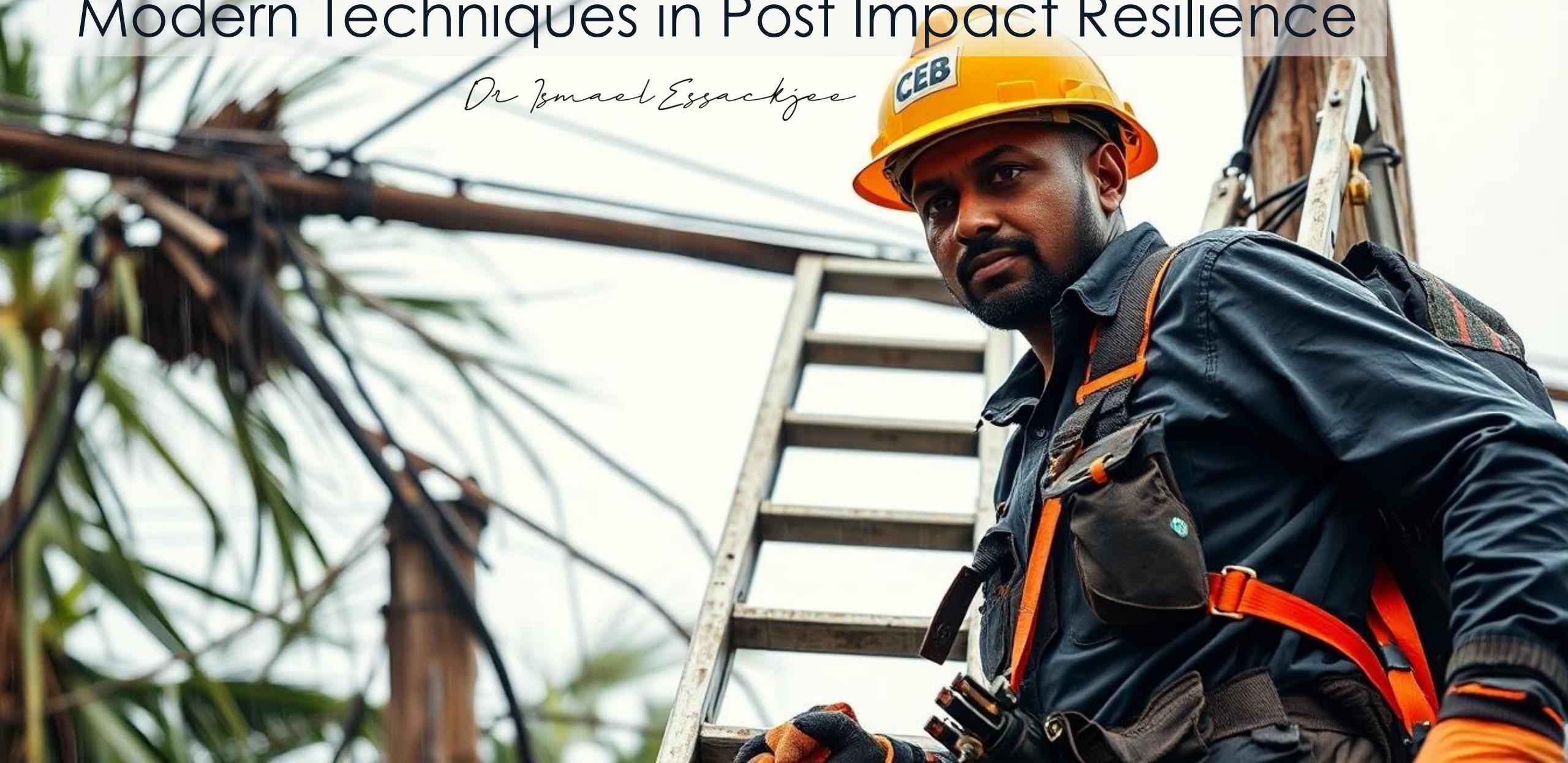




# Building Resilient Utility Assets and Modern Techniques in Post Impact Resilience

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US Dept of State Geographer  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google

