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EIM Entity Comments on Extending the Day-Ahead Market to EIM Entities/Issue Paper

Submitted by	Organization	Date Submitted
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INTRODUCTION

The EIM Entities¹ are pleased to offer these joint comments on the CAISO's October 10, 2019, Issue Paper on *Extending the Day-Ahead Market to EIM Entities* ("Issue Paper"). The EIM Entities are existing or planned participants in the Western Energy Imbalance Market ("EIM") and are potential participants in the Extended Day-Ahead Market ("EDAM"). In these comments, the EIM Entities will refer to themselves as "EIM Entities" except in certain circumstances when referring to the future EDAM, where occasionally there will be reference to "EDAM Entities" in that future context. These comments are grounded upon the "*Extended Day-Ahead Market Principles and Elements of the EIM Entities*," which were submitted to CAISO on September 16, 2019, and which are posted to CAISO's website ("EIM Entity Principles & Elements").²

At the outset, the EIM Entities recognize that these comments contain considerable detail, and varying levels of detail, on many issues identified in the Issue Paper. It is natural that during the course of performing the Feasibility Assessment the EIM Entities gave thought to how certain market design elements in EDAM might work in order to provide a framework for the Feasibility Assessment, and we are hopeful that by getting as much of this thinking out early, we can help set the table for the workshops and upcoming stakeholder dialogue.

The EIM Entities also emphasize that they are a diverse group and are sometimes differently situated based upon geography, resource portfolios, and jurisdictional status, among other potential differentiating factors. In addition, some EIM Entities may not have yet formulated their own specific viewpoints on specific market design issues. Therefore, while these comments represent consensus viewpoints of the group as a whole, they may not necessarily represent any individual EIM Entity. Moreover, the EIM Entities are hopeful that collaborative dialogue in the stakeholder process will help shape and refine positions. In such circumstances, some EIM Entities may choose to submit their own individual comments where appropriate, either in these initial comments or throughout the stakeholder process. As previously noted, these comments vary in terms of the level of detail included and the specificity of the suggestions and recommendations made by the EIM Entities; this is a product of the varying levels of complexity of any given market design issue and the amount of thinking to date on key issues; it is not meant to elevate one particular issue over another. Finally, there are some market design issues that the EIM Entities recommend be considered as part of future phases for EDAM and not necessarily for "Day 1" implementation.

The EIM Entities will make several general observations before commenting on the specific subject areas identified in the Issue Paper. It is hard to overstate the importance of this stakeholder process. If

¹ The EIM Entities joining these comments include: Arizona Public Service Company ("APS"), Avista Corporation ("AVA"), Balancing Authority of Northern California ("BANC"), Bonneville Power Administration ("BPA"), Idaho Power Company ("Idaho Power"), The City of Los Angeles, Department of Water and Power ("LADWP"), NV Energy ("NV Energy"); PacifiCorp, Portland General Electric Company ("PGE"); Powerex Corp. ("Powerex"), Public Service Company of New Mexico ("PNM"), Puget Sound Energy, Inc. ("PSE"), Salt River Project ("SRP"), The City of Seattle, acting by and through its City Light Department ("Seattle City Light"), The City of Tacoma, Department of Public Utilities, Light Division ("Tacoma Power"), Tucson Electric Power ("TEP"), Turlock Irrigation District ("TID"); and NorthWestern Corporation d/b/a NorthWestern Energy ("NWE"). BPA and Seattle City Light are still reviewing and considering the section entitled "External Resource Participation" and, for this reason, do not join that portion of these comments.

² <http://www.caiso.com/Documents/PublicCommentLetter-EIMEntities-EDAM-Sep16-2019.pdf#search=eim%20entity%20principles>

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successful, the EDAM has the potential to transform the wholesale electricity market in the West, to facilitate the increased use of renewable resources, and to provide significant benefits to customers. Those benefits must be widespread and not limited to a particular region or set of entities. These objectives will only be achieved with extraordinary cooperation between the CAISO, stakeholders, and regulators. There is a long history of failed attempts to form a Western organized electric market. This effort must be different. The EIM Entities believe that in order to meet western state policy objectives for aggressive renewable development and associated greenhouse gas emission reductions in an economical manner, some form of a broader wholesale market is essential. The EDAM has the potential to provide a solution in a scalable manner with a relatively small investment.

Most notably, the EDAM builds upon the successful foundation of the EIM. It is an incremental step designed to work within the existing regulatory structure. As noted in the Issue Paper, the EDAM maintains the same principles of voluntary participation; low-cost entry and exit; local control of resource adequacy through integrated resource planning; and separate Balancing Authority Areas (“BAAs”), with those outside of CAISO operating under an Open Access Transmission Tariff (“OATT”) structure.

Although EDAM presents an opportunity to build from the success of the EIM, the core design elements of EDAM must be considered carefully and not simply extended from the EIM or from the CAISO’s existing day-ahead market design. Key market design choices must effectively balance a variety of potentially competing interests and priorities, ultimately providing an opportunity for participation in a well-functioning competitive market. This can only be achieved through a comprehensive evaluation and resolution of numerous critical market design topics through a robust stakeholder process.

There are those who might push for the immediate formation of a Western Regional Transmission Organization (“RTO”) with a fully independent governance structure. While the EIM Entities certainly do not rule out further market enhancements beyond EDAM, there is a desire to capture potential incremental customer benefits through incremental changes that do not require changes in state law or need to involve the jurisdictional concerns and broader transmission planning and cost allocation challenges associated with an RTO. The EIM Entities see the EDAM as a unique, incremental solution. Under the Federal Power Act (“FPA”), the EDAM must be just and reasonable: there is no requirement that it be equivalent to an RTO or to be superior to all alternatives. The potential incremental benefits of EDAM can meet the FPA standard.

GENERAL OBSERVATIONS

1. *The EDAM Schedule Needs to Accord More Time for Comments, Even If It Means Extending the Prospective Go-Live Date*

The EIM Entities appreciate the importance of a project schedule to keep the initiative moving forward in an efficient manner. While the CAISO’s proposed schedule in Table 1 provides for approximately 8 months of activities between the first technical conference and the comments on the final proposal, this period, given the scope of the initiative and the myriad of issues to be addressed, is unrealistically short. In particular, the period between events such as technical conferences or issuance of straw proposals and the comment date are too short. Generally speaking, and particularly when responding to written straw proposals, there should be a minimum of six weeks to develop comments. The EIM Entities suggest six to eight weeks between comment periods and have provided a revised, suggested schedule that follows these guidelines as Attachment 1 to these comments (“EIM Entity Suggestions for Revised Stakeholder Schedule”).

The scope of the EDAM and the complexity of the issues will require time to work with the different departments within each EIM Entity to harness the views of internal subject matter experts. We suspect other stakeholders have similar processes. Given the extensive nature of the issues and number of interested stakeholders, the EIM Entities anticipate that there will be significant benefit to allowing time for stakeholders to discuss, debate, and hopefully collaborate on market design elements.

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Further, there is the need to get the design right out of the gate. As with the EIM, there will be unique issues associated with the blending of the CAISO market and EIM Entity OATT structures. With the significant expansion of the EIM and the volume of the day-ahead market, this initiative will encompass a broader set of issues with a vastly expanded set of active participants.

An overly aggressive schedule is less likely to produce the collaborative effort needed to develop workable solutions. The benefits the EIM Entities identified in the Feasibility Assessment are predicated on widespread participation by the EIM Entities. To achieve this objective, time must be taken to gain the confidence of a broad array of stakeholders, regulators, and customers. Moreover, time spent on vetting the design will potentially save time on the tariff development as implementation details are worked through in a well-considered manner.

2. While in a Separate Process, Timely Reform of Governance Is Critical

The EIM Entities understand that governance reform is being considered in a separate stakeholder process under the auspices of the Governance Review Committee (“GRC”).

An EDAM design without significant governance reform will be a theoretical exercise devoid of actual participants. Ideally, the GRC will be able to do its work in an expeditious manner so that market participants will have an understanding of likely governance structures as any market design concepts are finalized. We are hopeful, therefore, that the GRC should be able to complete its work by Mid-2020. Regular progress reports on the GRC’s activities should be made at the EIM Governing Body meetings.

