DOCKETED

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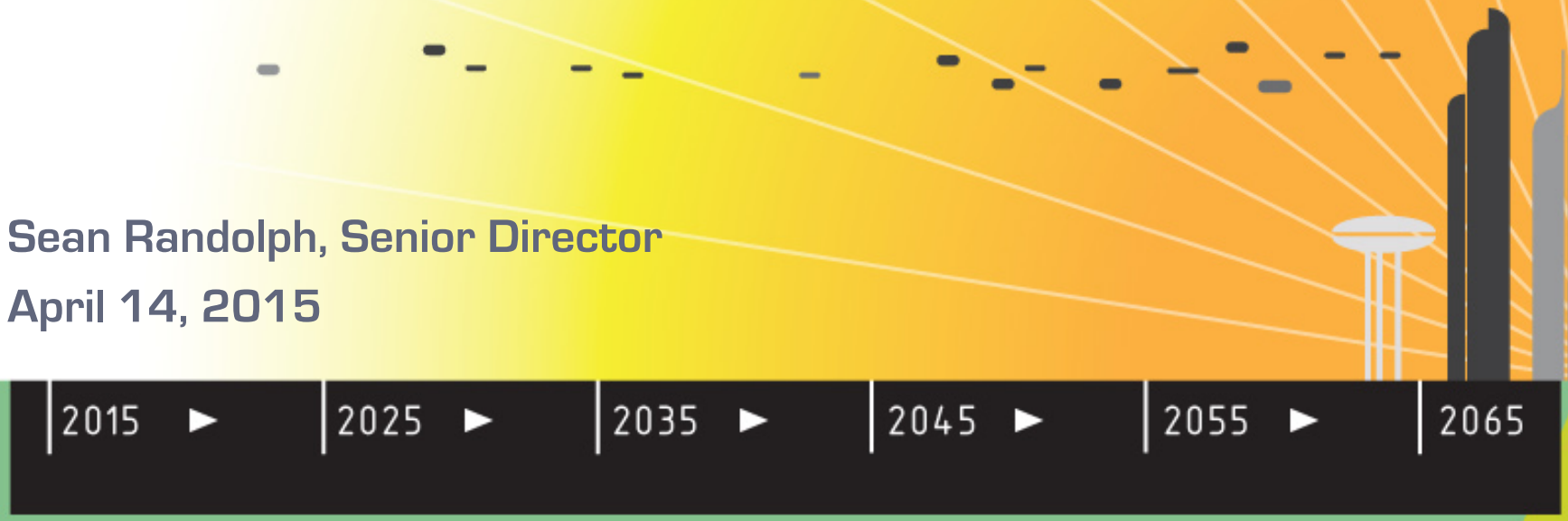
21ST CENTURY INFRASTRUCTURE

