



# **Tropical Cyclone Tammy (AAL020023)**

## **Final Event Briefing**

### **Reportable event**

**Anguilla Electricity Company Limited  
(ANGLEC)  
Saint Lucia Electricity Services Limited  
(LUCELEC)**

**1 November 2023**

## 1 SUMMARY

Tropical Cyclone Tammy was the nineteenth named cyclone and the seventh hurricane of the 2023 Atlantic Hurricane Season. On 20 October at 1400UTC, Tammy became a Category 1 hurricane, while approaching the Windward Islands. During the next two days, it passed north of Barbados, turned northwestward and passed just east of the northern Windward Islands and the Leeward Islands. Hurricane Tammy was characterized by a tight and well-organized inner core, with hurricane-force winds confined to that region. Therefore, despite the proximity of the hurricane centre from the Windward and Leeward Islands, in general they were not affected by hurricane-force winds, but only by tropical-storm-force winds. Among them, only the island of Barbuda (Antigua and Barbuda) experienced hurricane-force winds for some hours around 22 October at 0000UTC, just before and after Tammy's landfall in Barbuda. On 23 October, TC Tammy moved away from the northern Leeward Islands, moving towards the north Atlantic Ocean.

This event briefing is designed to review the modelled losses due to wind and storm surge due to TC Tammy, calculated by CCRIF's Public Utilities model, which covers transmission and distribution lines for electric utilities. The Anguilla Electricity Company (ANGLEC) and the Saint Lucia Electricity Company (LUCELEC) were the only utilities with a CCRIF Public Utilities policy for which the CCRIF Public Utilities loss model reported wind speeds greater than 39 mph (62.7 km/h) due to Tammy.

The final run of the CCRIF Public Utilities loss model did not produce any losses for ANGLEC or LUCELEC. Therefore, no payouts under the respective CCRIF policies of ANGLEC or LUCELEC are due.

## 2 INTRODUCTION

On 18 October at 2100UTC, the US National Hurricane Center (NHC) reported that a tropical storm (TS) formed in the central tropical Atlantic Ocean, about 625 mi (1005km) E of the Windward Islands, and it was named Tammy. The system proceeded with estimated forward velocity of 23 mph (37 km/h) towards the west. The minimum central pressure was 1007 mb and the maximum sustained winds were estimated at 40 mph (65 km/h).

During the next two days, the tropical storm proceeded westward over the tropical Atlantic Ocean with progressively slower forward velocity. Tammy was embedded in an environment of high oceanic heat content, due to the warm sea surface temperature. However, the moderate vertical wind shear allowed only a modest strengthening of the storm.

On 20 October at 1400UTC, NHC upgraded Tammy to a Category 1 hurricane, with estimated maximum sustained winds at 75mph (120 km/h) and minimum central pressure of 992mb. At this time, the centre of Tammy was located near latitude 14.1° North, longitude 58.5° West, about 90 mi (150 km) NE of Barbados (Figure 1a). Hurricane Tammy presented a closed eye and a large curved band that wrapped around the eastern and southern portions of the circulation (Figure 2a).

Hurricane-force winds extended outward up to 25 miles (35 km) from the circulation centre, while tropical-storm-force winds extended outward up to 140 miles (220 km). Therefore, starting from this time tropical-storm-force winds spread over Barbados (Figure 3a).