Imagery Date: 12/14/2015    3°54'47.56" S    65°42'47.76" E    eye alt 1626



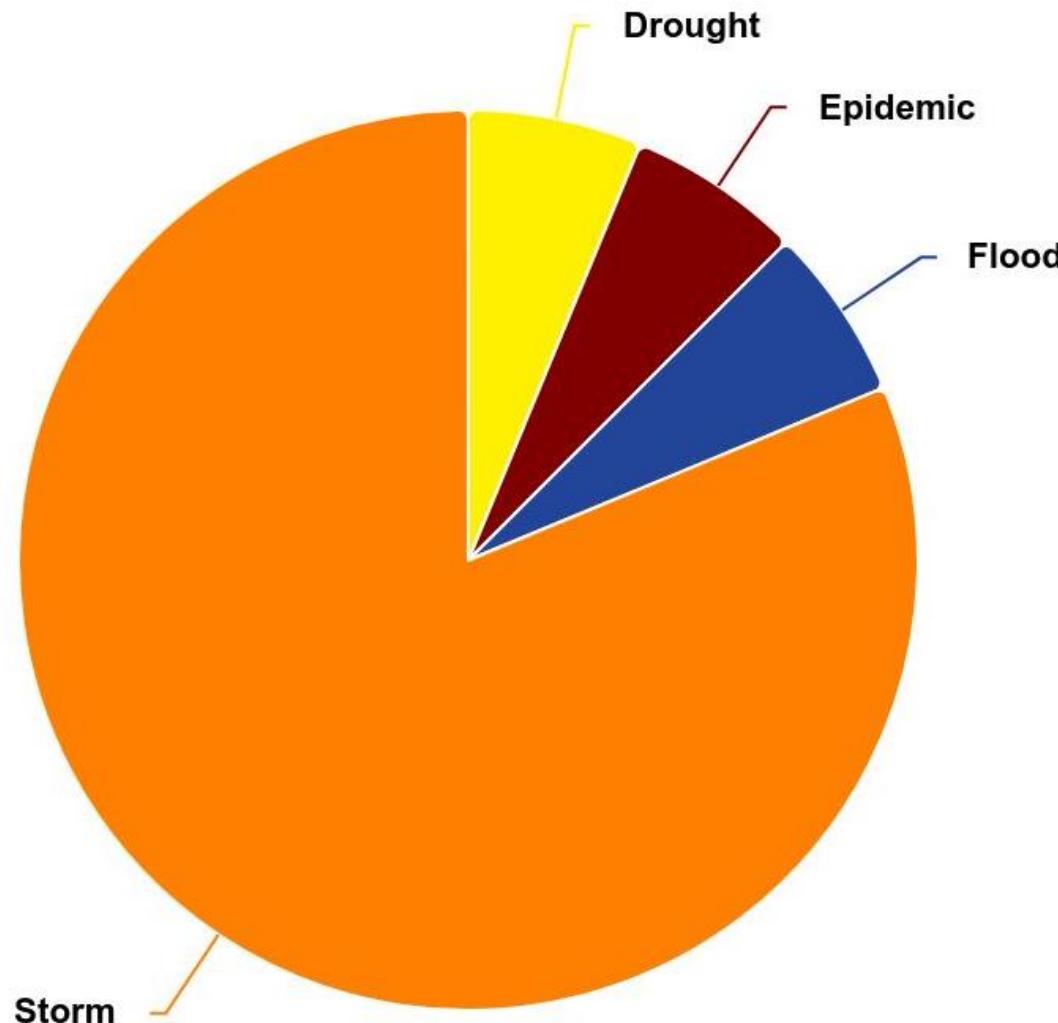
**Capital:** Port Louis

**Population:** 1.27M (Indian Origin, African/Creole, Chinese)

**Size:** Country spans 2,040 km<sup>2</sup> (45 km wide and 65 km long)

**Highlight:** The only known habitat of the dodo

## Average