Keeping California Connected, Powered, and Competitive

BAY AREA COUNCIL ECONOMIC INSTITUTE

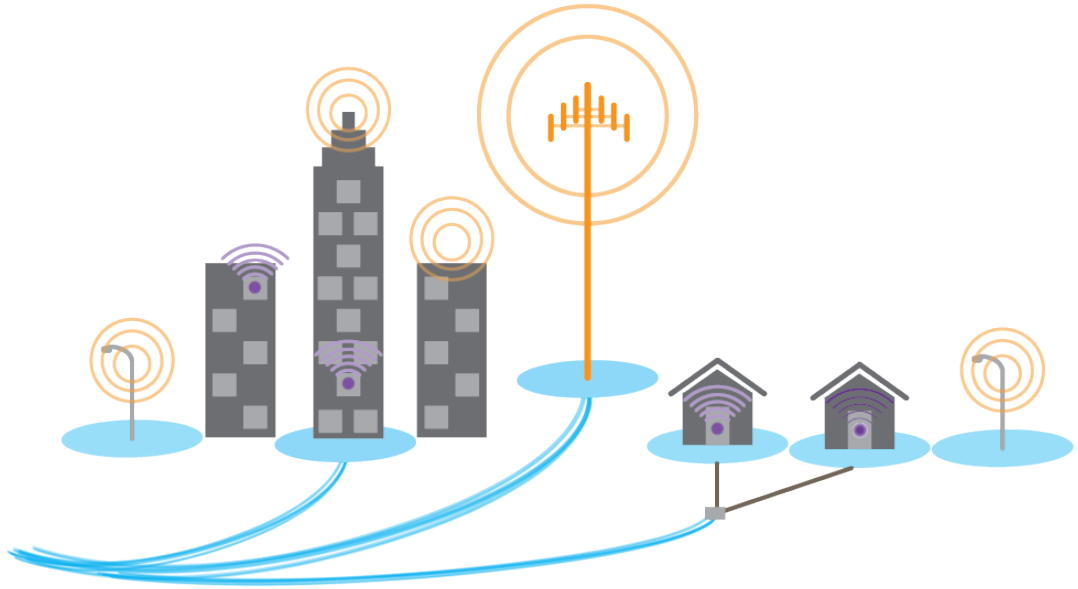
Sean Randolph, Senior Director

April 14, 2015



REPORT HIGHLIGHTS

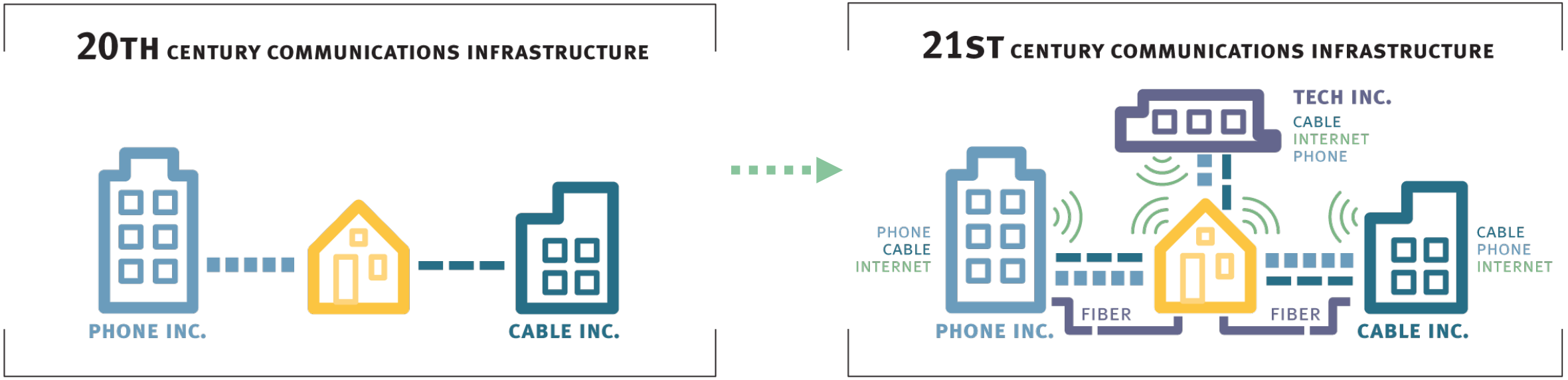
- Key Drivers of Change in Communications Technologies and the Electricity Grid
- What is the Infrastructure of the 21st Century?
- The Role of Infrastructure in Improving Competitiveness and Quality of Life
- Policy Recommendations



