



ERCOT Responses to Stakeholder Questions on the SARA/CDR COVID-19 Peak Load Forecasts

- 1. During the GCPA call last week Warren was very careful to note that ERCOT had not made changes to the CDR load forecast given the long-term uncertainty about COVID-19 impacts. Can you speak to what the triggers would be that would cause ERCOT to make revisions to both the CDR and anything else like transmission planning cases? Also, when might that happen?**

Hard to give a definitive answer to this question:

- If there is a significant increase in COVID-19 cases in the fall, with severe economic impacts (including low demand for new cars, prolonged low oil prices), that would need to be considered by ERCOT as a catalyst for changing from our current, official long-term load forecast.
- If COVID-19 becomes an annual event similar to the flu, this would also need to be considered.
- Availability of a vaccine is another consideration.

- 2. Can you provide a breakdown in the revision to the reduction in peak demand in the SARA by weather zone?**

The reduction was determined using the information found here:

<http://www.ercot.com/gridinfo/load/covid-19-load-forecast> under the Weather Zone Non-Coincident Peak Forecast link.

- 3. How does the before and after compare at the weather zone level?**

See answer to Question 2 above. Excel files on the COVID page include the original data and the COVID impact data.

- 4. Does the summer 2020 COVID impact case use the same model as previously used, or does the model take into account the different usage patterns (as applicable to peak demand) ERCOT has observed from the impact of COVID?**

The model is still based on data from January 2014 – August 2019.

- 5. Do the before and after ONLY include the COVID-19 effects or do the new numbers also include more recent assumptions such as load additions/cancelations or a refresh with new extended historical weather data?**

We didn't change any recent or historical inputs, only the updated Moody's forecast from April that reflects the COVID.



6. Is the load update purely a result of the updated Moody’s economic forecast? What other considerations/adjustments have been made?

The model used updated information that was provided by Moody’s in their April 2020 update. To be clear, this is not a special scenario that was created by Moody’s. This is Moody’s base economic forecast going forward. The big change was in the Moody’s forecast of non-farm employment. The population and housing stock forecasts had minimal changes. The other change that was made to some of the weather zone models (Far West and West) included using non-farm employment as the growth driver instead of housing stock and/or population. Before COVID-19, these weather zone forecast growth trajectories appeared to be more realistic when using housing stock and/or population versus non-farm employment (ERCOT reviewed multiple forecasts models in making this determination). Forecasts using non-farm employment as the growth driver would indicate a slowing of future growth, and towards the end of the 10-year forecast, the growth would be minimal. We decided to use population and/or housing stock instead of non-farm employment for this reason (to create a more realistic looking forecast).

When reviewing the Moody’s COVID-19 update (which was their April 2020 update for the base scenario), we realized that for these weather zones there was little to no change in the Moody’s forecast of housing stock and/or population. If we didn’t change the growth driver to non-farm employment, the COVID-19 updated forecast for these areas would have had little to no impact. In fact, the housing stock forecast increased in the April 2020 update. This led us to change the growth driver to non-farm employment for these two weather zones. One outcome in making this change is that it appears to indicate an increasing impact due to COVID-19 in future years. We will be reviewing ways to mitigate this in the next Long-Term Load Forecast, which will be published at the end of this year.

7. Why is the percentage load growth lower in summer of 2021 compared to summer of 2020 given the effects of COVID-19 will be more impactful in 2020?

See answer to Question 6 above:

“If we didn’t change the growth driver to non-farm employment, the COVID-19 updated forecast for these areas would have had little to no impact. In fact, the housing stock forecast increased in the April, 2020 update. This led us to change the growth driver to non-farm employment for these two weather zones. One outcome in making this change is that it appears to indicate an increasing impact due to COVID-19 in future years. We will be reviewing ways to mitigate this in the next Long-Term Load Forecast, which will be published at the end of this year.”

8. Why does the load forecast impact seem to grow over time, both in absolute MW terms and as a % of load?

See answers to Questions 6 and 7 above.

9. How much of the COVID -19 effect is related to the oil & gas business in Far West Texas?



Don't know specifically, is reflected as above in answer to Question 6, in the non-farm employment changes.

10. Will oil impact be bigger – what assumption does Moody's make on production?

ERCOT is unaware of Moody's assumptions relating to oil.

11. Has the assumption related to load adjustments in Far West Texas been modified? Have other topside adjustments included in the December 2019 load forecast been modified (i.e., Lubbock, LNG, etc.)?

No, the assumption has not been modified, and no other adjustments have been made.

12. Does ERCOT's forecast, before and after, include the additions of Lubbock in 2021.

Yes.