Annual Natural Hazard Occurrence affecting Mauritius for 1980-2020

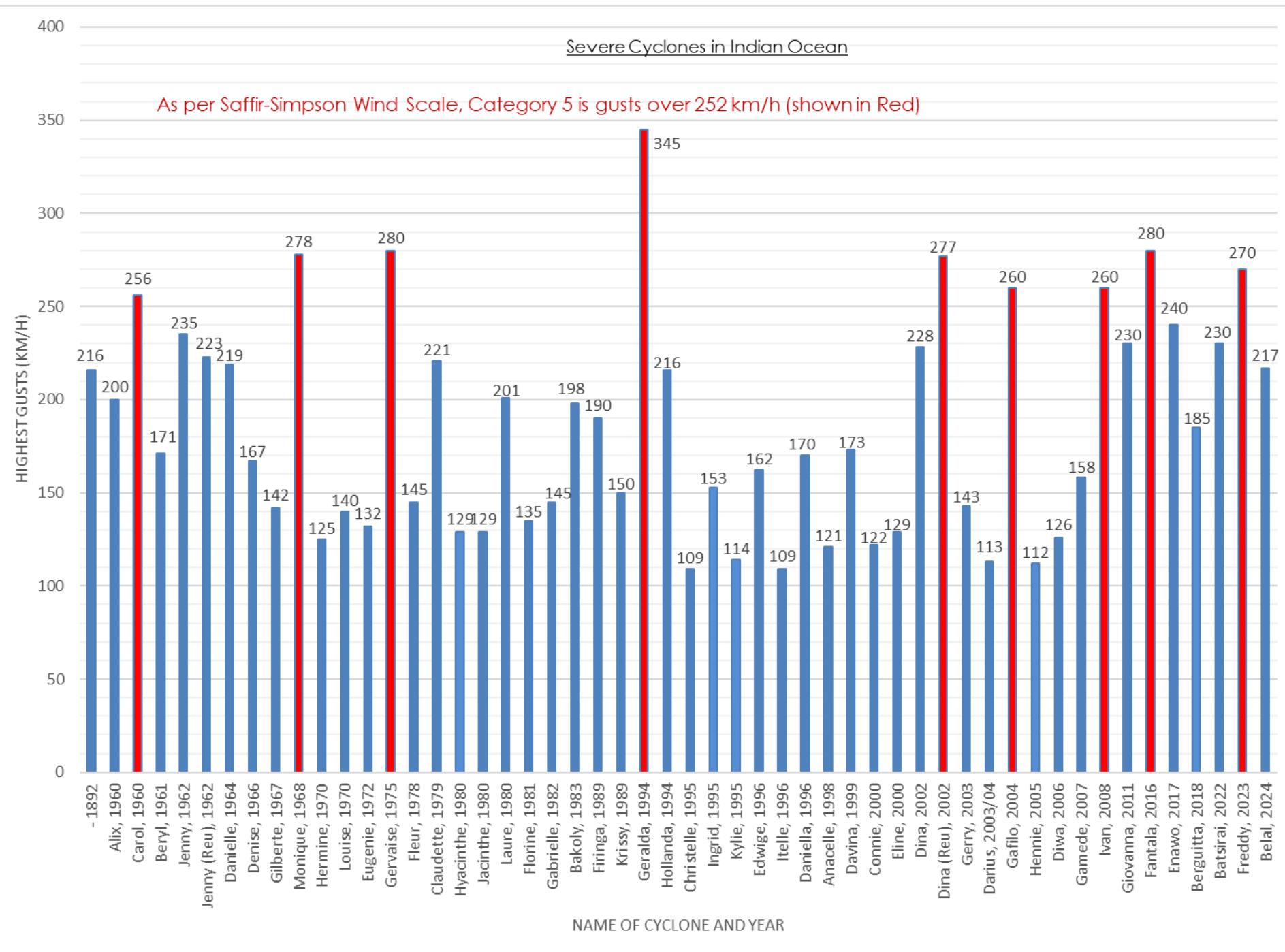


Storm : 81.25%

Drought : 6.25%

Epidemic: 6.25%

Flood : 6.25%



Mauritius is **100%** electrified since **1982**.

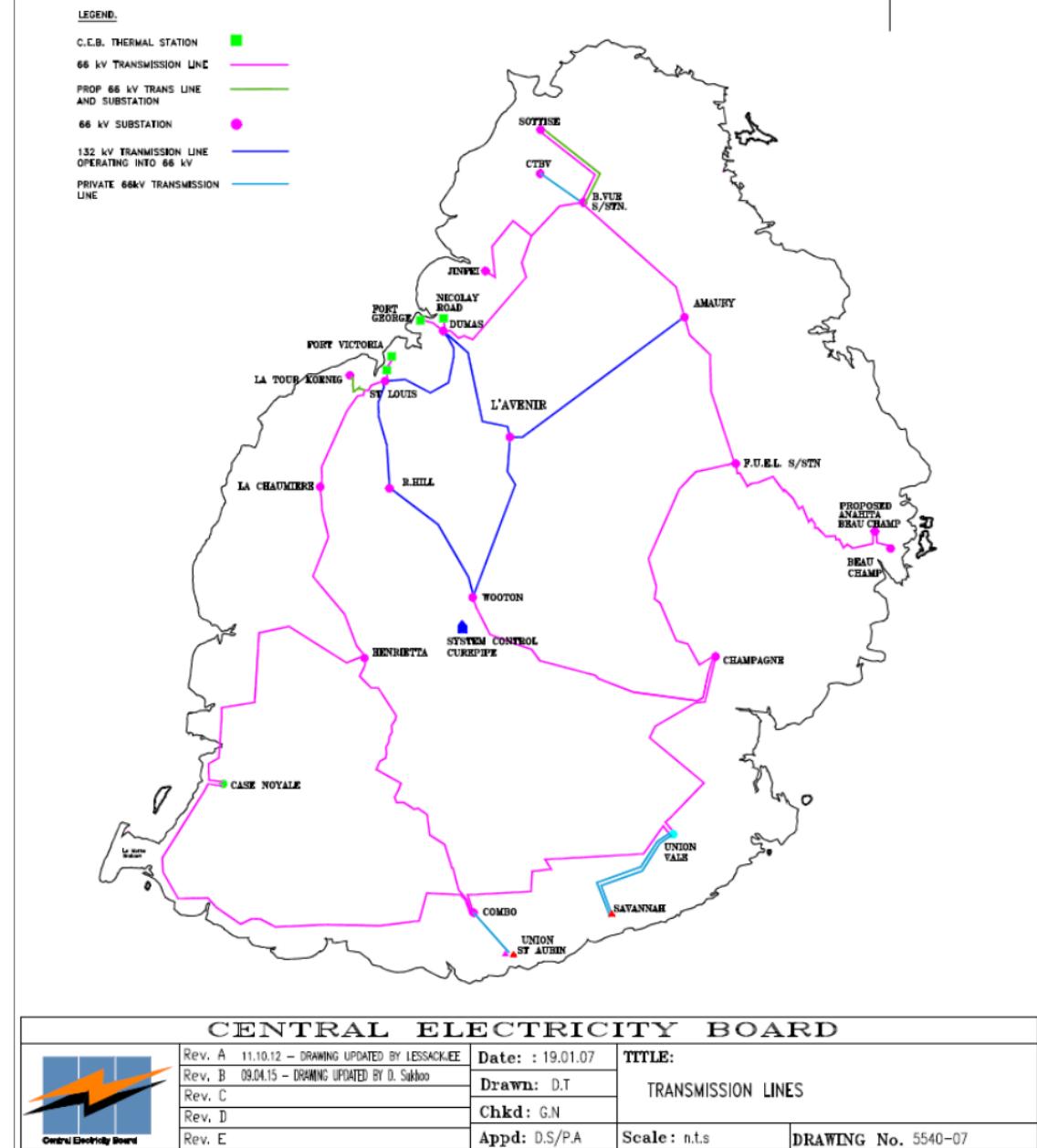
CEB's effective generating capacity (including the IPPs) is **762 MW**.