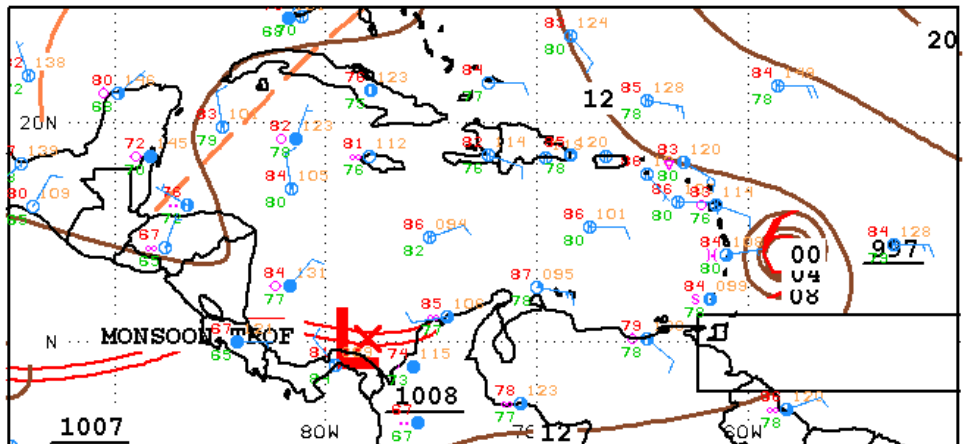
During the next 12 hours, Tammy moved west-northwest at near 7 mph (11 km/h), heading toward the southern Leeward Islands. On 21 October at 0000UTC, the centre of Tammy was located near latitude 14.5° North, longitude 59.7° West, about 90 mi (140 km) E of Martinique, about 95 mi (150 km) NE of Saint Lucia and about 124 mi (200km) SE of Dominica. Hurricane-force winds extended outward up to 25 miles (35 km) from the circulation centre and tropical-storm-force winds extended outward up to 125 miles (205 km). Thus, Saint Lucia and Dominica began to experience tropical-storm-force winds, while strong winds were still affecting Barbados (Figure 3b).

After 12 hours, on 21 October at 1200UTC, Hurricane Tammy slightly strengthened, due to the inflow of more humid air. The estimated maximum sustained winds increased to 80 mph (130 km/h) and the minimum central pressure decreased to 988 mb. The infrared satellite imagery showed that the hurricane had a relatively small central area of thunderstorms surrounding the circulation centre and a prominent trailing convective band to the south, but no evidence of an eye (Figure 2b). Moreover, the eyewall had become more pronounced although it was open on the south side (Figure 3c). At this time, Tammy was at its minimum distance from Dominica, since the centre of circulation was sited near latitude 15.7° North, longitude 60.6° West, about 50 mi (80 km) E of this country (Figure 1b). Tropical-storm-force winds were still affecting Dominica, while ceased over Barbados and Saint Lucia (Figure 3c). Tammy turned towards northwest with nearly the same forward velocity (9 mph, 15 km/h) and during the next 12 hours it crossed the waters just east of the Leeward Islands. On 22 October at 0000UTC, Tammy's centre of circulation was sited near latitude 17.5° North, longitude 61.6° West, about 15 mi (25 km) ESE of Barbuda (Antigua and Barbuda) and about 30 mi (50 km) NNE of Antigua. The NHC reported a slight intensification of the hurricane, with the estimated maximum sustained winds increased to 85 mph (140 km/h) and unvaried minimum central pressure. Tammy maintained a tight and well-organized inner core, and the aircraft data indicated that the hurricane-force winds were confined to that region (Figure 3d). For this reason, only the island of Barbuda started to experience hurricane-force winds, while Antigua and the other countries in a radius of 125 mi (205 km) from the hurricane centre, i.e. Montserrat and Saint Kitts and Nevis, were affected by tropical-storm-force winds (Figure 3d). One hour later, at 0115UTC, Tammy made landfall in Barbuda, passing along the eastern coast of the island, and continued to affect it with hurricane-force winds.

Hurricane Tammy then proceeded north-northwestward at almost unchanged forward velocity (10 mph, 17 km/h) and at 1200UTC, its centre was located near latitude 18.9° North, longitude 62.5° West, about 60 mi (25 km) NE of Anguilla. The shape and intensity of the hurricane was unvaried. Hurricane-force winds extended outward up to 25 miles (35 km) from the circulation centre and tropical-storm-force winds extended outward up to 125 miles (205 km). Thus, tropical-storm-force winds affected Anguilla and began over portions of the British Virgin Islands (Figure 3e). Strong winds were still active over Antigua and Barbados and Saint Kitts and Nevis, while they ceased over Montserrat (Figure 3e).

