

Western Power Trading Forum Comments on Flexible Resource Adequacy Criteria and Must-Offer Obligation Phase Two Revised Straw Proposal

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About the Western Power Trading Forum

The Western Power Trading Forum (WPTF) is a California nonprofit, public benefit corporation. It is a broad-based membership organization dedicated to enhancing competition in Western electric markets while maintaining the current high level of system reliability. WPTF supports uniform rules and transparency in order to facilitate transactions among market participants. The membership of WPTF includes load serving entities, energy service providers, scheduling coordinators, generators, power marketers, financial institutions, and public utilities, all of which participate actively in the California market and other such markets in the West and across the country.¹

Introduction

WPTF appreciates the opportunity to provide these comments on the ISO's FRAC MOO Phase 2 Revised Straw Proposal. The latter portion of our comments are contained in an appendix and are mostly reiterations of previous comments, including a simple, illustrative proposal that has already been submitted twice² for ISO consideration, but has received no feedback from the ISO. It is once again included to further the discussion on how the flexible RA requirement could address flexible needs, and not as a WPTF-backed proposal. The illustrative proposal describes how the ISO can adjust the requirement side of the flexible RA equation rather than the eligibility side.

FRAC MOO2 Stakeholder Process

It likely goes without saying that WPTF is disappointed in the speed of this initiative and the resources being devoted to finding a long-term solution. The ISO suggests that there are two hurdles to developing and implementing a long-term policy by 2019; (1) coordination with the CPUC, and (2) implementation.

Concerning (1), it is May 2017: the ISO has at least seven months before they will need to bring a proposal to the CPUC to be incorporated into the CPUC's process for the 2019 RA year to conclude at the CPUC by June 2018. Seven months is plenty of time to develop a flexible RA proposal, not to mention that the ISO had supposedly been working on a proposal for the past 2 years.³ Over two and a half years provided for significant time to thoroughly develop and vet a solid flexible RA proposal.

Concerning (2), the ISO's implementation schedule often poses an issue for RA initiatives. This is because the ISO typically implements new policies in Fall, which occurs after the October annual RA showing and the additional time needed to go through the CPUC process. A proposal for 2019 may still be implemented in October 2018. Previously the ISO has dealt with this in one of three ways:(A) allowing a transition advisory year until the following October, (B)

¹ A member list can be found [here](#) and these comments do not necessarily represent individual member views.

² WPTF submitted the proposal in comments initially on September 29, 2015 and then again on January 7, 2016.

³ Given that stakeholders have only been asked to meet in person one time in the last two years on this topic, I am sure, like WPTF, they will be pleased to attend working groups or meetings as needed.

moving forward with the changes beginning with the first monthly requirement after implementation, or (C) moving implementation itself to spring and moving forward with the changes beginning with the first monthly requirement after implementation. Any of these three options seem worthy of consideration to implement long-term RA rules either in Fall 2018 or Spring 2019.

Finally, these options seem in-line with the ISO's statements that FERC has not wanted to see policy more than 120 days before go-live. Therefore, if the ISO continues to assert that a long-term proposal is not possible, WPTF seeks information on the specific hurdles and deficiencies with ISO planning. Why can't the hurdles be removed? Why did the ISO not know about these hurdles a year, or two years ago, when there was still plenty of time to move forward with a policy design and address the hurdles? What occurred in the ISO's planning process such that FRAC MOO was not adequately planned for in the implementation schedule?

General Comments on Flexible RA Proposal

WPTF believes that any FRAC MOO 2 proposal must address, although not resolve, the following issues in order to ensure long-term reliability. The proposal must:

1. Address net load ramping requirements.
 - a. Ensure the CAISO has adequate capacity under a must-offer obligation to meet energy market day-ahead and real-time ramping requirements.
 - b. Ensure the CAISO does not lean on reserves or neighboring BAs to meet forecasted ramping requirements.
 - c. Ensure the CAISO does not rely on voluntary real-time bilateral and imbalance markets to meet forecasted ramping requirements.
2. Provide incentives for load-serving entities to contract with the most flexible resources in order to meet their peak-load requirement and provide incentives for resources to act as flexibly as possible.
 - a. Provide incentives for all resources, including wind and solar, to economically offer into the energy market and make reasonable investments into increasing physical flexibility.⁴
 - b. Provide incentives for all load serving entities to sign contracts that encourage economic offers rather than self-schedules, particularly with imports and renewable resources, and reduce barriers impeding this contracting.⁵
 - c. Provide incentives for entities outside the CAISO to offer flexible decremental RA at the CAISO interties and address seams issues with adjacent transmission service providers for facilitating these transactions⁶.

The first set of issues are direct reliability challenges. The CAISO must have sufficient capacity to meet ramping requirements in order for the grid to operate reliably. The second set of issues on over-generation are reliability challenges indirectly. Over-generation can, to some extent, be addressed through renewable curtailments. However, consistent high levels of curtailment in the energy market can lead to grid instability and will lead to increased renewable integration costs.

⁴ Physical flexibility could include lowering start-up times, increasing ramp rates, reducing minimum load, etc.