NEW TRENDS IN COMMUNICATIONS

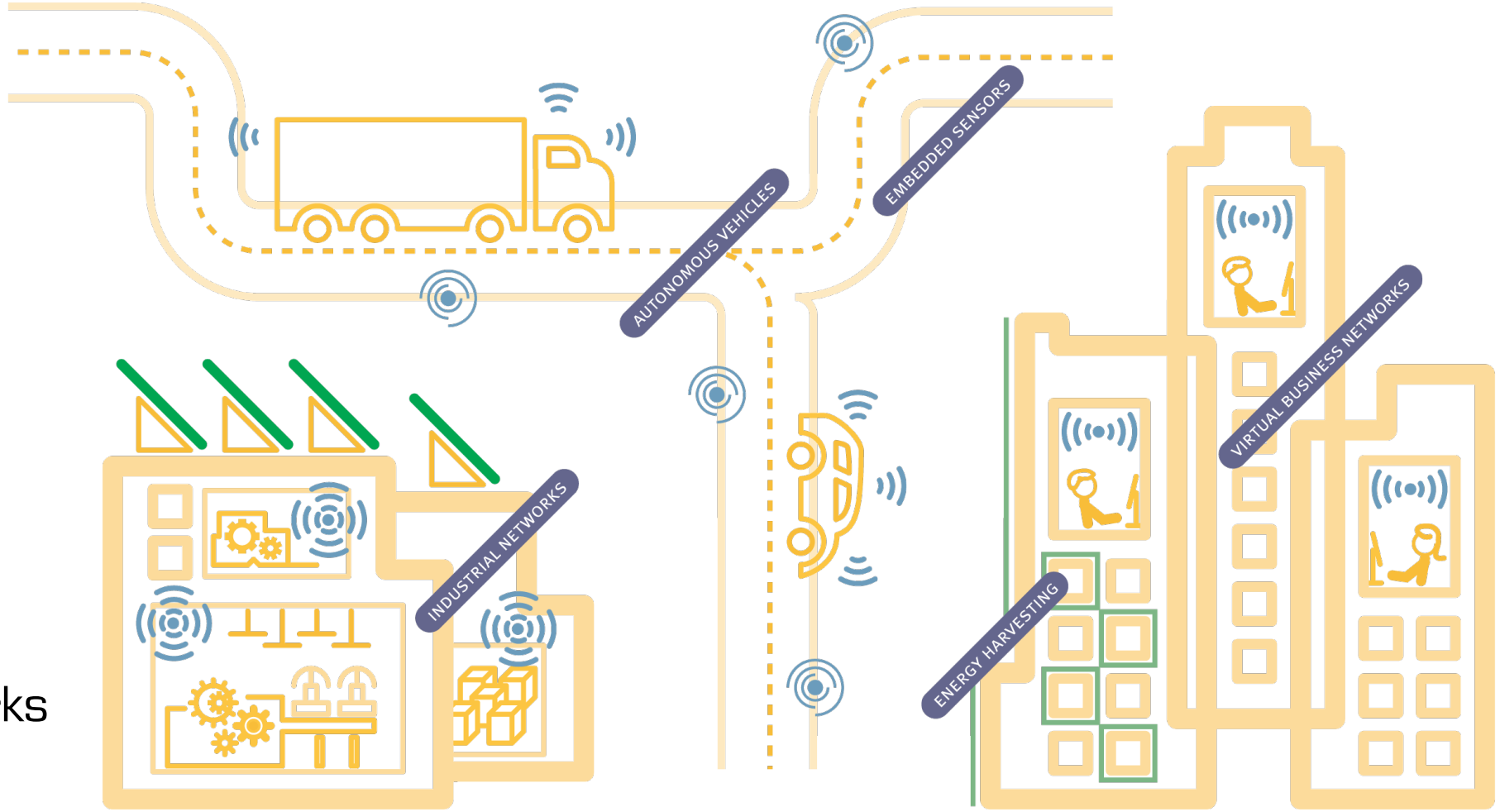
Rising Demands, Evolving Market

- Mobile data and streaming video
- Cloud storage
- Internet of Things



ENABLING NEW BUSINESS MODELS

- Agriculture
- Education
- Health
- Public Services
- Building Networks



POLICY RECOMMENDATIONS

PLAN FOR LOCAL NETWORKS AND EXPEDITE PERMITTING

- Map assets and encourage co-location
- Explore blanket permitting approaches

