

# Grid Modernization and Smart Cities

The Role of Utilities in Building Smart Cities

Smart Cities Policy Session

March 16, 2016



# Southern California Edison

## Customers

- 15 million residents in over 190 cities and counties
- 5 million customer accounts
- 50,000 square-mile service territory

## Infrastructure

- 1.4 million utility poles
- 725,000 transformers
- 103,000 miles of transmission and distribution lines
- 3,100 MW owned generation

## Distribution Resource Integration

- 5,000 PV apps per month (~160,000 installed for ~1,250 MW)
- 1,325 MW Energy Storage mandated in CA (580 MW SCE share)
- 1,500 EV charging stations approved for 2016-2017

## Looking Forward

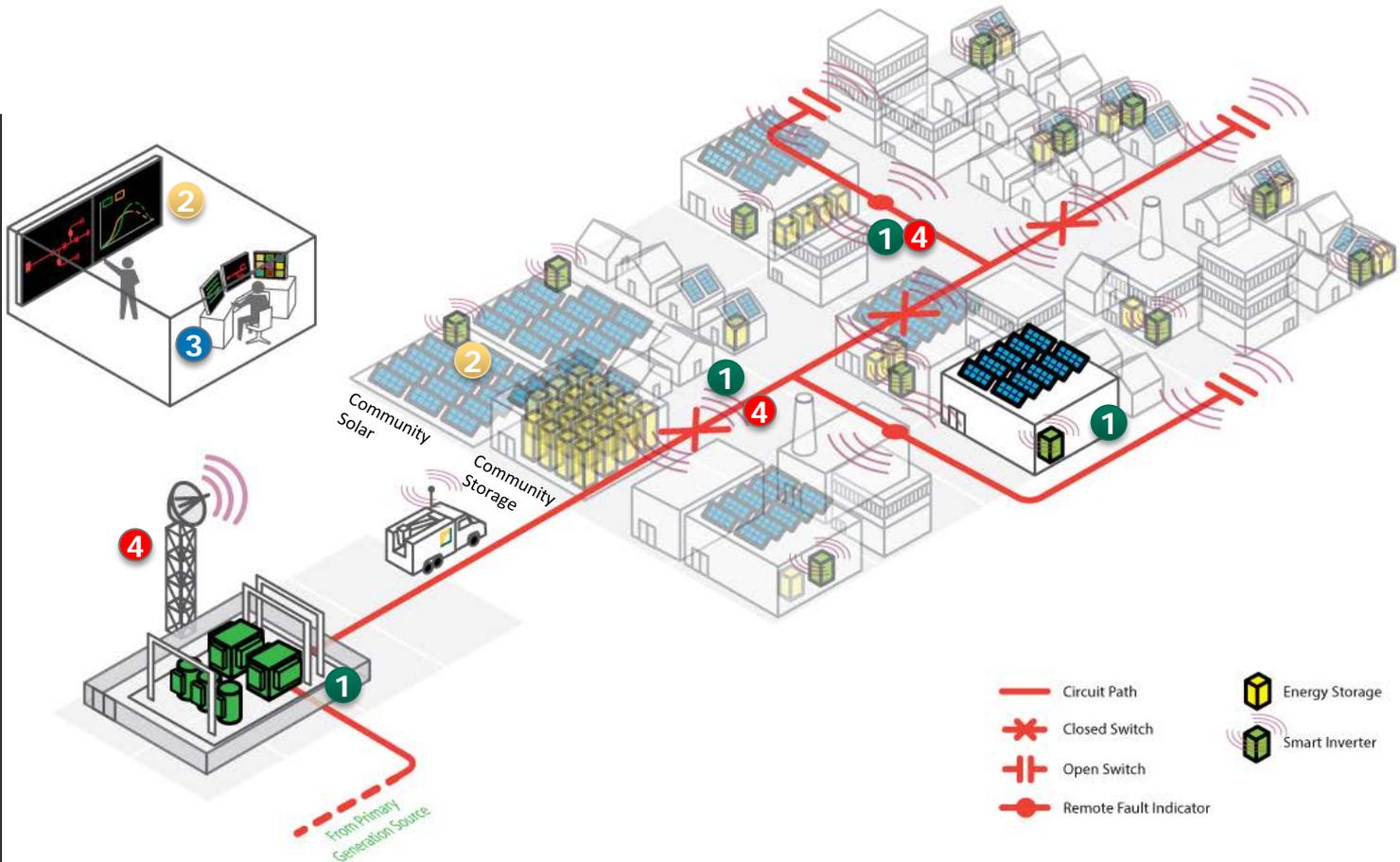
- Distribution Resources Plan proceeding looks to integrate DERs
- SB 350 (Oct 2015) requires 50% of energy from renewable sources by 2030
- Many customers inquiring about microgrids (e.g. military bases, hi-tech)



# Integrating Distributed Resources

## Future state based on evolving energy landscape

- 1** More automation enhances interaction of grid with customer devices & DER. Sophisticated automation schemes now possible
- 2** Prediction of DER performance facilitates increasing renewables & two-way power flow
- 3** Software tools for real time state estimation, grid simulation & optimization
- 4** Bolstered telecommunications supports increased telemetry and faster remote response



# Smart Cities Opportunities

---

## **Opportunities for Partnerships**

- Long range planning – load growth, energy plans
- Focused resiliency efforts for critical customers (e.g. microgrids)
- Optimize investments in the telecom space
- Leveraging streetlight infrastructure

## **Regulatory Support is Necessary**

- Aligned objectives can help to focus efforts
- Clear understanding of benefits and risks
- Mindful of customer fairness – need to avoid an upper class solution at expense of under served communities
- Regulatory construct keeping pace with market