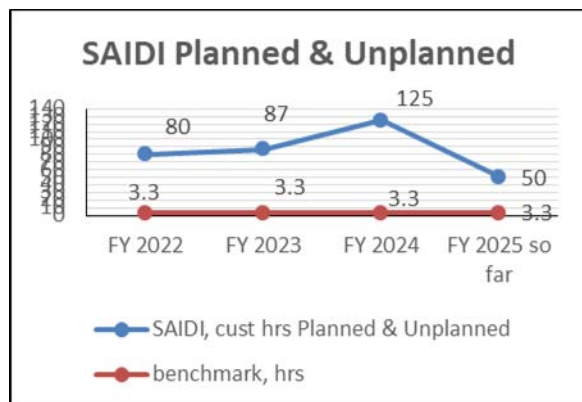
SAIDI indicates the average duration of power outages experienced by customers and is measured in customer hours. The results are shown in Figure below as Planned and Unplanned outages that have resulted in power interruptions to customers. The categories based on the source of the interruption are planned and unplanned generation events and planned and unplanned network events. The benchmark for Pacific Island utilities is for the total Planned and Unplanned SAIDI to be below 200 customer minutes or 3.3 customer hours.

The number of outages increased in FY 2024 due to the failure of aging engines and power rationing and maintenance. The introduction of rental engines have stabilized the system and can be seen in the considerable outage reduction trend in FY 2025 so far as number in mid FY 2025 so far. A comprehensive breakdown of each outage and causes are attached in the Appendix.

### 2.1 SAIDI Planned & Unplanned

	FY 2022	FY 2023	FY 2024	FY 2025 so far
--	---------	---------	---------	----------------

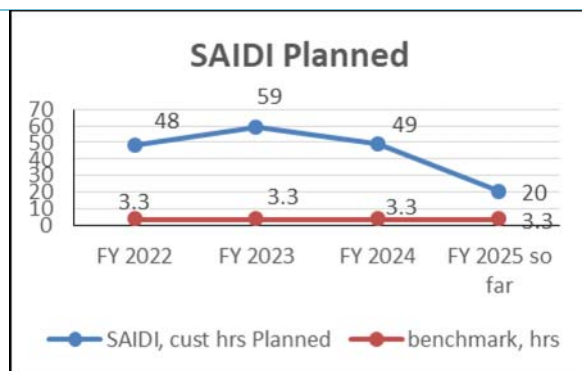
<b>SAIDI, customer hrs Planned &amp; Unplanned</b>	80	87	125	50
<b>PPA Benchmark, hrs</b>	3.3	3.3	3.3	3.3



## 2.2 SAIDI Planned

One of the reasons of decrease of Planned SAIDI in FY 2024 is the fact that new generators are added to the system and as it was mentioned above for the availability factor analyses, the engines are not taken out for overhauls often and for a long time.

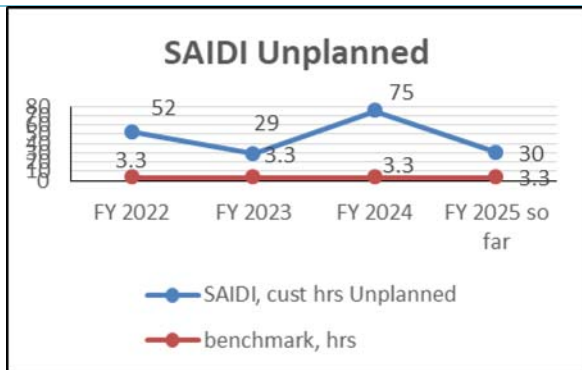
	FY 2022	FY 2023	FY 2024	FY 2025 so far
<b>SAIDI, cust hrs Planned</b>	48	59	49	20
<b>PPA Benchmark, hrs</b>	3.3	3.3	3.3	3.3



## 2.3 SAIDI Unplanned

Increase of Unplanned SAIDI in FY 2024 is linked to the long and serious failures in the distribution network often resulting in the power system blackouts.

	FY 2022	FY 2023	FY 2024	FY 2025 so far
SAIDI, cust hrs Unplanned	52	29	75	30
PPA Benchmark, hrs	3.3	3.3	3.3	3.3



## 3 System Average Interruption Frequency Index (SAIFI) (events per customer)

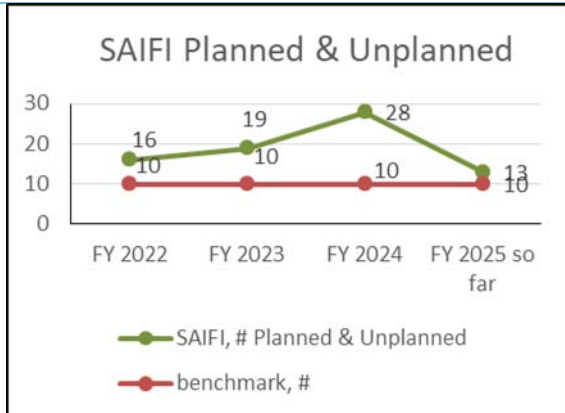
$$\text{SAIFI (\%)} = \frac{\text{Total Customer Interruptions}}{\text{Total Number of Customers (connections)}}$$

SAIFI indicates the average frequency of power interruptions experienced by customers over the fiscal year. Figure below shows the Planned and Unplanned SAIFI for Majuro. The benchmark for Pacific Island utilities is for the total of Planned and Unplanned SAIFI to be below the average of 10 events per customer.

A detailed breakdown of the outages can be found in the Appendix below.

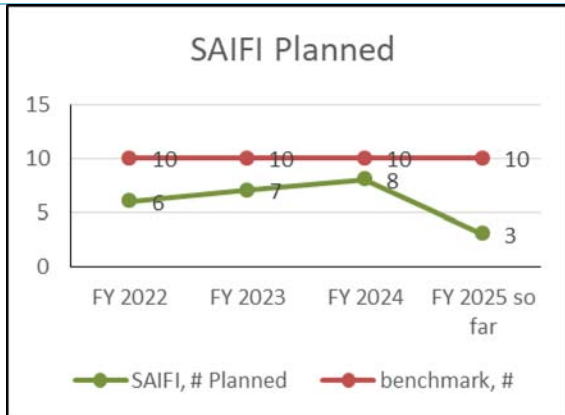
### 3.1 SAIFI Planned & Unplanned

	FY 2022	FY 2023	FY 2024	FY 2025 so far
<b>SAIFI, % Planned &amp; Unplanned</b>	16	19	28	13
<b>PPA Benchmark, %</b>	10	10	10	10



### 3.2 SAIFI Planned

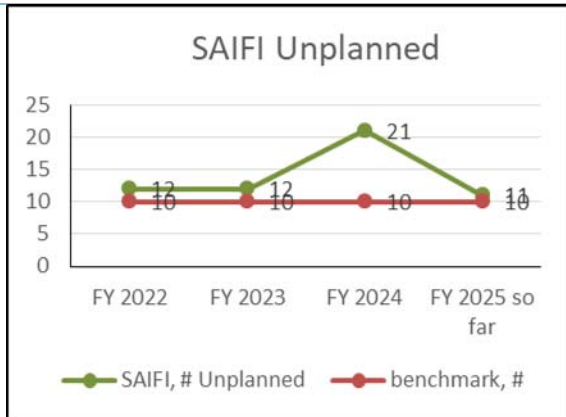
	FY 2022	FY 2023	FY 2024	FY 2025 so far
<b>SAIFI, % Planned</b>	6	7	8	3
<b>PPA Benchmark, %</b>	10	10	10	10



### 3.3 SAIFI Unplanned

Increase of Unplanned SAIFI in FY 2024 is linked to the long and serious failures in the distribution network often resulting in the power system blackouts.

	FY 2022	FY 2023	FY 2024	FY 2025 so far
<b>SAIFI, % Unplanned</b>	12	12	21	11
<b>PPA Benchmark, %</b>	10	10	10	10



	Date	G1 (kWh- Monthly Energy Produced Generator 1)	G2 (kWh- Monthly Energy Produced Generator 2)	G3 (kWh- Monthly Energy Produced Generator 3)	G4 (kWh- Monthly Energy Produced Generator 4)	G5 (kWh- Monthly Energy Produced Generator 5)
--	------	--	--	---	---	---

Calculation Equation

<b>FY 2023</b>	10/31/2022	215,890	251,850	0	0	0
	11/30/2022	163,750	173,380	0	0	0
	12/31/2022	0	184,350	0	0	0
	1/31/2023	0	99,350	0	0	0
	2/28/2023	0	0	0	0	0
	3/31/2023	540,350	148,690	0	0	0
	4/30/2023	171,940	97,390	0	0	0
	5/31/2023	320,010	189,220	0	0	1,500
	6/30/2023	132,550	194,350	0	0	245,300
	7/31/2023	355,240	0	0	0	222,100
	8/31/2023	366,870	0	0	0	765,600
9/30/2023	162,470	0	0	0	700,300	

**FY 2023 TOTALS**

<b>FY 2024</b>	10/31/2023	198,460	0	0	0	105,720
	11/30/2023	167,110	0	0	0	157,000
	12/31/2023	123,490	0	0	0	-
	1/31/2024	100,010	0	0	0	-
	2/29/2024	121,440	0	0	0	-
	3/31/2024	126,420	0	0	0	-
	4/30/2024	0	0	0	0	-
	5/31/2024	0	0	0	0	-
	6/30/2024	0	0	0	0	28,960
	7/31/2024	0	0	0	0	25,640
	8/31/2024	0	0	0	0	9,314
9/30/2024	0	0	0	0	83,729	

**FY 2024 TOTALS**

G6 (kWh -Monthly Energy Produced Generator 6)	G7 (kWh- Monthly Energy Produced Generator 7)	CAT1 (kWh - Monthly CAT 1)	CAT2 (kWh - Monthly CAT 2)	CAT3 (kWh - Monthly CAT 3)	A (kWh - Monthly Aggreko A)
---	---	----------------------------	----------------------------	----------------------------	-----------------------------

3,087,000	1,622,000				0
2,877,150	1,865,920				0
3,010,000	2,009,000				0
2,299,000	2,900,000				0
3,100,000	2,146,000				40,000
2,005,000	2,600,000				44,000
2,888,000	2,077,000				109,000
3,182,000	2,053,000				110,000
3,158,000	2,056,000				110,000
3,159,000	2,034,000				108,000
3,026,000	1,865,000				0
3,106,000	1,890,000				0

2,913,450	2,184,350				0
2,889,340	2,098,770				0
2,921,850	2,184,220				0
2,894,320	2,016,330				0
2,904,330	1,893,410				0
3,006,290	1,444,250				0
2,708,830	1,616,100				0
2,557,730	1,604,690				0
2,589,940	1,447,450				0
2,538,940	1,561,350				0
2,422,136	1,702,543				0
2,364,003	480,034				0

A1 (kWh - Monthly Aggreko 1)	A2 (kWh - Monthly Aggreko 2)	A3 (kWh - Monthly Aggreko 3)	A4 (kWh - Monthly Aggreko 4)	A5 (kWh - Monthly Aggreko 5)	A6 (kWh - Monthly Aggreko 6)	A7 (kWh - Monthly Aggreko 7)
------------------------------	------------------------------	------------------------------	------------------------------	------------------------------	------------------------------	------------------------------