Among the governance reforms to support EDAM design, the EIM Entities believe it is necessary for the EDAM Governing Body (“EDAM GB”) to have the support of an Independent Market Expert (“IME”) to provide additional perspective on the complex, technical issues that the EDAM GB will need to review. The EDAM IME is intended to serve as an advisor to the EDAM GB, providing expertise in organized markets and in-depth analytical capabilities. To be clear, the EIM Entities are not proposing that an IME replace any current roles in this area; the role of the EDAM IME is intended to be additive to and distinguishable from the roles of the Department of Market Monitoring (“DMM”) and Market Surveillance Committee (“MSC”). Attachment 2 contains additional explanation as to the potential roles and responsibilities of the independent market expert.

3. EDAM Design Elements Must Work with the EIM Entities’ OATTs

The purpose of the EDAM is to bring the EIM Entities into a CAISO day-ahead market, without consolidation of BAAs and with continuation of OATT service. This will require adjustments to both the CAISO Tariff as well as the OATTs administered by several EIM Entities. For example, the EDAM resource sufficiency evaluation must be consistent with existing resource procurement requirements in states or provinces and under the OATT. Similarly, scheduling timelines must identify how transmission may be made available to the EDAM and thought given to the cost-consequences of adjustments between what has heretofore been a non-binding advisory day-ahead submission. In addition, with respect to the various obligations contemplated by EDAM, including Resource Sufficiency (“RS”) and flexible reserve requirements, the expectation must be that such requirements should be fairly allocated among transmission customers in a manner consistent with cost causation and in a manner that is not unduly discriminatory or preferential. This is particularly important because the EDAM will involve a much larger volume of transactions than is involved in the EIM today. In the EIM, the general EIM OATT construct is that the Balancing Authority is the entity responsible for making all final resource adjustments to meet balancing and flexible ramp requirements. For EIM this has been a practical and pragmatic construct, however, with EDAM a different construct which more fairly allocates responsibilities and/or costs must be considered by the EIM Entities and supported by the CAISO.

4. The CAISO Process Must Provide for Meaningful Input from State Regulators

State regulators will play a vital role in the development and implementation of the EDAM. While some EIM Entities may need state authorization to participate, all need to ensure EDAM is compatible with state

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resource planning and that future cost/benefit studies provide a reasonable projection of expected customer benefits.

While the CPUC is experienced in participating in CAISO stakeholder processes, other regulatory authorities will need to develop policies and processes to support the EDAM. Issues, including a potential transmission charge and GHG implementation will require input from state authorities. Accordingly, the CAISO should work with the EIM Body of State Regulators (“BOSR”) to identify how best to utilize the existing structure, including the EIM Regional Issues Forum (“RIF”), to provide for this input.

5. EDAM Design Requires Coordination with Other Critical Initiatives

The EIM Entities appreciate that CAISO has recognized that many of the objectives of the EDAM design are contingent on reaching workable solutions in other related stakeholder initiatives:

a. Resource Adequacy (“RA”) Enhancements

A fundamental element of EDAM is that each participating entity be able to pass the day-ahead resource sufficiency evaluation as a condition of market participation. This will involve an assessment about where current resource adequacy constructs may require improvements. The RA Enhancements stakeholder process is therefore an important initiative that has the potential to identify such improvements that will help support CAISO’s ability to pass the EDAM resource sufficiency evaluation, enabling participation in EDAM.

b. Day-Ahead Market Enhancements (“DAME”)

The CAISO has recently begun exploring improvements to its day-ahead market design in the DAME initiative. While DAME is a separate initiative currently focused on the CAISO’s day-ahead market design, the changes being considered are also likely to establish the fundamental market design elements of an EDAM. For this reason, it is critical to have alignment between the DAME and EDAM initiatives moving forward, and for the DAME proposals to be evaluated in light of the needs of the broader region.

An appropriate EDAM that suits the needs of a diverse range of participants will require careful consideration of the differences between CAISO’s current financially-binding day-ahead energy market and the physical firm energy products that are most commonly transacted in western bilateral markets. The EIM Entities believe it is critical for the success of EDAM that a day-ahead solution be identified that builds a bridge between CAISO’s existing financially-binding day-ahead energy market and the physical firm energy environment that EIM Entities currently transact within. Ultimately, EDAM design must reflect that EDAM will be a voluntary, “physical” day-ahead energy market that will determine unit commitment and dispatch of resources across the broader market footprint. The key elements in the CAISO’s “Option 2” proposal appear to lay the groundwork for a successful EDAM market design and the EIM Entities look forward to further discussion on this proposal.

TRANSMISSION PROVISION

Outside of CAISO, transmission customers generally take service under an OATT at rates that are defined by the transmission provider providing service over its facilities – an approach that is very different from transmission service within the CAISO that is made available through the day-ahead and real-time markets, and for which costs are recovered using a transmission access charge applied to all load and export schedules. The transmission design for the EDAM will need to address five broad general categories of issues: (1) how will transmission capacity be made available; (2) what rates are just and reasonable for each category of transmission; (3) allocation of congestion revenues and, assuming an EDAM transmission rate is applied, allocation of transmission revenues; (4) losses and (5) the proper balance of tariff structures between the CAISO Tariff and OATTs to develop a consistent and durable approach to this critical component of the market.

In the EIM Entity Principles & Elements, the EIM Entities identified certain general principles for the EDAM transmission framework including:

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- a. EIM Entities will continue as a Balancing Authorities and transmission providers with responsibility to ensure reliability in their Balancing Authority Area (“BAA”) and to administer their respective Open Access Transmission Tariff (“OATT”) (as may be voluntarily modified to facilitate EDAM services). Moreover, the EDAM transmission design should be reasonably compatible with existing market transactions through all market timeframes for purchases and sales, allow for continued participation in reserve sharing groups, and fully respect long-term transmission ownership rights;
- b. Participation in EDAM by either California or non-California utilities does not modify any existing processes for transmission planning or transmission siting. Regional and interregional transmission planning will continue under the established planning regions. EDAM may help inform transmission investment decisions, but these processes will continue independent of EDAM; and
- c. The EIM Entities recognized that designing an effective EDAM transmission framework that is compatible with existing practices is a challenging task. On the one hand, many of the increased benefits of a centralized market depend on the ability for the market software to efficiently seek out economic transactions – an effort that can be impeded by a lack of available transmission and excessively high transmission “hurdle” rates. On the other hand, eliminating all “hurdle” rates can create risks of reducing the revenues Transmission Service Providers (“TSPs”) rely on to recover the fixed costs of their transmission facilities, of creating “winners and losers” resulting from material transmission cost shifts between transmission customers, market participants, and regions, or of simply leading to less transmission being made available to the EDAM in the first place.

The EIM Entities provide the following comments on Transmission Provision guided by these principles:

1. *Transmission Availability*

As a general matter, transmission availability design for EDAM must recognize that EDAM Entities will be relying on these transfers to avoid committing units and to serve load, and that all transmission in the EDAM must therefore be of “high quality” and not subject to curtailment in all but the rarest of circumstances. These general principles should apply regardless of which type of transmission is being considered for EDAM. For purposes of this discussion, high quality, reliable transmission is generally defined as transmission that should not be curtailed absent a physical event necessitating the curtailment for reliability. By way of further clarification, the EIM Entities would not consider transmission that is only available if another transmission customer doesn’t schedule on their higher-priority rights to be “highly reliable” absent well-defined usage patterns associated with network service to meet load that provide the requisite level of assurance.

a. *Transmission to Support Resource Sufficiency*

The Issue Paper proposes that a source of transmission for EDAM is transmission needed to fulfill bilateral contracts or pass the day-ahead resource sufficiency evaluation. The paper explains that this transmission has been procured prior to the day-ahead market and is a sunk cost that does not have a marginal cost in the day-ahead timeframe.

