



SOUTHERN CALIFORNIA  
**EDISON**<sup>®</sup>

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# **Climate Change Impacts: Wildfire Risk**

July 27, 2015

# AGENDA

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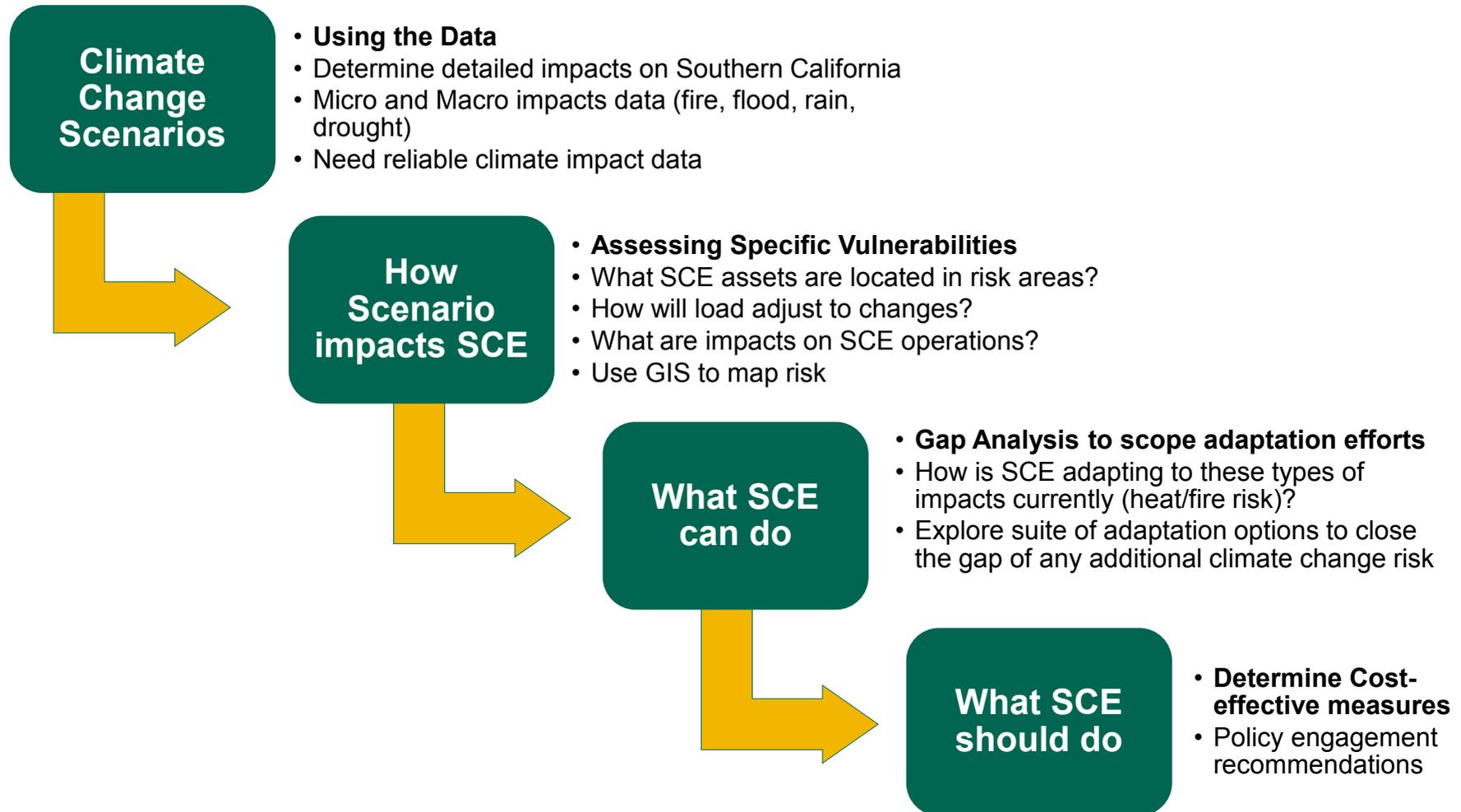
- Overview of SCE Climate Impacts
- Framework for Climate Adaptation Planning
- Example in Action: Wildfire Risk
- Next steps

# Types of Climate Impacts SCE is Mitigating



1. Incremental Warming
2. Wild Fires
3. Extreme Weather Events
  - Heat Waves
  - Drought
  - High Winds
  - Snow

# SCE Framework for Adaptation Planning



# **Example in Action: Assessing and Mitigating Wildfire Risk**



# Assessing Vulnerabilities: Wildfire Risk

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- **SCE utilizes CAL FIRE data, and on-the-ground inspections, to assess wildfire threats to the Southern California grid.**
  - Fire Prevention Plan (FPP) - FPP filed with CPUC in 2012
  - Conduct semi-annual pre-fire season inspection and maintenance of limited access lands and sparsely populated canyons
  - SCE Fire Management Officers act as a liaison with local/county/State Fire Agencies
  - Summer Readiness Program
  - Operation Santa Ana - Partner with State and County Fire Agencies to jointly review vegetation preparedness in fire areas