⁵ For example, many imports have long-term shaped contracts and guaranteed delivery volumes that cause entities to submit hourly block schedules.

⁶ This could include reducing or eliminating measured demand charges for certain export transactions if the holistic cost-benefit of doing so was positive for California ratepayers.

Therefore, WPTF believes that the direct reliability issues should be resolved by the flexible RA product requirement and only the over-generation concerns that cannot be addressed by changes to energy market rules, be resolved by changes to the flexible RA product. The end result, however, is that the flexible RA product should consider all six needs identified above.

Comments on the ISO's Short-Term Proposal

WPTF supports a "short-term" proposal that identifies needed resource attributes or behavior, can be implemented quickly, and is *extremely likely continue into any long-term proposal*. The ISO's proposal, however, falls short of these criteria. The proposal to modify eligibility to meet a 3-hour ramping requirement to only resources that can be started in real-time and have a minimum run time of 4.5 hours or less is challenging to understand. We have the following questions on the proposal:

1. How does this short-term proposal fit in with the ISO's long-term identified needs? If, for example, the ISO moves to a 15-minute day-ahead market and implements the flexible ramping product in the day-ahead, will the ISO still need these identified characteristics?
2. Why has the ISO focused on real-time when the majority of ramping is procured in the day-ahead market?
3. Why has the ISO restricted eligibility to a 4.5 minimum run hour when actual ramps are much longer than 4.5 hours and the ISO continues to need energy across the evening hours?
4. Why is the look-out horizon the appropriate measurement to set the eligibility for providing flexibility, especially when it is likely to change through real-time market enhancements? Can the ISO point to whether this is a problem with the day-ahead set up of resources or a defined need for ramping capacity from peaking plants in real-time?

In addition, WPTF does not agree with the ISO's perspective that this interim, one-year proposal, which is likely to drastically change, will keep needed resources from retiring. It seems unlikely that any peaking resources that currently do not have RA contracts will stick around for a 2019 single year contract. It also seems likely that this may hasten the retirement or RMR/CPM-seeking by combined cycle resources.

Finally, the ISO is setting itself up, and the market, for failure by not pursuing a long-term solution now. Let's work this backwards. Based on the data provided by the ISO, the forecasted flexibility requirement will exceed eligible flexible capacity by 2020 under the ISO's short-term proposal. This means the ISO must have a long-term solution implemented before October of 2019 so that it can be effective for the 2020 RA year. If the ISO's next steps, after concluding the current stakeholder process, is to first develop a long-term RA road map, WPTF questions if there is sufficient time to properly vet, develop, and implement a robust flexible RA product proposal. Therefore, it is completely plausible that the ISO will go into the 2020 RA year with insufficient eligible flexible RA capacity.

Long-Term Flexible RA Perspective

It is clear that the ISO is still struggling to define flexible RA in a very real way. WPTF offers that this is because the ISO views and speaks about flexible RA as if it is a separate product from system RA. That is, the ISO speaks as if flexible RA can be developed in isolation of the capacity already required to participate in the energy market due to system RA requirements. Instead, WPTF sees flexible RA as a subset of system RA. In the same way local RA requirements establish *where system capacity must be located*, flexible RA establishes *how*

system capacity must operate. How a plant operates can encompass both physical characteristics (e.g. fast ramping capability) and behavior (i.e. economic bidding versus self-scheduling).⁷

This premise is, of course, deeply uncomfortable for many stakeholders because they believe that energy market prices should influence resource behavior and the resource mix. They believe that because the energy market rewards flexible behavior, LSEs should naturally contract with more flexible resources and resources should already be incented to economically offer into the market. However, just like there is a local requirement despite the theory that local capacity should have an energy market premium and therefore stick around, the ISO has decided there should be a flexible requirement despite the theory that flexible capacity should have an energy market premium and therefore stick around. Likewise, just like the ISO has a must-offer obligation on system and local RA despite energy market incentives to offer into the market- the ISO determined flexible RA resources need an economic must-offer obligation.

WPTF supports the ISO developing a flexible RA product with an associated must-offer obligation and encourages the ISO to continue moving forward as quickly as possible. That said, there are boundaries to what a flexible RA product can do and WPTF believes these boundaries should be identified from the onset and that they should drive the proposal. At the highest level, the flexible RA product can impact both individual resource flexibility and impact entire resource fleet flexibility.⁸

Increases in *resource flexibility* can occur by (1) making physical changes to plants, i.e. lowering the Pmin so a resource can offer in additional flexible capacity to the market or by (2) changing how a resource participates in the energy market, i.e. economic offers versus self-scheduling. However, expecting that a flexible RA product will incent resources to make physical modifications to their resources in response to a one-year flexible RA contract is asking too much of the flexible RA product. Just like the ISO does not expect a one-year local RA contract to incent merchant generation in a local area, the ISO cannot expect a one-year flexible RA contract to incent expensive resource capability changes. On the other hand, WPTF does believe that the flexible RA product will immediately change how a resource participates in the market by mandating economic offers.