This source of transmission for EDAM does not have an analog with transmission in the EIM. The EIM Entities agree that this is a necessary source of transmission for EDAM and refer to this as “EDAM Resource Sufficiency Transmission” or “EDAM RS Transmission”. This is transmission that must be demonstrated to be able to support RS requirements prior to the EDAM run by a transmission customer to meet EDAM RS test(s). EDAM RS Transmission could include both the transmission scheduled to support bilateral energy contracts or transactions between EDAM participants and/or bilateral “bid range” transactions used to meet RS requirements (which includes both load and uncertainty requirements). Whether or not EDAM RS Transmission is available to be optimized by the EDAM will be highly dependent on the nature of the underlying transaction, but the EIM Entities believe that there may be significant portions of EDAM RS Transmission that will be available for re-optimization. The EIM Entities do not believe there is a need for an additional, incremental charge for EDAM RS Transmission (i.e., a “hurdle” rate). The

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EIM Entities support allocation of congestion rent to participants that provide EDAM RS Transmission (see comments below).

b. Transmission for the Downward Diversity Benefit

The Issue Paper proposes that another source of transmission for EDAM is transmission that a Balancing Authority sets aside to capture the downward imbalance reserve diversity benefit contemplated for EDAM. The paper explains that for a BAA to benefit from the downward diversity benefit, the BAA must have sufficient export transmission to support transfers into another BAA. The EIM Entities are not sure if this type of transmission warrants a separate category or if it wouldn't be taken care of through EDAM RS Transmission or the other types of transmission discussed in these comments. The EIM Entities acknowledge that EIM RS tests today identify whether there is sufficient transmission associated with RS requirements to merit crediting of a diversity benefit and that this feature may be driving identification of this transmission type.

c. Transmission Provided by Transmission Customers

The Issue Paper proposes two methods or incentives by which an EDAM Entity's transmission customers could voluntarily provide transmission to the EDAM; in return for congestion rents or in return for a transmission charge.

The EIM Entities agree that an incentive for transmission that is voluntarily made available makes sense to get more transmission into the market. The EIM Entities also agree that this might occur when a transmission customer procured transmission to facilitate economic displacement utilizing its resources or if it procured transmission but did not plan to use that transmission for a given time period.

This potential source of transmission is most like "Interchange Rights Holder" ("IRH") transmission in the EIM. Consistent with the principle that EDAM transmission should be highly reliable, the EIM Entities believe this transmission should be Firm Point-to-Point Transmission contributed prior to the EDAM optimization by a transmission customer on a voluntary basis. EDAM IRH Transmission may help to reduce congestion and/or enhance potential EDAM benefits. This transmission must be firm to maintain reliability of market optimization results from day-ahead to real time. The EIM currently includes this source of transmission, and it is required to be firm under the EIM Entity OATTs.

The EIM Entities believe that the appropriate incentive for this source of transmission is congestion rent, not a separate transmission charge (see comments below). Transmission Customers already procured this transmission source prior to the day-ahead market run for a multitude of purposes and at the applicable Transmission Provider's OATT rate. There is no need for an additional, incremental charge for EDAM IRH Transmission (i.e., a "hurdle" rate). EDAM IRH Transmission includes firm point-to-point rights already acquired and paid for by the transmission customer. As such, there is no risk that the transmission provider is not being compensated for this category of transmission.

d. Transmission Provided by the Transmission Provider

The Issue Paper contemplates that an additional source of transmission is transmission that a transmission service provider makes available for use at a tariff approved transmission rate. The paper provides that it will be necessary to address the scheduling priority of this transmission since it can be scheduled for either day-ahead energy or imbalance reserves which must be available for use in real-time.

This potential source of transmission is most like "Available Transfer Capability" ("ATC") transmission in the EIM, however, in the EIM this transmission is considered non-firm; for the reasons explained in these comments, the EIM Entities do not believe that will work for EDAM. The EIM Entities refer to this transmission as EDAM Balancing Authority ("BA") Transmission, which is transmission contributed prior to

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the EDAM run by the EIM Entity as the transmission provider based on its determination of ATC but must be of high quality.³

Due to the larger volumes of transactions in the day-ahead timeframe, the EIM Entities agree that there is a likely a need for an additional, incremental charge for EDAM BA Transmission (i.e., a transmission “hurdle” rate). EDAM BA Transmission includes unsold ATC which has not already been acquired and paid for by a transmission customer. As such, there is a risk that the transmission provider (and other transmission customers paying the embedded cost of the transmission provider’s system) is not being compensated for this category of transmission unless a charge is designed and applied. There are many potential approaches to developing a transmission charge for EDAM BA Transmission. The EIM Entities’ principles for EDAM state that EDAM should not result in materially significant cost shifts; EDAM transmission design should seek to balance the costs and benefits of transmission, including recovery of transmission costs and compensation for transmission utilization. A uniform incremental rate should be considered. EDAM transmission should facilitate the market and not place an unreasonable hurdle to impede EDAM efficiency.

The Issue Paper also addresses a potential need to address transmission compensation for an EIM Entity facilitating a wheel-through receives no direct financial benefit for facilitating the wheel; only the sink and source directly benefit. The paper suggests that whatever compensation method is developed for EDAM BA Transmission could be employed for this circumstance. The EIM Entities are generally supportive of this approach and believe that compensation for EDAM BA Transmission may be a solution for this issue.

Additionally, there may be instances where paths supported by EDAM BA Transmission experience a binding constraint and where congestion occurs. The EIM Entities support allocation of congestion rent to the BA that provided the EDAM BA Transmission (see comments below) and the BA would determine an appropriate sub-allocation methodology.

2. Other Considerations for Transmission in EDAM

There are numerous technical implementation issues that need to be considered for EDAM transmission availability. Among these, CAISO should be able to identify exactly which type of transmission was used for EDAM optimization to assist the EDAM optimization in the selection of the source of transmission and the associated payments and charges.

A day-ahead timeline to make transmission available to EDAM will need to be established for the CAISO Tariff and for the OATTs. This will be especially important to identify in the day-ahead timeframe the amount of EDAM BA Transmission the market can utilize in the optimization that is maintained through real-time. Also, there should be consideration of which system loss rates are used.

EDAM RS Transmission likely includes Network Integration Transmission Service (“NITS”) for imports and firm point-to-point rights already acquired and paid for by the transmission customer. Use of NITS in EDAM will require some additional review to ensure OATT compliance and to ensure feasibility.

DISTRIBUTION OF CONGESTION RENTS

Consistent with the comment above relating to allocation of congestion rents, in principle, the participant or entity that provides transmission capability to enable EDAM transfers should be the entity that receives

³ There may also be specific circumstances where some transmission accounted for as “non-firm” by a Transmission Provider could meet the requirement that it is of sufficient high quality to be used for EDAM. In the context of network service, an EDAM Entity might consider voluntarily contributing transmission capacity that has been sold as firm network service to other transmission customers and where the EDAM Entity has information indicating that the network transmission which has been reserved will not be scheduled (e.g., seasonal transmission usage patterns associated with serving load). Additionally, an EDAM Entity might also consider contributing transmission capacity associated with Capacity Benefit Margin (“CBM”) or Transmission Reserve Margin (“TRM”). Some transmission providers elect to sell CBM and TRM on a non-firm basis under the OATT and could contribute non-firm CBM or TRM as EDAM BA Transmission on a similar basis. This decision also presents some operational risk and would need to be carefully considered, considering the specific nature of the allocations of CBM and TRM that transmission providers may be setting aside on their systems.

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the congestion rents associated with that path. This may include EDAM BAAs, the CAISO BAA, or other transmission customers (i.e., rights-holders) that voluntarily make their transmission rights available for use in EDAM.

Careful consideration must be made to determine a fair allocation of congestion rents, particularly circumstances where one or more entities may be each providing a particular segment of transmission that forms the broader transfer path between two BAAs. There are currently two approaches used in EIM:

- (1) For transfer paths in which the transfer capability to export energy from one EIM Entity BAA is equal to the transfer capability to import to another EIM Entity BAA, the congestion rent is split 50/50.
- (2) For transfer paths between two BAAs that are “mismatched” (e.g., when the EIM transfer capability to deliver from an EIM BAA to a CAISO intertie is different from the CAISO’s ability to import at that location), the congestion rent is allocated to whichever segment is fully utilized (i.e., “binding”) first.

Approach (2) above can result in 100% of the hourly congestion value being allocated either to the exporting BAA or the importing BAA, and this creates the risk of an unfair and systemic windfall to one segment of the EDAM transfer path.

