

## FACT SHEET

# PJM Temporary Limit on Fast Responding Regulation

### What is happening?

PJM staff have proposed a temporary limit on fast responding regulation (“RegD”) resources while a larger market design review is underway.

### Why is this happening?

PJM has experienced challenges to balancing the grid, wherein the RegD signal moves the opposite control direction than desired by dispatch, creating “excursions” of the system control signal. This is because RegD signal always integrates back to zero at the end of each dispatch period to accommodate recharging of resources like energy storage. PJM sees this likeliest to occur when the Regulation market is procuring a large proportion of RegD. To date, PJM has used manual intervention to correct this phenomenon without any adverse effects.

Originally, the PJM Operating Committee intended to address this problem in a several month stakeholder process. However, with the Regulation Market Issues Senior Task Force to begin simultaneously and covering signal design issues, PJM has directed the Operating Committee to quickly develop a temporary measure to avoid duplication of processes.

### What is being proposed?

PJM staff have [proposed](#) an adjustment to the way it calculates how much RegD resources to procure, called the benefits factor curve. This curve indicates the system benefits of RegD resources compared to traditional regulation (“RegA”) resources at different levels of RegD procurement—that is, the relative value declines as the proportion of RegD increases. Specifically, PJM has proposed making the curve more conservative, i.e., making the slope steeper, which would shift overall Regulation market to smaller proportion of RegD resources. Additionally, PJM has proposed stopping procurement of RegD resources at benefits factor of 1 during six hours each day (hours ending 7-8 and 18-21), when PJM grid operators commonly experience excursion events. Finally, resource performance scores will be used to rank all bids of equal cost—effectively ranking energy storage resources ahead of all other competitive resources.

The temporary limit on RegD resources would be roughly 300 MW on-peak and 230 MW off-peak during 18 hours of each day, and roughly 200 MW on-peak and 150 MW off-peak during 6 hours each day:

*PJM Proposed RegD Limit*

	Non-Excursion Hours	Excursion Hours
On-peak	300 MW	200 MW
Off-peak	230 MW	150 MW

### When will this proposal be implemented?

PJM's Operating Committee is planning a stakeholder vote to endorse its proposal at the Sep 25 Regulation Performance Impacts meeting. Endorsement of the proposal would then go to the Markets and Reliability Committee, which would be expected to vote as soon as Oct 1 or as late as Oct 22. Implementation is expected to start November 4, although could occur as late as December.

### What is the impact of this proposal?

This proposal will effectively force lower-performing resources out of the RegD market and into the RegA market as the limit is met. More importantly for energy storage, this proposal will moderately constrain the PJM Regulation market opportunity for new projects and may affect opportunities for existing projects.

First, there will be more competition for fewer procurements. Currently, 136 MW of energy storage participates in the RegD market, in addition to 400 MW of pumped hydro, 100 MW of gas turbines, and 15 MW of demand response. According to ESA's calculation, another 135 MW of energy storage projects intending to participate in PJM RegD market are expected to come online by the end of 2015. During non-excursion hours in peak periods, the proposed limit will accommodate all energy storage resources existing and expecting to come online by end of 2015. However, in off-peak periods and during excursion hours, the proposed limit will only allow a fraction of all energy storage resources to participate. The finite hours for the lower limit will at least allow some strategic adaptation by energy storage owners.

Second, there will be greater uncertainty for projects farther back in the development pipeline. The upcoming Regulation Market Issues Senior Task Force already poses some level of regulatory uncertainty for projects in development. Nevertheless, the sudden regulatory change that this proposal represents may stop projects that do not expect to enter the market before saturation.

### When will this "temporary" measure be terminated?

PJM staff's proposal is intended to remain in place until the Regulation Market Issues Senior Task Force concludes its work – though the uncertain timeline for conclusion of that process could extend the limitation. While PJM staff optimistically offer a nine-month timeline to resolution, in reality the Senior Task Force's work could last longer, and there is no guarantee that the Senior Task Force will succeed in developing a consensus market reform to implement.

In recognition of this, PJM staff have agreed to fast track RegD operational items as part of the Senior Task Force review, suggesting that termination of the temporary measure will follow a separate timeline from the Senior Task Force. PJM Operating Committee staff have also stated that they will evaluate the temporary measure on a quarterly basis to see if it is reducing excursion events. This implies an opportunity to modify the limit over time, although PJM staff have not indicated any specific criteria or method for doing so.

### What happens next?

ESA will continue to work closely with staff and leadership to ensure that the ongoing changes underway in PJM create fair and competitive markets for energy storage systems. PJM has been a leading voice for the benefits and value that energy storage provides to the grid and grid operators.