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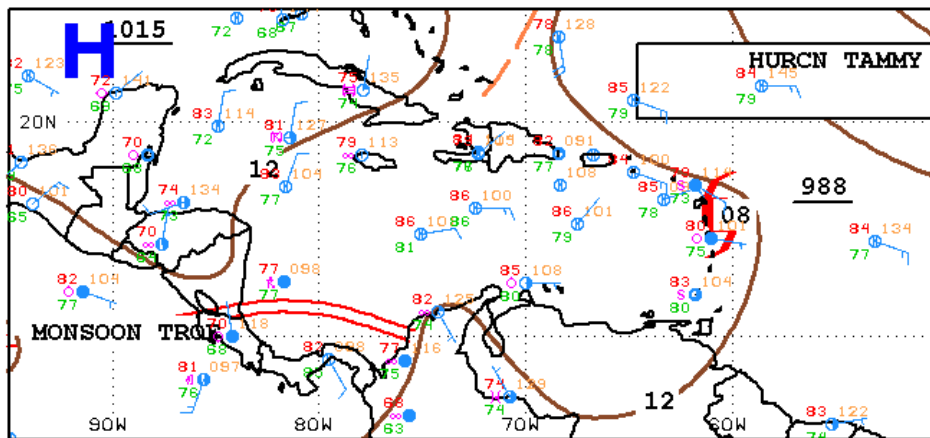
In the following hours, Tammy moved away from the northern Leeward Islands, proceeding at almost unvaried forward velocity (9 mph, 15 km/h) towards northwest over the northern Atlantic Ocean. On 23 October at 0300UTC, the centre of Tammy was located near latitude 20.8° North, longitude 64.0° West, about 190 mi (305 km) NNW of Anguilla. The strong winds associated with the hurricane ceased over Anguilla and over the other northern Leeward Islands.