Given that EDAM is likely to include increased transmission connectivity and much larger transfers than EIM, the potential congestion rents associated with EDAM are likely to be significant. The fair allocation of congestion rents is therefore extremely important to ensure equitable outcomes and to promote maximum voluntary contribution of transmission rights from participants. Stakeholders should evaluate robust and durable approaches to fairly allocate congestion rents and avoid introducing “seams” issues that may systemically benefit one entity over another. Special consideration should be given to EDAM transfer connections with CAISO that fit under Approach (2) above; such approaches could include a pre-determined allocation ratio (e.g., 50/50) on all paths, or exploring the voluntary use of Congestion Revenue Rights (“CRR”) allocations for purposes of distributing congestion rents.

RESOURCE SUFFICIENCY

1. *An Effective Day-Ahead RS Meets Multiple Important Objectives*

An accurate EDAM resource sufficiency evaluation will promote reliability by ensuring all entities in the EDAM footprint have sufficient energy, capacity, flexibility and transmission to meet a variety of potential real-time needs, with a high level of confidence. It will also ensure that all participants are held to an appropriate standard to reliably serve load and meet imbalances, while unlocking a diversity benefit that can be applied to all entities fairly. While an accurate day-ahead resource sufficiency evaluation is a prerequisite to supporting reliability, it also ensures fairness between entities by preventing EDAM participants from “leaning” on the capacity and/or flexibility investments made by other entities and other regions without explicitly contracting for it. In addition, the EDAM RS framework will complement forward resource planning activities by providing a critical feedback mechanism regarding the resource planning actions that must be made ahead of time.

2. *Day-Ahead RS Is Critical to Ensure Reliability*

A core element of EDAM is a more efficient day-ahead commitment of generating units, including the displacement of internal unit commitments with EDAM imports from other BAAs. Unlike the economic displacement transactions in EIM, EDAM transactions will be relied upon to meet firm load and therefore such transactions must be highly reliable. EDAM Entities must not face elevated risk of curtailment due to resource shortfalls in other BAAs within the EDAM footprint.

3. Each Entity, Including CAISO, Must Be Capable of Meeting RS Every Day

The EIM Entities recognize that the EDAM's scope does not extend to centralized oversight of long-term resource planning. Some entities, however, may need to make modifications to their existing processes in order to be able to pass the EDAM RS test. Each potential EDAM participant must take appropriate steps to ensure it can pass the day-ahead sufficiency test.

Some EIM Entities may also seek to make long-term, near-term and/or day-ahead bilateral transactions ahead of the EDAM timelines to help facilitate passing an EDAM RS Test. The CAISO BAA, however, is unique in that it is the only BAA that includes a full organized market and significant separation of resource ownership from load serving entities. Additional dialogue on what additional tools or processes, if any, CAISO may wish to develop to support its ability to pass a day-ahead RS test should be considered during this stakeholder process.

4. The EDAM Test Must Be Transparent, and Subject to On-Going Review and Improvement

EDAM RS must be carefully designed, with a commitment to ongoing review and continued improvement as experience is gained. The EIM Entities believe that ongoing review should be informed by the review and consultation of an IME. Both RS requirements and results should be transparent to all participants, with extensive after-the-fact analysis to ensure the tests are applied accurately and equitably to all BAAs.

5. The EDAM and EIM RS Tests Must Be Accurate

Several EIM participants have raised concerns related to the current EIM RS framework, including detailed discussions during prior CAISO workshops and other forums in which fundamental RS challenges have been identified. The RS test must be applied equally to all BAAs in the EDAM footprint. In EDAM, given the increased volume of day-ahead transactions, it is critical that the RS test accurately measure physical and substantiated capacity and transmission available for the day-ahead market, and the flexibility attributes of that physical capacity.

Both the EDAM and EIM RS tests will be part of a broader RS framework for the EDAM/EIM footprint, and therefore the current EIM real-time tests will continue to have a material impact on the overall effectiveness of the RS framework. The EDAM stakeholder initiative provides an opportunity to address the existing challenges with the EIM RS test while avoiding introducing similar problems in a day-ahead test by:

- Improving the calculation of uncertainty requirements to reflect actual system conditions;
- Ensuring import supply that is counted towards RS tests reflects real, identifiable resources and is supported by an e-Tag;
- Defining qualification requirements to ensure internal supply that is included is capable of performing when dispatched;
- Avoiding double-counting of flexible capacity; and
- Ensuring failure consequences do not allow any entities to lean on EDAM imports throughout the failure period for capacity.⁴

The increased importance of passing an accurate EDAM RS test (and the potential consequences of failing to do so) requires that the test be designed carefully to ensure that RS requirements are

⁴ In the most recent stakeholder initiative catalogue, the CAISO deleted initiative 7.5.2 Flexible Ramping Product Enhancements. As justification for the removal, the CAISO stated that these enhancements will be part of the Day-Ahead Market Enhancements initiative. There should be a comprehensive evaluation of the Flexible Ramp Product, including but not limited to, the level of the requirement, the timing of when the requirement is established and communicated to the EIM Entity, the resources that can qualify to meet the requirement for the EIM Entity, the relationship between day-ahead and real-time requirements, and how the requirements are allocated to the EIM Entity's transmission customers.

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straightforward for EDAM participants to understand and follow and that the test holds each entity to an appropriate standard.

6. *An upfront RS Test, applied at an applicable interval in advance of EDAM submissions, should require that entities provide a feasible operating plan for all 24 hours of the operating day*

The EIM Entities suggest that the framework for a day-ahead test is for each EDAM participant to provide a 24-hour feasible operating plan that will allow the market operator to verify four essential measures of a resource sufficient BAA:

- i) **Energy:** Sufficient energy and associated fuel commitments to sustain output to meet load across all hours of the operating day from specific identified resource(s);
- ii) **Capacity:** Sufficient physical generating capability to meet peak load and maintain sufficient contingency reserves, regulation and balancing reserves in each hour with a high degree of confidence;
- iii) **Flexibility:** Sufficient flexibility to deploy resources up or down to respond to changing system conditions that may occur within a single hour and across multiple hours; and
- iv) **Transmission:** Highly reliable transmission to deliver energy from external resources and to reliably meet load in major constrained zones within a given BAA. Transmission rights could be evidenced with a transmission reservation, acknowledging that the deadline for complete tagging information may need to be later in the day.

This approach will allow for entities to provide their RS-related submissions in a format that is conceptually similar to how many BAAs plan their systems today.

7. *To the extent possible, EDAM participants should not be held to a new standard in the EIM once they have met a Day-Ahead requirement*

The EDAM RS test will include requirements to ensure sufficient resources are set aside to respond to day-ahead uncertainty in real-time system conditions (such as changes in load and VER output, forced unit outages, and unexpected interchange deviations). To the extent that such uncertainty is properly addressed in the day-ahead timeframe, an entity that has passed the day-ahead test should not be required to supply additional resources into the EIM as such uncertainty materializes.

A major benefit of EDAM is to pool resources on a day-ahead basis to commit resources more efficiently across the EDAM footprint. Holding entities to a full-blown hourly real-time RS test has the potential to undermine these benefits if entities believe they will have to hold aside additional supply in order to meet such a test in real-time.

It is conceivable, however, that a simplified real-time test may be necessary to verify that the participant has not taken actions in Real Time that would undermine the day-ahead RS result (such as entering into a new bilateral transaction in Real Time that relies on the same capacity that is already committed to an EDAM Day-Ahead market award).

8. *Internal Resources Must Be Capable of Performing When Dispatched*

Resources that are counted toward RS must be based on the resource's actual capability to perform when dispatched. The use of nameplate capacity or Master-File registration values are not sufficient to ensure that the resources shown for RS are reliably available when needed. Further discussion on appropriate qualifying criteria for resources within each BAA will be required.

9. External Resources must only include real, non-recallable physical supply

Incorporating external resources in a given BAA's RS supply will require a robust method for the market operator to verify that the resource is backed by real, non-recallable supply. This will require consideration of bilateral energy transactions between EDAM participants, imports from resources from outside the EDAM footprint, and import supply offers that are offered into the CAISO's existing intertie bidding framework.

