

## Script of Shinjini Menon VP

Good Afternoon Chair Garcia and members of the Committee. My name is Shinjini Menon, and I am Vice President of Asset Management and Wildfire Safety at Southern California Edison. Thank you for the opportunity to speak with you today about one of the most important transitions ahead of us.

The value of the electric grid goes beyond the commodity cost of the energy it delivers. The grid powers all aspects of our society. As electricity becomes the fueling system for a larger part of the economy, we must reimagine what the future grid should look like at all levels -- and how it must function differently to meet those expanded needs.

In recent history, load growth and electrical infrastructure buildouts have proceeded at a modest pace with reasonable predictability.

While an electric system upgrade can take as long as a decade to site, license, build and commission, the extremely long lead times were manageable given this modest, predictable growth.

However, we are currently at an inflection point where rapid acceleration in electric grid upgrades is needed compared to what sufficed historically.

- It is essential to prepare so that we can increase decarbonization, accelerate electrification, improve air quality, and respond to climate change impacts.

**I'd like to focus for a minute on decarbonization.** The Decarbonization of our economy will be a core driver of how we plan, design and operate the electrical grid going forward. The Air Resources Board is updating the state's scoping plan as we speak. They are crafting the state's path to carbon neutrality by 2045 and the implications for the electric system are monumental. Per the alternative that CARB has highlighted as their preferred scenario (Alternative 3)—by 2045 electric load will increase by nearly two thirds from 2020 levels.

- We will need to build out 7GW of solar and 2GW of battery storage every single year. For context -- historically we've only built out less than 3GW of solar at the maximum.
- And we'll need to connect all of that to the grid to meet increased demand from electrification. By 2035, 100% of annual light duty vehicles sold in the state will be zero emission.

We also expect major changes in how customers will use electricity, which will place unprecedented stress on the grid. Demand will be higher, and less predictable. Supply will be more intermittent. And dependence on electricity for transportation, homes and businesses will increase.

Conversations with CEC, CPUC and CAISO reveal growing appreciation of the challenges ahead and the need for action now.

I do want to emphasize that to hit our shared goals, we will need more than transmission upgrades. Meeting increased local demand and interconnecting distributed energy resources will also require upgrades and new design and operating standards at the distribution levels and at customer sites. As the grid gets more complex and interconnected, technology will be a significant foundational element as well – whether it is for communication, automation, more sensors, or cybersecurity. To operate a safe, secure, reliable, and flexible grid we must also invest in the digital infrastructure.

Let me take you through a quick tour of some of the challenges before us:

- More than 20 million light-duty electric vehicles are expected by 2045 in California, with each new vehicle's peak charging being roughly the equivalent of adding a new home to the grid
- For the first time since the electric grid was built, a significant amount of demand will come from devices that are not stationary, making load forecasting by location more difficult
- Not only will the uncertainty of demand forecasting increase, the variability in power supply with renewable resources will also increase as many of these are intermittent resources. This in turn will challenge the grid's stability, reliability, and resilience.
- Connecting millions of solar panels, batteries and electronics to the grid could cause widespread power quality impacts such as voltage distortions, which if left unmitigated, could shorten the life of customer and grid equipment alike.
- The bulk of future renewable resources will be located far from customers, and the current transmission grid will be unable to deliver adequate power to urban load centers.
- The grid will be exposed to growing climate change effects. Recent wildfires and heat waves in California are early proof of the acceleration of these climate challenges.

We can go on and on about the challenges

**So what are the solutions?** In short -- Grid planning, design and operations need to evolve starting now. Though there are continued uncertainties in the trajectories of demand growth and renewable resource development, we can all agree on the end game. That is, we may not know the exact path, but we all know our destination.

**California should make reasonable reforms to the existing planning regime and permitting processes. We need longer term planning, and we need to get ahead of the demand growth curve -- by beginning the necessary investments in the transmission and distribution systems now.**

- **We should have electric utilities proactively upgrade the grid** while providing them adequate cost recovery assurances; getting ahead of clean technology adoption and worsening climate change impacts will avoid costly just in time solutions, prevent the grid from being a barrier to electrification and decarbonization, and in fact enable an equitable and affordable transition to a clean economy.
- **We should also expand energy system planning to longer-term time horizons and 2045 decarbonization objectives across state agencies.** We need to work on near-term needs and long-term targets with equal urgency.

Significant amounts of transmission need to be built to support SB100 and Carbon Neutrality. All parties agree on this point too. So, specifically for Transmission—

- **First, we need to plan using demand and resource forecast scenarios that will actually meet California’s clean energy goals,** or at least have a reasonable chance to meet those goals. Otherwise, we fall further and further behind.
  - **We should ensure that the CAISO Transmission Planning Process or TPP incorporates 2045 goals. The 10-year planning horizon of the CAISO TPP does not currently integrate the paths highlighted by CARB’s Scoping Plan Scenarios.** To help CAISO, the state should require that the CEC provide the full 15-year IEPR forecast to the CAISO for use in its TPP. And the IEPR forecasts should reflect a viable trajectory to carbon neutrality by 2045 that incorporate state policies, laws, regulations and executive orders.
  - For example, the IEPR forecast provided to the CAISO for transmission planning should reflect state policy targets for electric vehicle adoption. In our view, this will help to ensure timely modeling and approval of long-lead time transmission upgrades by the CAISO.
- **Second, we need to establish a Unified State and Local Siting and Approval Process.** One key challenge with transmission development is that planning between relevant entities is not aligned. Local jurisdictions and various agencies are not equipped with plans that would achieve the state’s goals. As the SB 100 Joint Agency Report noted, – “A unified planning process for developing utility-scale energy projects and the respective transmission lines must be considered.”
  - It will also be imperative to fast-track high priority projects where load is bound to increase, where the systems are already constrained or close to being constrained, and where economic development is vital. For example, locations and communities near the ports, major transportation corridors and warehouse districts.

**In our view the state does not need new agencies or new public financing mechanisms.** It needs commonsense reforms of the existing processes to enable proactive grid investments and minimize the time to construct transmission lines. We are actively working on solutions

ourselves, evaluating the impacts of high electrification scenarios, transitioning from a grid-centric to customer centric planning, and streamlining our interconnection processes. If we are going to achieve our shared climate goals and an affordable and equitable transition to clean energy for all Californians, we need to cut current timelines down and find ways to understand today what the needs of the future will be.

Thank you for your time, and I look forward to answering any questions.