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4,759	56,941	100,762	256,401	431,152	488,696		0
55,335	163,044	201,223	287,503	389,129	447,923		0
506,386	413,585	242,847	303,654	591,016	245,426		0
520,145	57,939	450,980	472,537	463,090	389,229		0
431,757	304,778	431,200	298,359	285,945	453,519	25,370	
466,038	403,111	305,613	420,351	539,116	386,375	251,860	

Total Diesel Generation Gross (kWh)	MXA1 (kWh - Aux TX1 PS1)	MXA2 (kWh - Aux TX2 PS1)	MX21 (kWh - Aux TX1 PS2)	MX22 (kWh - Aux TX2 PS2)	ATX1 (kWh - Aggreko Aux TX1)	ATX2 (kWh - Aggreko Aux TX2)
G1+G2+G3+G4 +G5+G6+G7+A +A1+A2+A3+A 4+A5+A6+A7+ CAT1+CAT2+C AT3						
5,176,740	82,227		0	200,798	Not metered	Not metered
5,080,200						
5,203,350						
5,298,350						
5,286,000						
5,338,040						
5,343,330	188,716		0	588,803		
5,855,730						
5,896,200						
5,878,340						
6,023,470						
5,858,770						
<b>66,238,520</b>						
5,401,980						
5,312,220						
5,229,560						
5,010,660						
4,919,180						
4,576,960						
5,663,641						
5,706,577						
6,369,264						
6,479,850	0		205,020	20,496		
6,364,921						
5,700,230						
<b>66,735,043</b>						

Diesel Generation Aux (kWh) Total	Total Energy Produced (kwh) ((Gen+Solar) - Aux)	F1 (kWh - Monthly Feeder 1)	F2 (kWh - Monthly Feeder 2)	F3 (kWh - Monthly Feeder 3)	Net (sum of MF1+MF2+MF 3)
<b>Sum of Aux: MXA1+MX21+MX22</b>	<b>((Gen+Solar) - Aux)</b>				<b>sum of MF1+MF2+MF 3</b>
283,025	4,906,125	1,825,230	2,478,190	729,300	5,032,720
-	5,092,780	1,705,490	2,451,340	706,060	4,862,890
-	5,217,470	1,855,310	2,502,980	709,640	5,067,930
-	5,311,880	1,855,640	2,449,640	709,640	5,014,920
-	5,300,330	1,847,350	2,501,680	709,010	5,058,040
-	5,354,550	1,850,120	2,501,640	708,940	5,060,700
777,519	4,580,521	1,864,280	2,446,310	695,820	5,006,410
-	5,870,460	1,967,700	2,393,790	774,370	5,135,860
-	5,910,940	1,969,340	2,389,440	775,000	5,133,780
-	5,892,830	2,010,370	2,599,140	776,340	5,385,850
-	6,039,220	2,043,390	2,832,940	735,670	5,612,000
-	5,874,090	2,020,200	2,746,080	724,910	5,491,190
					<b>61,862,290</b>
-	5,415,354	2,043,920	2,725,320	739,190	5,508,430
-	5,325,218	2,036,330	2,692,010	724,430	5,452,770
-	5,242,120	2,012,850	2,664,930	744,800	5,422,580
-	5,024,009	2,109,350	2,709,650	741,240	5,560,240
-	4,932,889	2,194,350	2,806,340	740,880	5,741,570
-	4,594,197	2,186,850	2,821,580	791,480	5,799,910
-	5,674,885	2,197,440	2,780,410	745,510	5,723,360
-	5,716,834	2,150,490	2,786,840	741,770	5,679,100
-	6,379,397	2,138,960	2,738,310	739,740	5,617,010
225,516	6,264,043	2,149,330	2,740,110	739,240	5,628,680
-	6,376,312	2,343,831	3,011,981	839,116	6,194,928
-	5,710,356	2,043,994	2,764,649	725,782	5,534,425
					<b>67,863,003</b>

110%

Difference (Engine - Feeder)	Net Calculated (kWh) (Gen-Aux)	Energy Available for sale (Monthly kWh) (MF1+MF2+MF3+MS)*95%	Estimated Distribution Tech. Loss (5%), Monthly kWh (MF1+MF2+MF3+MS)*5%	MS (kWh - Monthly Solar)	Total Energy Delivered to Distribution (kWh) MF1+MF2+MF3+MS
Engines - Feeders	(Gen-Aux)	(MF1+MF2+MF3+MS)*95%	(MF1+MF2+MF3+MS)*5%		MF1+MF2+MF3+MS
144,020	4,893,715	4,792,874	252,257	12,410	5,045,130
217,310	5,080,200	4,631,697	243,774	12,580	4,875,470
135,420	5,203,350	4,827,948	254,103	14,120	5,082,050
283,430	5,298,350	4,777,028	251,423	13,530	5,028,450
227,960	5,286,000	4,818,752	253,619	14,330	5,072,370
277,340	5,338,040	4,823,350	253,861	16,510	5,077,210
336,920	4,565,811	4,770,064	251,056	14,710	5,021,120
719,870	5,855,730	4,893,061	257,530	14,730	5,150,590
762,420	5,896,200	4,891,094	257,426	14,740	5,148,520
492,490	5,878,340	5,130,323	270,017	14,490	5,400,340
411,470	6,023,470	5,346,363	281,388	15,750	5,627,750
367,580	5,858,770	5,231,185	275,326	15,320	5,506,510
				<b>173,220</b>	<b>62,035,510</b>
(106,450)	5,401,980	5,245,714	276,090	13,374	5,521,804
(140,550)	5,312,220	5,192,480	273,288	12,998	5,465,768
(193,020)	5,229,560	5,163,383	271,757	12,560	5,435,140
(549,580)	5,010,660	5,294,910	278,679	13,349	5,573,589
(822,390)	4,919,180	5,467,515	287,764	13,709	5,755,279
(1,222,950)	4,576,960	5,526,290	290,857	17,237	5,817,147
(59,719)	5,663,641	5,447,874	286,730	11,244	5,734,604
27,477	5,706,577	5,404,889	284,468	10,257	5,689,357
752,254	6,369,264	5,345,786	281,357	10,133	5,627,143
851,170	6,254,334	5,356,470	281,919	9,709	5,638,389
169,993	6,364,921	5,896,003	310,316	11,391	6,206,319
165,805	5,700,230	5,267,323	277,228	10,126	5,544,551
				<b>146,087</b>	<b>68,009,090</b>

110%

Generation Losses (%)	Total Energy billed, kWh Prepaid & PostPaid, Majuro Only	Monthly Commercial Loss , %	Monthly Total Loss, %	Engine Qty	Commercial Losses Calc (%) 1-(Billed kWh+PPM kWh)/Energy Delivered	Annual Commercial Losses per FY
(Feeders-(Gen-Aux))*(100/Gen)		(1-Billed kWh / (Feeders*95%))*100	5+ (1-Billed kWh / (Feeders*95%))*100		1-(Billed kWh) / (Feeders+MS)*0.95	
3	3,364,386	30	35	4	29.80%	22.34%
(4)	3,643,450	21	26	4	21.34%	
(3)	3,641,303	25	30	3	24.58%	
(5)	3,734,597	22	27	3	21.82%	
(4)	3,440,352	29	34	3	28.60%	
(5)	3,640,184	25	30	5	24.53%	
8	3,602,688	24	29	5	24.47%	
(12)	4,154,491	15	20	6	15.09%	
(13)	3,841,695	21	26	6	21.46%	
(8)	4,344,666	15	20	5	15.31%	
(7)	4,191,910	22	27	4	21.59%	
(6)	4,170,417	20	25	4	20.28%	
	<b>45,770,140</b>					
2	4,525,064	14	19	4	13.74%	14.97%
3	4,577,309	12	17	4	11.85%	
4	5,356,736	-4	1	3	-3.74%	
11	4,086,730	23	28	3	22.82%	
17	4,115,263	25	30	3	24.73%	
27	4,210,299	24	29	3	23.81%	
1	4,942,694	9	14	8	9.27%	
(0)	4,832,683	11	16	8	10.59%	
(12)	4,417,586	17	22	9	17.36%	
(10)	4,090,969	24	29	9	23.63%	
(3)	5,721,994	3	8	10	2.95%	
(3)	4,058,275	23	28	10	22.95%	
	<b>54,935,602</b>					

120%

Total Loss, % , per month	Total Loss, Annual per FY	Time of Continuous Operation (PH)	Run Time MG1 (Hours per Month at Generator 1)	Run Time MG2 (Hours per Month at Generator 2)	Run Time MG3 (Hours per Month at Generator 3)	Run Time MG4 (Hours per Month at Generator 4)
<b>Est Dist Loss 5%+ Commercial Losses</b>		<b>Engine Qty * 24 hrs * #days/month</b>				
34.80%	27.34%	2976	247	276	0	0
26.34%		2880	192	196	0	0
29.58%		2232	0	167	0	0
26.82%		2232	0	81	0	0
33.60%		2016	0	0	0	0
29.53%		3720	571	131	0	0
29.47%		3600	238	54	0	0
20.09%		4464	390	217	0	0
26.46%		4320	162	242	0	0
20.31%		3720	242	0	0	0
26.59%		2976	280	0	0	0
25.28%		2880	651	0	0	0
		<b>38,016</b>				
18.74%	19.97%	2976	651	0	0	0
16.85%		2880	540	0	0	0
1.26%		2232	434	0	0	0
27.82%		2232	326	0	0	0
29.73%		2088	434	0	0	0
28.81%		2232	434	0	0	0
14.27%		5760	0	0	0	0
15.59%		5952	0	0	0	0
22.36%		6480	0	0	0	0
28.63%		6696	0	0	0	0
7.95%		7440	0	0	0	0
27.95%		7200	0	0	0	0
		<b>54,168</b>				

Run Time MG5 (Hours per Month at Generator 5)	Run Time MG6 (Hours per Month at Generator 6)	Run Time MG7 (Hours per Month at Generator 7)	Run Time CAT1 (Hours per Month at CAT 1)	Run Time CAT2 (Hours per Month at CAT 2)	Run Time CAT3 (Hours per Month at CAT 3)	Run Time A (Hours per Month at Aggreko A)
--	--	--	---	---	---	--

0	744	605				0
0	701	652				0
0	670	688				0
0	699	712				0
0	710	700				40
0	721	744				44
0	707	693				109
234	738	732				110
286	715	689				110
235	712	707				108
292	720	734				0
289	720	732				0
289	720	732				0
385	722	729				0
0	722	729				0
0	722	729				0
0	722	729				0
0	722	729				0
0	722	729				0
0	722	729				0
16	722	729				0
16	725	727				0
3	721	756				0
48	721	756				0

