Regulation Redesign Phase 2 – Frequently Asked Questions (FAQ)

Created: January 12, 2026

Q1 **When is the Regulation Redesign Phase 2 going live?**

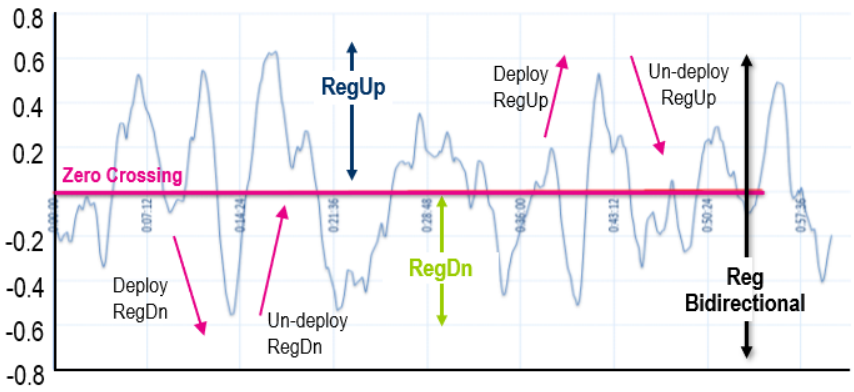
A1 As filed and approved by FERC, Regulation Redesign Phase 2 is scheduled to go live on Oct. 1, 2026.

Q2 **When is the Regulation Up (RegUp) and Regulation Down (RegDn) implementation?**

A2 The RegUp and RegDn implementation is in Phase 2 of the Regulation Redesign, and as filed and approved by FERC, it will go live on Oct. 1, 2026.

Q3 **What are RegUp and RegDn?**

A3 RegUp provides upward movement from the Reg setpoint to correct a negative Area Control Error (ACE); RegDn provides downward movement from the Reg setpoint to correct a positive ACE.



- RegUp product operates above the zero crossing.
- RegDn product operates below the zero crossing.
- Resources will be able to follow the full signal (bidirectional) by being assigned RegUp and RegDn.
  - Only one product will be deployed at a time.

Q4 **How are RegUp and RegDn different from Reg bidirectional?**

A4 Reg bidirectional assumes symmetrical capability from a single award/commitment. Separate RegUp/RegDn creates independent clearing, commitment and pricing.

Q5 What does Regulation Redesign Phase 2 entail?

A5 Regulation Redesign Phase 2 bifurcates the current Reg bidirectional signal into two products, RegUp and RegDn. Table A5 below summarizes the changes in Phase 2:

Table A5: Phase 2 Summary of Changes

No.	Design Components	Summary Description
1	Signals and Products	Bifurcate one signal bidirectional to two products, RegUp and RegDn, each with its own requirement, clearing price and settlement. Eligible resources will be able to offer, clear and follow either RegUp or RegDn, or both, in a given market interval. Only one product is deployed at a time.
2	Requirement MW	Seasonal and hourly requirement MW separate for RegUp and RegDn may be asymmetric to better reflect operational needs, with consideration both to historic and future system conditions, and with annual requirements MW updates.
3	Performance Metrics	Phase 1 changes plus performance score, mileage and bias-factor calculation separately for RegUp and RegDn
4	Offer and Clearing Timing	Phase 1 changes plus offer MW, offer price and availability status separately for RegUp and RegDn. Offer MW will change from hourly granularity to 30 min. granularity.
5	Opportunity Cost Calculation	Separate resource's RegUp and RegDn opportunity cost for pricing. Settlements will calculate one intra-commitment opportunity cost that accounts for both RegUp and RegDn assignments on a resource. The settlements calculated intra-commitment opportunity cost will also account for the amount of energy produced while providing Regulation, referred to as "Regulation signal bias."
6	Settlement	Regulation billing for Reg Up and Reg Dn - Separate clearing price credits for RegUp and RegDn - Ability to submit Regulation bilateral transactions separately for RegUp and RegDn - Separate clearing price charges for RegUp and RegDn - A single lost opportunity lost credit accounting for both RegUp and RegDn assignments - A single lost opportunity cost charge

Q6 Will separate RegUp and RegDn products require more resources to clear than a single Reg bidirectional?

