



## 2017 Summer Energy Market and Reliability Assessment

**Craig Cano:** Welcome to Open Access, the podcast series of the Federal Energy Regulatory Commission, or FERC. I'm Craig Cano, your host. FERC is an independent regulatory agency that oversees the interstate transmission of electricity, natural gas and oil, reviews proposals to build interstate natural gas pipelines and liquefied natural gas terminals and licenses nonfederal hydropower projects. FERC also protects the reliability of the high-voltage interstate transmission system through mandatory reliability standards, and it monitors interstate energy markets to ensure that everyone in those markets is playing by the rules.

**Craig:** Today on Open Access, Mary O'Driscoll sits down with FERC staff to discuss the 2017 Summer Market and Reliability Assessment. This annual report, prepared by staff from the FERC Office of Electric Reliability and the Office of Enforcement, gives the Commission an opportunity to share our summer outlook on electricity and natural gas markets, and reliability matters. This helps inform the Commission's understanding of current and future trends.

**Mary O'Driscoll:** Today were joined by Alan Phung at the Division of Engineering, Planning and Operation in FERC's Office of Electric Reliability and Jennifer Fletcher of the Division of Energy Market Oversight in FERC's Office of Enforcement. Welcome to the podcast!

**Alan Phung:** Thank you.

**Jennifer Fletcher:** Thank you.

**Mary:** So Alan, what is a summer assessment? And why does FERC do this?

**Alan:** From a general reliability point of view, a summer assessment takes a look into the adequacy level of electric resources or supplies within an area, for the summer peak demand periods. FERC staff performs this assessment as it provides an independent avenue for staff to inform the Commission of national reliability and market outlooks for the upcoming summer season. Staff can also highlight any summer reliability issues, potential risks, or trends of the bulk power system in the assessment as well.

**Mary:** Jennifer, who will find this report useful?

**Jennifer:** The report may interest anyone monitoring trends affecting the U.S. energy system this summer. This could include policymakers, other federal agencies, state energy regulators, grid operators, utilities, and the public.

**Mary:** Okay Alan, let's take the reliability angle first. Does this report indicate any concerns about reliability of the grid this summer? You know, not to be too ham-handed, but: Temperatures are expected to be higher than average. With everyone using electricity to stay cool, will the lights stay on?

**Alan:** Staffs' reliability assessment or report does not indicate any significant reliability issues and concerns on the grid going into the summer period. However, several reliability-related challenges across the nation are worth highlighting. In New England, the region's anticipated reserve margin is projected to be below their reference margin level of 15.10% at 14.88%. In Southern California, the limited availability of Aliso Canyon natural gas storage facility continues to be of concern as it could pose a risk to reliability if weather conditions become extreme and if any unplanned gas pipeline outages occur. Additionally, areas across the United States bulk power system are expected to observe effects from a solar eclipse that is forecasted to traverse the nation on August 21. Even though temperatures are forecasted to be higher than average the summer, most areas across the nation should have sufficient levels of reserve margins, meaning there should be enough anticipated resources to serve peak electric demand, and keep the lights on the summer.

**Mary:** What's a reserve margin?

**Alan:** Well, a reserve margin is a planning metric, primarily used to assess and evaluate resource adequacy by comparing projected resource capabilities with forecasted peak demand. It's essentially a percentile that is calculated by taking the difference between forecasted resources and net internal demand and dividing that difference by the net internal demand.

**Mary:** Okay, you just threw a lot of math at me. So why is that important?

**Alan:** Well, this metric is important because it'll tell you if projected resources within an area is expected to be sufficient enough to serve forecasted peak demand, when compared against a reference margin level.

**Mary:** Okay, and what's a reference margin level?

**Alan:** Good question. A reference margin level is usually determined based on load generation and transmission characteristics for an area. In some areas in cases, a reference margin level may also be a requirement. Ideally you would want the planning reserve margin to be at or above a reference margin level. This will ensure that there is an adequate level of resource capability to serve demand during the peak. Also long-term projections of reserve margins are important. These projections would assist system planners in determining if additional resources in an area are required if there is a shortfall in the reserve margin, again, when compared against a reference margin level.

**Mary:** Alright Alan, what areas of the country are you looking at most closely, and why?

**Alan:** Some areas within the country staff is monitoring closely include New England and California. As mentioned earlier, New England is projecting a shortfall in their anticipated reserve margin for the summer. This is primarily due to a delay in the commissioning of approximately 700 MW of new generating capacity. As a result of the shortfall, the region may be required to rely more on imports from neighboring areas or even implement emergency operating procedures to cover the forecasted deficiency in resource capability.

**Mary:** Okay, you've already discussed the Aliso Canyon gas storage facility in Southern California. I think we'll discuss that a little bit more with Jennifer as we discuss markets.