Increases in *fleet flexibility*, therefore, can occur by (1) having more flexible resources come onto the grid and having less flexible resources retire or by (2) maintaining the fleet's current resource abilities and having more of this capacity economically offer into the market. Because WPTF views flexible capacity as a subset of system capacity, we acknowledge the flexible RA product's limited role in being able to change fleet behavior unless the flexible requirement is sufficiently high compared to the system requirement. This is because system RA capacity and non-RA capacity is allowed to self-schedule and have no ability to ramp in response to ISO dispatch. System RA capacity is in fact explicitly allowed to increase flexible ramping needs. Therefore, having a flexible requirement that is only a small portion of the system requirement does nothing to lower the self-schedule amounts by these resources, or to encourage LSEs to contract with ramping resources in aggregate. This is why the current flexible ramping requirement does nothing to change fleet flexibility- because the requirement quantity is too small in relationship to the system RA requirement.

⁷ It is of course an unrealistic assumption that an LSE will contract with three separate resources to meet its system, local, and flexible RA requirements. Rather, an LSE will tend to minimize RA costs by contracting with resources that has eligible capacity to count towards more than one of its RA requirement's, further confirming the concept that flexible RA is a subset of system RA. The CPUC also deems all flexible RA as system RA by rule.

⁸ Fleet flexibility means the ability of the entire fleet (as opposed to flexible RA capacity) to respond to economic dispatches and meet operational ramping needs.

Any proposal where the flexible requirement is not sufficiently high compared to the system requirement will also fail to address the ISO's import flexibility problem. As noted by the DMM's 2016 annual report, approximately 95% of the 7,500 MWs of average hourly imports to the ISO were not economically price responsive within the operating hour. The ISO has continually produced evidence that imports are the single largest contributor to the inflexible minimum load during renewable curtailment. Any flexible proposal that does not explicitly target imports through either a specific import proposal or by having a large enough flexible requirement to impact system import contracting is not addressing one of the largest contributors to renewable curtailment and grid instability.

Additionally, non-RA capacity and system capacity will still exist on the grid. Their willingness to economically offer into the market will completely be driven by energy market incentives. Flexible RA resources will receive additional signals from the energy market that is beyond their must-offer obligations. This is why energy market and RA flexible product reform must move forward together.

WPTF therefore supports moving forward with a long-term flexible RA product in conjunction with needed energy market changes to increase price responsiveness and ramping capability of fleet capacity. WPTF's suggestions on a way to think about increasing the flexible RA requirement are included in an appendix and our comments on needed energy market changes to accompany the long-term flexible RA product are in the next section.

Comments on the Need for Energy Market Enhancements to Increase Flexibility

WPTF supports the ISO's assertion that they plan to integrate high-levels of wind and solar resources through both energy market and RA market enhancements.⁹ The ISO and other market participants have identified the following list of energy enhancements that WPTF agrees should be a priority:

- Lowering the bid floor. This will incent all resources to become more flexible in the downward direction, including imports. WPTF supports this being implemented at the same time or just ahead of regulation market reform.¹⁰
- Revisiting export charges. This charge reduces incentives to export outside the EIM market and reduces flexibility. Powerex has noted this issue in numerous processes in addition to the FRAC MOO initiative.¹¹
- Align day-ahead and real-time market: Procuring flexible ramping capacity in the day-ahead market and other reforms that better align the day-ahead and real-time market. These are tentatively planned to be addressed in the ISO's real-time market enhancements initiatives.
- Examining use of Load Bias and the Load Bias Limiter: Examining the underlying causes of operators biasing the real-time market load forecast 80% of the time and exploring whether the flexible ramping or regulation requirements should be changed to reduce this behavior. The ISO has stated in response to a presentation at the MSC by Dr. Scott

⁹ The need for energy market and capacity market reform was stated multiple times at the May 8, 2017 FRAC MOO meeting.

¹⁰ The current decoupling of regulation dispatch and energy offers has caused adverse settlement impacts on providers of regulation. We would expect lowering the bid floor may exacerbate this issue.

¹¹ <http://www.caiso.com/Documents/PowerexComments-Import-ExportLiquidityinFMM-Oct6-2015.pdf> , <http://www.caiso.com/Documents/PowerexComments-TransmissionAccessChargeWholesaleBillingDeterminant-IssuePaper.pdf> ,

Harvey on the load bias limiter that they plan to look into load bias and the limiter. DMM also plans to put out a white paper on load bias and the limiter sometime in late-May.

