



## Hurricane Fiona | Update #1

**REPORT TIME & DATE:** 5:00 PM EDT | Monday, September 19, 2022

**REPORT DISTRIBUTION:** Public

### EXECUTIVE SUMMARY

As of 2:00 PM EDT, Hurricane Fiona was 165 miles southeast of Grand Turk Island, moving northwest at nine MPH with maximum sustained winds of 90 MPH. Tropical-storm-force winds extend outward up to 140 miles from the center of the storm, and hurricane-force winds extend outward up to 30 miles from the center of the storm. A Tropical Storm Warning remains in effect for Puerto Rico, Vieques, and Culebra. The center of Hurricane Fiona passed over southwestern and western Puerto Rico on September 18, with heavy rains from outer bands of the storm continuing across the region on September 19. Rain continues to impact most areas in Puerto Rico, and additional flooding may occur.

#### Electricity Sector Summary

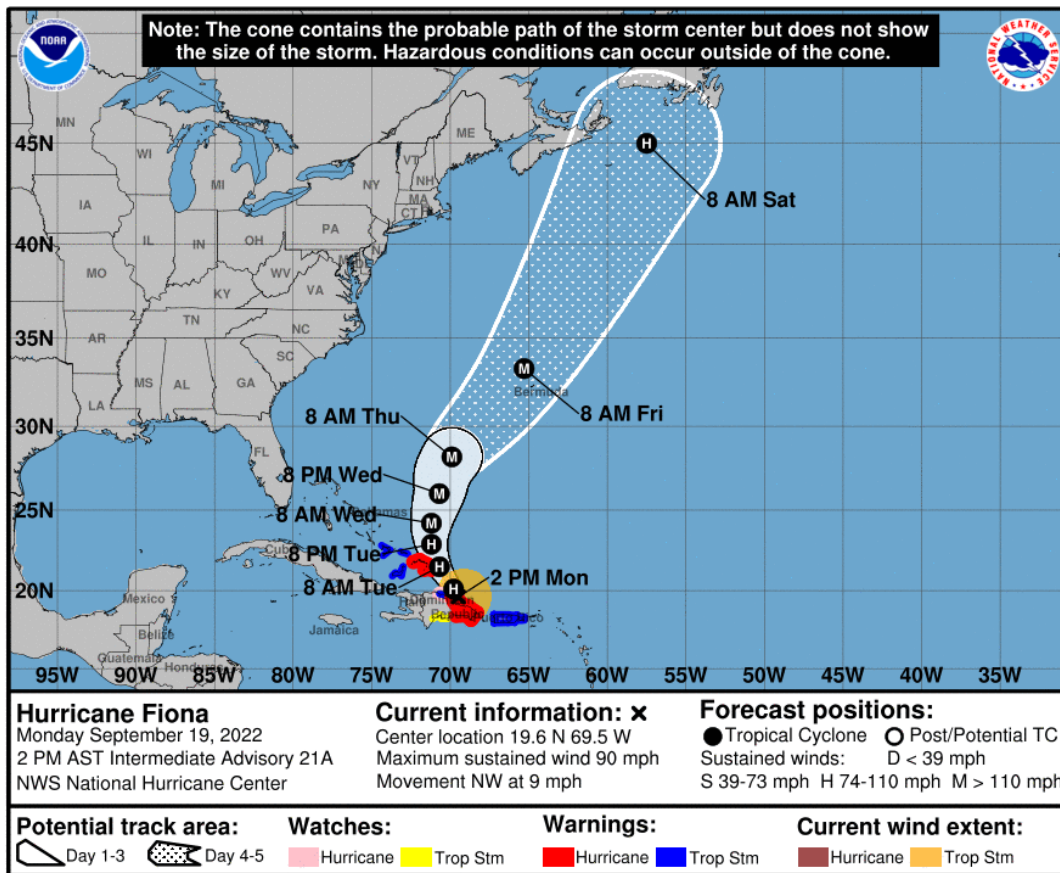
- As of 2:00 PM EDT, Puerto Rico has approximately 1.37 million customer outages (93% of total customers). LUMA has restored approximately 108,000 customers.
- On the afternoon of September 18, Puerto Rico experienced an island-wide power outage due to impacts to distribution and transmission damage from Hurricane Fiona, which caused a system imbalance that tripped generation units offline. Following the island-wide outage, the Puerto Rico Electric Power Authority (PREPA), in coordination with the transmission and distribution operator LUMA, began procedures to restart generation, enabling restoration of some customers.
- Damage assessments and restoration efforts are expected to get underway on September 19, as conditions permit. Due to the magnitude and scope of the outage, as well as the impacts from Hurricane Fiona, LUMA reports that full power restoration will take at least several days.