At a minimum, all external resources used for RS must be supported by day-ahead e-Tags to confirm they are backed by real physical supply and highly reliable transmission. Ideally, all e-Tags would be provided for maximum transparency at the time of the RS Test. However, the EIM entities recognize that the requirements should be compatible with existing scheduling timelines and practices, and that the specific rules may be tailored to each type of import supply.

Bilateral firm energy transactions are likely the most straightforward to verify since the seller has committed to deliver energy and a failure to do so will become clear to the purchaser by the 3 pm day-ahead scheduling deadline if a supporting e-Tag is not submitted.

External resources that submit import bids into the CAISO's existing intertie framework (or at other EDAM BAA intertie locations if such functionality is enabled) are more difficult to verify since the submitted offer may not be dispatched for any energy at all. In these cases, the EIM Entities believe that the import offer must be supported by real, identifiable resources, and an e-tag that is confirmed at the time of the RS Test to verify the key characteristics of that capacity (including confirmation of the Source BAA, Resource, Transmission Path and associated reservation numbers, etc.).

10. Failure Consequences

Preventative enforcement of RS requirements is critical to ensuring that entities continue to have appropriate incentives to contract for sufficient energy, capacity and flexibility ahead of each hour (through bilateral transactions or other forward commercial activities) and hence do not lean on the capacity and/or flexibility investments made by other entities. Minor consequences of failure, such as "freezing" EDAM transfers at current transfer levels, may play a limited role in deterring occasional RS failures, but these measures are not appropriate to address larger, systemic resource shortfalls resulting from an entity failing to ensure that it is capable of securing sufficient capacity in advance. A well-designed enforcement framework has the potential to simultaneously ensure that (1) the failing BAA is not leaning on the supply from other BAAs to make up a shortfall and (2) supply from an insufficient BAA is not being relied upon by the other BAAs within the EDAM footprint.

11. EDAM RS Design Should Consider New Products and/or Processes

Bid Range: To supplement forward planning and procurement, EDAM participants may seek forward or day-ahead bilateral transactions to meet EDAM RS, including the use of the standard day-ahead firm energy products typically traded in 16-hour or 8-hour blocks. The EIM Entities would also like to work with the CAISO to allow for bilateral trading of a new resource-specific "bid range" product that could be used to transfer flexible capacity from one BAA to another to help meet EDAM RS requirements.

Multi-Day Unit Commitment: The EIM Entities would like to work with the CAISO on developing a "multi-day" unit commitment process that would allow long start resources to participate in the EDAM market in a meaningful way. For example, during expected over-supply conditions it is most efficient to de-commit a large thermal facility, such as a coal plant, in order to facilitate additional renewable resources. The obstacle faced by an EIM entity with a long-start commitment period is that it would be necessary to receive commitment information prior to the EDAM market awards, in addition, the units' availability would need to be considered in the day-ahead resource sufficiency evaluation for the EDAM entity. If a multi-day unit commitment process is not developed it is likely that market awards would result in sub-optimal unit commitment and dispatch decisions with regard to these large, long-start thermal resources.

ANCILLARY SERVICES

The co-optimization of traditional ancillary services (spinning reserve, non-spinning reserve, and regulation) across the EDAM footprint is a complex topic that should be further explored through stakeholder discussion. Any co-optimized ancillary service market must be properly designed to ensure reserves are deliverable and that market design properly reflect each BAA's needs (including potential needs to carry such reserves in specific locations or on specific resources).

Additional complexity is introduced by the potential overlap with existing contingency reserve sharing groups. These existing reserve sharing groups already provide a diversity benefit to participating entities and the incremental benefits available from further optimization in EDAM are unclear. A potential first step that could be implemented more quickly would be to allow ancillary reserves to be optimized within a given BAA (assuming entities in that BAA prefer this approach rather than self-scheduling reserves on specific resources).

Beyond contingency reserves and regulation, however, there are a number of reserve products that the EIM Entities believe merit dialogue in the context of EDAM. For example, in the DAME stakeholder process, the CAISO is exploring new day-ahead "imbalance reserve" products to respond to uncertainty and rapidly changing grid conditions in real-time. These day-ahead reserve products will be necessary to allow the EDAM to commit sufficient resources to meet load under a variety of real-time system conditions and should also be considered in the context of EDAM resource sufficiency requirements.

In addition, the EIM Entities would like to explore the concept of "replacement reserve" – additional capacity that would be optimized by EDAM and available to entities to respond to a real-time forced outage that extends beyond the 60-minute period in which contingency reserves may be deployed. The EIM Entities believe replacement reserves are an important opportunity to expand the optimization possibilities of EDAM and to minimize the risk that BAAs feel that they need to "hold back" extra capacity on a stand-alone basis in case of such real-time outages.

NETWORK TRANSMISSION CUSTOMER REQUIREMENTS

Many EIM Entities provide transmission service to third-party customers within their respective BAAs to deliver resources to loads inside the EIM Entity BAA. These third-party transmission customers may or may not currently participate (i.e., bidding into the EIM) with their loads and resources within the EIM and many of the existing EIM requirements (e.g., real time RS tests) are not enforced or sub-allocated to third-party loads and resources.

The resource plans of third-party resources or loads that are participating in the EIM, participating in the EDAM, or non-participating, will impact the ability of the BAA to satisfy the RS requirements and, therefore, the ability for all of the participants within the BAA to derive benefits from participation in the EDAM market. Therefore, EIM Entities may need to develop tariff requirements, rates schedules and business practices associated with the allocation of day-ahead resource sufficiency requirements in manner consistent with state or federal requirements. The allocation of RS obligations, performance and penalty mechanisms, back-stop obligation and mechanisms, and rate schedules for any RS related products are examples of elements that must be considered.

For jurisdictional EIM Entities implementing EDAM, such tariff changes will have to be acceptable to FERC: they must be just and reasonable, consistent with cost causation principles, and the timing of the tariff change filings and effective dates will need to parallel the CAISOs EDAM tariff development, filing, and effective date.

OBLIGATIONS OF LOADS AND RESOURCES IN EDAM BAAS

As previously noted, with respect to the various obligations contemplated by EDAM, including RS and flexible reserve requirements, the expectation must be that such requirements should be fairly allocated among transmission customers in a manner consistent with cost causation and in a manner that is not unduly discriminatory or preferential. BAAs implementing EDAM provide OATT service to transmission customers which serve loads and which own or contract for resources inside the EDAM BAA that are not affiliated with the EDAM Entity (i.e., “third-party” loads and resources). In today’s EIM OATT construct, the Balancing Authority is the entity responsible for making all final resource adjustments to meet balancing and flexible ramp requirements. The EDAM will involve significantly larger volumes of transactions than the EIM. For these reasons, the EIM Entities desire solutions for EDAM supported by the CAISO which provide transparent obligation and cost information so that allocation of responsibilities and/or costs by the EDAM Entity may be considered in a manner that will be consistent with existing resource procurement requirements in states or provinces and under the OATT. Additionally, it may be necessary for the CAISO to consider options for transmission customers which own or control contracted resources (whether bidding into EDAM or not) to offer and/or schedule their resources directly with CAISO (in both day-ahead and real time) and to settle directly with CAISO. Currently, this kind of direct operational relationship with CAISO is supported only for the EIM Entity BAA and for participating (i.e., bidding) resources.

EXTERNAL RESOURCE PARTICIPATION

Support for external intertie bidding at the boundaries of EDAM BAAs should not be pursued until after the EDAM is established and EDAM Entities explicitly request such a framework. Given the successful and rapid expansion of the EIM, the EIM Entities are not convinced there is broad regional desire or need for this type of additional market expansion. Here are some concerns and considerations:

- 1) This feature is incremental to the core EDAM design elements and it is not a critical component of a voluntary regional market;
- 2) It is not currently enabled in the EIM and no EIM Entities are currently seeking to implement intertie bidding; and
- 3) Intertie bidding at other locations could add operational complexity for some EIM Entities that may have relatively smaller BAAs and already suffer from challenges associated with unpredictable third-party bilateral import and export activity in the EIM.

Introducing a voluntary EDAM should not fundamentally alter CAISO’s existing intertie bidding framework or create barriers for participating in that market.

- 1) EDAM participation is voluntary and must not be a pre-condition of participating in the CAISO intertie bidding framework;
- 2) CAISO intertie bidding should not require the mandatory provision of transmission for EDAM use; and
- 3) The costs and benefits of using the CAISO intertie bidding framework should not be materially changed.