Run Time A1 (Hours per Month at Aggreko 1)	Run Time A2 (Hours per Month at Aggreko 2)	Run Time A3 (Hours per Month at Aggreko 3)	Run Time A4 (Hours per Month at Aggreko 4)	Run Time A5 (Hours per Month at Aggreko 5)	Run Time A6 (Hours per Month at Aggreko 6)	Run Time A7 (Hours per Month at Aggreko 7)	Engine Run Time Total (AH)
0	0	0	0	0	0	0	1,872
0	0	0	0	0	0	0	1,741
0	0	0	0	0	0	0	1,525
0	0	0	0	0	0	0	1,492
0	0	0	0	0	0	0	1,450
0	0	0	0	0	0	0	2,211
0	0	0	0	0	0	0	1,801
0	0	0	0	0	0	0	2,421
0	0	0	0	0	0	0	2,204
0	0	0	0	0	0	0	2,004
0	0	0	0	0	0	0	2,026
0	0	0	0	0	0	0	2,392
							<b>23,139</b>
0	0	0	0	0	0	0	2,393
0	0	0	0	0	0	0	2,376
0	0	0	0	0	0	0	1,885
0	0	0	0	0	0	0	1,777
0	0	0	0	0	0	0	1,885
0	0	0	0	0	0	0	1,885
5	9	71	175	81	169	0	1,961
81	198	244	359	480	565	0	3,378
609	500	299	336	666	320	0	4,197
625	69	537	567	556	439	0	4,261
535	369	538	367	353	539	67	4,248
559	484	383	504	642	459	440	4,996
							<b>35,240</b>





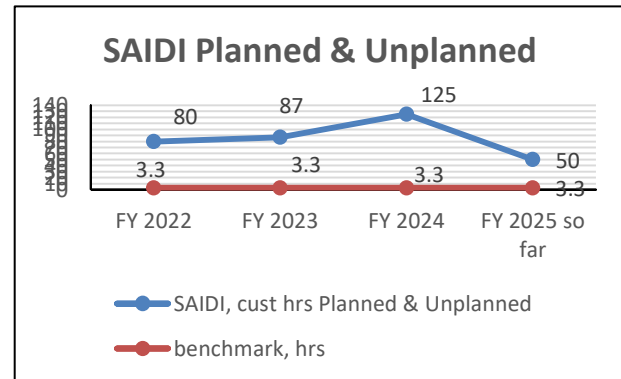


Available Capacity Aggreko 7 (kW)	Total Diesel Generation Available Capacity (kW)	Available Energy (kWh)	SCF (%), Annual
	sum(Availabl e Capacity)	(Sum(Available Capacity))*8760	sum(Feeders)/(A verage(Available Capacity)*8760)
0	11,000	96,360,000	60.92%
0	11,000	96,360,000	
0	9,500	83,220,000	
0	9,500	83,220,000	
0	9,000	78,840,000	
0	14,000	122,640,000	
0	12,000	105,120,000	
0	14,000	122,640,000	
0	14,000	122,640,000	
0	12,500	109,500,000	
0	11,500	100,740,000	
0	11,500	100,740,000	
	<b>139,500</b>	<b>1,222,020,000</b>	
0	11,500	100,740,000	58.05%
0	11,500	100,740,000	
0	9,500	83,220,000	
0	9,500	83,220,000	
0	9,500	83,220,000	
0	9,500	83,220,000	
0	15500	135,780,000	
0	15500	135,780,000	
0	16500	144,540,000	
0	16500	144,540,000	
1250	17750	155,490,000	
1250	17,750	155,490,000	
	<b>160,500</b>	<b>1,405,980,000</b>	

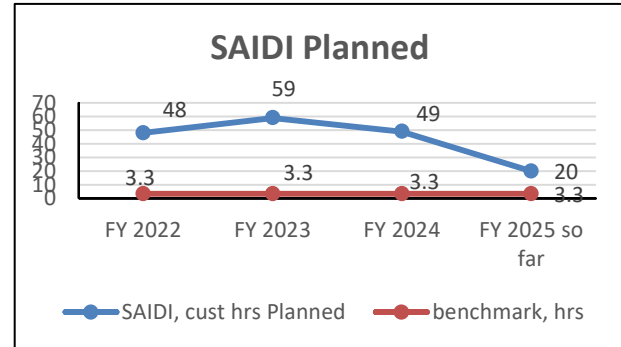
## System Average Interruption Duration Index (SAIDI) (hrs per customer)

SAIDI (hours) = 
$$\frac{\text{Total Customer Interruptions duration interrupted (hrs)}}{\text{Total Number of Customers}}$$

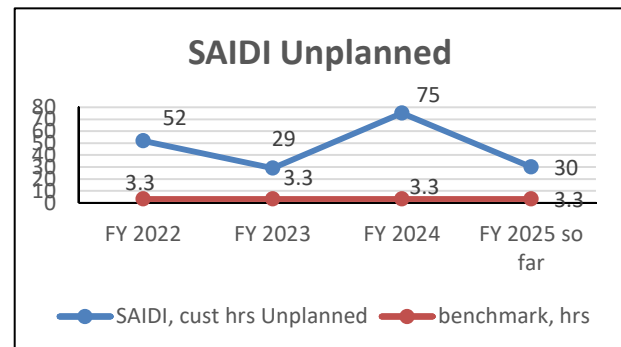
	FY 2022	FY 2023	FY 2024	FY 2025 so far
SAIDI, cust hrs Planned & Unplanned	80	87	125	50
benchmark, hrs	3.3	3.3	3.3	3.3



	FY 2022	FY 2023	FY 2024	FY 2025 so far
SAIDI, cust hrs Planned	48	59	49	20
benchmark, hrs	3.3	3.3	3.3	3.3



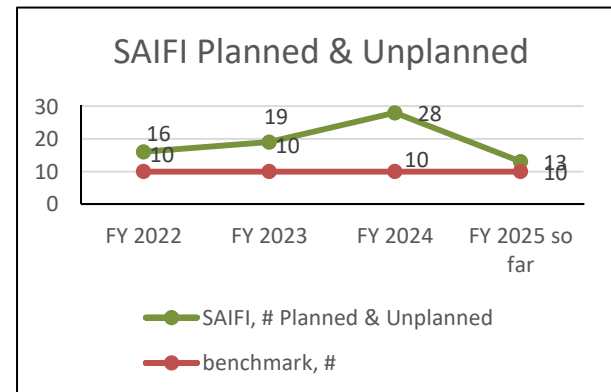
	FY 2022	FY 2023	FY 2024	FY 2025 so far
SAIDI, cust hrs Unplanned	52	29	75	30
benchmark, hrs	3.3	3.3	3.3	3.3



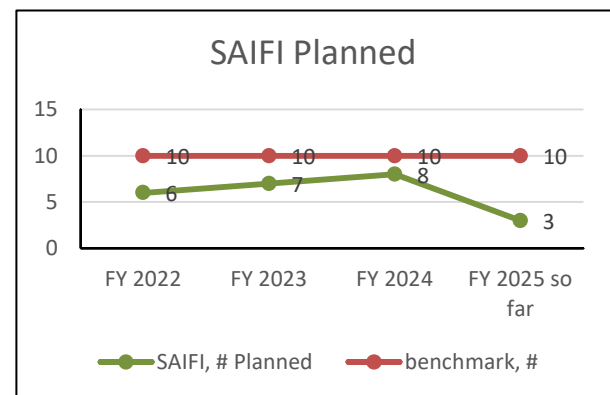
## System Average Interruption Frequency Index (SAIFI) (events per customer)

SAIFI (%) = 
$$\frac{\text{Total Customer Interruptions}}{\text{Average Number of Customers (connections)}}$$

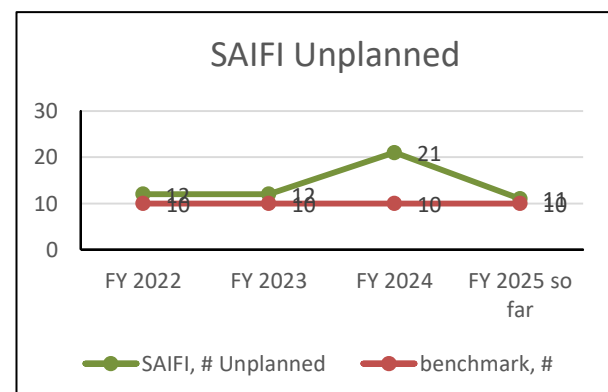
	FY 2022	FY 2023	FY 2024	FY 2025 so far
SAIFI, # Planned & Unplanned	16	19	28	13
benchmark, #	10	10	10	10



	FY 2022	FY 2023	FY 2024	FY 2025 so far
SAIFI, # Planned	6	7	8	3
benchmark, #	10	10	10	10



	FY 2022	FY 2023	FY 2024	FY 2025 so far
SAIFI, # Unplanned	12	12	21	11
benchmark, #	10	10	10	10



FY 2022 Outages

Outage Date	Feeder 1				Feeder 2								Feeder 3	Planned/ Unplanned	Generation		Distribution		cause of outage
	Outage Time in Minutes F1 Airport to Laura	Outage Time in Minutes F1 Kessal to Airport	Outage Time in Minutes F1 Laura to End	Outage Time in Minutes F1 Plant to Kessal	Outage Time in Minutes F2 EZ Price to CMI	Outage Time in Minutes F2 EZ Price to Kirts	Outage Time in Minutes F2 EZ Price to MIC	Outage Time in Minutes F2 Kirts to MIHS	Outage Time in Minutes F2 MIHS to Rita	Outage Time in Minutes F2 Momo to EZ Price	Outage Time in Minutes F2 Plant to Momo	Outage Time in Minutes F2 Rita to Ejit	Outage Time in Minutes F3 Plant to Hospital	Planned	station failure	station maintenance	distribution failure	distribution maintenance	
10/2/2021	110.	101	118	99.	275	166	275	169	175	159	156	175	64	No	No	No	Yes	No	Unplanned Outage. All Feeders. Faulty transformer at Uliga next to Courthouse area.
1/13/2022	612	586	631	582										Yes	No	Yes	No	Yes	Planned Outage. Feeder 1. Power Plant to Laura. Maintenance on Engine #5 and change one transformer in Arrak.
1/20/2022	141	183	211	86	306	291	306	291	320	277	271	320		No	No	No	Yes	No	Unplanned Outage. Feeder 1 and Feeder 2. Feeder 1 failure and Feeder 2. A transformer exploded at Delap Back Road back side of K&K.
2/10/2022					688	688	687	834.	840	687	680	840		Yes	No	Yes	No	Yes	Planned Outage. Feeder 2 Power Plant to Rita End. Maintenance on Engine #6, Change A1 Cylinder, change fuel injector, A8 cylinder. Change headline at Eastern Gateway.
2/14/2022					120	120	120	120	120	120	120	120		Yes	No	No	No	Yes	Planned Power Outage. Feeder 2 - Power Plant to Rita/Ejit to do line maintenance at Court House area.
2/21/2022					65	65	65	68	70	55.	50	70		No	Yes	No	No	No	Unplanned Outage. Feeder 2. Under/Over Frequency alarm came up and Feeder 2 and G1 tripped off.
2/23/2022					51	51	51	55.	58.	48	75	58.		No	Yes	No	No	No	Unplanned Outage. Feeder 2 from Power Plant all the way to Rita End. The Aggreko unit fail caused F2 trip but no fault at su.....
2/25/2022	122	84	155	83										No	No	No	Yes	No	Unplanned Outage. Feeder 1 tripped off due to a loose cutout burnt out. Cut-out connection from hotline exploded causing whole Feeder 1 to trip off.
2/26/2022					480	480	480	480	480	480	480	480		Yes	No	No	No	Yes	Planned Power Outage. Feeder 2. Power plant to Rita/Ejit. to do line maintenance at KMI to ADG church along with tree trimming .
3/3/2022	138		138											No	No	No	Yes	No	Unplanned Outage. Feeder 1 from Airport VCB all the way to Laura End. Laura hot line to ch.....