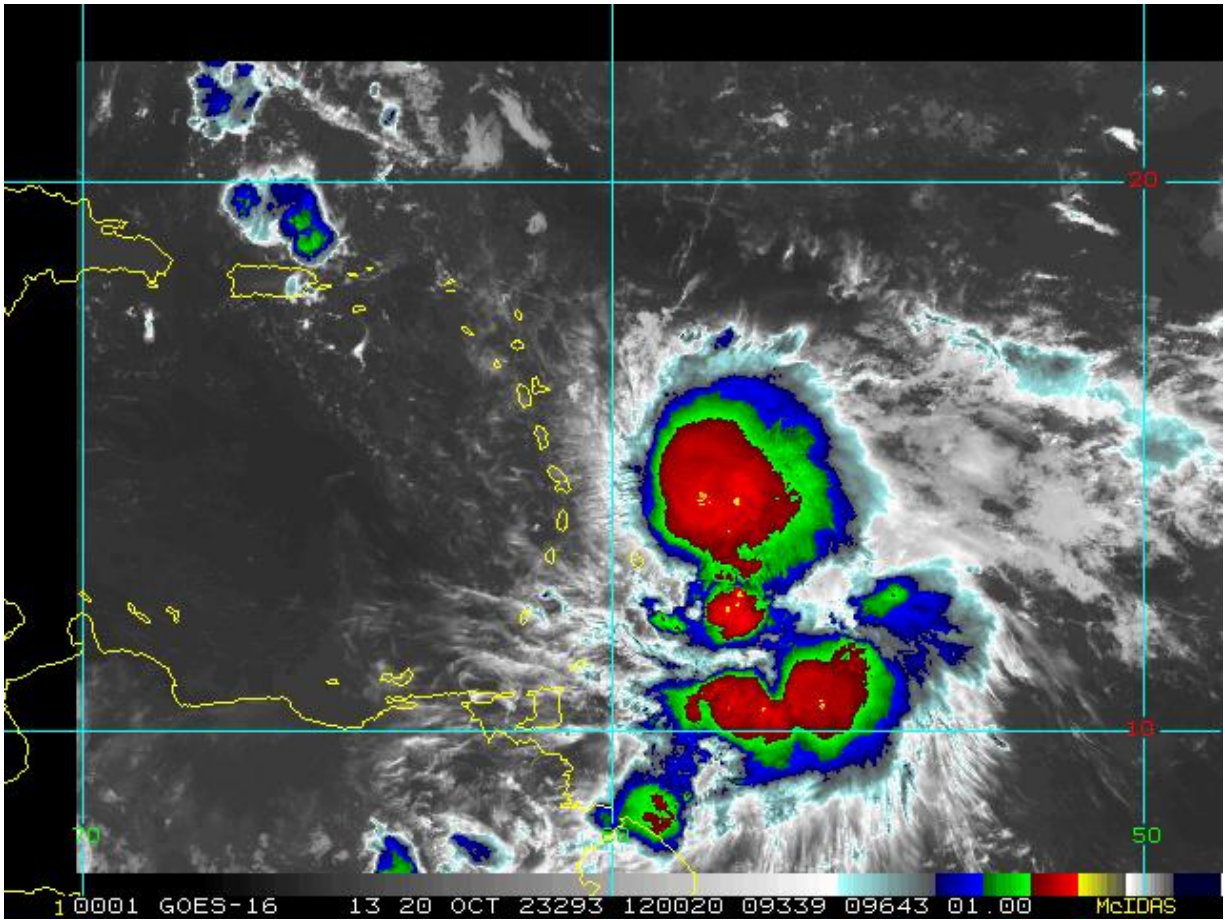
12Z CARIBBEAN SURFACE ANALYSIS  
ISSUED:  
Fri Oct 20 14:31:09 UTC 2023