#### Oil & Natural Gas Sector Summary

- All ports on in the U.S. Virgin Islands reopened on September 19 after the passing of Hurricane Fiona. The ports of San Juan (daylight only), Fajardo/Yabucoa, Arcibo, and Roosevelt Roads have reopened, while the other ports on the south and west coasts of Puerto Rico remain closed.
- Initial reports indicate that Puerto Rico has adequate supplies of gasoline, diesel, jet fuel, and bunker fuel as of September 17.

## HURRICANE FIONA

As of 2:00 PM EDT, Hurricane Fiona was 165 miles southeast of Grand Turk Island, moving northwest at nine MPH with maximum sustained winds of 90 MPH but gusts reported at higher speeds. Tropical-storm-force winds extend outward up to 140 miles from the center of the storm, and hurricane-force winds extend outward up to 30 miles from the center of the storm. A Tropical Storm Warning is in effect for Puerto Rico, Vieques, and Culebra. Tropical Storm conditions will continue for portions of Puerto Rico for the next few hours. Northern Puerto Rico is forecast to receive an additional one to four inches of rain, with a local maximum of six inches. Southern Puerto Rico is forecast to receive an additional four to eight inches of rain with a local maximum of over 30 inches. These rains will continue to produce life-threatening and catastrophic flooding along with mudslides and landslides across Puerto Rico. The USVI are forecast to receive an additional 2 to 4 inches of rain, with localized totals up to ten inches. Localized coastal flooding remains possibly along the southern coast of Puerto Rico. Swells generated by Hurricane Fiona are affecting the Virgin Islands and Puerto Rico.



**DOE ACTIONS****DOE ENERGY RESPONSE ORGANIZATION (ERO): ACTIVATED**

- The DOE Energy Response Organization (ERO) is activated and closely monitoring restoration efforts, following impacts from Hurricane Fiona in Puerto Rico and the U.S. Virgin Islands. The ERO and field responders are in regular contact with industry partners and local officials.
- DOE ESF #12 responder were deployed to Puerto Rico and the U.S. Virgin Islands on September 15. ESF #12 subject matter experts are working with PREPA and LUMA to assess additional need to help support restoration efforts.

**DOE EMERGENCY SUPPORT FUNCTION (ESF) #12 DEPLOYMENTS:**

- FEMA Incident Management Assistance Team (IMAT) – San Juan, Puerto Rico
- FEMA Incident Management Assistance Team (IMAT) – St. Thomas, U.S. Virgin Islands
- FEMA Incident Management Assistance Team (IMAT) – St. Croix, U.S. Virgin Islands
- FEMA Region II Response Coordination Center – Colts Neck, New Jersey

**ELECTRICITY SECTOR**

**POWER OUTAGES**

- As of 2:00 PM EDT, Puerto Rico has approximately 1.37 million outages (93% of customers). LUMA has restored approximately 108,000 customers.
- As of 10:30 AM EDT, there were approximately 5,500 outages (10% of customers) in the U.S. Virgin Islands, down from a storm peak of 14,000 outages.
- Fluctuation in the outage numbers is expected and normal during large-scale restoration efforts.