3/12/2022														44	No	No	No	Yes	No	Unplanned Outage. Feeder 3 - Tree branch fell on Primary lines @ Delap backroad.
3/17/2022	357	342	364	310											No	No	No	Yes	No	Unplanned Outage. Feeder 1. Feeder 1 tripped by itself and staff said maybe branch touched line
3/19/2022	55.	52.	60	50											No	No	No	Yes	No	Unplanned Outage. Feeder 1. Transformer at Rairok near USP exploded.
3/22/2022			11												No	Yes	No	No	No	Unplanned outage. Just only Laura Village. Aggreko unit tripped by itself, and opened Laura VCB to re-Load... on G2, G5, and G6 can't manage the Is Load.
3/25/2022					46	46	46	59	69	39	34	69			No	Yes	No	No	No	Unplanned outage. Feeder 2. Aggreko unit tripped by itself and caused Feeder 2 to trip, Engine #5 load also tripped off
3/27/2022			50												No	Yes	No	No	No	Unplanned outage. Feeder 1 Just Laura VCB and Laura Village outage. Cause water leak worst on G7 on gap by small pipes.
3/31/2022	480	480	480	480											Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura. to do engine maintenance along with distribution line maintenance and tree trimming.
4/9/2022	41	1	74	0											No	Yes	No	No	No	Unplanned Outage. Feeder 1. Handeme L tried to close Airport VCB while whole Feeder 1 tripped off.
4/10/2022	117	111	180	97											No	Yes	No	No	No	Unplanned Outage. Feeders 1 and 2. Feeder 1 at 01:15 AM, and at Feeder 2 at 00:55 AM. Outage caused by Flo Leak at Engine #6, a 2 inch flo pipe broke under B-bank Turbo next to the starting panel and Engine #7 cannot start because of l/o Temperature was very cool.
4/10/2022					165	165	159	169	173	155	40				No	Yes	No	No	No	Unplanned Outage. Feeders 1 and 2. Feeder 1 at 01:15 AM, and at Feeder 2 at 00:55 AM. Outage caused by Flo Leak at Engine #6, a 2 inch flo pipe broke under B-bank Turbo next to the starting panel and Engine #7 cannot start because of l/o Temperature was very cool.
4/12/2022			157												No	No	No	Yes	No	Unplanned outage. Feeder 1 - Laura to End. Coconut Tree Branches landed on secondary line.

4/13/2022			140											No	No	No	Yes	No	Unplanned. Feeder 1 Laura VCB. Emergency outage to fix primary line that fell down.
4/14/2022	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura, to do engine maintenance along with distribution line maintenance and tree trimming.
4/28/2022					480	480	480	480	480	480	480	480		Yes	No	No	No	Yes	Planned Power Outage. Feeder 2 - Power Plant to Rita/Anil. to do distribution line maintenance and tree trimming.
5/5/2022					480	480	480	480	480	480	480	480		Yes	No	No	No	Yes	Planned Power Outage. Feeder 2 - Power Plant to Rita/Anil. to do distribution line maintenance and tree trimming.
5/26/2022	480	480	480											Yes	No	No	Yes	Yes	Planned Power Outage. Feeder 1 - Kessai VCB to Laura 9AM to 5PM. to do some adjustments to the airport VCB and also distribution line maintenance.
5/27/2022	200	177	662											No	No	No	Yes	No	Unplanned Outage. Feeder 1. Kessai VCB all the way to Laura. The faulty switch somewhere at Woja Village nearby Jorelik Tibon's area caused the trip.
6/2/2022	61		77											No	No	No	Yes	No	Unplanned Outage. Feeder 1 - Airport VCB to Laura End. To install a Trip Relay at Airport VCB.
6/10/2022	483.	323	553	320										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1. Maintenance on Engine #7. Distribution Linemen Maintenance.
6/18/2022	71	63.	203											No	No	No	Yes	No	Unplanned Outage. Feeder 1 Kessai VCB to Laura VCB. Transformer nearby Dennis Momotaro Store at Rairok Long Island exploded
6/23/2022					481.	481.	439.	481.	487	438.	375	491		Yes	No	Yes	No	Yes	Planned Outage. Feeder 2 - Maintenance on Engine 7 and for Distribution work on the field.
6/29/2022					1,832	1,832	1,832	987	992	983	901	992		No	No	No	Yes	No	Island wide Blackout F1,F2,F3. 6/29/22-6/30/22 @ 09:22 - F2, @ 18:15 - F1 & F3. Causes: Moisture in insulators @ Uliga. Burned out Underground Primary Cable line near Cost Price area.
6/29/2022	183	174	371.	149									147	No	No	No	Yes	No	Island wide blackout F1,F2,F3. 6/29/22-6/30/22 @ 09:22 - F2, @ 18:15 - F1 & F3. Causes: Moisture in insulators @ Uliga. Burned out Underground Primary Cable lines nearby Cost Price area.

7/1/2022	95	37	100	35	68	68	68	68	71	61	50	79	20	No	No	No	Yes	No	Unplanned All Feeders Island wide Black out. Load shedding, a secondary line near the main office fell and caused an island wide blackout.	
7/21/2022	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder1 Power Plant to Laura. to do engine maintenance along with tree trimming and distribution line maintenance.	
7/28/2022	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura. to do engine maintenance along with tree trimming and distribution line maintenance.	
9/5/2022	678		678											No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 Airport VCB to Laura.	
9/15/2022	480	480	480											Yes		Yes		Yes	Planned Power Outage. Feeder 1 - Kessal VCB to Laura 9AM to 5 PM. Generation System Maintenance. Distribution VCB testing and transformer maintenance. Tree Trimming performed at other locations within outage zone during same time period.	
9/29/2022					120	120	120	120	120	120	120	120	120	Yes	No	No	No	Yes	Planned Power Outage. Feeder 2 Power Plant to Anil. To change 2 ballpin and an insulator at K&K backroad.	
<b>Planned &amp; Unplanned Outage Minutes TOTALS FY 2022</b>	6,344	5,114	7,813	3,731	5,657	5,533	5,608	4,861	4,935	4,582	4,312	4,774	275							
<b>Planned &amp; Unplanned Outage Hours TOTALS FY 2022</b>	106	85	130	62	94	92	93	81	82	76	72	80	5							
<b>Planned &amp; Unplanned Customer Hrs per VCB FY22</b>	52,444	41,679	55,603	38,118	10,277	9,867	9,347	19,687	60,207	23,597	77,903	5,172	1,480							
<b>Planned &amp; Unplanned Customer Hrs Feeders Total FY22</b>	187,844				216,057									1,480						
<b>Planned &amp; Unplanned Customer Hrs TOTAL MAJURO FY22</b>	405,382																			
<b>Planned &amp; Unplanned SAIDI Hrs MAJURO FY22</b>	80																			
<b>Planned Outage Minutes FY 2022</b>	3,975	3,789	4,064	2,822	2,729	2,729	2,686	2,875	2,887	2,685	2,615	2,891	0							

Planned Outage Hrs FY 2022	66	63	68	47	45	45	45	48	48	45	44	48	0
Planned Customer Hrs per VCB FY 22	32,860	30,880	28,922	28,831	4,958	4,867	4,477	11,644	35,221	13,828	47,244	3,132	0
Planned Customer Hrs Feeders Total FY22	121,494				125,370								0
Planned Customer Hrs TOTAL MAJURO FY22	246,864												
Planned SAIDI Hrs MAJURO FY22	48												
Unplanned Outage Minutes FY 2022	3,809	2,765	5,189	1,869	4,248	4,124	4,242	3,306	3,368	3,217	3,017	3,203	275
Unplanned Outage Hrs FY 2022	63	46	86	31	71	69	71	55	56	54	50	53	5
Unplanned Customer Hrs per VCB FY 2022	31,488	22,535	36,928	19,095	7,717	7,354	7,070	13,389	41,090	16,568	54,507	3,470	1,480
Unplanned Customer Hrs Feeders Total FY22	110,046				151,165								1,480
Unplanned Customer Hrs TOTAL MAJURO FY22	262,691												
Unplanned SAIDI Hrs Majuro FY22	52												

**SAIFI**

Planned & Unplanned Total Number of Interruptions FY2022	22	19	26	15	15	15	15	15	15	15	15	14	4
# Interruptions * Customers	10,912	9,291	11,102	9,195	1,635	1,605	1,500	3,645	10,980	4,635	16,260	910	1,292
Customer Interruptions per Feeder	40,500				41,170								1,292
Customer Interruptions Majuro	82,962												
Planned Unplanned SAIFI FY2022	16												
Planned Total Number of Interruptions FY2022	8	8	8	6	6	6	6	6	6	6	6	6	0
# Interruptions * Customers	3,968	3,912	3,416	3,678	654	642	600	1,458	4,392	1,854	6,504	390	0
Customer Interruptions per Feeder	14,974				16,494								0
Customer Interruptions Majuro	31,468												
Planned SAIFI FY2022	6												
Unplanned Total Number of Interruptions FY2022	17	14	21	11	11	11	11	11	11	11	11	10	4
# Interruptions * Customers	8,432	6,846	8,967	6,743	1,199	1,177	1,100	2,673	8,052	3,399	11,924	650	1,292
Customer Interruptions per Feeder	30,988				30,174								1,292
Customer Interruptions Majuro	62,454												
Unplanned SAIFI FY2022	12												

FY 2023 Outages

Outage Date	Feeder 1				Feeder 2							Feeder 3	Planned/ Unplanned	Generation		Distribution		cause of outage	
	Outage Time in Minutes F1 Airport to Laura	Outage Time in Minutes F1 Kessai to Airport	Outage Time in Minutes F1 Laura to End	Outage Time in Minutes F1 Plant to Kessai	Outage Time in Minutes F2 EZ Price to CMI	Outage Time in Minutes F2 EZ Price to Kirts	Outage Time in Minutes F2 EZ Price to MIC	Outage Time in Minutes F2 Kirts to MIHS	Outage Time in Minutes F2 MIHS to Rita	Outage Time in Minutes F2 Momo to EZ Price	Outage Time in Minutes F2 Plant to Momo	Outage Time in Minutes F2 Rita to Ejit	Outage Time in Minutes F3 Plant to Hospital	Planned	station failure	station maintenance	distribution failure		distribution maintenance
10/2/2022					360	360	360	360	360	360		360		No	No	No	Yes	No	Unplanned Outage. Feeder #2. Momotaro VCB to Ejit. The cause was a car accident a car crashed into primary pole across Catholic Church in Uliga village. The vehicle was brown SUV belonging to Narmo Mayor license plate #6999. Linemen crew responded to the outage found that not one but two primary poles were affected by the impact by the accident. Both poles had their top cross-arms and insulators broken off which made the cable fall out of place.
10/20/2022	480	480	480											Yes	No	Yes	No	No	Planned Outage. Feeder 1 - Kessai VCB to Laura 9AM to 5 PM. Generation System Maintenance. Tree Trimming performed at other locations within the outage zone during the same period.
11/3/2022	480	480	480	480										Yes	No	Yes	No	Yes	Planned Emergency Power Outage. Feeder 1 -Power Plant to Laura- 9AM to 5 PM. Emergency replacement of damaged primary pole at Amata Kabua mini lagoon area. Generation System Maintenance.
11/23/2022	480	480	480											Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Kessai VCB to Laura 9AM to 5 PM. to change a pole for Rairok School, and also to do engine maintenance.
12/1/2022					480	480	480	480	480	480	480	480		Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 2 - Power Plant to Rita/Ejit- 9AM to 5 PM. Pole and line repairs, tree trimming. Generation System Maintenance.
12/15/2022	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura. to do engine maintenance along with tree trimming and distribution line maintenance.
12/16/2022			180					180	180			180		Yes	Yes	Yes	No	No	Planned Power Outage. Feeder 1 Laura area and Feeder 2 Jenrok VCB to Rita/Anil. Due to high oil temperatures on engine #1