MODELING OF NON-EIM EXPORTS AND IMPORTS

The EIM Entities are generally supportive of improved modelling accuracy and understand the CAISO’s desire to align approaches currently used for the CAISO’s existing market with the approach used in the EIM. Improved modelling of CAISO intertie bids, including consideration of resource-specific bidding, will be necessary to facilitate the CAISO properly distinguishing between:

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- 1) Firm energy bids, supported by real physical capacity and highly reliable transmission, that could contribute towards meeting CAISO's EDAM RS requirements, could be dispatched to avoid committing physical resources within the EDAM footprint, and would receive capacity compensation as proposed under CAISO's DAM Enhancements Option 2 approach; and
- 2) Economic displacement bids, not verifiably supported by physical capacity or highly reliable transmission, that could not be used to meet CAISO's EDAM RS requirements or used to avoid committing physical capacity within the EDAM footprint, and would receive energy-only compensation, similar to virtual supply, under CAISO's DAM Enhancements Option 2 approach.

ACCOUNTING FOR GREENHOUSE GAS ("GHG") COSTS

The EIM Entities appreciate that the CAISO recognizes that the current approach for incorporating greenhouse gas costs into the EIM will not work in the context of EDAM. As described in the issue paper, a different approach is needed to accommodate the lack of base schedules in EDAM and to account for the future potential that other states in the EDAM footprint will adopt GHG pricing policies. In addition, it is the EIM Entities' perspective that it is critically important that the EIM GHG framework be revisited because the consequences of inaccurate GHG pricing are much greater as increased volumes of energy are transacted in the market and as more states adopt GHG pricing policies. A long-term and durable solution is needed.

EDAM should seek to assign proper accountability through the accurate allocation of the costs and/or benefits associated with GHG pricing policies in a manner that reflects policies adopted by individual jurisdictions. Failure to do so creates the potential for inefficient dispatches, improper resource attribution, and inappropriate shifts in GHG-related compensation.

The implementation of a GHG market design solution for EDAM will likely require modification of the California Air Resources Board Mandatory Reporting Regulation and Cap-and-Trade Programs and reflection of EDAM in other states that adopt GHG regulations. A multi-faceted approach, including early and regular dialogue and coordination with regulators and regulated entities, is critical to the development of a durable solution.

In the issue paper, the CAISO characterizes the GHG issue as the need for an approach "to determine which resources are serving load within a GHG compliance region." The EIM Entities encourage a broader view of the problem and its solution. As noted above, the problem is how to accurately assign proper accountability for costs and benefits associated with state GHG pricing policies. The solution may not require the attribution of specific resources and MWh quantities to specific loads. In fact, the EIM Entities contend that the attribution of specific resources to specific loads is inherently problematic given the technical limitations of doing so accurately. A simpler, more accurate, but perhaps less granular approach is preferred to a solution that is precise but inaccurate.

Given the technical limitations on the ability of market design to fully implement GHG policies of multiple jurisdictions, a simpler solution that is fully compatible with GHG, fuel mix, and renewable portfolio standard ("RPS") accounting regimes is likely to include both "in market" and "out of market" components. The incorporation of GHG pricing policies into the market design should not inadvertently interfere or frustrate the ability of jurisdictions without GHG pricing policies to implement policies that do not directly price GHG, such as RPS programs.

In this context, the below principles articulate the parameters around which a comprehensive solution may be developed:

- 1) To the maximum extent possible, market design should fairly reflect and be consistent with policy objectives adopted by individual jurisdictions;

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- 2) Jurisdictions that have not adopted a greenhouse gas or renewable procurement policy should not be improperly affected, directly or indirectly, by policies adopted by other jurisdictions;
- 3) The entity responsible for the output of a resource, as defined by a jurisdiction's policy, should receive the full greenhouse gas or renewable benefit and bear the full greenhouse gas cost of that resource;
- 4) The method for assigning and verifying compliance obligations under a specific greenhouse gas or renewable procurement policy should be consistent with or reconciled to how the market design allocates costs and benefits; and
- 5) Renewable and non-emitting resources outside of jurisdictions with greenhouse gas policies should not be unfairly disadvantaged in the EDAM compared to renewable and non-emitting resources inside jurisdictions with greenhouse gas programs.

CONVERGENCE BIDDING

EDAM must be considered a “physical” market. The EDAM results will determine the physical resources that are deployed across the regional footprint and the EDAM market design must ensure that sufficient resources are committed on a day-ahead basis. The EIM Entities are supportive of continuing to pursue the CAISO's DAME “Option 2” approach that seeks to distinguish between the capacity, flexibility and energy attributes of virtual supply and physical supply in the DAM dispatch, pricing, and settlement processes. These enhancements will enable CAISO's existing virtual bidding framework to play an important role in improving energy price convergence between day-ahead and real-time, while allowing the market to efficiently dispatch sufficient physical resources to operate the system reliably. While virtual bids will serve a valuable purpose, the EIM Entities do not believe that the expansion of virtual bidding to locations outside the CAISO is necessary at this time and should not be pursued given the number of complex issues already implicated by EDAM.

PRICE FORMATION

There is significant diversity in the approaches to various price formation topics amongst organized markets and between the CAISO markets and western bilateral markets. Similar to any organized market, the specific approaches adopted in the CAISO market have evolved over time and naturally reflect the CAISO's history and governance structure, as well the interests and priorities of California stakeholders. Furthermore, there is significant diversity of interests amongst entities and regions across a potential EDAM footprint:

- 1) Some entities are net sellers of energy, capacity, flexibility and environmental attributes, while others are net purchasers, seeking to displace use of their own resources and to efficiently balance their systems; and
- 2) Some entities will benefit from relatively lower market clearing prices, while others may benefit from relatively higher market clearing prices.

This potential large volume of trade and this diversity in interests and approaches means it is critical that price formation practices be comprehensively examined. Robust stakeholder dialogue on price formation will be necessary to achieve price formation approaches that are not only just and reasonable but also equitable to the diverse potential participants and regions. This dialogue must begin with careful examination of price formation in bilateral markets, CAISO markets, and other organized markets to enable fully-informed choices that reflect industry best practices and can balance the diverse interests of a multi-state market.

An initial list of topics that should be considered are included in the table below:

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Topic	CAISO IFM	Bilateral	Other Approaches in Organized Markets
Efficient Dispatch and Pricing of All Market Products	Does not differentiate between physical and virtual supply in pricing or dispatch	Standard bilateral product includes sufficient capacity to support physical firm energy Bilateral prices reflect bundled value of energy and capacity	General principle that a single co-optimized market solution and limited out-of-market actions are critical to provide accurate price signals for energy, capacity and flexibility Note: CAISO is exploring such an approach under its DAM Enhancements initiative
Fast Start Pricing	No	Yes – buyers and sellers will include incremental short-term commitment costs in willingness, and pricing, of transactions	Certain other RTOs include fast start pricing to more accurately reflect short-term marginal cost of meeting load in prices
Long Start Pricing	No	Yes – buyers and sellers will include incremental commitment costs in willingness, and pricing, of transactions	No, although some other organized markets are considering this
Scarcity Pricing	Prices generally set by marginal resource Immediate \$1000 “penalty price” if market is unable to meet demand	Prices negotiated between buyer and sellers Prices may rise during tightening supply conditions	Varied - some use of operating reserve demand curves to allow prices to rise gradually and in an orderly fashion to reflect relative degrees of scarcity
Seller Market Power Mitigation	Automated Local MPM using DEBs Potential stakeholder process to expand automated process to “system” level in CAISO BAA	MBR authority as granted by FERC	Conduct and Impact Test

EDAM ADMINISTRATIVE FEE

To some extent an approach similar to the development of the current EIM administrative fee can be used for the EDAM administrative fee. In the development of the EIM administrative fee it was generally understood that EIM participants utilized the CAISO’s Real-Time Market Services and Real-Time Dispatch System operations services, so those costs were allocated to them. Likewise, an analysis of what services are being used by EDAM participants must be undertaken so that a fair allocation of costs can be implemented. However, the CAISO Day-Ahead market services are more expansive than the Real-Time market services. Thus, the analysis of EDAM administrative fee must be performed at the lowest activity-

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based cost tracking level utilized by the CAISO in order to accurately assess EDAM activities and the accompanying cost-allocation for market services.