A6 Yes, potentially. The system may clear more resources to independently meet RegUp and RegDn requirements.

Q7 Does separating RegUp/RegDn increase the total cost of Regulation?

A7 Not necessarily. Empirical evidence shows costs do not double. Regulation Lost Opportunity Costs, RegUp LOC + RegDn LOC from the same resource in the same interval is generally not greater than Reg LOC from the same resource for a bi-directional product. RegUp/RegDn will reduce the overall production cost.

Q8 How will the current Regulation resources transition to Phase 2 Regulation resources?

A8 Table A8 below describes the Regulation resources transition process:

Table A8: Summary of Regulation Resources Transition for Phase 2

Description	For Phase 2 Transition
Product Type and Testing Requirement	Effective Oct. 1, 2026, Reg bidirectional product in the Regulation Market will be terminated. To avoid disruption during Phase 2 transition on Oct. 1, 2026, each fleet (one resource per fleet) that wants to continue to participate in the Regulation Market will need to schedule either RegUp or RegDn or both signal conversion testing anytime from April 1, 2026. PJM-administered tests only will be allowed for these tests (no self-administered tests). A resource owner can decide which one resource out of each fleet to test. Follow standard procedure to request a regulation test according to Manual 12, Section 4.4.1, Regulation Qualification Test (PDF). Resource owners must take the resource testing for signal conversion out of the Regulation Market in the hour it is testing. The rest of the resources in the fleet can continue participating in the Regulation Market during the signal conversion test.
Regulation Certified MW	Effective Oct. 1, 2026, all resources that completed their signal path conversion test (either RegUp or RegDn or both) successfully will automatically carry forward their Reg Certified MW for either RegUp or RegDn, or both, except if an uprate or derate MW test is requested.
Historic Performance Score	Effective Oct. 1, 2026, all Regulation resources that completed their signal path conversion for either RegUp, or RegDn, or both, tests successfully will automatically carry forward their Reg historic performance score. This is according to Manual 12, Section 4.4.1, Changes to the Signal Path Re-Test – Existing Resource Owner (PDF).
Uprate Testing	If a regulation certified resource chooses to test for a higher MW capability, then this resource will have to follow Manual 12, Section 4.4.3, Increasing Regulation Capability on a Resource (PDF).
New Certified Regulation Resources During Transition to Phase 2	For any new resources that need to certify for Phase 1 bidirectional signal during the conversion testing period of April 1, 2026, through Sept. 28, 2026, the resources will need a total of two tests: one test for RegUp and the other test for RegDn. Their initial performance score will be an average of these two passed tests for Phase 1 bidirectional signal. PJM-administered tests only will be allowed for these tests (no self-administered tests). The tests will also certify the resource for Phase 2 RegUp and RegDn.

Q9 **Where should Regulation redesign-related questions be sent?**

A9 Please direct your inquiry to the applicable contacts listed in table A9 below:

Table A9: Summary of Regulation-Related Email Contacts

No.	Inquiry	Email Contact
1	To request a Regulation test	RegulationTesting@pjm.com
2	Regulation telemetry – signal setup or conversion	PJMTelemetrySupport@pjm.com
3	Regulation Redesign questions	RegulationDesign@pjm.com
4	Communication with PJM Member Relations	custsvc@pjm.com

Q10 **Will there be updates to the RegUp/RegDn-related documents posted on the Ancillary Services page under the markets & operations menu on the PJM website, PJM.com?**

A10 Yes, PJM will make updates to the related documents listed in table A10 below by Q2 2026 for Phase 2 implementation.

