

November 1, 2019

California Energy Commission  
Docket Office  
Re: Docket No. 19-IEPR-01  
1516 Ninth Street  
Sacramento, CA 95814

*Via Electronic Filing*

**Re: 19-IEPR-01 – General/Scope  
Post 2020 Grid Operational Outlook**

Dear Commissioners:

The California Independent System Operator (ISO) appreciates the opportunity to submit the following presentation about the post-2020 grid operational outlook into the 2019 Integrated Energy Policy Report (IEPR) docket. The information was presented to the ISO Board of Governors at its public meeting on September 18, 2019. There are three challenges identified in the presentation. The first challenge is a near-term concern over the capacity shortfall in the ISO's footprint starting as early as 2020 and the ability to meet the summer evening peak load. The presentation only focused on this first challenge due to its near-term urgency. The remaining challenges reflect longer-term issues and will be presented to the ISO Board of Governors in the future.

Thank you for the opportunity to submit these comments.

Regards,

**/s/ Jordan Pinjuv**  
Senior Counsel



# Briefing on post 2020 grid operational outlook

Mark Rothleder, Vice President – Market Quality and State  
Regulatory Affairs

Board of Governors Meeting  
General Session  
September 18, 2019

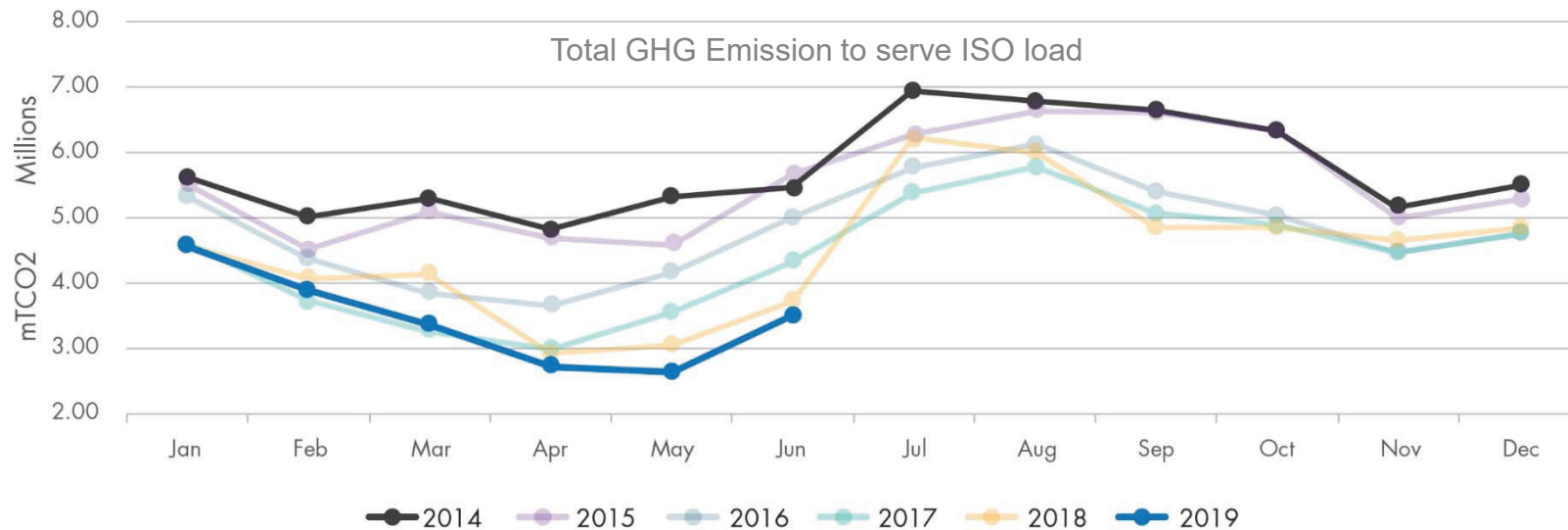
# ISO supports California's clean energy goals