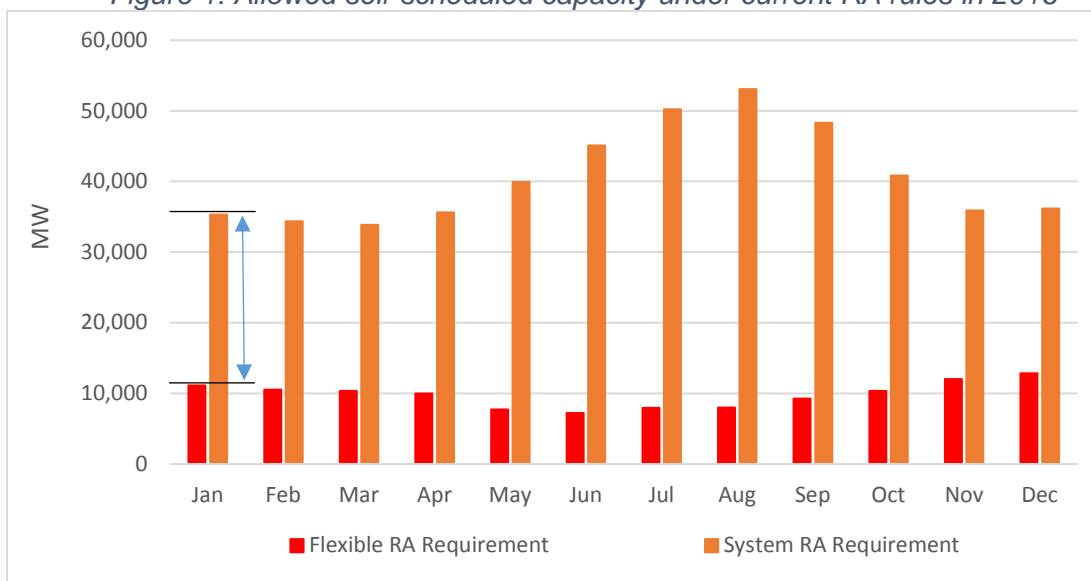
Appendix: Strawman Enhancement to Flexible RA Requirement

The appendix consists of the following sections:

1. Possible enhancement to flexible RA requirement
2. Incorporating capacity that increases load – exports and storage
3. Impact on requirement and ability of LSEs to meet enhanced requirements
4. Discussion of underlying principles behind proposal

Figure 1 shows the amount of RA capacity that may be self-scheduled under the current RA rules. The orange bars show the 2016 system RA requirement by month and the red bars show the 2016 flexible RA requirement by month. Because flexible capacity also qualifies as system capacity, typically every MW increase in the flexible requirement directly decreases the amount of RA capacity that may be self-scheduled under ISO rules. This is because flexible capacity *must* be economically offered into the energy market whereas system capacity *may* be self-scheduled into the energy market. The range illustrated in Figure 1 by the blue arrow therefore shows the amount of RA capacity that is inherently allowed to be self-scheduled under ISO RA rules in January 2016. This is approximately 24,000 MW.

Figure 1: Allowed self-scheduled capacity under current RA rules in 2016



Under a 50% renewable goal, it is reasonable to question why the ISO would continue to explicitly allow 24,000 MW of inflexible capacity. If, in 2018, anywhere near the amount of system capacity required began to self-schedule, the ISO would not be able to commit and de-commit resources exclusively using energy bids and instead would have to begin curtailing renewables. In 2018, the ISO expects the minimum net load to be around 11,000 MW, which was already surpassed in May with a record minimum net load of 8,500 MW, yet explicitly will allow self-scheduling at a much higher level. Because self-scheduled capacity cannot represent the relative willingness to be cut, the ISO must create administrative, out-of-market rules, to determine which resources are cut. This decreases efficiency- and at a high level of intervention - risks reliable grid operations. WPTF does not believe that all 24,000 MW would actually self-schedule, and instead simply questions the efficiency of continuing with a system that allows such a high level of self-scheduling into the future.

1. Possible enhancement to flexible RA requirement

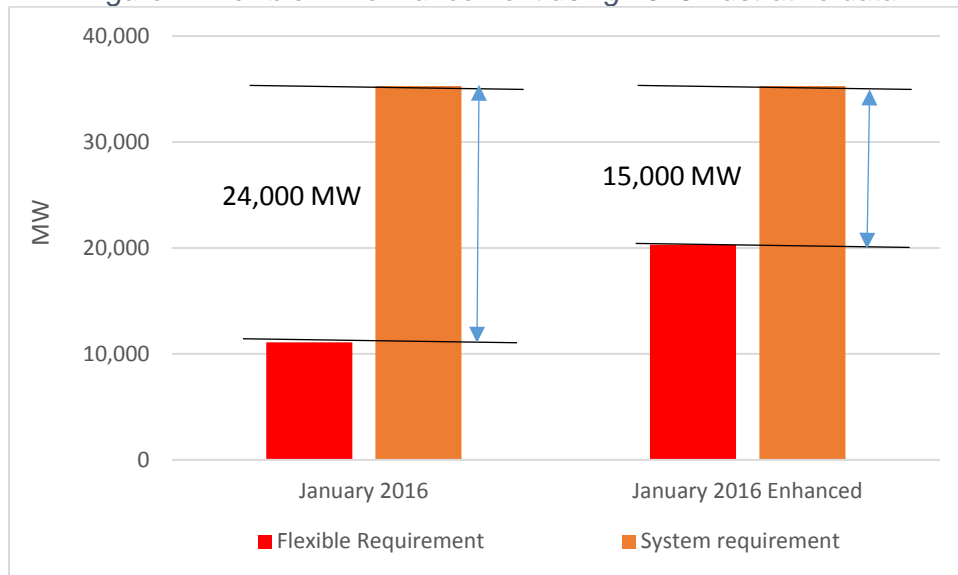
WPTF believes that there are many potential enhancements to the current flexible RA requirement that could accommodate the need for downward flexibility. One relatively simple way is for the ISO to increase the current flexible requirement to a level that the ISO could reliably operate the grid using RA resources and minimize manual intervention. Specifically, the ISO could increase the flexible RA requirement until self-schedules allowed under the system RA requirement are equal to the forecasted minimum monthly net load.