Table A10: RegUp/RegDn-Related Web Posting

No.	Document
1	RegUp and RegDn Test Signal Sample Pattern
2	RegUp and RegDn Self-Test Performance Scoring Templates
3	RegUp and RegDn Effective MW Requirement Definitions
4	RegUp and RegDn Two-Part Cost-Based Offer Validation Templates
5	RegUp and RegDn Control Education
6	RegUp and RegDn Lost Opportunity Cost Calculation Example

Q11 What about the RegUp and RegDn requirements megawatt annual review process?

A11 The hourly Regulation requirement megawatt update will happen annually beginning in October 2026. The requirement megawatt will be modified based on system needs to address the energy transition and integration of renewables based on defined criteria. The update in October 2026 will adjust RegUp and RegDn equally. The update in October 2027 will adjust RegUp and RegDn separately. Table A11 summarizes the review steps:

Table A11: Regulation Requirement Megawatt Annual Update

No.	Step	Description
1	Annual review period	Oct. 1 of the previous year through Sept. 30 of the current year
2	Logic	The requirement megawatt updates will maintain the defined high/low/transition hours.
3	Communication	Update will be presented at the October MIC/OC.
4	Requirement megawatt update	Effective from Nov. 1 through Oct. 31 of the following year

Q12 Will all Regulation resources be able to continue to include the variable operation and maintenance (VOM) cost in its offer?

A12 Effective Oct. 1, 2025, only a non-energy Regulation resource may include VOM in its offer.

Q13 Are the same resources eligible to provide both RegUp and RegDn?

A13 Yes, if they are RegUp and RegDn certified and offered into both products. However, they are cleared independently.

Q14 Where, when and how frequently PJM will clear the Regulation Market?

A14 PJM will continue to clear Regulation only in real time. In addition, PJM will continue to clear the market twice an hour (hh:00 and hh:30), 30 minutes ahead of the operating time and for a duration of 30 minutes. For example, the Regulation Market clearing engine will kick off at 09:30 to clear resources for Regulation and commit from 10:00 to 10:30. See Regulation Clearing and Commitment (PDF).

Q15 How frequently can a resource change its regulation offer and availability status in Markets Gateway?

A15 For Market Participants who did not elect to opt out of Intraday, the offer price will remain in hourly quantities with *lockout 35 minutes before the* ***operating hour.*** Effective Oct. 1, 2026, similar to the Regulation self-schedule and availability status, the Regulation offer MW will be updatable every 30 minutes, *with lockout 35 minutes before the operating interval*. For Market Participants who opted out of intraday, offer price hourly quantities lock out at 14:15 a day before the operating day.

Q16 How does the Phase 2 implementation affect the Markets Gateway?

A16 We expect changes on Markets Gateway's Regulation Market Offers and Results pages and their corresponding XML. PJM will communicate additional information on the specific changes in a timely manner and as they become available at the Tech Change Forum and other communication outlets.

Q17 **Is the Regulation Margin Adder of $12 changing in Phase 2?**

A17 The Regulation Margin Adder of $12 will change in Phase 2. The $12 will be divided equally between RegUp and RegDn. The Regulation Margin Adder for RegUp will be $6. The Regulation Margin Adder for RegDn will also be $6.

Q18 **How does mileage play into separate RegUp/RegDn products?**

A18 The Performance Score Calculation Engine will calculate mileage separately for RegUp and RegDn based on Automatic Generation Control (AGC) signal decomposition.

Q19 **Does a resource need to follow both RegUp and RegDn signals to receive performance credit?**

A19 Only for the direction awarded. If a resource is awarded only RegUp, only RegUp performance matters. If a resource is awarded RegDn, only RegDn performance matters. If a resource is awarded both RegUp and RegDn, then both RegUp and RegDn performances matter.

Q20 **Do resources need separate offers for RegUp and RegDn?**

A20 Yes, offer data is required for the direction the resource is certified for and intending to participate in. Offers typically include capability price and cost based and mileage price and cost based.

Q21 **Can a resource self-schedule RegUp or RegDn?**

A21 Yes, a qualified resource may self-schedule for RegUp or/and RegDn.