1/12/2023	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura- 9AM to 5 PM. Pole and line repairs, tree trimming. Generation System Engine Maintenance.
1/26/2023	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura- 9 AM to 5 PM. Continue Pole and line repairs, tree trimming. Generation System Engine Maintenance.
2/9/2023					480	480	480	480	480	480	480			Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 2 - Momotaro VCB to Rita/Ejit-9AM to 5 PM. Continue Pole and Line repairs, tree trimming. Generation System Engine Maintenance.
3/2/2023	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura- 9AM to 5 PM. Continue Pole and line repairs, tree trimming. Generation System Engine Maintenance.
2/24/2023	480		480					480	480					Yes	No	Yes	No	Yes	Emergency Power Outage. Feeder 1 - Airport to Laura & Feeder 2 - Jenrok VCB to Rita/Ejit - 9 AM to 5 PM. Urgent Turbocharger replacement to one of the Deutz engine. Continue pole and line repairs, tree trimming.
3/23/2023	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura-9AM to 5 PM. Continue Pole and line repairs, tree trimming. Generation System Engine Maintenance.
5/5/2023	106	99.	136	47	153	154	152	156	157	143	142	157		No	No	No	Yes	No	Unplanned Outage. Feeders 1 and 2. Primary line nearby MALGOV City Hall fell tripped off F1 and F2.
5/13/2023					64	64	64	73	77	57	47	77		No	No	No	Yes	No	Unplanned Outage. Feeder 2. Staff closed Feeder 1 and tripped Feeder 2 as one transformer at PSS exploded and caused F2 to trip. PSS area was isolated for the linemen to work on it.
5/13/2023	130	35	132	24										No	Yes	No	No	No	Unplanned outage. Feeder 1. Engine #1 tripped with difficulty due to its power factor and Feeder 1 tripped to lower the load so that Engines #6 and #7 could handle it.
5/16/2023	179	170	445	166	96	116.	96	121.	121.	92	92	121.	92	No	Yes	No	No	No	Unplanned Outage. All Feeders 1,2,3. Power surge caused island wide blackout.
5/17/2023	244	221	251	211	671	671	671	676	684	664	655	684		No	No	No	Yes	Yes	Unplanned Outage. Feeders 1 and Feeder 2. The primary underground cables burned out at K&K area at Feeder 2.

5/18/2023	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura. 9AM to 5 PM. Engine Maintenance at power plant and Distribution Line maintenance work. Tree trimming performed at other locations within the outage zone during the same time period.
5/20/2023					91	91	91	95	101	85	65	101		No	Yes	No	No	No	Unplanned outage. Feeder 2. Engine G7 tripped which caused engine G2 and Feeder 2 to trip as well. The outlet temp that alternator voltage regulator and voltage frequency.
5/29/2023					74	74	74	80	83	70	69	83		No	No	No	Yes	No	Unplanned outage. Feeder 2. Primary line burned and fell down on the road .
6/6/2023	93.	80	116.	79										No	Yes	No	No	No	Unplanned Outage. Feeder 1. Interconnected 18 tripped and both stations battery run on Low Voltage. So Feeder 1 was tripped.
6/25/2023					46	47	45	51	54	35	30	54		No	Yes	No	No	No	Unplanned outage. Feeder 2. Engines G1, G6, G7 were onboard while G1 power factor was bouncing at 10:30 AM and G1 tripped so did Feeder 2.
6/26/2023	343	339	345											No	Yes	No	No	No	Unplanned Outage. Feeder 1 Kessai VCB to Laura VCB. Engine G 6 B-5 cylinder head injection pump drive was stuck and Engine 2 Temp reading was 0 no reading. Injection pump drive was fixed.
7/15/2023	480	480	480	480										Yes	No	No	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura- 9AM to 5 PM. Tree trimming in Batakan, Other distribution line, pole and transformer maintenance work
8/9/2023					62	62	62	67	71	44	39	71		No	Yes	No	No	No	Unplanned outage. Feeder #2. CAT 3 load bouncing, going up and down after 3 minutes, CAT 3 tripped off while Engine G7 tripped and then Feeder 2 tripped off.
8/10/2023	425	417.	454											Yes	No	Yes	No	No	Planned Power Outage. Feeder 1. Kessai VCB to Laura End. To work on Engine #7 , leak between cylinder head #1,2, and also change radiator fans #1,2.
8/10/2023					80	80	80	85	90	75		90		No	No	No	Yes	No	Unplanned outage. Feeder 2 Momo VCB to Ejl. VCB at Momo caused Feeder 2 to trip off board.

8/15/2023					59	59	59	64	69	55		69	No	No	No	Yes	No	Unplanned Outage. Feeder 2 - Momo VCB to End of Rita. Momo VCB 3 Phase power supply module tripped off and caused outage.
8/16/2023	636	619	664	508									Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1. For visiting switchgear engineer to inspect all VCBs in Feeder 1 area and also mechanics at Power Plant to install both turbochargers on Engine #7.
8/16/2023					480	480	480	480	480	480	480	480	Yes	No	No	No	Yes	Planned Power Outage. Feeder 2. Power Plant to Rita/Ejit. 9am to 5pm. A visiting switchgear engineer conducted inspections and tests on Feeder 2 switchgears, Momo VCB, Uliga VCB, Jenrok VCB, MIHS VCB to determine possible solutions to upgrade the systems and to reduce the number of wide area outages we have been experiencing recently. To perform this work safely, the feeder must be shut down.
8/16/2023												120	Yes	No	No	No	Yes	Planned Power Outage. Feeder 3. Power Plant to Hospital 10pm to 12 pm. A visiting switchgear engineer conducted inspections and tests on Feeder 3 switchgear at the power plant to determine possible solutions to upgrade the systems and to reduce the number of wide area outages we have been experiencing recently. To perform this work safely, the feeder must be shut down.
8/17/2023	480	480	480	480									Yes	No	No	No	Yes	Planned Power Outage. Feeder 1. Power Plant to Laura. 9 am to 5 pm. A visiting switchgear engineer conducted inspections and tests on the Feeder 1 switchgears, Kessai VCB, Airport VCB, Laura VCB, to determine possible solutions to upgrade the systems and to reduce the number of wide area outages we have been experiencing recently. To perform this work safely, the feeder must be shut down.
9/2/2023					480	480	480	480	480	480	480	480	Yes	No	Yes	No	Yes	Planned Outage. Feeder 2. Momo VCB to Rita/Ejit. Generation Dept did engine maintenance to the Deutz Generator #7 which cannot wait any longer. Distribution and Gen Electrical team fixed temporary solution used on Uliga VCB during previous outage so that power could be restored.

9/16/2023					130	130	130	142	146	122		146		No	Yes	No	No	No	Unplanned Outage. Feeder 2 from Momo VCB all the way to Rita End. The .... leak on GG on top of a .....	
9/23/2023	296	290	297	287										No	No	No	Yes	No	Unplanned Outage. Feeder 1 Power Plant all the way to Laura. Coconut tree leaves fell on primary hot line Feeder 1 tripped at Inst 1094 Amp Phase 1b.	
9/24/2023			85											No	No	Yes	No	No	Unplanned Outage. Feeder 1 only Laura VCB. To .....and short of backup of generator	
9/25/2023					123	123	123	127.	131	112		131		No	Yes	No	No	No	Unplanned Outage. Feeder 2 from Momo VCB all the way to Rita End. Bad HF-water leak on GG engine to fix with ... backup generators.	
8/27/2023	170	155	190	84	108	108	108	112	116.	105	98.	116.	71	No	No	No	Yes	No	Unplanned Outage. Feeders 1,2,3. Island black out. Distribution Failure as showed F3 Inst 3,461 Amp Phase 1a and F2 Inst 225 Amp Phase 1a, .....Reset it...	
9/28/2023	132	122	192	105	126.	126.	126.	194	200	101	95	200		No	No	No	Yes	No	Unplanned Outage. Feeder 1 &2. Feeder 1 from Power Plant all the way to Laura End. Feeder 2 from Power Plant all the way to Rita End. Strong wind caused primary hot lines to fall down.	
9/30/2023					100	100	100	103	107	96	85	107		No	Yes	No	No	No	Unplanned Outage. Feeder 2 from Power Plant to Rita End. CAT 2 power failure.	
<b>Planned &amp; Unplanned Outage Minutes TOTALS FY 2023</b>	8,514	7,827	9,247	5,831	4,263	4,285	4,261	5,086	5,147	4,136	2,857	5,147	283							
<b>Planned &amp; Unplanned Outage Hrs TOTALS FY 2023</b>	142	130	154	97	71	71	71	85	86	69	48	86	5							
<b>Planned &amp; Unplanned Customer Hrs per VCB FY23</b>	70,382	63,790	65,808	59,573	7,744	7,642	7,102	20,598	62,793	21,300	51,616	5,576	1,523							
<b>Planned &amp; Unplanned Customer Hrss Feeders Total FY23</b>	259,554				184,372								1,523							
<b>Planned &amp; Unplanned Customer Hrs TOTAL MAJURO FY23</b>	445,449																			
<b>Planned &amp; Unplanned SAIDI Hrs MAJURO FY23</b>	87																			
<b>Planned Outage Minutes FY 2023</b>	6,821	6,316	7,058	4,828	1,920	1,920	1,920	2,580	2,580	1,920	1,440	2,580	120							
<b>Planned Outage Hours FY 2023</b>	114	105	118	80	32	32	32	43	43	32	24	43	2							
<b>Planned Customer Hrs per VCB FY23</b>	56,387	51,475	50,229	49,326	3,488	3,424	3,200	10,449	31,476	9,888	26,016	2,795	646							
<b>Planned Customer Hrs Feeders Total FY23</b>	207,418				90,736								646							

Planned Customer Hrs TOTAL MAJUORO FY23	298,800																		
Planned SAIDI Hrs MAJUORO FY23	59																		
Unplanned Outage Minutes FY 2023	1,693	1,511	2,189	1,003	2,343	2,365	2,341	2,506	2,567	2,216	1,417	2,567	163						
Unplanned Outage Hrs FY 2023	28	25	36	17	39	39	39	42	43	37	24	43	3						
Unplanned Customer Hrs per VCB FY 2023	13,995	12,315	15,578	10,247	4,256	4,218	3,902	10,149	31,317	11,412	25,600	2,781	877						
Unplanned Customer Hrs Feeders Total FY23	52,136				93,636								877						
Unplanned Customer Hrs TOTAL MAJUORO FY23	146,649																		
Unplanned SAIDI Hrs Majuro FY23	29																		