**33% RPS**  
achieved ahead  
of 2020 target

**78%**  
highest load level served  
by renewable energy

**98.7%**  
highest load level served  
by carbon-free resources

**34%** Reduction in GHG Emission associated with serving ISO since 2014



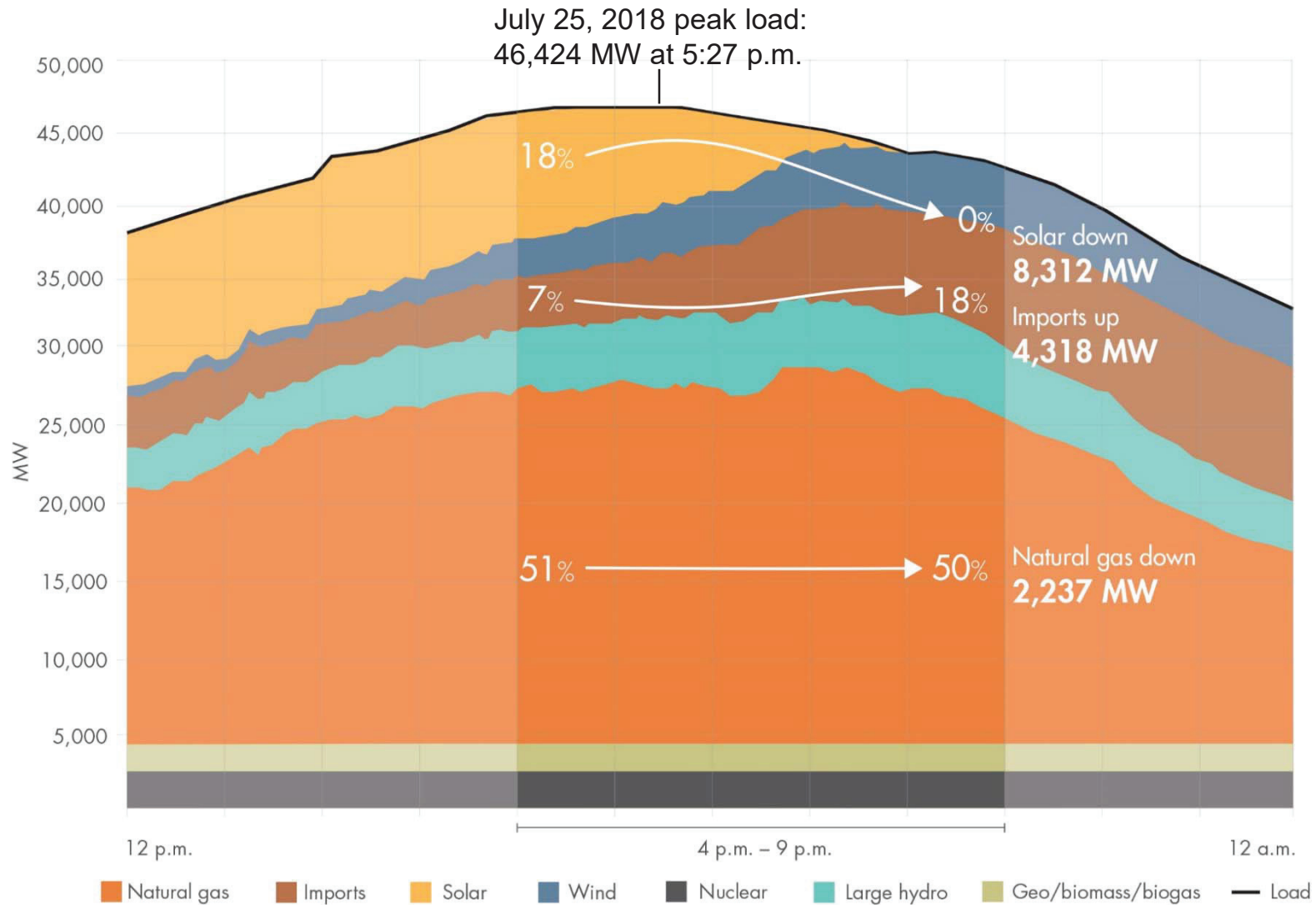
## Challenges

- **Challenge 1: Capacity shortfall in 2020 and meeting summer evening peak load**
- Challenge 2: Increased ramping needs
- Challenge 3: Low renewable energy production from multi-day weather events