NATIONAL HURRICANE CENTER  
MIAMI, FLORIDA  
BY TAFB ANALYST: KRV  
COLLABORATING CENTERS: NHC OPC

a) 20 October at 1200UTC



Hurricane Center<sup>1</sup>

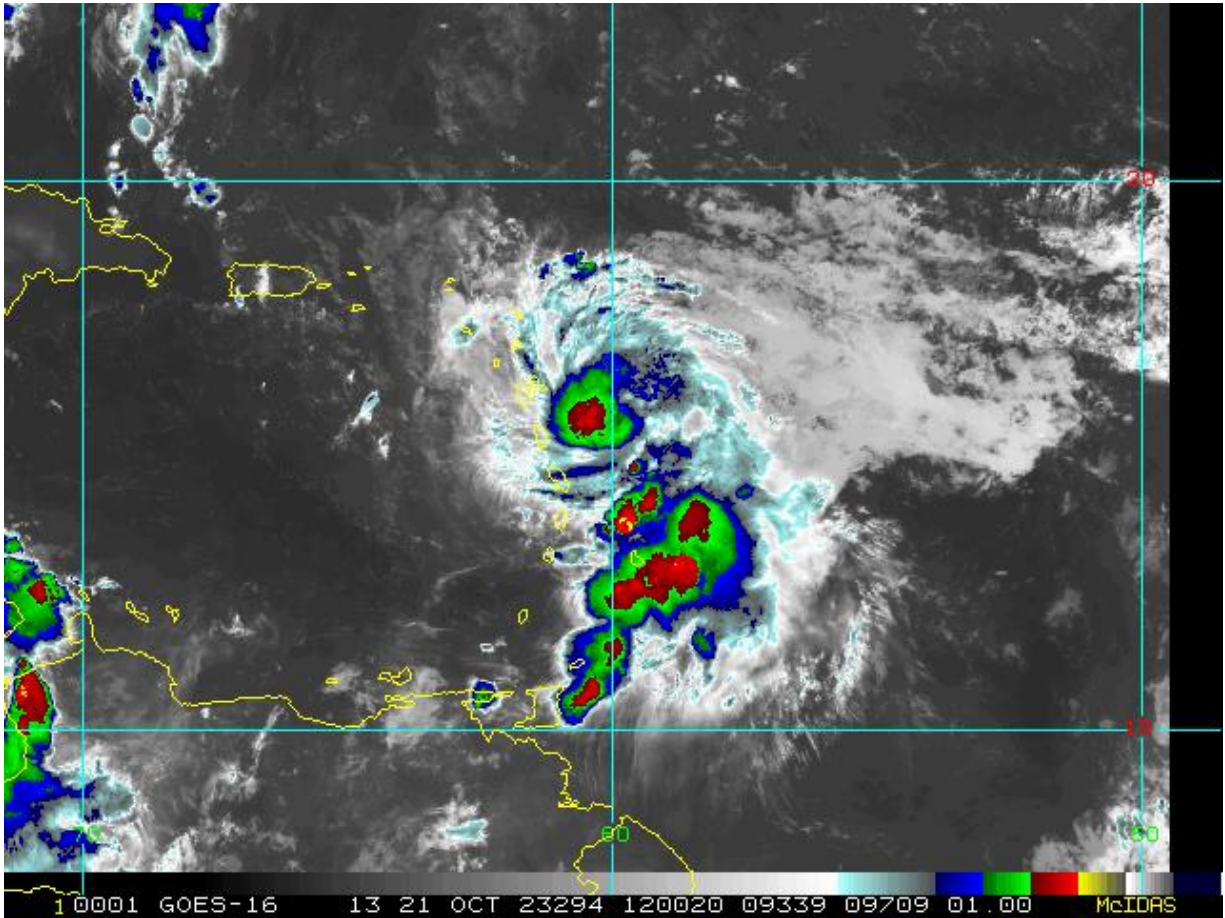


a) 20 October at 1200UTC

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<sup>1</sup> National Oceanic and Atmospheric Administration - FTP, National Hurricane Center, review date: 20 and 21 October 2023, available at: [https://www.nhc.noaa.gov/tafb/CAR\\_12Z.gif](https://www.nhc.noaa.gov/tafb/CAR_12Z.gif)

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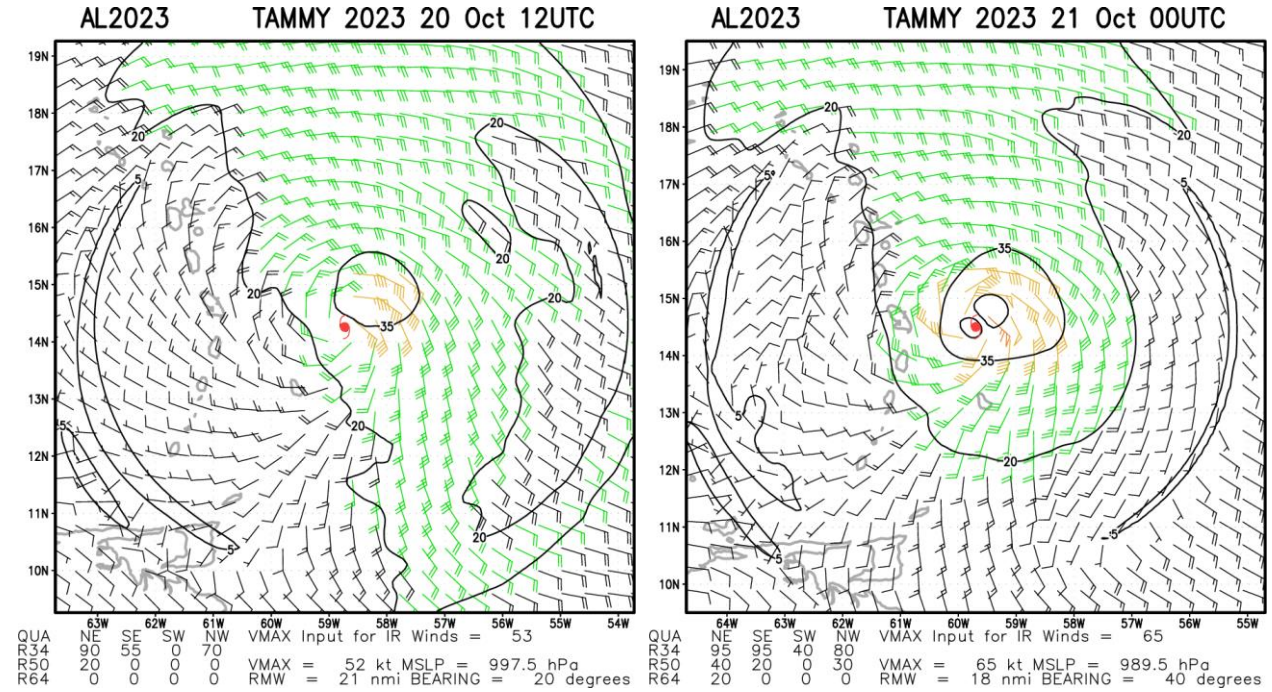
b) 21 October at 1200UTC