13. What is the amount of load added to the forecast each year for Lubbock? What weather zone is Lubbock being added to (confirming North)?

Lubbock is being added to the North Weather Zone in June 2021. Will need to follow up on proving the Lubbock forecast values.

14. What is the locational granularity of the Moody's economic forecast? By state? By county?

ERCOT requires data from Moody's at the county level. They also provide forecasts by metropolitan area and by state, which we don't use in our Long-Term Load Forecast. Currently, there are two additional COVID-19 scenarios available from Moody's that are more severe than their base case. ERCOT did not contract with Moody's to take these metropolitan area forecasts and create county level forecasts. This would have taken around a month to complete. ERCOT contracts with Moody's to provide multiple scenarios on an annual basis that are delivered in August. These scenarios are evaluated as part of the Long-Term Load Forecast.

15. Is ERCOT differentiating the impact of COVID-19 across different ERCOT regions (i.e., production in west, Houston refining)?

Moody's county level forecasts are used as input into the weather zone forecast models. This means that each weather zone should have different impacts.

16. How often is Moody's economic forecasts updated? What Moody's economic forecast was used in the SARA and CDR? When was it last updated before being included?



ERCOT receives a monthly forecast from Moody's. This is their base case economic forecast. In addition, once a year around August, ERCOT receives approximately 10 different forecast scenarios from Moody's.

The SARA included impacts from the Moody's April 2020 forecast. The CDR included impacts from the Moody's August 2019 forecast.

17. What oil price is assumed in Moody's economic forecasts for the SARA and each year in the CDR?

ERCOT doesn't have or know the oil price assumptions used by Moody's.

18. What natural gas price is assumed in Moody's economic forecasts for the SARA and each year in the CDR?

ERCOT doesn't have or know the natural gas price assumptions used by Moody's.

19. What is the explanation for the East weather zone having higher load in the COVID-19 case for years 2022-2024?

We noticed this as well. Has to be related to Moody's forecast changes. Don't have a definite reason why. The difference is pretty small (1%).

20. What is ERCOT's view on the shape of the recovery and peak load estimate in particular (vs. their December 2019 Long-Term Hourly Demand and Energy forecast analysis for 2020)?

ERCOT is very comfortable with the revised forecast (assuming a more severe second COVID-19 wave doesn't occur).

21. Has ERCOT's view on Coast & South zone new industrial facilities changed?

No.

a. Is ERCOT projecting additions from 75 MW to 1,000 MW during 2020-2029?

Yes.

b. Does ERCOT see/anticipate any construction delays?

Not aware of in forecasting load.

22. Did ERCOT observe changes in the hourly load shape due to more residential demand and less flat load?



We did observe changes in the hourly load shape in all weather zones and overall. We are unsure if it's just related to residential demand (could also be influenced by commercial business closings). We have not performed a study based on customer classes, nor is there a plan to perform this type of analysis at this time.

23. Is ERCOT accounting for the new Steel Dynamics load in the load forecast, and how much load and when? Steel Dynamics is coming online right now and will reach 3-500 MW by next summer, AEP previously stated it would be online in the second half of 2021. ERCOT called out Lubbock and Freeport as additions, but not sure about this one.

From the 2020 ERCOT System Planning Long-Term Hourly Peak Demand and Energy Forecast report (published Dec. 31, 2019) on page 15:

There are multiple large industrial facilities projected to be operational in the South weather zone during the forecasted timeframe (2020-2029). Additions of 75-930 MW were made to the forecast based on the estimated loads of these facilities.

We do not disclose individual customer load levels.

24. Does ERCOT look at the West Texas intermediate crude curve when modeling far west load growth?

No.

25. Will ERCOT be updating the COVID load scenario in future reports?

There will likely be an updated COVID load scenario included in the 2021 ERCOT System Planning Long-Term Hourly Peak Demand and Energy Forecast due to be published at the end of this year.

26. PJM is only expecting a 1% hit to peak demand, any reason why ERCOT is higher (2%)?

I'm unsure of the value for these types of comparisons due to a variety of reasons (different economies, different rate of growth, etc.). We have no visibility on the details of the PJM forecast.

27. Is there any differentiation in inputs between the COVID load forecast presented as a scenario in the latest CDR vs. the preliminary LTSA COVID impact forecast that was presented at the RPG meeting earlier this week?

The COVID-19 scenario included in the CDR is model-based. The LTSA COVID-19 scenario is based on judgment.



28. What was the quarterly GDP COVID-19 impact assumption from Moody's for the summer (in terms of annualized GDP growth)?

GDP is not a variable used in ERCOT's load forecasting models.