Hurricane Fiona Customer Power Outages				
Territory	Current Outages	% of Territory Without Power	Peak Outages	% Restored from Peak
Puerto Rico	~1,370,000 as of 2 PM EDT	93% as of 2 PM EDT	1,477,000	7% as of 2 PM EDT
U.S. Virgin Islands	5,486 as of 10:30AM EDT	10% as of 10:30 AM EDT	14,009	61% as of 10:30 AM EDT
<b>Total</b>			-	



## STATE AND TERRITORY DETAILS

## PUERTO RICO

**Background**

- Puerto Rico Electric Power Authority (PREPA) is the government-owned agency that supplies electricity to Puerto Rico and is the largest public electric utility by customer count in the United States. PREPA owns the transmission and distribution system on the island, as well as approximately 86% of generation assets. LUMA Energy operates the island's transmission and distribution system.
- Grid infrastructure, including generation facilities, continues to be rebuilt after sustaining damage caused by Hurricanes Irma and Maria in 2017 and a 6.4 magnitude earthquake and aftershocks in early 2020. In January 2020, a major seismic event and series of aftershocks on the southern side of the Puerto Rico damaged several generation facilities, limiting PREPA's available reserve margins.

**Storm Updates**

- LUMA has restored approximately 108,000 customers as of 2:00 PM EDT on September 19.
- Due to the magnitude and scope of the outage, as well as the effects of Hurricane Fiona, LUMA reports that full power restoration could take several days.
- Damage assessments and restoration are underway as conditions permit. Additional contractor support for damage assessments and restorations is expected to arrive on September 19.
- LUMA and PREPA are engaged in calls to coordinate mutual assistance as needed.
- On the afternoon of September 18, Puerto Rico experienced an island-wide power outage due to impacts to distribution and transmission damage from Hurricane Fiona, which caused a system imbalance that tripped generation units offline. Following the island-wide outage, the Puerto Rico Electric Power Authority (PREPA), in coordination with the transmission and distribution operator LUMA, began procedures to restart generation, enabling restoration of some customers.

## U.S. VIRGIN ISLANDS

**Virgin Islands Water and Power Authority (VI WAPA) – Background**

- VI WAPA manages two separate grids in the U.S. Virgin Islands. One grid network encompasses St. Thomas and St. John, which are connected via two underwater 35-kV transmission cables. A second, independent grid network powers St. Croix.
- There are two major power plants in USVI: Randolph Harley Power Plant (199 MW capacity) on St. Thomas, and Estate Richmond Power Plant (118 MW capacity) on St. Croix.

**Storm Updates**

- As of September 19, crews are continuing to address various Hurricane Fiona-related damage such as problems from downed trees, downed power lines, and downed poles.

## OIL AND NATURAL GAS SECTOR

**Puerto Rico and the USVI** have no active on-island refining capacity and instead import petroleum products through their ports.

**In Puerto Rico**, petroleum products—primarily residual fuel, motor gasoline, and distillate fuel—are imported to the island primarily through the ports of San Juan, Ponce, and Yabucoa. In total, Puerto Rico imports approximately 130,000 barrels per day (b/d) of petroleum products. Fuels imported to Puerto Rico are primarily used for transportation (gasoline, diesel) and electricity generation (fuel oil).

From the major ports and associated port terminals, products are barged to smaller ports and/or trucked to terminals and end users. There are no petroleum pipelines on the island, aside from a short pipeline carrying jet fuel from the San Juan port to the Luis Muñoz Marín International Airport. Puerto Rico's power sector is highly reliant on petroleum fuels. In 2021, natural gas and residual fuel oil generation provided the largest shares of Puerto Rico's net electricity generation at 47% and 23% respectively. Coal generation provided the third-largest share at 18%, followed by distillate fuel oil at 10%. Nearly all natural gas is imported as liquefied natural gas (LNG) through the Peñuelas terminal in Ponce and through San Juan for electricity generation.