Figure 2 illustrates how this could be done using January 2016 flexible and system RA requirements, assuming a minimum net-load of 15,000 MW. In Figure 2, the orange bars show the system RA requirement and the red bars show the current flexible RA requirement and the enhanced flexible RA requirement. Under the enhanced approach, the flexible requirement increases to the point that the ISO can allow all system RA to self-schedule (up to 15,000 MW) and still being able to economically commit and dispatch the remaining RA capacity through the energy market optimization. This is because the remaining RA capacity must be flexible capacity and therefore has the associated economic must-offer obligation.

Inherent in this idea is that upward flexible capacity is also mostly flexible in the downward direction. WPTF believes this is the case with the majority of flexible resources using the ISO's current flexible qualifying capacity rules, and therefore does not believe the flexible qualifying capacity rules are required to change in order to ensure the flexible requirement can also meet the downward requirement.

Again, this is for thought-provoking purposes, thus proposing an extreme case. In reality the ISO could exclude some level of renewable capacity from the minimum net load calculation to account for economic curtailment and could make some adjustments in both directions for inflexible Pmin capacity from flexible resources and system capacity.

Figure 2: Flexible RA enhancement using 2016 illustrative data

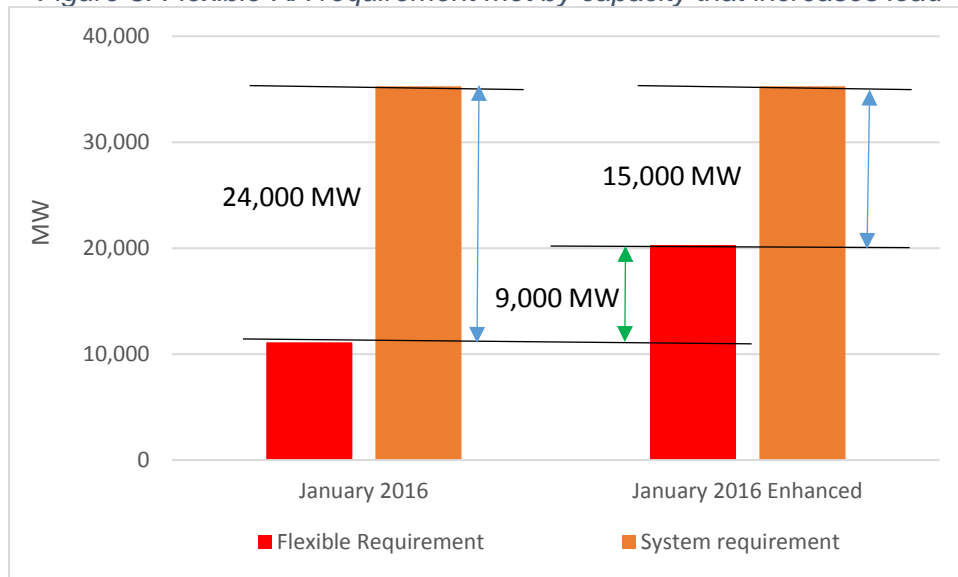


2. Capacity that increases load during over-generation conditions

Capacity that has the ability to increase load can also contribute to reliability during over-generation conditions. Exports, storage (charging), and potential other capacity products all allow the ISO to accommodate additional net load capacity. However, capacity that solely increases load cannot be used by the ISO to meet the peak load requirement or the upward flexible ramping requirement. Therefore, WPTF does not think the ISO needs to make significant changes to eligible system requirements, but instead should add a category to the flexible RA requirement allowing a certain amount of RA capacity that can increase load.

Figure 3 illustrates how the maximum could be set on this new flexible RA category. Figure 4 shows the illustrative January 2016 example. The red bar on the left represents the amount of upward flexible ramping capacity needed for the ISO to meet its upward ramping requirements. The red bar on the right represents the amount of flexible capacity needed to accommodate a minimum net load curve. The difference between the two bars therefore represents the amount that can be met by capacity that only affects the load side of the equation – in this case 9,000 MW. A simple enhancement to the current flexible RA requirement that accommodates storage and imports/exports is to add a 4th category that is capped at the difference between the ISO's upward flexible ramping need (15,000 MW) and the total flexible need that includes downward capacity (24,000 MW). (This is illustrated in Figure 5, category 4.)

Figure 3: Flexible RA requirement met by capacity that increases load



3. Impact on flexible RA requirement and ability of LSEs to meet enhanced requirements

Even though the flexible RA requirement would increase under the enhanced method, LSEs will still be able to meet those requirements with the current resource fleet.