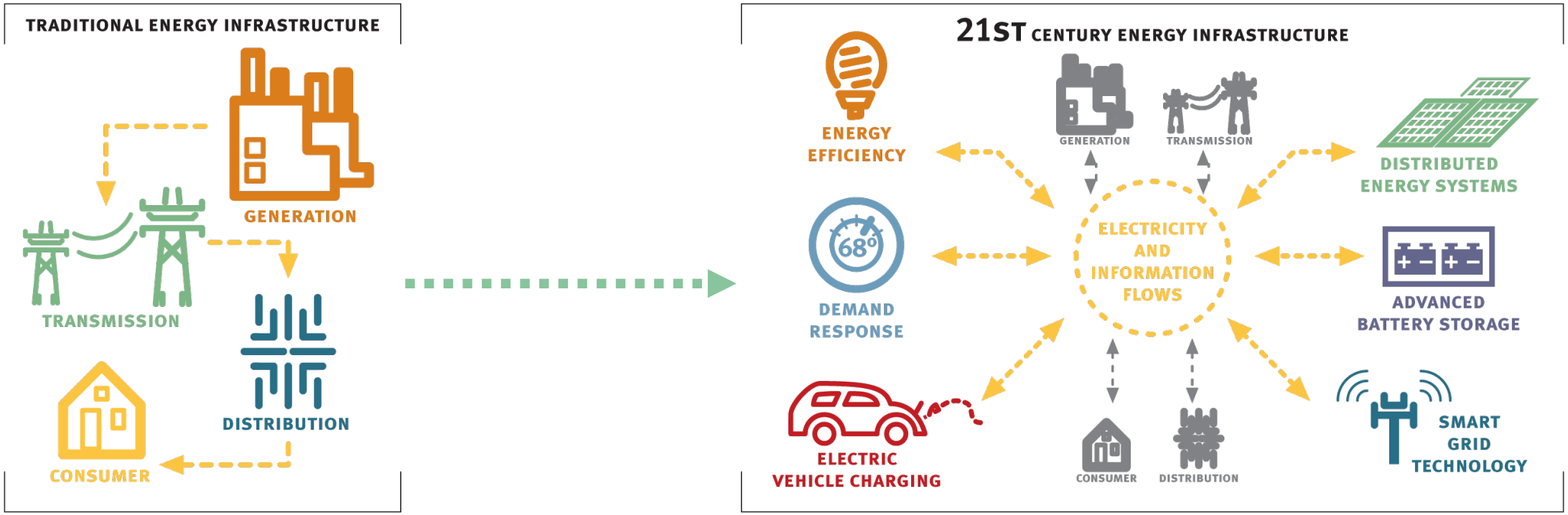
CREATE AN ADVANCED NETWORKS TASK FORCE

- Standardize permitting guidelines across the state
- Share best practices for working with internet service providers

ELECTRIC GRID DRIVERS OF CHANGE

Increasingly distributed grid + variable generation

- Climate change & GHG policy
- Falling price of solar
- Expectation of consumer choice
- Electric vehicle uptake