Q22 **Can a resource be awarded/assigned both RegUp and RegDn at the same time?**

A22 Yes, if qualified and offered. The cleared/assigned quantities may be asymmetrical except if the resource opted for symmetrical only.

Q23 **How will AGC signal change with RegUp and RegDn products?**

A23 PJM AGC will send a decomposed signal with independent RegUp and RegDn components. Resources follow only the directional signal for which they were cleared.

Q24 **How will RegUp/RegDn support evolving grid conditions?**

A24 The RegUp/RegDn enhances PJM's flexibility to manage variable resources, integrate new technologies and maintain reliable system operation under diverse operating conditions.

Q25 **Will the Markets Gateway Train environment provide Market Participants with a testing ground for Regulation offer submissions and result extractions?**

A25 As indicated in Phase 2 timeline table A27, the Market Participants will have the opportunity to test Regulation data in the Markets Gateway Train environment.

Q26 **When will the Market Participants be able to submit Regulation offer data in the Markets Gateway for Phase 2 go-live of Oct. 1, 2026?**

A26 The Regulation Market for the Phase 2 go-live date of Oct. 1, 2026, will open seven days in advance on Sept. 24, 2026.

Q27 **What is the implementation timeline for Phase 2?**

A27 The Phase 2 implementation tentative timeline is described in table A27 below:

Table A27: Phase 2 Milestones and Tentative Timeline

No.	Milestone	Timeline
1	Regulation Redesign project – information update at the MIC/OC	February 2026
2	Open House 1	March 2026
3	Tech Change Forum & Markets Gateway Train (Sandbox) Opens for Testing	March through August 2026
4	Resources signal conversion testing begins	April 2026
5	First read all related manuals (Phase 2)	July 2026
6	Open House 2	July 2026
7	All related manuals endorsed (Phase 2)	August 2025 (September if needed)
8	MIC special education session	August/September 2026
9	Signal cutover tabletop exercise with Market Participants (if needed)	August/September 2026
10	Regulation Redesign Phase 2 market opens	Sept. 24, 2026
11	Regulation Redesign Phase 2 go-live (cutover)	Oct. 1, 2026, at 00:00

Q28 **When will PJM stop retesting existing bidirectional Phase 1 resources?**

A28 PJM will stop retesting existing bidirectional Phase 1 resources on **Sept. 28, 2026**.

Q29 **Will there be updates to this FAQ document?**

A29 PJM will update this FAQ document periodically until the Phase 2 go-live date of Oct. 1, 2026.

Q30 **Will the signal conversion test require the resource to actively follow the Reg signal to demonstrate performance, or is it mainly a communication check to confirm receipt of the signal?**

A30 The signal conversion test ensures that the testing resources can follow the new Reg signal either RegUp or RegDn or both. The resource must actively follow the test signal so that Performance Compliance can reasonably determine whether it is ready to transition to the new Regulation market (RegUp, RegDn or both) when Phase 2 goes live.

Q31 **What is the duration of Regulation qualification or requalification test?**

A31 The Regulation qualification or requalification test will remain at a 40-minute duration.

Q32 **When will PJM post a sample of the new Reg signal for testing?**

A32 PJM plans to post the new Reg sample test signal by April 2026.

Q33 **How will PJM calculate the Regulation performance score in the redesign that is effective on Oct. 1, 2026?**

A33 The performance score calculation in the Regulation Redesign will remain the same as in Phase 1. The performance formula is described in slide 7 of the presentation (PDF).

Q34 **Will the Regulation Redesign Phase 1 affect the Performance Groups for performance scoring?**

A34 The use of performance groups described in section 4.4.6 of Manual 12 (PDF) was preserved in Phase 1. However, all of the existing performance groups shall be removed in Phase 2, and the resource owner will need to reapply by emailing RegulationTesting@pjm.com during testing period starting April 1, 2026.