Figure 4: 2016 Flexible RA requirement compared to enhanced requirement

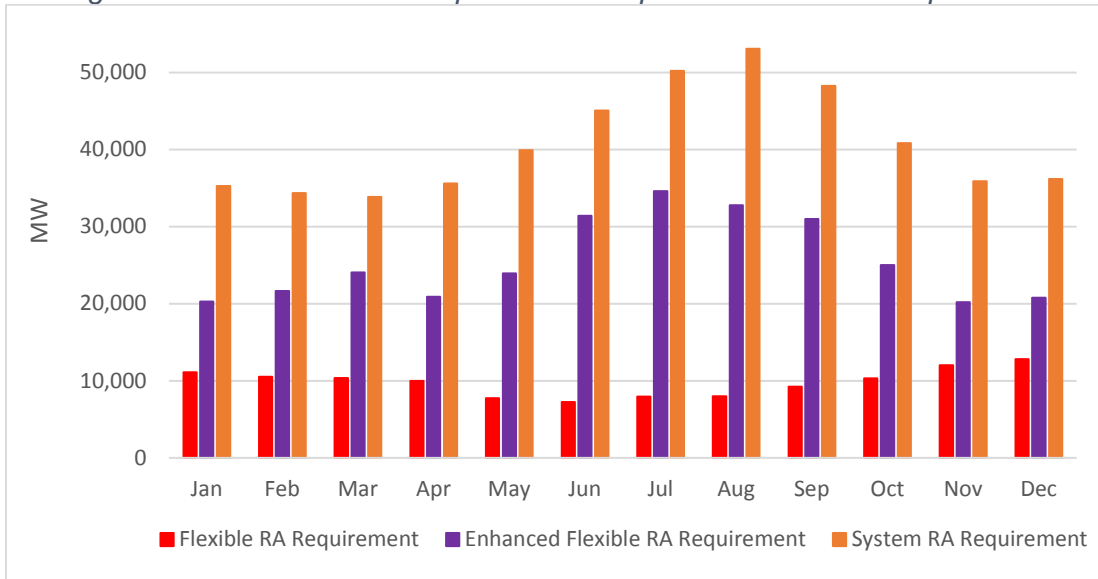


Figure 4 shows December 2016 broken down by category, including the new category 4 which storage charging, exports, and potential other capacity could qualify to provide. The total increase in requirement is completely reflected in the category 4 maximum. Resources that qualify in lower categories may count toward higher categories. Because the enhanced requirement is only to accommodate the need for downward flexibility, there is no increase to the minimum category 1 requirement and no changes to the category 2 or 3 maximums.

Figure 45: December 2016 Flexible RA requirement compared to enhanced requirement by category

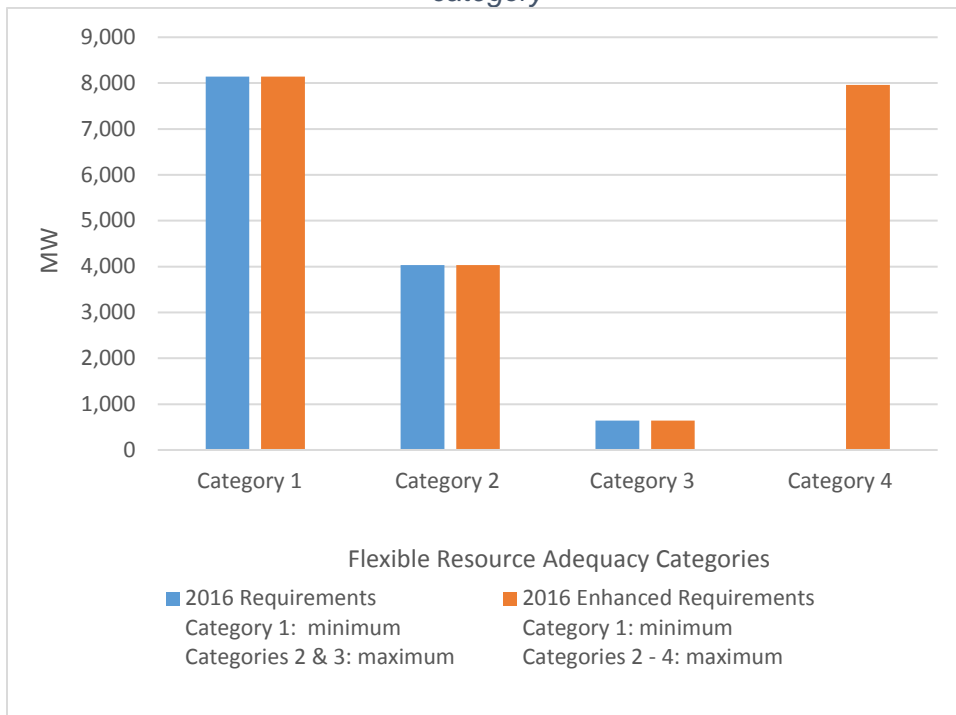
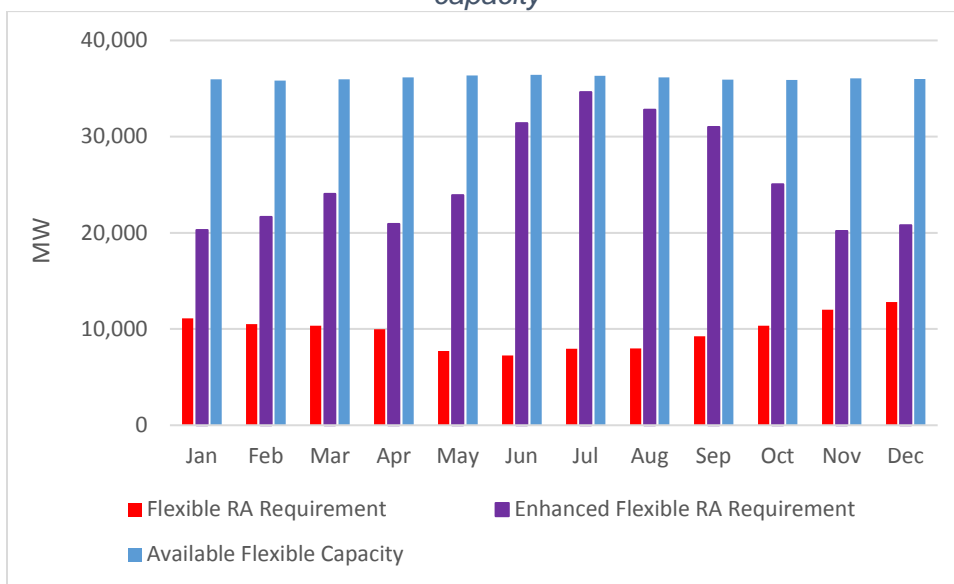