**Alan:** Sure, sure.

**Mary:** So you mentioned a solar eclipse a few minutes ago. What's going on with that? What's the concern there?

**Alan:** Right. Staff is monitoring the effects of this solar eclipse because regions with significant levels of installed solar capacities such as California and North Carolina may experience some reliability effects. Some of these effects may include rapid grabbing conditions and potential challenges in balancing load and generation during periods where photovoltaic or solar generation could be made unavailable due to obscuration.

**Mary:** Okay Jennifer, I would think with the record rain and snowfall out in the West this year, things should be going well for California, correct?

**Jennifer:** Yes, the snow water equivalent in the West is been near record highs this year, providing relatively high hydro generation in the spring and early summer so far. Over the course of the summer, hydro generation typically drops by June and is replaced by natural gas-fired generation, and to a lesser extent, coal-fired generation. However, because of this year's abundant Northwest and California snowpack levels. It's possible that high hydro generation could extend until July if the temperatures remain moderate.

**Mary:** Well, what does that mean for all of the renewable energy that California generates?

**Jennifer:** So during the spring, the combination of strong hydroelectric generation, coupled with high spring renewable output led to warnings from the California ISO that up to 8,000 MW of renewable generation could be curtailed to maintain reliability. The energy imbalance market, or EIM, helps to manage energy imbalances and integrate diverse resource types across a wider geographic area. In this regard, the EIM has provided an outlet for CAISO to some renewable energy that it cannot use on its own system. For instance, in recent months that California ISO had sold into EIM during the middle of the day when solar output peaks often at negative prices. During the summer

months, this pattern may change as CAISO uses more of its renewable generation to meet its own summer load.

**Mary:** Okay, we had mentioned Aliso Canyon before. So, California also uses a lot of natural gas but there still restrictions on the use of the Aliso Canyon facility in Southern California. Will those restrictions come into play there the summer?

**Jennifer:** Yes, this year marks the second summer that Aliso Canyon will be restricted. Aliso Canyon currently has less working gas than last summer because it withdraws this past January and under current limitations may affect the amount of stored gas that could be used in case of emergency. The state of California has also imposed new restrictions on all natural gas storage facilities, requiring facilities to inject and withdraw only through the well pipe, not through the casings, as has been done in the past. These limitations will reduce the rate at which injections and withdrawals can occur.

**Mary:** Has anything been done to mitigate any risks associated with the restrictions placed on Aliso Canyon?

**Jennifer:** Yes, given that there were no major issues last summer, this should only become a problem if there's extreme temperatures or if there is unexpected gas pipeline outages. The construction of additional electric transmission into Southern California will also help ease the stress on natural gas-fired generation in the region and the associated systems. SoCal Edison completed construction of the 173 mile Tehachapi renewable generation, transmission project, which will bring non-local generation into Southern California. Other measures implemented to address the loss of Aliso Canyon remain in place, including the California ISO's ability to implement a natural gas constraint, the ability of the natural gas pipelines to require that shippers balance their supplies. Staff also expects that the Los Angeles Department of Water and Power will continue to have dual fuel capability and most of its LA basin gas units, which allow these units to continue generating in the event of natural gas curtailments.

**Mary:** Okay Jennifer, let's change direction just a little bit. Electricity production from natural gas surpassed coal for the first time on an annual basis in 2016 and that's nationwide, in part due to low prices for natural gas. So where are things going pricewise in 2017?

**Jennifer:** It's very difficult to precisely predict how natural gas prices over the course of the summer will respond to the changing supply and demand. However, natural gas futures contracts offer a simple, transparent forecasting tool that's a reasonable predictor of near-term commodity prices. The Henry Hub summer strap which is an average of the current prices of Henry Hub futures contracts that settle in the summer, was recently trading at \$3.09 per MMBtu which was slightly above the prevailing spot price of \$3.07 per MMBtu.

**Mary:** Okay and so what does that mean for electricity prices in 2017?

**Jennifer:** Again, we can't predict that accurately, since weather, increases in consumer demand, the price of natural gas, coal, and other fuels are all still projections. Some new generating resources have been built, some have retired and transmission infrastructure is continually being built and upgraded. Futures prices for electricity can give us some insight into how the markets anticipate all these factors to come together. Average monthly on peak futures prices since 2016 have risen between 9 and 15% at most regional market hubs. Futures prices at PJM's Western hub, however, have decreased 3%.

**Mary:** Alan and Jennifer, thanks so much. I want to let our listeners know that the report itself is available at the FERC website [www.ferc.gov](http://www.ferc.gov), look under What's New on the left-hand side of the page. Alan and Jennifer, thank you so much for joining Open Access today.

**Alan:** Thank you.

**Jennifer:** Thank you.

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