Thursday 06 February 2025, CEB registered an all-time peak demand of **567.9 MW** at 21:00hr.

**20.68%** share of renewables in the energy mix.

T&D Losses: **6.1%**

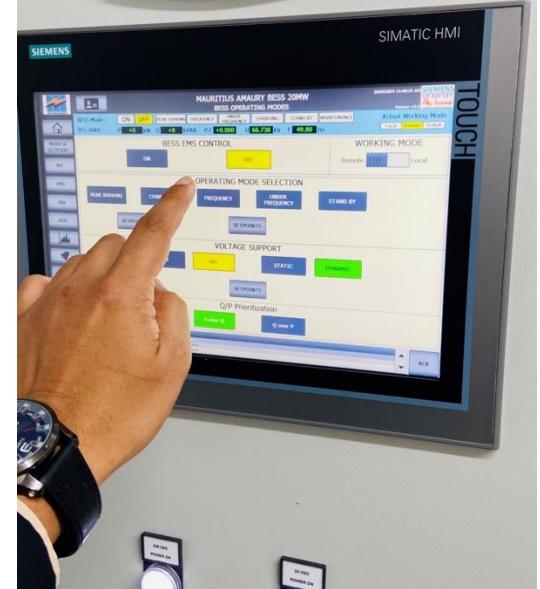
Low SAIDI (**3 hours per year**) and SAIFI values (**2 occasions**)



# [1] Battery Energy Storage Systems



BESS Sites	
Henrietta	2 MW
Amaury	2 MW
Anahita	4 MW
Jinfei	4 MW
LTK	2 MW
Wooton	4 MW
Amaury	20 MW
<b>Total installed capacity</b>	<b>38 MW</b>





## [2] (Indoor) Gas Insulated Substations



## [3] Poles



Upgraded from 6.5 kN to 8 kN for distribution network

## [4] Vegetation Management



## [4] Vegetation Management



## [4] Vegetation Management



# [4] Vegetation Management – Legal Aspect

Government Notices 2022

2219

## THIRD SCHEDULE

[Regulation 22(3)]

### DISTANCE FROM TREES TO OVERHEAD CONDUCTORS

#### 1. Low voltage overhead conductors

	Not surrounded by insulation (m)	Surrounded by insulation (m)
Vertical distance	2	0.5
Horizontal distance*	2	0.5

#### 2. Medium voltage overhead conductors

	Not surrounded by insulation (m)	Surrounded by insulation (m)
Vertical distance	2.5	1
Horizontal distance*	2.5	1

The distances specified in the table shall be further increased where the factors such as tree movement, tree re-growth, overhanging of branches, conductor swing and falling of a tree/part of a tree, for different geophysical conditions so require.

\* The horizontal distance is the lateral distance between a tree and the nearest conductor

#### 3. High Voltage

66 kV

(1) (a) No tree shall be grown within a distance of 11 metres from the nearest Overhead Conductor, unless the Licensee