Figure 5 shows the current and enhanced requirement for 2016 compared to the total qualified flexible RA in 2016.¹² LSEs would be able to meet the enhanced requirement even without accounting for new resources being able to qualify to meet the flexible RA requirement (imports, exports, storage charging, etc.),.

Figure 5: 2016 current and enhanced flexible RA requirements compared to available flexible capacity



4. Discussion of underlying principles behind proposal

It is important to note that the ISO is only mandating behavior under the current flexible RA rules and is not changing the physical resource mix available to meet the net load ramp. Measuring 3-hours of ramping capability from resources and only allowing that portion of capacity to count toward a requirement does not change the ramping speed or Pmin burden in the energy market unless market conditions are such that resources without these attributes retire and leave the grid. This is because flexible RA obligations are only mandating behavior (economic offers) by a small subset of resources already participating as system RA. Said another way, under current rules if capacity is not considered “flexible RA” it still exists as system RA, or non-RA, and so that ramping capability or Pmin burden is still in the energy market. The only potential impact on the energy market of designating capacity as “flexible RA” is those resources change their behavior and move from self-scheduling to economically offering into the market.

WPTF believes an intent behind the flexible RA requirement was to provide a price signal to the “more flexible” resources so that the excess, less flexible resources, could retire. WPTF can think of one easy criteria to differentiate between flexible resources and inflexible resources – self-scheduling. If a resource is flexible, it should be able to allow the ISO to ramp it within its resource constraints. This is a minimum requirement to consider a resource flexible. Therefore, as a first initial step, WPTF asserts that the ISO should consider defining flexible RA as the portion of system RA that the ISO needs to economically offer into the market in order to operate the grid efficiently. This aligns with the previously discussed enhanced flexible RA requirement. As a second step, WPTF believes the ISO should consider the long-term needs of the grid and more specifically focus on physical characteristics most needed.