Figure 2 Satellite imagery on 20 and 21 October, 2023 at 1200UTC from the thermal infrared channel enhanced with colour. Blue/green colours represent high altitude clouds (top cloud temperature between  $-50^{\circ}\text{C}$  and  $-70^{\circ}\text{C}$ ), while the red/yellow colours represent very high altitude clouds (top cloud lower than  $-70^{\circ}\text{C}$ ). High altitude clouds indicate strong convection associated with intense precipitation. Source: NOAA, National Environmental Satellite, Data and Information Service<sup>2</sup>.

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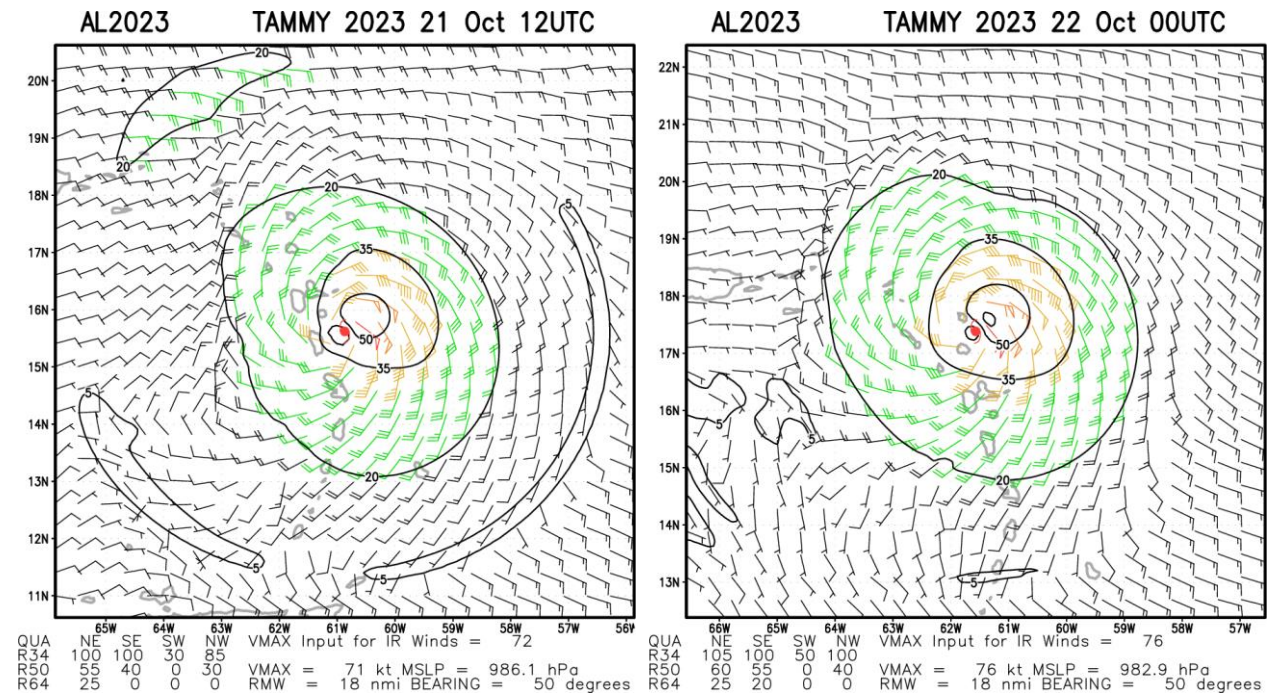
2 RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: [https://rammb-data.cira.colostate.edu/tc\\_realtime/storm.asp?storm\\_identifier=al202023](https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al202023)