Q35 **How would PJM calculate the resource historic performance score in the Regulation Redesign Phase 2?**

A35 Effective Oct. 1, 2026, the performance daily scores will remain the same as in Phase 1, which is to be calculated based on 200 30-minute intervals. However, there will be separate calculations for RegUp and RegDn.

Q36 **What is the difference between Regulation self-de-assignment versus PJM dispatcher de-assignment in respect to performance scoring?**

A36 As discussed at the RMDSTF and endorsed, self-de-assignment will result in a zero performance score for the remainder of the commitment period. For a PJM dispatcher de-assignment, the historic performance score will be used in the remainder of the period the resource is de-assigned. There is no difference between phase 1 and phase 2.

Q37 **When does PJM plan to have a Tech Spec document outlining the changes for Markets Gateway for Phase 2?**

A37 PJM plans to provide the initial documentation about changes to Markets Gateway, due to the Regulation Redesign Phase 2, around April 2026, and then open the sandbox (Markets Gateway Train) for testing thereafter.

Q38 **Can you explain how resource pre-ramping into the Regulation band in order to provide Regulation service is achieved?**

A38 With the Regulation Redesign, there is an engine change that will have RT-SCED pre-ramp the units that are eligible for shoulder interval opportunity cost (excluding CT, hybrid, solar, wind, storage/ESR, diesel, nuclear, DSR and hydro) coming into Regulation from about 10 minutes before the start of the regulating interval in order to get the resource to the Regulation set point. The shoulder interval opportunity cost covers the cost associated with uneconomic dispatch of the applicable resource coming into Regulation.

Q39 **When will PJM post the new RegUp and RegDn performance score (precision score calculation) template?**

A39 PJM plans to post the new RegUp and RegDn performance score (precision score calculation) template by April 2026.

Q40 **When is the Regulation Redesign Open House session?**

A40 The Regulation Redesign Open House session is scheduled for March and July 2026.

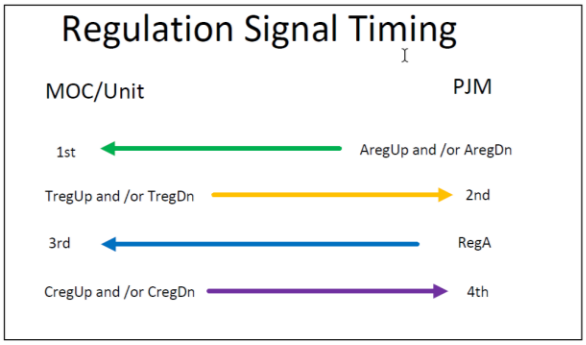
Q41 **How will new AGC control signals change for Regulation Redesign Phase 2?**