WHERE CALIFORNIA STANDS TODAY

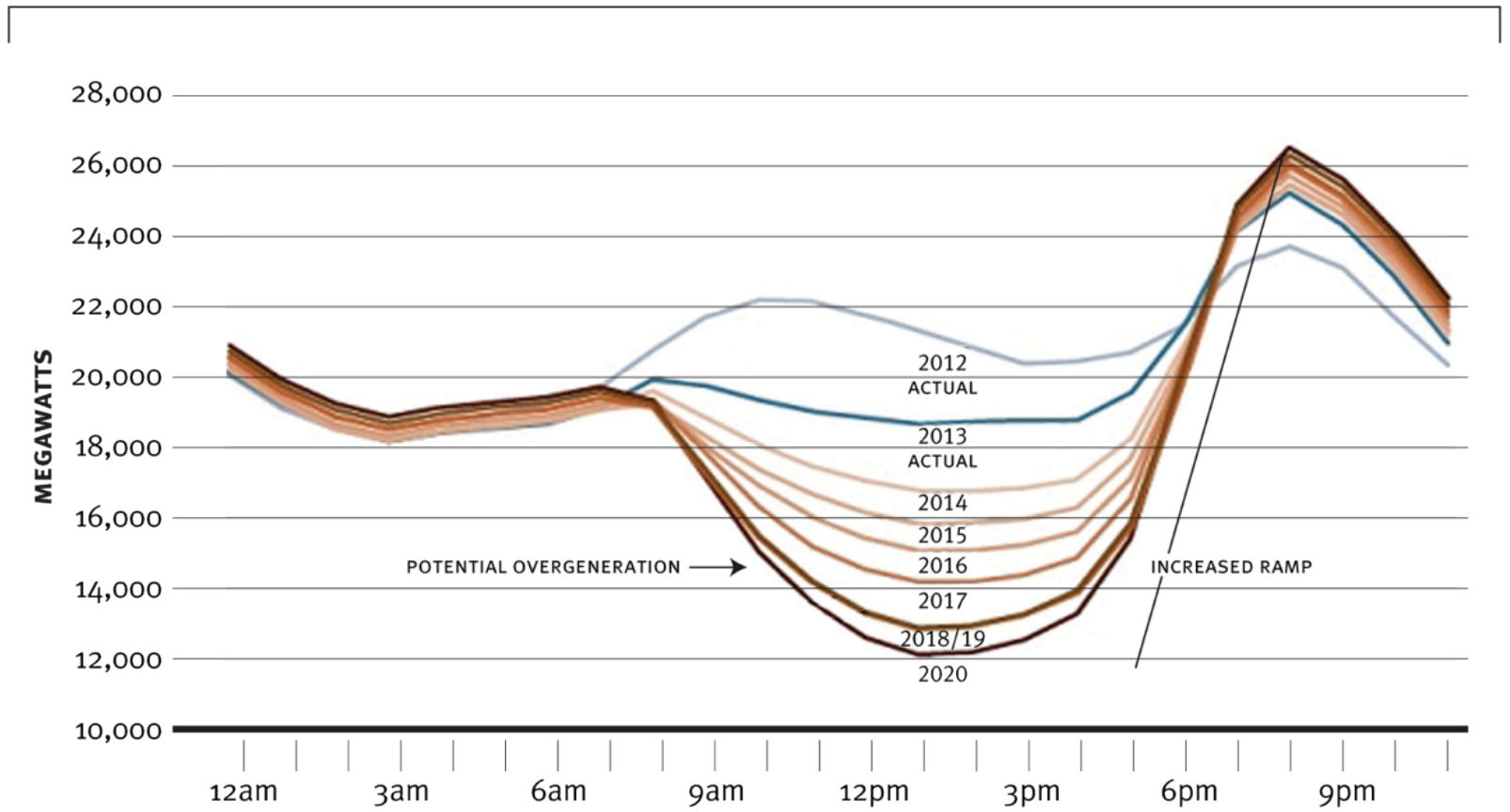
California Leads the Nation:

- 240,000 distributed, on-site solar systems
- 8,500 MW solar capacity

Smart Grid Management:

- Vehicle-grid integration
- Home Area Networks
- Microgrids

NET LOAD PROJECTIONS FOR CALIFORNIA



Data Source: California Independent System Operator

BENEFITS TO CALIFORNIANS

- Cost Savings
- Customer Choice
- Transparency
- Resiliency

POLICY RECOMMENDATIONS

CONNECT ELECTRICITY RATES TO ACHIEVEMENT OF POLICY GOALS

- Spread costs across all who benefit from and utilize a more distributed grid

LEVERAGE NEW TECHNOLOGIES TO STORE ENERGY

- Create incentives to offset current high cost of grid-scale storage
- Develop guidelines for cost recovery and administration of EV charging infrastructure

ENABLE ENERGY DATA TO BE USED IN NEW WAYS

- Establish standards for electricity data and policies for privacy and ownership
- Facilitate the convergence of the Internet of Things and a smarter grid