**SAIFI**

Planned & Unplanned Total Number of Interruptions FY2023	23	22	25	18	20	20	20	22	22	20	14	22	3
# Interruptions * Customers	11,408	10,758	10,675	11,034	2,180	2,140	2,000	5,346	16,104	6,180	15,176	1,430	969
Customer Interruptions per Feeder	43,875				50,556								969
Customer Interruptions Majuro	95,400												
Planned Unplanned SAIFI FY2023	19												
Planned Total Number of Interruptions FY2023	14	13	15	10	4	4	4	6	6	4	3	6	1
# Interruptions * Customers	6,944	6,357	6,405	6,130	436	428	400	1,458	4,392	1,236	3,252	390	323
Customer Interruptions per Feeder	25,836				11,992								323
Customer Interruptions Majuro	38,151												
Planned SAIFI FY2023	7												
Unplanned Total Number of Interruptions FY2023	10	10	11	9	17	17	17	17	17	17	12	17	3
# Interruptions * Customers	4,960	4,890	4,697	5,517	1,853	1,819	1,700	4,131	12,444	5,253	13,008	1,105	969
Customer Interruptions per Feeder	20,064				41,313								969
Customer Interruptions Majuro	62,346												
Unplanned SAIFI FY2023	12												

FY 2024 Outages	Feeder 1				Feeder 2								Feeder 3	Planned/Unplanned	Generation		Distribution		cause of outage
	Outage Time in Minutes F1 Airport to Laura	Outage Time in Minutes F1 Kessai to Airport	Outage Time in Minutes F1 Laura to End	Outage Time in Minutes F1 Plant to Kessai	Outage Time in Minutes F2 EZ Price to CMI	Outage Time in Minutes F2 EZ Price to Kirts	Outage Time in Minutes F2 EZ Price to MIC	Outage Time in Minutes F2 Kirts to MIHS	Outage Time in Minutes F2 MIHS to Rita	Outage Time in Minutes F2 Momo to EZ Price	Outage Time in Minutes F2 Plant to Momo	Outage Time in Minutes F2 Rita to Ejit	Outage Time in Minutes F3 Plant to Hospital	Planned	station failure	station maintenance	distribution failure	distribution maintenance	
10/2/2023					114	114	114	120	124	106	56	124		No	Yes	No	No	No	Unplanned Outage. Feeder 2 from Power Plant to Rita End. G6 tripped caused F2 to trip, same time with Alarms caused under frequency, overspeed.
10/10/2023					88	219.	88	222	228	88	80	228		No	No	Yes	No	No	Unplanned Outage. Feeder 2. Chinese guy working on CAT3 control panel while CAT 2 tripped on G2 shut down alarm on CAT2 control panel at 14:18 , and Feeder 2 also tripped off.
10/12/2023					567	516	567	480	484.	474		484.		Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 2 - From Momo VCB all the way to Rita End. To do planned maintenance on G7 and also for Distribution team to replace the port at Uliga VCB.
10/19/2023					47	51	47	51	61	44	30	61		No	Yes	No	No	No	Unplanned Outage. Feeder 2. Feeder 2 power surge and tripped along with Engine #7... no alarm on switching station.
10/20/2023					61	64	61	64	67	56	55.	67		No	Yes	No	Yes	No	Unplanned Outage. Feeder 2. Another power surge on Feeder 2 and Engine #7 tripped along with Feeder 2... No alarm on switching station.
10/20/2023	211	208.	295											No	Yes	No	No	No	Unplanned Outage. Feeder 1 from Kessai VCB all the way to Laura End. G7 .....
10/20/2023					247	247	247	439.	460.	236	100	460.		No	Yes	No	No	No	Unplanned Outage. Feeder 2 From Power Plant all the way to End of Rita. G7 as Paulson doing electrical work inside control panel CAT2.
10/24/2023								109.	110.			110.		No	No	No	No	Yes	Unplanned Outage. Feeder 2 Jenrok VCB all the way to End of Rita. To change the ball pin insulator by the Cross Arm at Jenrok town.
11/2/2023	590		760											No	No	Yes	No	No	Unplanned Outage. Feeder 1 from Airport all the way to Laura End. Load shedding....
11/3/2023					964.	964.	964.	970.	976	959	952	976		Yes	No	Yes	No	No	Planned Power Outage. Feeder 2 - Power Plant all the way to Rita end. To work on G6 ...
12/28/2023	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura, to do engine maintenance along with tree trimming and distribution line maintenance.
1/4/2024	480	480	480	480										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 - Power Plant to Laura, to do engine maintenance along with tree trimming and distribution line maintenance.
1/11/2024					240	240	240	240	240	240		240		Yes	No	Yes	No	No	Planned Power Outage. Feeder 2 - Momo VCB to Rita. This is to change the oil in one of Deutz's turbochargers.

1/16/2024					43	43	43	50	60	37	35	60		No	Yes	No	No	No	Unplanned Outage. Feeder 2. CAT 2 load tester tripped and caused F2 to trip too, the cause is CAT 2 high coolant temp.
1/19/2024	960	960	960		960	960	960	960	960			960		No	Yes	No	No	No	Unplanned Power Outage. Feeder 1 Kessai VCB to Rita, and Feeder 2 EZ price VCB to Rita, at 1AM, there was an unexpected power outage. This was caused by a mechanical issue with our Deutz engine. Work may take the entire day
1/22/2024					74	74	74	80	84	49.	45	84		No	Yes	No	No	No	Unplanned Outage. Feeder 2. Aggreko unit tripped caused Feeder 2 to trip as well. Aggreko unit alarm was Hf Overspeed & Air Flap.
1/24/2024					38	38	38	52.	60	29.	27	60		No	Yes	No	No	No	Unplanned Outage. Feeder 2. Aggreko unit tripped by itself causing the entire Feeder 2 to trip.
1/27/2024	27	18	31	16										No	No	No	Yes	No	Unplanned Outage. Feeder 1. F1 tripped caused by first attempt to close F3 at 19:29. F1 Alarm was inst 70 Amp Phase 1 and ground fault. ok reset SCE.F3 trot on F3 found.
1/27/2024												520		Yes	No	No	No	Yes	Planned Power Outage. Feeder 3. To connect ECC Building from F3, but it tripped at .. first attempt to close at 19:26, tripped 2nd attempt F3 closed at 20:40.
1/29/2024					43	43	43	155	160	43	30	160		No	Yes	No	No	No	Unplanned Outage. Feeder 2. Aggreko unit tripped off board.
2/7/2024					107	107	107	110.	114	81		114		No	Yes	No	No	No	Unplanned Outage. Feeder 2 from Momo VCB to end of Rita. To fix or work on Engine G6 fuel leak high pressure pipe cyl5B.
2/7/2024	107		126.											No	Yes	No	No	No	Unplanned Outage. Feeder 1 Airport VCB to End of Laura. To fix or work on fuel leak, high pressure pipe on G6 cyl5B
2/17/2024	585	574	796											Yes	No	Yes	No	No	Planned Power Outage. Feeder 1 - Kessai VCB to Laura. CAT 2 and CAT 3 planned maintenance.
2/24/2024												300		Yes	No	Yes	No	No	Planned Power Outage. Feeder 3. Delap Backroad and MIFV. Power rationing.
2/24/2024			300		300	300	300	300				300		Yes	No	Yes	No	No	Planned Power Outage. Feeder 1 Laura only, Feeder 2 Uliga Backroad and MIFV. Power rationing.
2/24/2024									300			300		Yes	No	Yes	No	No	Planned Power Outage. Feeder 2 MIHS VCB. Power rationing.
2/25/2024			300											Yes	No	Yes	No	No	Planned Power outage. Laura VCB off. power rationing
2/25/2024												300		Yes	No	Yes	No	No	Planned Power Outage. Feeder 3. Delap backroad. power rationing.
3/12/2024					240	240	240	240	240	240		240		No					Unplanned power outage. Feeder 2 Momo VCB to Rita.

3/12/2024									97					Yes	No	No	No	Yes	Planned Power Outage. Feeder 2 MIHS VCB to Driedj. Distribution requested to open MIHS VCB for them to tighten one primary line at Litokwa's place.
3/12/2024	297	289	322											No	No	No	Yes	No	Unplanned Outage. Feeder 1 - Kessai VCB to End of Laura. A cross arm burnt at Australian Embassy and linemen tripped Kessai VCB as emergency.
3/13/2024					57	57	57	62	65	55.	54	65		No	Yes	No	No	No	Unplanned Outage. Feeder 2. Aggreko unit tripped off and tripped off Feeder #2.
3/14/2024					2	2	2	0	-5	7		-5		Yes	Yes	No	No	No	Planned Power Outage. Feeder 2 Momo VCB to MIHS VCB. G7 off load and 900W insider off switch off G7 excitation big mistake G6 was on full load while switch off is excitation and caused island blackout.
3/18/2024					76	81	76	85	85	70	68	85		No	No	No	Yes	No	Unplanned Outage. Feeder 2. Just tripped off, nothing found on all VCBs and area.
3/19/2024					96	96	96	98.	103	82	82	103		No	No	No	Yes	No	Unplanned Outage. Feeder 2. no more tripping alarm on F2, nothing found in switching station and also distribution site.
3/19/2024					85	85	85	88	92	38	14	92		No	Yes	No	No	No	Unplanned Outage. Feeder 2. Bad HT Water leak occurred on Engine #7 at 16:30 while SCE tripped off Feeder 2, F2 power restored at 18:05.
3/19/2024			300										300	Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 Laura VCB, Jitni, and Feeder 3 Delap Backroad off. Power rationing
3/28/2024					41	41	41	43	1,031	33		1,031		No	No	No	Yes	No	Unplanned Outage. Feeder 2 from Momo VCB to Rita End. An old electric pole broke down to ground at Rita Village causing trip off from Momo VCB all the way to end of Rita.
4/20/2024					40	40	37	60	65	37	36	65		No	No	No	Yes	No	Unplanned Outage. Feeder 2. Cut out line burnt out between MIHS and Jenrok VCB.
4/21/2024			252.											No	No	No	Yes	No	Unplanned Outage. Feeder 1 Laura to End. (from Citny all the way to Laura End). Linemen didn't find any electric fault, but noticed strong load.
4/27/2024			540											Yes	No	No	No	Yes	Planned Power Outage. Feeder 1 Laura VCB Only. to do distribution line maintenance and tree trimming.
5/7/2024									35			35		No	No	No	No	Yes	Planned Outage. Feeder 2 MIHS to Ejit Island. Emergency outage to change one broken cross arm at Alwal back road needed to change.