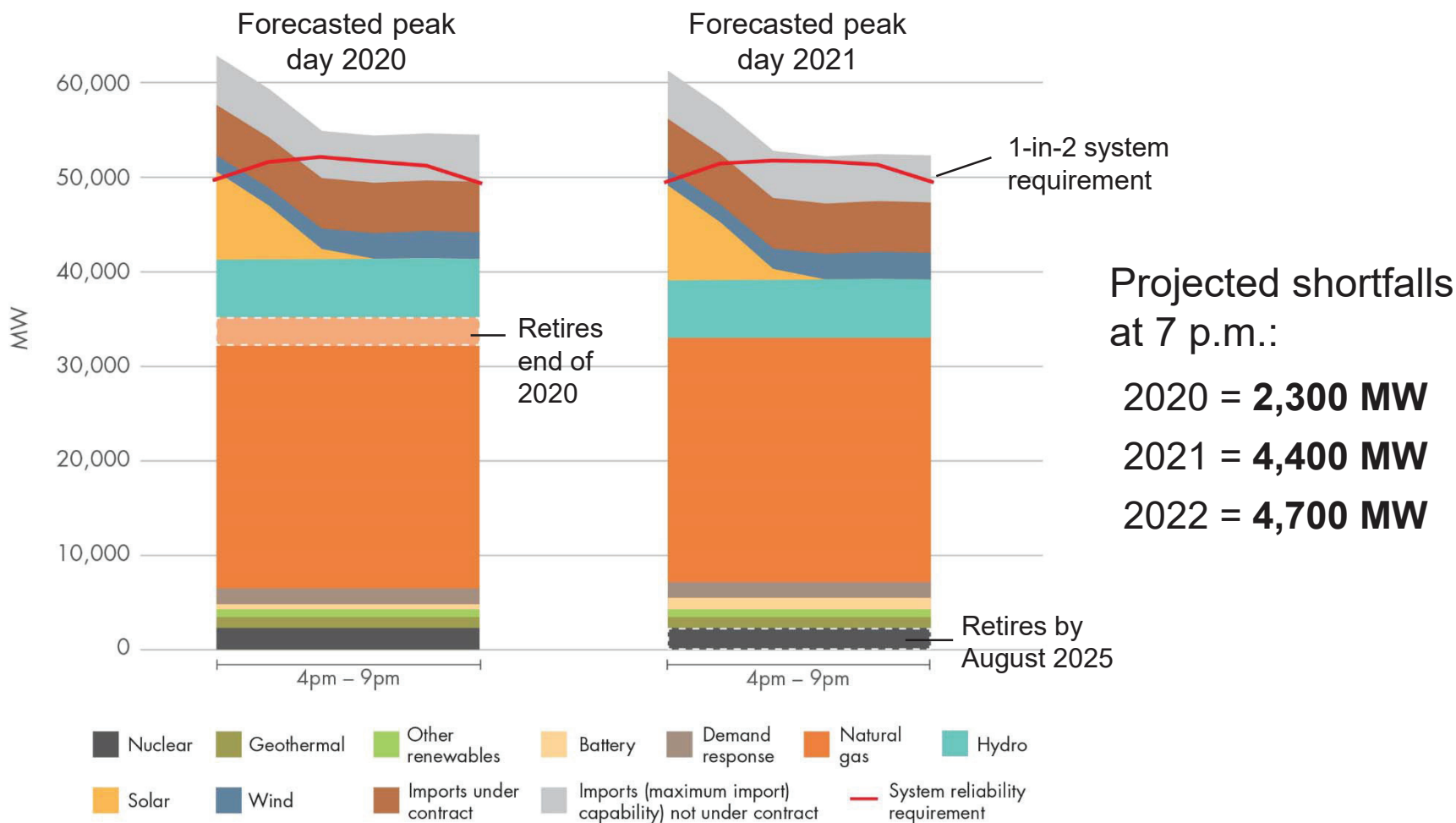
## Challenge 1: Capacity shortfall in 2020 and meeting summer evening peak load

- The peak demand the ISO serves is shifting from the afternoon to the early evening
- Solar production is significantly reduced or not available during these new, later peak demand hours
- Instead, we now rely on energy from natural gas resources and imports
- However, energy capacity is decreasing due to:
  - Net retirement of 4,000 MW of once-through cooling steam generation
  - Reduced imports due to increasing load, thermal resource retirement, and increasing renewable integration needs outside of California
  - Potential changes in hydro conditions and availability in CA and west

# Gas and imports support high loads after sun sets



# Potential resource shortage<sup>1</sup> starting in 2020



<sup>1</sup> Assumes no transmission outages or other significant events affecting availability of generation

# Challenge 1: Capacity shortfall in 2020 and meeting summer evening peak load – *Recommended actions*

- Address 2020 capacity concerns
  - Increase resource adequacy contracting from operational, mothballed and new resources
  - Secure available import capacity
  - Consider extension of once-through cooling compliance date on critical units until CPUC identifies alternatives
- After 2021
  - Diversify fleet for evening peaks, include preferred resources that align with needs; e.g. geothermal and wind
  - Add both short- and long-duration storage focused on evening peak
  - Strategically maintain gas fleet

## Other actions to consider:



Add automated demand response



Increase energy efficiency