For example, the existence of such services as convergence bidding and inertia bidding which may or may not be services offered in the EDAM point to the existence of day-ahead costs that may or may not be appropriate to allocate to EDAM participants. It is expected that during this initiative there will be a transparent analysis of each individual activity-based costing category. Since EDAM services offerings may be less than the CAISO BAA DA market, or perhaps even within the traditional CAISO DA market, granular cost tracking will allow a better attribution of cost responsibility to market participants. While the EIM Entities recognize that they must bear a reasonable responsibility for administrative charges associated with EDAM (reflecting a value to current CAISO customers), the EDAM administrative fee can represent a significant barrier to EIM Entities participation in the EDAM so it is imperative all steps be taken to ensure that cost causation principles are honored.

REVIEW OF DAY-AHEAD SETTLEMENT CHARGE CODES

The EIM Entities appreciate the CAISO preparing the list of day-ahead charge codes impacted by the EDAM initiative along with the accompanying descriptions in Appendix A. The EIM entities and their transmission customers can now better assess the settlement impact of an EIM Entity joining the EDAM. Please consider the below comments on the information provided in the Issue Paper:

- 1) The EDAM is likely to include increased transmission connectivity and much larger transfers than EIM, the potential congestion rents associated with EDAM are likely to be significant. Therefore, it is important to the EIM Entity to have transparency into the congestion rents being paid and received in the EDAM by ETSR by interval. As noted in Appendix A, a new congestion offset charge code is to be created for the EDAM. When creating this new charge code please consider increasing the transparency into the amount of congestion rents paid and received by ETSR by interval. EIM Entities do not have this transparency in the EIM billing determinants now but it is imperative the transparency exists in the EDAM.
- 2) As noted in Appendix A, a new day-ahead Energy Offset charge code is expected to be created for the EDAM. The current RT Imbalance Energy Offset EIM charge code 64770 both calculated energy neutrality and has a dual role of allocating charge code 491 GHG revenues. The EIM Entities recommend that a separate charge code be used for the allocation of charge code 491 GHG Emission Cost Revenues in the EDAM. The day-ahead Energy Offset charge code should not serve a dual purpose of calculating energy neutrality and allocating GHG revenues. The charge code is complex enough just calculating the energy neutrality.
- 3) It would be helpful to expand Appendix A to ensure it includes all existing EIM charge codes so the EIM Entities and their transmission customers know for certain what would happen to the following charge codes if the EIM Entity joined the EDAM
 - a. Charge Code 64600 FMM Instructed Imbalance Energy EIM Settlement – Would the EIM entity discontinue being assessed this charge code and would it be replaced by 6460 or a new EDAM version of that charge code?
 - b. Charge Code 64700 RT Instructed Imbalance Energy EIM Settlement - Would the EIM entity discontinue being assessed this charge code and would it be replaced by 6470 or a new EDAM version of that charge code?
 - c. Charge Code 64750 RT Uninstructed Imbalance Energy EIM Settlement – Would the EIM entity discontinue being assessed this charge code and would it be replaced by 6475 or a new EDAM version of that charge code?

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- d. Charge Code 66200 Bid Cost Recovery EIM Settlement – Would the EIM entity discontinue being assessed this charge code and would it be replaced by 6620 or a new EDAM version of that charge code?
- e. Charge Code 66780 Bid Cost Recovery Allocation EIM – Would the EIM entity discontinue being assessed this charge code and would it be replaced by 6678 or a new EDAM version of that charge code?
- f. Charge Code 64740 RT Unaccounted for Energy EIM Settlement – Would the EIM entity discontinue being assessed this charge code and would it be replaced by 6474 or a new EDAM version of that charge code?

MISCELLANEOUS

1. *Access to Market Systems*

The EIM Entity Scheduling Coordinator (e.g., the BAA) currently has visibility to all elements of the EIM Resource Plan and the results of the various checks in the resource sufficiency evaluation and is able to make changes to hourly Base Schedules to resolve unbalanced supply and demand, transmission flow overloads, insufficient EIM Participating Resource bid range, and ramping capability.

In the day-ahead market, the EIM Entities anticipate that it will be necessary for transmission customers that are load serving entities and which are allocated RS requirements to have the capability to verify that their day-ahead resource plans are sufficient to meet the requirements. Due to the large volume of transactions and the complexity of a day-ahead market setup for a 24-hour time period, relying on the EIM Entity Scheduling Coordinator to facilitate failure results, schedule changes, reserve changes, etc. would be untenable and impossible to manage. Consistent with the principle established in the EIM, third party transmission customers in the EIM Entities' BAAs should have the option to execute the requisite scheduling coordinator agreements and participate directly in the EDAM or not to enter into a contractual relationship with CAISO and utilize their own self-schedules.

Furthermore, as discussed in these comments, the EIM Entities anticipate it will be necessary to allocate day-ahead resource sufficiency requirements to transmission customers that are load serving entities inside of the EIM Entity BAA. As such, it will be necessary to make available to each participant an ability to view its RS requirements and testing results. This may require the need for the CAISO to develop versions of its current EIM Entity Scheduling Coordinator tools that provide sufficient visibility to transmission customers that are load serving entities and which are allocated RS requirements.

While the EDAM is a day-ahead market, the reliability requirements would continue to reside with the EDAM Entity, therefore, it is important to understand the potential technical changes in the CAISO's market operator tools that may be needed to ensure the reliability of the EDAM Entity BAAs. The EIM Entities would like the CAISO to engage in a holistic review of its current EIM tools that are available to different scheduling coordinators and determine whether these tools are sufficient for reasonable and equitable EDAM participation (including for transmission customers that are load serving entities and which are allocated RS requirements) or would they require enhanced capabilities, such as load biasing enhancements for future EDAM Entities, exceptional dispatch capability within the EDAM Entity tool rather than maintain the reliance on the CAISO real-time market operator.

2. *Market Timelines*

Market timelines and market processes will need to be developed that take into consideration EDAM Entity timing requirements as well as CAISO requirements. Providing a timeline framework in the early stages of the EDAM stakeholder process will be necessary in order to develop and implement sufficient vendor tools and the technical capability for each future EDAM Entity, including for each EDAM Entities' transmission customers.

EIM GOVERNING BODY CLASSIFICATION

In the Issue Paper, the CAISO states,

Because EDAM is fundamentally about expanding the existing EIM to include an opportunity for day-ahead market participation, CAISO management believes it will be important for the EIM Governing Body to participate in the approval of all aspects of the proposed EDAM market design. Accordingly, CAISO management is proposing to request that the CAISO Board of Governors approve a one-time departure from the current decisional classification rules that would apply specifically to the process for approving the EDAM market design. In particular, management proposes to request that the CAISO Board of Governors direct the CAISO to bring all aspects of the proposed EDAM market design to both the EIM Governing Body and the CAISO Board of Governors for approval. Under this “joint authority” construct, CAISO management would be able to move forward with tariff amendments to implement EDAM only if both the EIM Governing Body and the CAISO Board of Governors have approved the proposed market design.

Given the significance of the EDAM, the EIM Entities support proceeding under the proposed joint authority proposal. As we understand the CAISO’s conceptual proposal outlined in the Issue Paper, the CAISO would be able to move forward with the EDAM tariff amendments only if both the EIM Governing Body and the CAISO Board of Governors have approved the proposed market design. It should be noted that the EIM Entities hope that the GRC will have finalized its recommendations by the time proposals for EDAM design are brought to the Board and the Body for approval. This is consistent with our position on the criticality of timely governance reform early in these comments. Ultimately, the EIM Entities would expect that, absent the proposal to exercise joint authority, it would be the EIM Governing Body (as a result of the reforms from the GRC and instituted by the CAISO Board of Governors) that would have primary authority over the EDAM if the current delegated authority model is retained.