Extract from: Electricity (Safety, Quality and Continuity) Regulations 2022

# [4] Vegetation Management – Legal Aspect

## C.18. Electricity Act

The Electricity Act will be amended to –

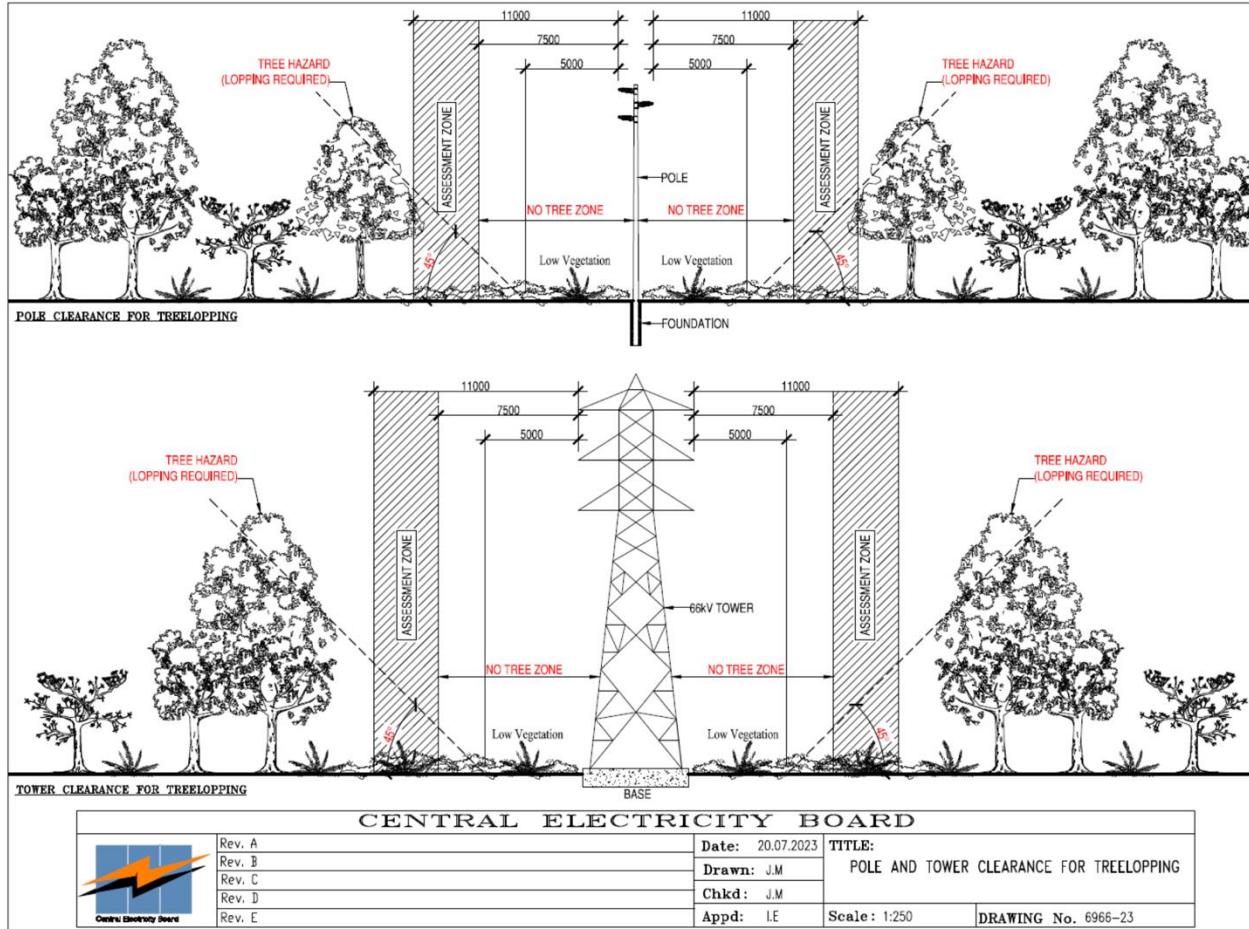
- (a) regulate the installation of domestic battery energy storage system in order to avoid safety hazards during maintenance works carried out by the CEB; and
- (b) require an occupier or owner of land to fell or lop a tree, growing on his land which can, during adverse climatic conditions, obstruct or interfere with the installation, maintenance or working of the electricity network and constitute an unacceptable source of danger. In case that person fails to do so, the CEB will act accordingly with a view to ensuring a continuous and reliable supply of electricity.

## [4] Vegetation Management – Legal Aspect

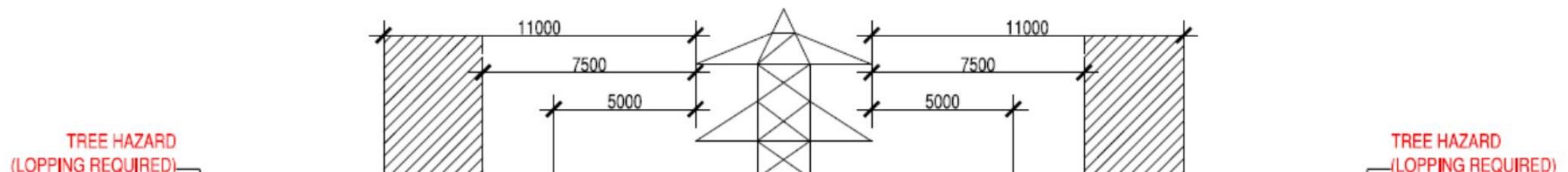
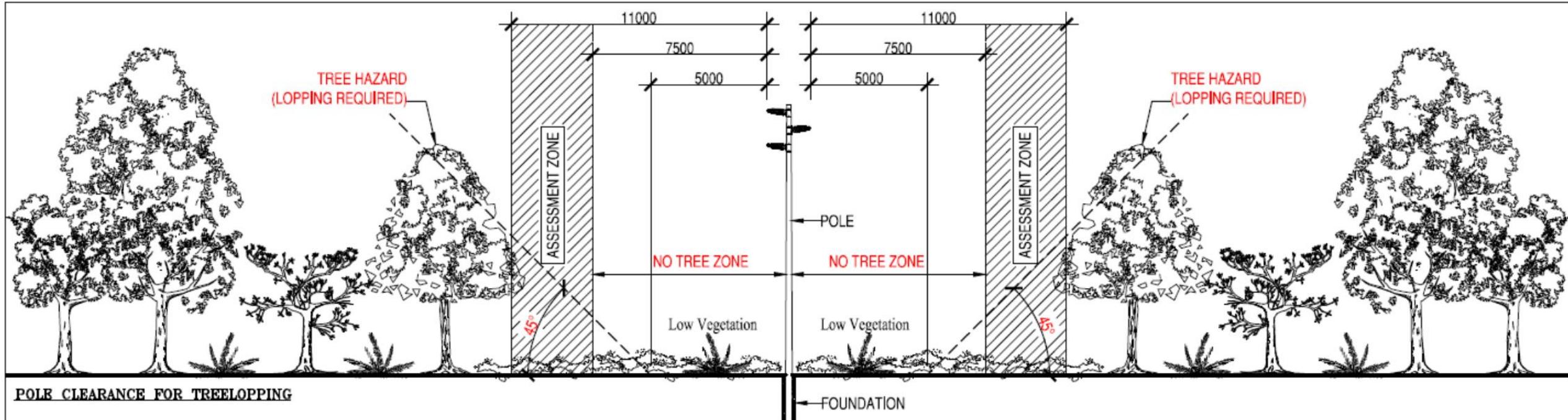
and replaced by a semicolon and the word “or” at the end of paragraph (a) being deleted –