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a) 20 October at 1200UTC

b) 21 October at 0000UTC



c) 21 October at 1200UTC

d) 22 October at 0000UTC

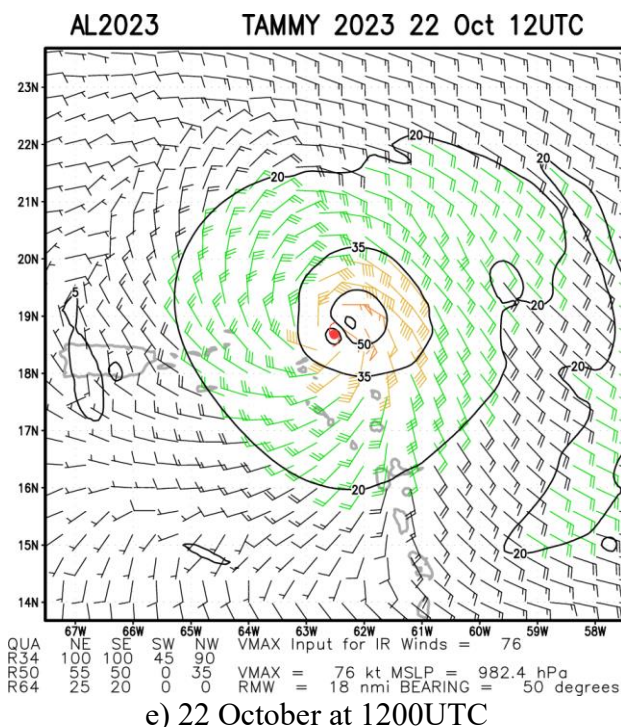


Figure 3 Multi-platform satellite based tropical cyclone surface wind analysis estimated on 20-22 October, 2023 at different times as indicated by the labels. Contouring indicates wind intensity at 20 kn (23 mph, 37 km/h), at 35 kn (40 mph, 65 km/h) and at 50 kn (57 mph, 92 km/h). Source: NOAA, National Environmental Satellite, Data and Information Service<sup>3</sup>

### 3 CCRIF SPC MODEL OUTPUTS

Under CCRIF’s loss calculation protocol, a CCRIF System for Probabilistic Hazard Evaluation and Risk Assessment (SPHERA) report is required for any tropical cyclone affecting at least one member country with winds greater than 39 mph (62.7 km/h). A Caribbean Public Utilities (CPU) report is required for any CCRIF member country whose electric utility company has a Public Utilities policy, which meets this criterion. Anguilla and Saint Lucia were affected by Tropical Cyclone Tammy, which qualified as a Reportable Event<sup>4</sup>. Figure 4 shows the wind footprint for the regions affected by Tropical Cyclone Tammy.