**In the USVI**, petroleum products are imported primarily through the Christiansted port and Limetree Bay on St. Croix and the Charlotte Amalie port on St. Thomas. In total, approximately 41,000 b/d of products are imported into the USVI. Fuels imported to the USVI are primarily used for transportation (gasoline) and electricity generation (propane and fuel oil). On St. Thomas, LPG is moved by truck from Charlotte Amalie to WAPA storage terminals in Krum Bay, near the Randolph Harley power plant. Additionally, as of 2020, a mid-size LPG-carrying vessel periodically moors off St. Thomas as floating storage. The vessel can directly supply the St. Thomas LPG terminal and can supply fuel to the LPG terminal on St. Croix via a smaller shuttle vessel. The Limetree Bay Refinery is inactive as of early 2022, although the new owners of the facility have expressed interest in resuming operations in the future. Limetree Bay continues to operate as a fuel terminal with 34 million barrels of crude oil, refined products, and propane storage capacity.

## PORTS

- The U.S. Coast Guard has set the following conditions for ports and waterways due to Hurricane Fiona. Listed in the table are select ports that receive petroleum products.

Status of State and Territory Ports as of 3:30 PM EDT 09/19/2022			
Port	Inbound Products* (b/d)	Status	Date Stamp
<b>Puerto Rico<sup>A</sup></b>			
San Juan	49,000	Open With Restrictions – Daylight Operations Only	9/19/22
Ponce	35,000	Zulu. Port is closed to all traffic.	9/16/22
Guayanilla	2,000	Zulu. Port is closed to all traffic.	9/16/22
Fajardo/Yabucoa	45,000	Open. Portcon 4	9/19/22
Mayaguez	<sup>A,B</sup>	Zulu. Port is closed to all traffic.	9/16/22
Arecibo	<sup>A,B</sup>	Open. Portcon 4	9/19/22
Guayama	<sup>A,B</sup>	Zulu. Port is closed to all traffic.	9/16/22
Roosevelt Roads	<sup>A</sup>	Open. Portcon 4	9/19/22
Salinas/Aguirre	<sup>A,B</sup>	Zulu. Port is closed to all traffic.	9/16/22
<b>U.S. Virgin Islands<sup>A</sup></b>			
Christiansted, St. Croix	41,000	Open. Portcon 4	9/19/22
Limetree Bay, St. Croix		Open Portcon 4	9/19/22
St. John		Open. Portcon 4	9/19/22
St. Thomas		Open. Portcon 4	9/19/22

Source USVI: Gasoline and fuel oil: EIA Company Level Imports (2019); Distillate, Jet, and Propane: U.S. Customs data

\*includes gasoline, distillates, jet kerosene, fuel oil, and LGP

<sup>A</sup> No direct foreign imports, but receives petroleum products from larger ports by barge.

<sup>B</sup> Receives fuel for oil-fired power plant.

## PETROLEUM TERMINALS/STORAGE

- Initial reports indicate that Puerto Rico has adequate supplies of gasoline, diesel, jet fuel, and bunker fuels as of September 17.

## EMERGENCY DECLARATIONS & WAIVERS

### EMERGENCY DECLARATIONS

To provide vital supplies and transportation services to a disaster area in the United States, emergency declarations may be issued by the President, Governors of States, or Federal Motor Carrier Safety Administration (FMCSA). These declarations trigger the temporary suspension of certain Federal safety regulations, including Hours of Service, for motor carriers and drivers engaged in specific aspects of the emergency relief effort. See [49 CFR 390.23](#) for the actual emergency regulation.

#### Emergency Declarations and HOS Waivers as of 3:30 PM EDT 09/19/2022

State/Territory	Details	Effective Dates		Status
		Start	End	
Puerto Rico	<a href="#">State of Emergency</a>	9/17	Until Rescinded	Active
Puerto Rico	<a href="#">Presidential Emergency Declaration</a>	9/18	Until Rescinded	Active

Sources: Territory government websites