5/8/2024	70	64	78	57	56	56	56	61	65	51	32	65	271	No	No	No	Yes	No	Unplanned outage. Feeders 1,2,3 island blackout. Solar system transformer at hospital burned out.
5/10/2024					114	114	114	132	138	114	110.	138		No	No	No	Yes	No	Unplanned outage. Feeder 2. Power Plant to Rita end. Nothing found by linemen. Feeder 2 tripped off board. 2 hours and 34 minutes outage.
5/11/2024					57	57	57	65	139	46	11	139		No	Yes	No	No	No	Unplanned outage. Feeder 2. Power Plant to Rita End. Aggreko #5 and #6 tripped off and Feeder 2 followed along... Both alarms emergency stop on both. 2 hours and 19 minutes outage.
5/11/2024					58.	58.	58.	69	76	58.	48	76		No	Yes	No	No	No	Unplanned Outage. Feeder 2. Power Plant to Rita End. Aggreko unit #4 tripped and Aggreko breaker at switch room opened. 1 hr and 12 minutes outage.
5/11/2024	52.	17	74	9										No	Yes	No	No	No	Unplanned outage. Feeder 1 Power Plant to Laura. Fuel leak on Engine #7 low pressure pipe #1 cylinder head.
5/12/2024	797	791.	804	791.										No	No	No	Yes	No	Unplanned Outage. Feeder 1. Power Plant to Laura. Transformer explosion according to Re Jack Stevedore isolated. 15 hours and 16 minutes outage.
5/15/2024		234		212	533	533	518	625	569	482.	428	569		No	Yes	No	No	No	Unplanned Outage. Feeder 1 and Feeder 2. tripped on underfrequency which knocked down Engine #7. 9 hours 15 minutes outage.
5/15/2024			2,963											No	No	No	Yes	No	Unplanned Outage. Feeder 1 from Jitnil Switchgear all the way to Laura End. One of the Underground Primary Cables burned somewhere in Woja Village near Heusm Paul's area. 49 hours 23 minutes outage.
5/16/2024	1,500		1,500											No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 Airport to Laura. Our team has discovered that a burnt out underground cable in Hemos Jack's area.
5/28/2024					33	33	33	37	40	31	29.	40		No	Yes	No	No	No	Unplanned Outage. Feeder 2. Aggreko unit A4 smoke caused A5, A6, and Engine 1 transformer to tripped and Pedro reset it. caused entire F2 to trip with just 40 min open ok closed.
6/19/2024	53	52.	58.	45										No	No	No	Yes	No	Unplanned Outage. Feeder 1. A2 rod broken and leaking and Transformer 2 for A1, A2, A3 also tripped off, causing Feeder 1 tripped.

6/21/2024													44	No	No	No	Yes	No	Unplanned Outage. Feeder 3. The Primary Hot lines loose and touching local street light pole somewhere in Delap backroad, by Katina's Taken... area.
6/25/2024	397	397	397	397										No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 Power Plant to Laura. here was an unexpected power outage from PP to Laura. This was caused by a broken cross arm at batkan.
6/29/2024						240								Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 2; Uliga backroad/ Napa area to RRE only. This is for our mechanic to do engine maintenance along with distribution line maintenance.
6/30/2024	215	215	215	215	215	480	215	215	215	215	215	215		No	No	No	Yes	No	Unplanned Power Outage. Feeders 1 and 2. Mechanical issue at switching station. power was restored at 12:35 pm at F2 PP to Rita, except areas isolated from MISCO Jenrok, which needed 5 hours until restored.
7/15/2024	105	96	136	87										No	No	No	Yes	No	Unplanned Outage. Feeder 1. Branches touched the primary hot lines somewhere at Rubar Weto. 2 hours 16 min outage.
7/18/2024					343	343	340	348	348	340	329	352		Yes	No	Yes	No	No	Planned Power Outage. Feeder 2. For Engine Maintenance for Engine #6.
7/19/2024	399	399	399	399										No	No	No	Yes	No	Unplanned Power Outage. Feeder 1, Power Plant to Laura. One of the transformers on a pole near PP Station 1 exploded, causing F1 to shutdown. At 17:53 AM, identified another branch.
7/20/2024	520	520	520											No	No	No	Yes	No	Unplanned Power Outage. Feeder 1, Airport to Laura. at 12:39 p.m. After power was restored from Jitin to Laura, it tripped back to the airport. problem found on a transformer in Laura.
7/20/2024	60	60	60	60										Yes	No	No	No	Yes	Planned Power Outage. Feeder 1, Power Plant to Laura. to do line repair at Jera's Take-Out in Jabbe.
7/31/2024	266		266											No	No	No	Yes	No	Unplanned Power Outage. Feeder 1, Airport to Laura. burned underground cable at late Jurelang's area.
8/1/2024					480	480	480	480	480	480	480	480		Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 2, Power Plant to Rita/Anil, to do engine maintenance along with distribution line maintenance and tree trimming.
8/16/2023	636	619	664	508.										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1. For visiting switchgear engineer to inspect all VCBs in Feeder 1 area and also mechanics at Power Plant to install both turbochargers on Engine #7.
8/17/2024	120	120	120	120										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1, Power Plant to Laura, due to an oil leak on G6.
8/25/2024	41		135											No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 Airport to Laura. Transformer Fault at Woja nearby Arm Momotaro Area.

8/29/2024					448	448	448	885	887				Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 2 Uliga VCB to Rita/Anil. This is for maintenance on Engine G6, and for our distribution team to install trip relays at MHHS VCB.
8/31/2024								560	565				Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 2 Jenrok VCB to Rita/Anil. to complete repairs at MHHS VCB as well as distribution line maintenance, and to fix oil leak on Engine G6.
9/1/2024	227		412										No	No	Yes	No	No	Unplanned Power Outage. Feeder 1 Airport to Laura end. To fix fuel leak on Engine G6.
9/5/2024					45		45						No	No	No	No	Yes	Unplanned Power Outage. Feeder 2 Uliga Backroad only. To change burnt fuse at Danny Peter area transformer
9/8/2024	16		92										No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 Airport to Laura. Power surge. team suspect may have been transformer issues.
9/15/2024	265		502					59	61				No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 Power Plant to Laura, and Feeder 2 Jenrok to Ejit. power surge caused F 1 to trip off, and Jenrok VCB to Ejit tripped off.
9/16/2024								230	236				No	No	No	Yes	No	Unplanned Power Outage. Feeder 2 Jenrok VCB to Ejit. Power surge caused Jenrok VCB all the way to Ejit is to trip off.
9/16/2024	55	25	135	20									No	Yes	No	No	No	Unplanned Power Outage. Feeder 1 Power Plant to Laura. Aggreko #2 tripped off on low battery, then shift charge engineer tripped off F 1.
9/26/2024	580	580	580	580									Yes	No	Yes	No	No	Planned Power Outage. Feeder 1, Power Plant to Laura. to do maintenance on Engine G6.
9/30/2024								47	161				No	No	No	Yes	No	Unplanned Power Outage. Feeder 2 Jenrok VCB to Ejit is. Power surge caused Jenrok VCB to Ejit is to trip off.

9/30/2024									1,590	1,590			1,590	No	No	No	Yes	No	Unplanned Power Outage. Feeder 2 Jenrok VCB to Ejit . burnt underground cable at MIHS.	
Planned & Unplanned Outage Minutes TOTALS FY 2024	10,111	7,198	16,052	4,476	6,912	7,464	6,891	10,481	11,866	5,121	3,346	11,634	1,735							
Planned & Unplanned Outage Hours TOTALS FY 2024	169	120	268	75	115	124	115	175	198	85	56	194	29							
Planned & Unplanned Customer Hrs per VCB FY24	83,584	58,664	114,237	45,730	12,557	13,311	11,485	42,448	144,765	26,373	60,451	12,604	9,340							
Planned & Unplanned Customer Hours Feeders Total FY24	302,215				323,994									9,340						
Planned & Unplanned Customer Hours TOTAL MAJURO FY24	635,548																			
Planned & Unplanned SAIDI Hrs MAJURO FY24	125																			
Planned Outage Minutes FY 2024	2,941	2,913	4,620	2,228	3,344	3,533	3,341	4,263	4,372	2,800	1,761	4,376	1,420							
Planned Outage Hours FY 2024	49	49	77	37	56	59	56	71	73	47	29	73	24							
Planned Customer Hrs per VCB FY 24	24,312	23,741	32,879	22,763	6,075	6,301	5,568	17,265	53,338	14,420	31,815	4,741	7,644							
Planned Customer Hrs Feeders Total FY24	103,695				139,523									7,644						
Planned Customer Hrs TOTAL MAJURO FY24	250,863																			
Planned SAIDI Hrs MAJURO FY24	49																			
Unplanned Outage Minutes FY 2024	7,170	4,285	11,432	2,248	3,568	3,931	3,550	6,218	7,494	2,321	1,585	7,258	315							
Unplanned Outage Hrs FY 2024	120	71	191	37	59	66	59	104	125	39	26	121	5							
Unplanned Customer Hrs per VCB FY 2024	59,272	34,923	81,358	22,967	6,482	7,010	5,917	25,183	91,427	11,953	28,636	7,863	1,696							
Unplanned Customer Hrs Feeders Total FY24	198,520				184,470									1,696						
Unplanned Customer Hrs TOTAL MAJURO FY24	384,685																			
Unplanned SAIDI Hrs Majuro FY24	75																			

**SAIFI**

Planned & Unplanned Total Number of Interruptions FY2024	29	22	35	17	34	34	34	39	41	31	24	40	6							
# Interruptions * Customers	14,384	10,758	14,945	10,421	3,706	3,638	3,400	9,477	30,012	9,579	26,016	2,600	1,938							
Customer Interruptions per Feeder	50,508				88,428									1,938						
Customer Interruptions Majuro	140,874																			
Planned Unplanned SAIFI FY2024	28																			
Planned Total Number of Interruptions FY2024	8	8	12	7	9	10	9	10	11	8	4	11	5							
# Interruptions * Customers	3,968	3,912	5,124	4,291	981	1,070	900	2,430	8,052	2,472	4,336	715	1,615							
Customer Interruptions per Feeder	17,295				20,956									1,615						
Customer Interruptions Majuro	39,866																			
Planned SAIFI FY2024	8																			

Unplanned Total Number of Interruptions FY2024	22	15	24	11	26	25	26	30	31	24	21	30	2
# Interruptions * Customers	10,912	7,335	10,248	6,743	2,834	2,675	2,600	7,290	22,692	7,416	22,764	1,950	646
Customer Interruptions per Feeder	35,238				70,221								646
Customer Interruptions Majuro	106,105												
Unplanned SAIFI FY2024	21												

