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Gas-fired Generation Requirements in the LA Basin

Neil Millar
Vice President, Infrastructure and Operations Planning

Session 4 of 4: Alison Canyon Reliability Impacts
IEPR Joint Agency Workshop on Summer 2021 Electric and Natural Gas Reliability

July 9, 2021
The ISO considers the local requirements through a number of venues including supporting CPUC proceedings:

- **Annual local capacity requirements technical studies** assess the needs for the next year as well as a 5 year projection, and a 10 year projection is performed every second year:
  - The potential for batteries to replace generating resources is assessed in each study – recognizing charging requirements.

- **Transmission alternatives to reduce local requirements** are explored through the annual transmission planning process:
  - Needs are considered from reliability, policy (if applicable) and economic perspectives.
  - System and local needs must be considered holistically.

- **Additional studies** have been performed to support other efforts such as the Aliso Canyon proceeding.
Local Capacity requirements are complex and overlapping in the LA Basin and San Diego-Imperial Valley Areas.
Potential for storage to meet Western LA Basin Subarea and Overall LA Basin area needs:

- From the most recent 2022 annual LCR study
- Includes consideration of charging requirements (under critical contingency conditions) met by transmission and other in-basin gas-fired generation
- The estimates include:
  - the maximum potential capacity and energy for energy storage, and
  - the 4-hour energy storage estimate (i.e., for 1-to-1 generation replacement in an LCR area).
- Note the Western LA Basin has gas-fired generation resources that are located in the Aliso Canyon Delivery Area. The overall LA Basin includes gas-fired generation outside of the Aliso Canyon Delivery Area.
The ISO has also studied transmission alternatives in the western LA Basin coupled with energy storage

- Options studied over the last two years have included:
  - Storage in the Western Basin sub-area and Nido sub-area (~$1.2 billion)
  - Upgrade Mesa – Laguna Bell 230 kV line and storage in Nido sub-area (~$0.6 billion)
  - Series Reactor on the Mesa-Laguna Bell 230 kV line and storage in the Nido sub-area (~$0.6 billion)
  - Upgrade La Fresa – La Cienega 230 kV line and Series Reactor on the Mesa – Laguna Bell 230 kV line (~$0.1 billion)
  - Pacific Transmission Expansion HVDC Project (~ $2 billion)
  - Devers - Lighthipe HVDC (~ $1 billion)
  - Lugo Area - LA Basin HVDC line with underground connections (~ $1 billion)

- Because the local resources are also needed for system purposes, there was little economic advantage to building transmission to reduce local requirements for the gas-fired generation

Note: Environmental impact assessments and construction feasibilities were not included in the ISO studies.
The ISO has conducted power flow studies as inputs into modeling for the I.17-02-002 Order instituting investigation regarding Aliso Canyon

- The ISO performed local capacity requirement (LCR) studies in 2019 to determine minimum local capacity requirements for summer and winter of 2020, 2025 and 2030 under contingency conditions
  - Specific gas-fired generating unit dispatches were then provided to the CPUC staff for use in the Production Cost Model
  - The CPUC performed production cost modeling that provided inputs to the gas hydraulic model.
- The ISO’s analysis is part of the picture, but comprehensive analysis of gas supply needs reaches beyond ISO gas-fired generation needs.