# Scoping Adaptation Efforts: Wildfire Risk

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- SCE looks across planning processes, operational practices and emerging technologies to identify ways of mitigating wildfire risk.
- Planning Processes:
  - Review many factors to design a system that meets our customers' needs
    - Customer load
    - Generation capacity
    - Operational needs
    - Loss of power lines
- Operational Practices: **System Operating Bulletin 322**
  - Self-imposed operating procedure for distribution lines to reduce the risk of wild land fires in high fire hazard areas (HFA) during Santa Ana Season & Red Flag conditions
  - HFA circuits are made "non-automatic" from:
    - October 1<sup>st</sup> - November 30<sup>th</sup> ("Santa Ana Season")
    - December 1<sup>st</sup> – September 30<sup>th</sup>, whenever Red Flag conditions exist
- Emerging Technologies:
  - FlameSniffer- pinpoints location enabling rapid response
    - Early fire-detection technology using wireless sensors to provide 24-hour, unmanned fire detection

# Implementing cost-effective measures: Wildfire Risk Management

## Standard Practices/Procedures



## New measures started in 2014 (continued into 2015)

- + Heightened situational awareness
- + Increased circuit patrols
- + Expedited review and repair of targeted protection systems
- + Reviewed protective device settings
- + Reviewed critical transmission corridors
- + Expedited detailed OH inspection and maintenance
- + Expedited and expanded vegetation management – more than minimum requirement
- + Quarterly vegetation management reporting

# Summary

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1. Climate Change will likely bring additional risks to our infrastructure, but thankfully **there is already substantial resiliency built in to our infrastructure and operational/planning practices.**
2. We need **clear and consensus-driven climate impact analysis (including maps)**. If the science is going to impact utility operations and investments it needs to be sound and approved by our regulators. Creating a state wide 'tool bucket' of approved analytics would make adaption planning for utilities and all California business much easier.
3. **SCE is thinking through how to best integrate climate data into our existing planning processes.** Some threat types (like wildfire, extreme heat events, and drought) have an existing planning framework that can be expanded to include this longer-term data.
4. We need to encourage collaboration among the utilities and our regulators to **come up with best practices** to address projected climate impacts.

# Backup Slides

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# FlameSniffer 4C-V5 Model – The New “R2D2”

- SCE has joined Santa Barbara County Fire and FlameSniffer Pty Ltd in the first U.S.-based pilot program using “FlameSniffer” early fire-detection technology
- FlameSniffer’s range of ~1-mile can immediately detect the onset of fire from any ignition source: lightning strike, arson, or power-line arcing or accidental ignition
- FlameSniffer’s wireless sensors provide 24-hour, unmanned fire detection and vital ground-based intelligence for managing the wildland urban interface
- FlameSniffer’s built-in camera takes photos about every 17 seconds once an ignition source is detected, providing real-time visual information of its surrounding area
- FlameSniffer streams live micro-climate information, providing more weather condition information than traditional remote automated weather stations
- Combined with FlameSniffer’s real-time climatic condition and imaging capabilities, Fire Agencies can get timely pinpoint information, enabling them to provide rapid response to help contain and extinguish incipient-stage wildfires before they become too large to fight with initial attack resources



# FlameSniffer – Weather Data Capabilities

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- Each FlameSniffer unit weighs 14-pounds is equipped with:
  - Four (4) Flame Detection sensors\* that detect flame signature and pressure of Co2 in the atmosphere
  - Eight (8) Thermal Imaging sensors\*, each sensor measuring 31,744 points of temperatures at 360-degree detection radius, providing a complete Thermal Image
  - One (1) Smoke/Co2 Detection & Air Sampling sensor\*
  - Four (4) Still-Image Video Cameras\*
  - One (1) Ultrasonic Wind Speed and Direction sensor
  - One (1) Barometric Pressure and Relative Humidity Sensor
  - One (1) Lithium battery with solar recharging
- FlameSniffer's ability to provide traditional weather observation data AND fire/heat/arc notification and observation allows SCE to take real-time operational measures to minimize fire ignitions (e.g. suspending line testing)
- The combined use of existing weather observation data from the NWS and the new FlameSniffer devices gives SCE both predictive and enhanced response capabilities to wildland fire incidents