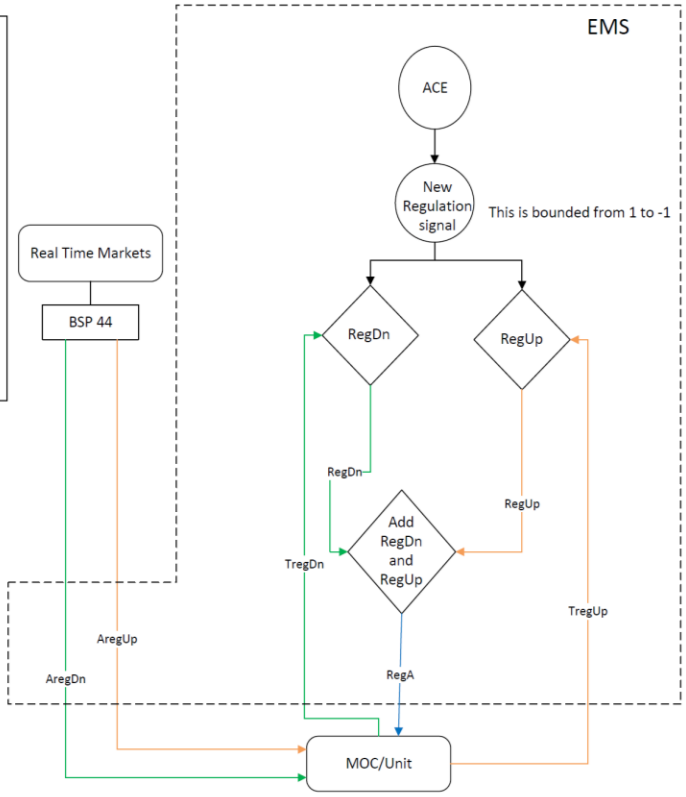
A41 On Oct. 1, 2026, PJM will stop using AReg, TReg and CReg. PJM will be adding Assigned Regulation Up (ARegUp), Assigned Regulation Down (ARegDn), Total Regulation Up (TRegUp), Total Regulation Down (TRegDn), Current Regulation Up (CRegUp) and Current Regulation Down (CRegDn). The ARegUp/ARegDn will be sent to each resource from markets. The Market Operations Center (MOC)/resource will send back TRegUp/TRegDn (total regulation it can provide by fleet, summation of ARegUp/ARegDn the resources are able to provide) based on the directional assignment. PJM will send back a singular RegA (Regulation control signal) after it receives a positive TRegUp/TRegDn value. The RegA control value will be the summation of the RegUp and RegDn control values. The MOC/resource will be responsible for sending the correct amount of the RegA control signal to the resource depending on the assigned megawatt quantity for each resource. The MOC/resource will then do a summation of CReg values (resource output minus basepoint) for each resource and send it to PJM as a fleet CRegUp/CRegDn value. The MOC/resource will have to add the six new control points and the logic to parse the RegA control signal according to the ARegUp/ARegDn assignment on a per fleet basis.

New Regulation control Signals for up/down

Point Definitions:

TregDn = Amount of down regulation unit can supply (max = AregD)	New
RegDn = Regulation down signal = if(Reg > 0, TregDn*Reg, 0)	Internal
TregUp = Amount of up regulation unit can supply (max = AregU)	New
RegUp = Regulation up signal = if(Reg < 0, TregUp*Reg, 0)	Internal
RegA = Regulation signal sent to Members, consisting of both RegUp/Dn	Reuse
AregDn = Down Regulation awarded by Markets	New
AregUp = Up Regulation awarded by Markets	New
CregDn = Down Current Regulation (from members and calculated)	New
CregUp = Up Current Regulation (from members and calculated)	New





Q42 **Will a resource still be able to continue to do bidirectional regulation control in the RegUp and RegDn implementation?**

A42 A resource is able to provide bidirectional control in the RegUp and RegDn implementation if it cleared equal megawatt quantities of RegUp and RegDn in the same market interval.

Q43 **Will the RegUp and RegDn clear at the same time?**

A43 Yes – RegUp and RegDn clear at the same time. But there are a few important nuances worth calling out:

RegUp and RegDn are treated as separate regulation products, but they are:

- Co-optimized
- Based on the same operating interval
- Cleared in the same market run

The Ancillary Service Optimizer (ASO) operates on a half-hourly schedule, executing at hh:00 and hh:30. It clears and commits Regulation 30 minutes prior to real time, handling both RegUp and RegDn simultaneously and making a commitment that lasts for 30 minutes:

- Applies separate offer megawatt, separate offer prices and separate constraints for each product
- Megawatt awards can be different (a resource may get RegUp only, RegDn only, both or neither).
- Resource-specific RegUp and RegDn performances are calculated separately.
- System-specific RegUp and RegDn mileages are calculated separately.
- Clearing prices can differ (RegUp MCP not the same as RegDn MCP).
- Clearing price credits and charges are separate for RegUp and RegDn.

Q44 **How does the Phase 2 implementation impact the billing line items?**

A44 The current Regulation billing line items (2340/1340) will continue to be used for the total Regulation Credits and Regulation Charges. The RegUp and RegDn details will be available in supporting MSRS reports.