<sup>3</sup> RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: [https://rammb-data.cira.colostate.edu/tc\\_realtime/storm.asp?storm\\_identifier=al202023](https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al202023)

<sup>4</sup> Any named Tropical Cyclone event (i.e. one that reaches Tropical Storm status or higher) which produces modelled winds of at least 39 mph in one or more grid cells of at least one CCRIF policyholder country but does not generate a modelled loss greater than zero.



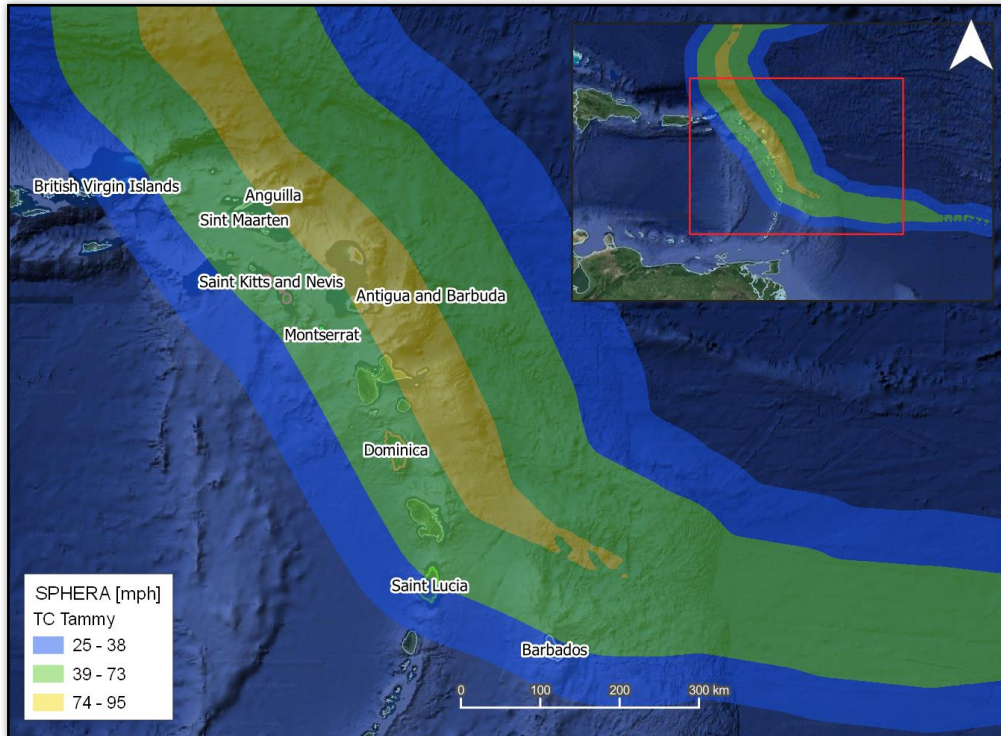


Figure 4 Map showing the wind field associated with Tropical Cyclone Tammy around Anguilla and Saint Lucia  
Source: NHC & CCRIF/SPHERA

## 4 IMPACTS

At the time of writing this report, there was no available information on damage to the electricity sector due to Hurricane Tammy in Saint Lucia. For Anguilla, regional media reported that the generation plant sustained damage due to a lightning strike and flooding/roof leaking, which produced power outages.<sup>5</sup>

## 5 CCRIF LOSS MODEL

The final run of the CCRIF SPHERA Public Utilities Model, using the input data downloaded from the National Hurricane Center on 30 October 2023, did not produce any modelled losses for ANGLEC or LUCELEC. Therefore, no payouts under the CCRIF policies of ANGLEC or LUCELEC are due.

For additional information, please contact CCRIF SPC at: [pr@ccrif.org](mailto:pr@ccrif.org)

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<sup>5</sup> Caribbean Loop News: [Anguilla experiencing bad weather from tail end of Tammy | Loop Caribbean News \(loopnews.com\)](https://www.loopnews.com/news/anguilla-experiencing-bad-weather-from-tail-end-of-tammy/)

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