FY 2025 Outages																			
Outage Date	Feeder 1				Feeder 2								Feeder 3	Planned/ Unplanned	Generation		Distribution		cause of outage
	Outage Time in Minutes F1 Airport to Laura	Outage Time in Minutes F1 Kessai to Airport	Outage Time in Minutes F1 Laura to End	Outage Time in Minutes F1 Plant to Kessai	Outage Time in Minutes F2 EZ Price to CMI	Outage Time in Minutes F2 EZ Price to Kirts	Outage Time in Minutes F2 EZ Price to MIC	Outage Time in Minutes F2 Kirts to MIHS	Outage Time in Minutes F2 MIHS to Rita	Outage Time in Minutes F2 Momo to EZ Price	Outage Time in Minutes F2 Plant to Momo	Outage Time in Minutes F2 Rita to Ejit	Outage Time in Minutes F3 Plant to Hospital	Planned	station failure	station maintenance	distribution failure	distribution maintenance	
10/10/2024	568	562	596	518										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1, Power Plant to Laura. to do engine maintenance along with ditribution line maintenance.
10/10/2024	120	120	120	120										No	Yes	No	No	No	Unplanned Power Outage. Feeder 1, Power Plant to Laura. in order to meet demand because one of the engines failed.
10/13/2024	102		102											No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 Jitni to Laura. Power surge caused Jitny to Laura to trip off.
10/14/2024								146	146			146		No	No	No	Yes	No	Unplanned Power Outage. Feeder 2. Jenrok to Ejit. Primary line fell off at Jenrok.
10/17/2024	69	65	76	44	164	173	164	177	184	164	169	184		No	No	No	Yes	No	Unplanned Power Outage. Feeders 1 and 2. Tranformer burned out at Pub area.
10/18/2024													6	No	No	No	Yes	No	Unplanned Power Outage. Feeder 3. Cross arm fell off caused Feeder 3 to trip off.
10/24/2024	211	205	572											No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 Kessai VCB to Laura. power surge caused kessai vcb to laura to trip off.
10/24/2024					859	859	859	865	873	847	843	873		Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 2. Power Plant to Ejit. Ian's team work on VCB at Jenrok and Uliga VCB. to change the primary pole opposite NTA and trim trees.
10/28/2024	212	197	250	145	162	162	162	168	170	157	148	170	143	No	Yes	No	No	No	Unplanned Power Outage. Feeders 1,2,3. Island wide blackout. Engine G6 overspeed relay tripped off anc caused the whole island to trip off.
10/29/2024	741	734	743	732				49	55			55		No			Yes		Unplanned Power Outage. Feeders 1 Power Plant to Laura, and Feeder 2 from Jenrok VCB to Ejit. tree branch hit the primary line at late Amata Kabua area an caused F1 to trip off.
11/3/2024					35	35	35	39	44	29		44		No	No	No	Yes	No	Unplanned Outage. Feeder 2 Momo VCB to Ejit. Napa Switchgear failure to closed and tripped off Momo VCB all the way to Rita end.
11/3/2024	70		277											No	No	No	Yes	No	Unplanned Outage. Feeder 1 Airport VCB to Laura End. TREE BRANCH FALL INTO THE PRIMARY LINE AT LAURA AREA AND CAUSE AIRPORT TO LAURA END TO TRIPPED OFF BOARD
11/14/2024	492	405	516	245										Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 Power Plant to Laura. Maintenance on Engine G7 alternator, also electrical team to do some work on the Laura VCB.

11/18/2024	375	386	402	107	349	349	349	354	508	344	337	508	50	No	No	No	Yes	No	Unplanned Outage. Feeders 1,2,3. Feeder 1 tripped switching s/w slam on Phase II and caused Feeder 2 and Feeder 3 to trip off 2556 Amp Inst. Primary Pole near Helino's house one of the primary line fell (ground neutral), and touched the hot lines at Delao Villae.
11/20/2024			180					180	180			180		Yes	No	Yes	No	Yes	Planned Power Outage. Feeder 1 Laura only and Feeder 2 Jenrok VCB to Ejit. to fix fuel leaks on G6
11/30/2024	261	239	261	218										No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 Power Plant to Laura. Primary line fell off in Rairok.
12/5/2024	209	198	236	193	206	206	206	222	226	196	176	226	174	No	Yes				Unplanned Outage. Feeders 1,2,3. ENGINE # 6 AVR FAILER AND CAUSE ALL ENGINES TO TRIPPED OFF BOARD. PS2 - system voltage too low .. 12447 kv. Engine 6 panel at control room APR not working properly. New APR fitted by Ian
12/17/2024	585	574	796	597										Yes	No	Yes	No	No	Planned Power Outage. Feeder 1 - Kessai VCB to Laura VCB. Planned maintenance on CAT2 and CAT3.
1/11/2025	14		128											No	No	No	Yes	No	Unplanned Outage. Feeder 1. Airport VCB to Laura End. Power surge, nothing found between Airport VCB to Laura.
1/17/2025	275	205	291	62										No	Yes	No	No	No	Unplanned Outage. Feeder 1. Power Plant to Laura End. Engine #7 Alternator voltage regulation fault. 7869 Al Jaquct T401 overspeed relay tripped.
1/18/2025	65	48	133	48										No	Yes				# 7 ENGINE ALTERNATOR VOLTAGE REGULATOR FAILED AND TRIPPED WHOLE FEEDER `1
1/20/2025					70	70	70	76	78	66	62	78		No	No	No	Yes	No	Unplanned Outage. Feeder 2. Power Plant to Rita End. Electric Pole on fire nearby the Majuro Hospital near tennis court area.
1/21/2025									30					No	No	No	Yes	No	Unplanned Outage. Feeder 2. Only MIHS VCB to Ejit Isl. Power surge.
1/22/2025	34		50											No	No	No	Yes	No	Unplanned Outage. Only Feeder 1 Airport VCB to the End of Laura. Rain with strong winds
1/23/2025	25		55											No	No	No	No	Yes	Unplanned Outage. Feeder 1. From Airport VCB to Laura VCB. Distribution Maintenance at Woja Village transformer nearby Ann Momotaro's house closed by switch Jitbon and Airport VCB all the way to Laura VCB tripped off
1/29/2025									29					No				Yes	DISTRIBUTION TEAM WAS NEED TO DO SOME REPAIR ON ONE OF THE POLE AT MOSQUITO TOWN IN RITA
1/29/2025	38		81											No			Yes		COCONUT TREE BRANCH HIT THE HOT LINE AT LAURA AND CAUSE AIRPORT TO LAURA TO TRIPPED OFF
2/6/2025	77	55	95											No			Yes		POWER SURGE, NOTHING FOUND CAUSE KESSAI VCB ALL THE WAY TO LAURA TO TRIPPED OFF
2/6/2025									46					No			Yes		power surge cause mihs to ejit to tripped off, Distribution failure

2/8/2025			648											Yes			Yes	INSTALL ONE NEW SWITCH GEAR TRANSFORMER AT MAYOR LADIE, JACK'S AREA, AND ALSO PAULSON'S TO DO SOME INSPECTION AT LAURA VACUUM CIRCUIT BREAKER ( VCB ) ( JITI SWITCH GEAR CLOSED AT 19:37 PM )		
2/11/2025	93		93											No			Yes	POWER SURGE CAUSE F-1, FROM AIRPORT VCB TO LAURA END TO TRIPPED OFF., LINE MANS FOUND NOTHING BETWEEN AIRPORT TO LAURA		
2/16/2025	49		78											No			Yes	Distribution failure., nothing found between airport vcb to laura end, same thing tripped then turn it back on then power restored		
2/26/2025	152	89	152											No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 , Kessal VCB to Laura. our team discovered two cutouts open between Kessal VCB and the airport, which may have caused the power to trip	
2/26/2025	30	30	30											No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 , Kessal VCB to Laura. linemen accidentally dropped the hot stick while trying to restore power.	
3/4/2025	84		181											No	No	No	Yes	No	Unplanned Power Outage. Feeder 1 , Airport to Laura. Probable cause, high tide at 5.6 ft at the time of outage.	
3/4/2025								26	34			34		No	No	No	Yes	No	Unplanned Power Outage. Feeder 2, Jenrok VCB to Ejit. bird nest caused fire on secondary line on pole at RES and tripped Jenrok VCB.	
3/8/2025														No	No	No	Yes	No	COCONUT TREE LEAVES DISTRRACTINT THE PRIMARY HOT LINE NEAR BY MWSC @ DELAP VILLAGE.	
3/10/2025	85		97											No			Yes		NOTHING FOUND, BUT AIRPORT VCB WAS TRIPPED ON GROND FAULT WITH 50 AMP.	
3/11/2025									15			15		No	No	No	Yes		Unplanned Outage. Feeder 2 MIHS VCB to Ejit. AN ELECTRICAL POLE ON FIRED SOMEWHERE @ RITA LOKINMOK. burnt cutout at Anmarut Weto, Rita backroad.	
Planned & Unplanned Outage Minutes TOTALS FY 2025	5,036	4,112	7,239	3,029	1,845	1,854	1,845	2,302	2,618	1,803	1,735	2,513	373							
Planned & Unplanned Outage Hours TOTALS FY 2025	84	69	121	50	31	31	31	38	44	30	29	42	6							
Planned & Unplanned Customer Hrs per VCB FY25	41,631	33,513	51,518	30,946	3,352	3,306	3,075	9,323	31,940	9,285	31,346	2,722	2,008							
Planned & Unplanned Customer Hours Feeders Total FY25	157,608				94,349									2,008						
Planned & Unplanned Customer Hours TOTAL MAJUORO FY25	253,965																			

Planned & Unplanned SAIDI Hrs MAJURO FY25	50												
Planned Outage Minutes FY 2025	1,645	1,541	2,736	1,360	859	859	859	1,045	1,053	847	843	1,053	0
Planned Outage Hours FY 2025	27	26	46	23	14	14	14	17	18	14	14	18	0
Planned Customer Hrs per VCB FY 25	13,599	12,559	19,471	13,895	1,561	1,532	1,432	4,232	12,847	4,362	15,230	1,141	0
Planned Customer Hrs Feeders Total FY25	59,524				42,336								0
Planned Customer Hrs TOTAL MAJURO FY25	101,860												
Planned SAIDI Hrs MAJURO FY25	20												
Unplanned Outage Minutes FY 2025	3,391	2,571	4,503	1,669	986	995	986	1,257	1,565	956	892	1,460	373
Unplanned Outage Hrs FY 2025	57	43	75	28	16	17	16	21	26	16	15	24	6
Unplanned Customer Hrs per VCB FY 2025	28,032	20,954	32,046	17,052	1,791	1,774	1,643	5,091	19,093	4,923	16,115	1,582	2,008
Unplanned Customer Hrs Feeders Total FY25	98,084				52,013								2,008
Unplanned Customer Hrs TOTAL MAJURO FY25	152,105												
Unplanned SAIDI Hrs Majuro FY25	30												

**SAIFI**

Planned & Unplanned Total Number of Interruptions FY2025	26	16	28	12	7	7	7	11	15	7	6	12	4
# Interruptions * Customers	12,896	7,824	11,956	7,356	763	749	700	2,673	10,980	2,163	6,504	780	1,292
Customer Interruptions per Feeder	40,032				25,312								1,292
Customer Interruptions Majuro	66,636												
Planned Unplanned SAIFI FY2025	13												
Planned Total Number of Interruptions FY2025	4	4	6	4	2	2	2	3	3	2	2	3	1
# Interruptions * Customers	1,984	1,956	2,562	2,452	218	214	200	729	2,196	618	2,168	195	323
Customer Interruptions per Feeder	8,954				6,538								323
Customer Interruptions Majuro	15,815												
Planned SAIFI FY2025	3												
Unplanned Total Number of Interruptions FY2025	23	13	23	9	6	6	6	9	13	6	5	10	4
# Interruptions * Customers	11,408	6,357	9,821	5,517	654	642	600	2,187	9,516	1,854	5,420	650	1,292
Customer Interruptions per Feeder	33,103				21,523								1,292
Customer Interruptions Majuro	55,918												
Unplanned SAIFI FY2025	11												