- (c) constitutes a major source of danger; or
  - (d) is likely to damage such line during cyclonic conditions or climate change conditions,
- (B) by deleting the words “lop or cut the tree or hedge so as to prevent the obstruction or interference” and replacing them by the words “lop, cut or uproot the tree or hedge”;
- (ii) in subsection (3), by deleting the words “lopped or cut so as to prevent obstruction or interference” and replacing them by the words “lopped, cut or uprooted so as to prevent obstruction, interference, danger or damage”;
  - (iii) in subsection (5), by deleting the words “lopped or cut so as to prevent obstruction or interference” and replacing them by the words “lopped, cut or uprooted

# [4] Vegetation Management – Practical Aspect



# [4] Vegetation Management – Practical Aspect



# [5] Insulation, Undergrounding, adding redundancy



Data	Transmission	Distribution MV	Distribution LV
<b>Voltage Levels (kV)</b>	<b>66</b>	<b>22/6.6</b>	<b>0.400/0.23</b>
Length of Overhead Cables (km)	442	3,310.9	5,963.2
Length of Underground Cables (km)	36.9	664.6	365.9

## [6] Distribution Automation



# [6] Distribution Automation

## MLBS deployment

Installation of some 100 Motorized Load Break Switch already in progress on the Distribution Network (22 kV).

Enabling remote switching to isolate faults and supply healthy sections of network (within minutes); instead of sending team on site for fault location and isolation (hours).

New System Control Building to be constructed to house a state of art EMS (66 kV) and ADMS (22 kV).



# [7] Disaster Planning and Response

Every officer (including non-operational) knows exactly where to report and which network to inspect.

Stakeholders: SMF, Police Force, Overhead Line Contractors, Tree Felling Contractors

Strategic Cyclone Stock of key materials – transported and stored at local sub-stores.

Key rations and other amenities catered for.

Priority networks to be inspected listed.