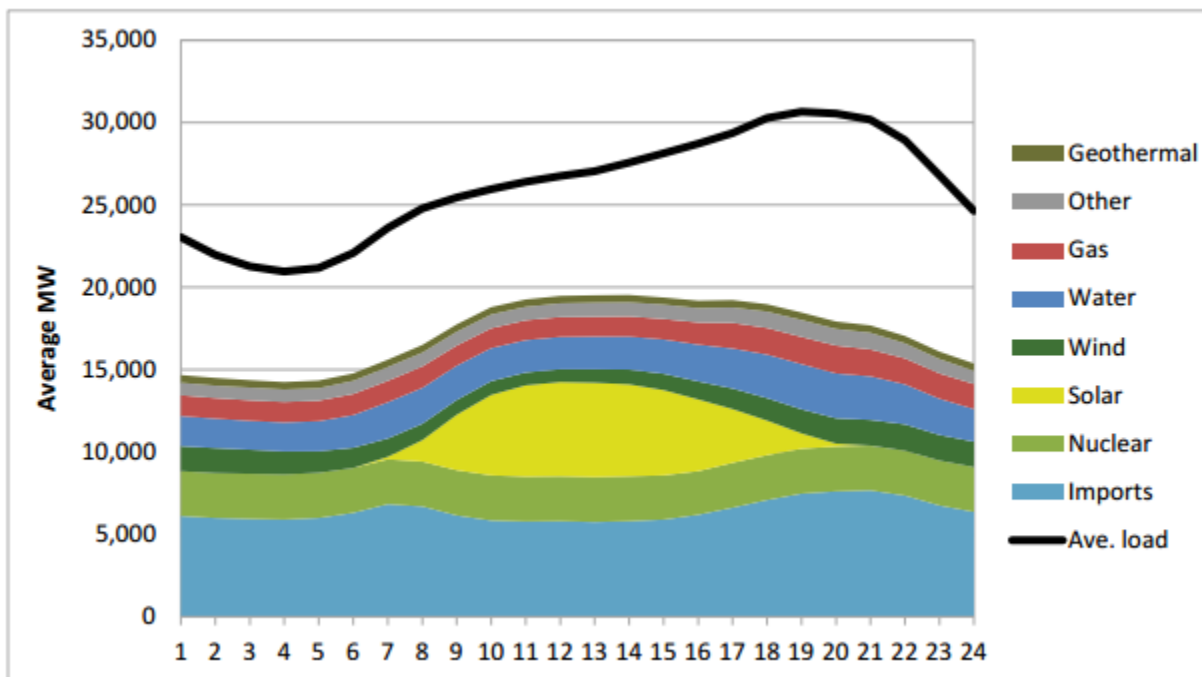
¹² <http://www.caiso.com/Documents/FinalEffectiveFlexibleCapacityList2016.xlsx>

The assertion that flexible RA should be defined in terms of economic offers needed is in direct contradiction to the initial flexible RA proposal which required a certain amount of capacity to have specific characteristics- namely ramping capability. This defined ramping capability need is not supported by any analysis done by the ISO. Again, and again, analysis has shown that there is sufficient ramping capability on the grid, but that at times some of it cannot be accessed due to self-scheduling by resources that are not willing to ramp based on economic signals. The ISO therefore does not need to mandate certain capacity characteristics at this time. Longer term it could be that the ISO will need specific ancillary services and load following capability. But in the near term, the ISO only needs to ensure the bulk of its system capacity is economically offering into the market. As long as this requirement is set high enough such that the RA market compensates resources with needed flexible attributes adequately, the ISO does not have to implement a command and control system that exactly defines which resources stay and which resources retire.

The assertion that self-scheduling, not lack of ramping capability, is a driver of curtailment is backed up by ISO data and analysis, such as the March 2017 MPPF presentation that identified the primary drivers were issues with DA/RT forecast and non-price responsive imports- i.e. self-schedules.

Figure 6 below is Figure 4.20 of the 2016 Department of Market Monitoring Annual Report. It shows the average amount of supply being self-scheduled into the market. Notably, by far the biggest amount of self-scheduled capacity comes from imports. A category of resource that neither the current nor the proposed short-term solution addresses.

Figure 6: Average hourly self-scheduled generation compared to Load



A quick thought exercise is the easiest way to demonstrate the extremes of the presented data. Imagine if all system resources self-scheduled into the day-ahead market. This would cause huge amounts of over-generation and the ISO would likely struggle to operate the grid. On the flip side what would happen if all system resources economically offered into the market? There would likely be only very limited, if any, curtailed renewables and the grid would be unlikely to have any reliability issues due to over-generation. All resources of course do not economically

offer into the market and this puts pressure on the market systems to optimize around these resources. Another way to put this is that system RA behavior is likely risking reliability. Therefore, the flexible RA requirement should be formulated to reduce this risk.

The flexible RA requirement can do this in a very similar way to the local requirement. Essentially the local requirement buckets system capacity into different regions, including a “don’t care” bucket that indicates the ISO does not care where a certain amount of resources are located as long as they exist. The flexible requirement as a first step should indicate the amount of system RA capacity that needs to economically offer into the market to maintain reliability. This is exactly what the current flexible RA requirement does, but rather than being set based on economic offer needs, it’s based on an arguably meaningless ramping requirement. (Again, the system resources already exist and are capable of ramping whether you categorize it as flexible RA or not.) The only difference the flexible RA requirement makes on system resources is that it requires the flexible capacity to economically offer into the market. Therefore, the ISO should indicate how much system capacity it needs to economically offer into the energy market.

Again, WPTF acknowledges this view of flexible capacity will make some stakeholders very uncomfortable. But if the ISO wants to use RA in order to ensure reliable grid operation, flexible RA is and can only be a tool to change behavior. It is not and never will be a measurement of ramping capability, because the ramping capability to meet the 3-hour or 6-hour or 8-hour belly to beak ramp already exists as system RA. You can do as many Monte Carlo simulations as you want showing the fastest 15,000 MWs of capacity compared to the slowest 15,000 MW of capacity. The fact is all 30,000 MWs are most likely needed anyway for system RA and will be on the grid regardless of the flexible RA requirement. What isn’t ensured is whether these resources are economically offering in or self-scheduling. Economically offering in can only be *mandated* through a high flexible RA requirement.

Thank you for consideration of these comments.