

# Con Edison Climate Change Vulnerability Study Summary 2023

Con Edison plays an essential role in the lives of millions of New Yorkers by powering their homes, businesses, and 24/7 lifestyle. While society becomes increasingly dependent on resilient, reliable electricity, climate change is bringing more frequent and severe heat waves and storms that can impact electric delivery equipment and cause customer outages. This recent vulnerability study updates Con Edison's 2019 report on the threat climate change poses to the Company's infrastructure and customers.



## Temperature and Humidity

### Climate Projections

- **Increasing Temperatures:** Con Edison's service territory will experience rising temperatures and increasingly frequent, intense heat waves.
- **Example:** The study estimates that by 2030 New York will experience **up to 17 days a year** with temperatures **reaching 95°F**. By 2050, the study projects there will be up to 32 such days.

### Key Vulnerabilities

- **Increased System Load:** Intense heat and humidity typically cause customers to use their air conditioners to stay safe and comfortable, **increasing the amount of power** flowing through electric delivery equipment.
- **Decreased Asset Capacity:** Operating at higher temperatures and carrying more power will likely decrease the capacity of assets such as cables and substation transformers. When capacity diminishes, Con Edison must seek approval to **make investments to replace that lost capacity** and keep service reliable for customers.
- **Accelerated Asset Degradation:** Higher temperatures and additional power flowing through the equipment will accelerate the aging of substation transformers.



## Flooding

### Climate Projections

- **Sea Level Rise:** The study shows that **sea levels will rise 16 inches by 2050**, increasing the risk of flooding.
- **Precipitation:** By 2050, New York is expected to experience **five days a year** with rain exceeding 2 inches, compared with the historical norm of three days per year.

### Key Vulnerabilities

- **Equipment Damage:** Floodwaters damage electric equipment and saltwater can cause corrosion.
- **Limited Accessibility:** Assets such as substations and underground power lines that are flooded or surrounded by water are difficult for crews to access for maintenance and repair. **That can mean longer outages for customers.**



## Wind and Ice

### Climate Projections

- **Wind:** Scientific studies indicate that intensifying storms will carry stronger wind gusts with the maximum annual wind speed in New York City increasing to **up to 60 miles per hour** in the next 10 to 15 years, compared to approximately 50 miles per hour historically.
- **Icing:** There is potential for events with ice building on overhead wires (radial icing) to increase in intensity in the winter months. The projections show that annual radial icing in New York City could total one inch in 2040, compared to 0.2 inches in 2025.

### Key Vulnerabilities

- **Vegetation Impacts:** Strong winds and ice accumulation can cause trees and branches to fall on overhead lines and other equipment, which can cause customers to lose service.
- **Line Impacts:** Ice gathering on overhead lines can result in equipment failure and outages.



## Extreme and Compound Events

### Climate Projections

- **Compound and Consecutive Extreme Events:** Compound and consecutive extreme events are expected to increase in frequency and intensity.
- **Hurricanes:** Scientific studies project that **hurricanes will be more intense** and more likely to track toward the Northeast.
- **Extreme Heat Waves:** Extreme heat waves will be more frequent and intense. The number of 3-day heat waves with **daily maximum temperatures over 90°F** is projected to increase to approximately **9 by 2050**.
- **Nor'easters and Cold Snaps:** Nor'easters and cold snaps could be less frequent as temperatures rise, but more intense when they do occur.
- **Deluge Rain:** Deluge rain, meaning short bursts of torrential downpours, is expected to increase in frequency and intensity.

### Key Vulnerabilities

- **Systemwide Impacts:** These concurrent and consecutive events pose challenges to Con Edison's system. The Company will need to take this into account in its emergency response planning.



## Ongoing Efforts

- **Worker Safety:** Con Edison is participating in pilot studies to test worker equipment in high heat conditions.
- **Load Relief Planning:** The Company has updated its process for planning load relief measures to consider climate-driven changes in system load and asset capacity.
- **Emergency Preparedness:** Con Edison continually updates its drills and exercises to reflect the extreme weather events climate change is causing. The Company is incorporating climate projections into the forecast model it uses for emergency response preparation.
- **Updated Asset Standards:** Con Edison has updated its design standards to account for rising sea levels. The Company will continue to make investments to protect assets against flooding.
- **Spare Equipment:** Con Edison maintains a stock of spare equipment it can use to repair or replace components damaged during major weather events.
- **Design Guidelines:** Con Edison maintains planning and design guidelines to incorporate the impacts of climate change on its electric, gas, and steam systems.

The Company has formed an [Environmental Justice Working Group](#) and plans to release an [Environmental Justice Policy Statement in 2023](#) to apply an equity lens to Company investments.

Key components of the upcoming policy statement include:

- Operations will not disproportionately burden disadvantaged communities.
- Con Edison will work to understand the concerns of those in these communities.
- Clean energy investments will benefit these communities.
- Con Edison will provide opportunities for clean energy jobs.

Equity will be a key consideration in Con Edison's climate resilience planning efforts. This will be clear when Con Edison files a [Climate Change Resilience Plan](#) in November 2023, summarizing the resilience-driven investments we believe we will need to make.