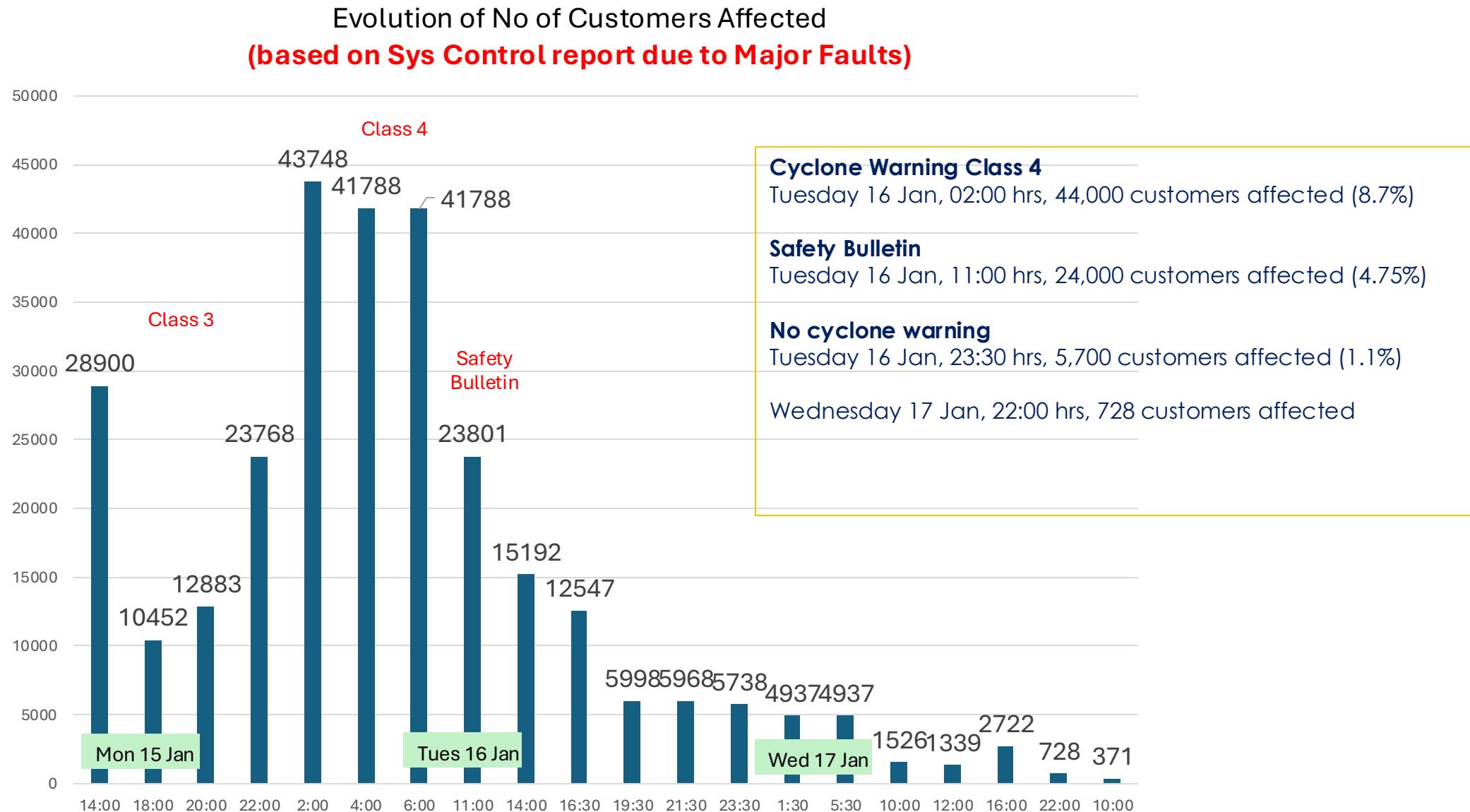


CYCLONE PREPAREDNESS, CONTINGENCY  
PLAN & REINSTATEMENT WORKS  
FOR  
CYCLONIC PERIOD  
2023 - 2024

## [7] Disaster Planning and Response



# Case Study – Response for Cyclone Belal (Jan 2024) - Mauritius



# Case Study – Cyclone Garance (Feb 2025) – Reunion Island



**3 Deaths**

**Gusts: 230 Km/h**

190,000 customers affected (50%)



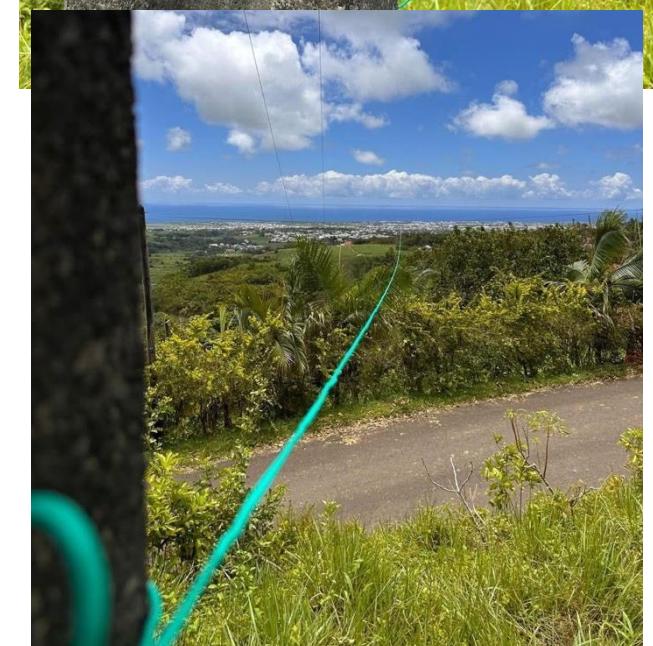
Ferran Ruz/@meteosabadell/X (Reuters)