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ATTACHMENT 1: EIM ENTITY SUGGESTIONS FOR REVISED STAKEHOLDER SCHEDULE

Table 1: Proposed schedule for the EDAM stakeholder process

Item	Date
Post Issue Paper	October 10, 2019
Stakeholder Conference Call	October 17, 2019
Existing Day-Ahead Market Overview for Stakeholders	October 29, 2019
Existing Day-Ahead market Overview for Stakeholders	November 12, 2019
Stakeholder Comments on Issue Paper Due	November 22, 2019
Flexible Ramping Product Enhancements Initiative	November 2019 – February 2020
Day-Ahead Market Enhancements Initiative Straw Proposal Posted	Late January 2020
Stakeholder Technical Workshop #1 Transmission and CRRs Resource Sufficiency Under EDAM (Including Presentations of Concepts by Stakeholders)	Early February 2020 (2-3 Days given the complexity and importance of the issues)
Stakeholder Comments Due on Workshop #1	Middle February Early March 2020
Stakeholder Technical Workshop #2 Resource Sufficiency Evaluation GHG and GMC (including Stakeholder Presentations)	Late February Middle March 2020 (2 days minimum to address complexity of issues)
Stakeholder Comments Due on Workshop #2	Middle March April 2020
Stakeholder Technical Workshop #3 Greenhouse Gas Price Formation (including Stakeholder Presentations)	Late March Early May 2020
Stakeholder Comments Due on Workshop #3	Middle April Early June 2020
Post Straw Proposal	Early June July 2020
Stakeholder Meeting	Middle June Early August 2020
Stakeholder Comments on Straw Proposal Due	Late June Middle September 2020
Post Revised Straw Proposal	Early August November 2020
Stakeholder Conference Call Meeting	Middle August Early December 2020
Stakeholder Comments on Revised Straw Proposal Due	Late August January 2020¹
Post Draft Final Proposal	Early October March 2020¹
Stakeholder Conference Call Meeting	Middle October Early April 2020¹
Stakeholder Comments on Draft Final Proposal Due	Late October Middle June 2020¹
Start Tariff Stakeholder Process	Early December 2020

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Start Development of Business Requirements Specification	Early December 2020
Post Final Proposal	Late February Early August 2021
Stakeholder Conference Call Meeting	Early March Middle September 2021
Stakeholder Comments on Final Proposal Due	Middle March October 2021
EIM Governing Body Meeting Approval	Q2 2021
Board of Governors Meeting Approval	Q2 2021

ATTACHMENT 2: INDEPENDENT MARKET EXPERT (“IME”)

The development of an Extended Day-Ahead Market (EDAM) will entail important changes to how the market is designed, overseen, and ultimately governed, as outlined in the Draft EDAM Governance Straw Proposal. Under the proposal, primary decisional responsibility for the EDAM would rest with the EDAM Governing Body (EDAM GB). The Department of Market Monitoring (DMM) and the Market Surveillance Committee (MSC) would also report on market-related issues to the EDAM GB, although both the DMM and the MSC would have broader responsibilities beyond the EDAM. The proposal also identifies the need for an Independent Market Expert (IME), to be engaged at least for an initial five-year term, “to provide additional perspective on the complex, technical issues that the EDAM GB will need to review.” This paper provides additional details on the need for, scope, and requirements of an EDAM IME.

Why an EDAM IME is necessary?

The EDAM IME is intended to serve as an advisor to the EDAM GB, providing expertise in organized markets and in-depth analytical capabilities. The role of the EDAM IME is distinguishable from the roles of the DMM and MSC in several important ways.

First, the EDAM IME will bring an independent perspective. The Draft EDAM Governance Straw Proposal recognizes that members of the MSC have experience with other markets and the DMM often looks at practices in other ISOs and RTOs. The undeniable fact is that EIM is an outgrowth of the existing CAISO Real Time Market, and as such focus has been on California-directed policies including Resource Adequacy, CRR revenue shortfall allocation, and other design issues that may not apply to EDAM. The IME will be able to provide a fresh perspective on market design proposals, as well as an evaluation of existing CAISO market design elements and choices.

Second, the EDAM IME will serve as a vital educational resource for the EDAM GB and the market as a whole. Whether or not the EDAM meets the objectives and needs of diverse EDAM participants and regions hinges critically on the market design of the EDAM, both at the outset and as it evolves in the future. Experience in organized markets makes it abundantly clear that there are a large number of market design parameters that shape market outcomes, and therefore determine the beneficial market outcomes available to the market as a whole and to each participant. Most of these design choices are highly technical, have no analog in bilateral market frameworks, and therefore may be unfamiliar, except to entities or institutions with extensive direct experience in organized markets. For these reasons, the very design elements that may be most critical to achieving the objectives and interests of many potential market participants may also be the ones that are least familiar to some of those market participants and perhaps the EDAM GB. The EDAM IME will serve as a vital resource to help the EDAM GB, EDAM Entities, other market participants, and affected state regulators whose understanding and engagement on EDAM is vital to its success, to understand the available market design choices and weigh the relative merits of each potential approach, as well as to explain actual and expected market outcomes.

Third, the EDAM IME will advise on issues related to the distribution of benefits and costs to differently-situated regions and market participants. One of the principal drivers of potential benefits in the EDAM is the ability to arrange energy transfers between participants and regions. The durability of the EDAM requires that the benefits of this coordination be distributed equitably and are not skewed for the overwhelming benefit of either sellers or of purchasers, of particular regions. To be clear, the expectation is that the regular benefits reports would continue to be produced by the CAISO staff as they are done for the EIM today. In contrast, the EDAM IME can support the objective of an equitable distribution of benefits through advising on potential market design choices, and periodic assessments regarding CAISO’s operational practices, and how these market design choices and operational practices affect the allocation of EDAM benefits to the various regions and participants. This is distinct from evaluations of aggregate efficiency for the market as a whole, which is the lens through which the MSC, DMM, and market monitors more generally, typically evaluate market performance.

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Fourth, in order to carry out the above functions, the EDAM IME will need to be responsive to the needs and priorities of the EDAM GB and a broader set of market participants. That is, the EDAM GB will need to be able to direct the IME to evaluate particular market design proposals or to conduct requested analysis on market performance, in a manner that the EDAM GB would not—and likely should not—be able to direct the activities of either DMM or the MSC. The need for an external expert advisor whose work can be directed by the EDAM GB—in addition to pursuing analyses of its own initiative—makes this a function that likely cannot be served by either DMM or the MSC.

Fifth, The EDAM IME is not intended to duplicate the functions of DMM or the MSC. For example, it would not be the role of the EDAM IME to investigate the behavior of a particular market participant, nor to refer market activity to FERC. The EDAM IME also is not intended to be the means through which FERC's market monitoring requirements and regular reporting obligations for RTOs are satisfied. These roles remain the responsibility of the DMM. While it is possible that the IME would report on a topic that has also been explored by either DMM or the MSC (as DMM and the MSC are expected to continue their current reporting and recommendation responsibilities), the IME would do so from its unique independent and diverse perspective. The IME's assessment would therefore not be duplicative and would provide a valuable complementary perspective for CAISO staff, the EDAM GB, stakeholders and regulators to consider.

Scope of duties

The EDAM IME will be charged with undertaking both qualitative and quantitative analysis arising both from its own initiative as well as in response to requests from the EDAM GB. As contemplated in the Draft EDAM Governance Straw Proposal, the EDAM IME would be able to request necessary data from CAISO staff and the DMM.

More specifically, the scope of the duties of the EDAM IME is anticipated to include:

- Presentations and advice to EDAM GB and stakeholders regarding key aspects of the prevailing market design, including but not limited to the design, application and performance of resource sufficiency requirements, local market power mitigation, GHG costs (where applicable), and price formation.
- Issuing opinions on proposed market design or other rule changes, including their relative impact on differently situated participants or market sub-regions.
- Preparing periodic assessments on the performance of the day-ahead and real-time markets, including evaluations of each entity's compliance with resource sufficiency requirements as well as the net benefits of market transaction for each entity and/or market sub-region.
- Conducting analyses on issues identified and requested by the EDAM GB. A process will also be developed to enable Market Participants to request, through the EDAM GB, that the IME conduct analyses on specific issues. However, the ultimate authority to direct IME analyses will lie with the EDAM GB.
- Upon request by the EDAM GB to provide an independent opinion of analyses or reports prepared by CAISO staff, DMM, or the MSC.