# Case Study – Cyclone Garance (Feb 2025)



# Case Study – Cyclone Garance- Post Impact Resiliency



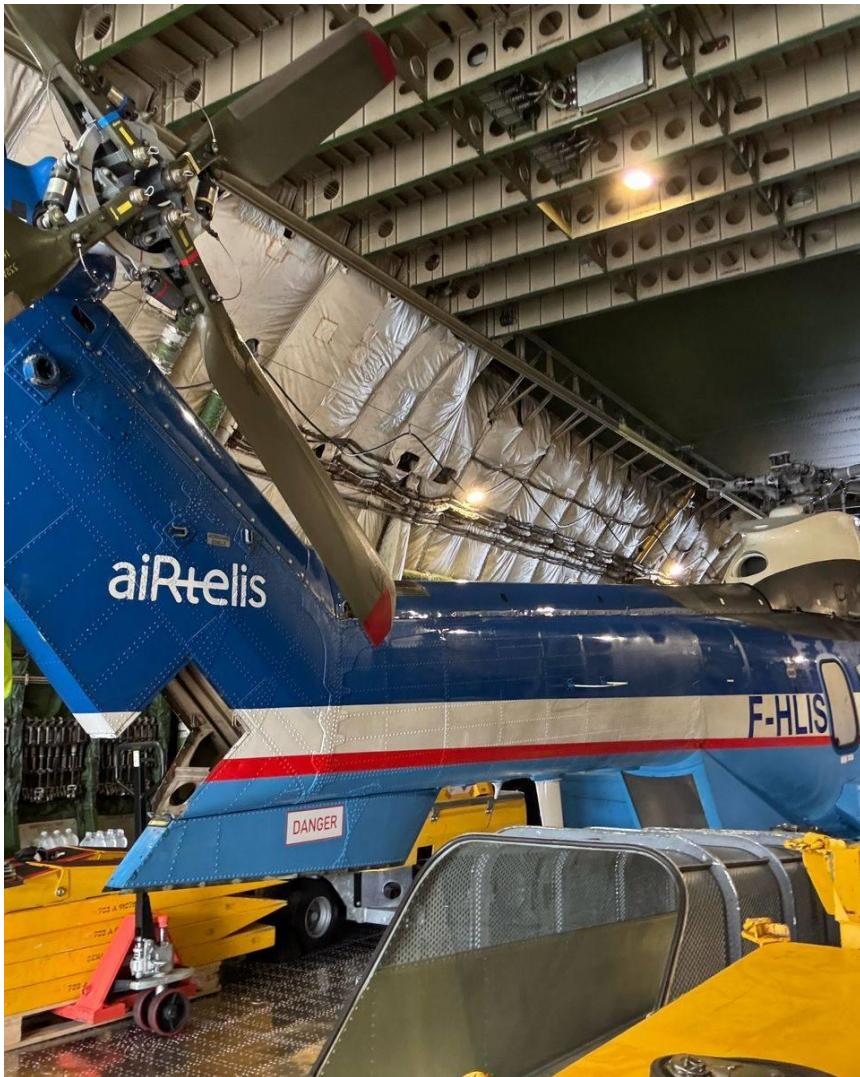
# Case Study – Cyclone Garance- Post Impact Resiliency



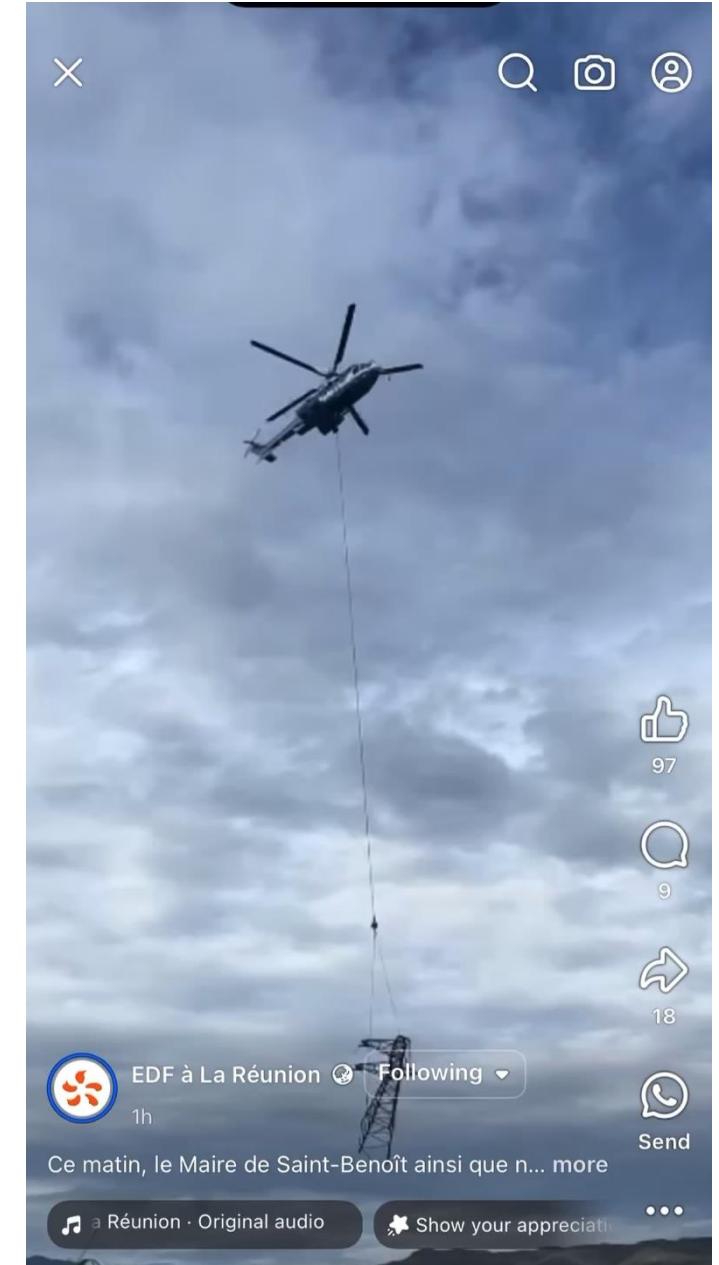
# Case Study – Cyclone Garance- Post Impact Resiliency



# Case Study – Cyclone Garance- Post Impact Resiliency



# Case Study – Cyclone Garance- Post Impact Resiliency



# Thank You



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