

REVISED REVENUE ALLOCATION POLICY DISCUSSION PAPER

This document contains a comprehensive set of recommendations prepared by Members that address revenue allocation policies. These recommendations include some proposed changes to existing NCPA policy, particularly in how revenue allocation methodologies are applied to non-Member Participants of NCPA Projects.

October 2017

Revised Policy Recommendations for Revenue Allocation

This document contains a number of Members' recommendations on how allocate revenues received for the provision of Power Management and Administrative Services (PM&AS) to third parties. The recommendations listed in this document are comprehensive including contributions from the Review Group¹, Facilities Committee, Utility Directors (UDs), and UD Sub-Group. These materials are intended to be a stand-alone document to serve as a replacement for the Commission's Interim Revenue Allocation Policy (Interim Policy). An itemized list of recommendations can be found in the next section "Policy Recommendations to the NCPA Commission." The "Introduction" section captures this issue in brief, and identifies high-level findings that help to form specific recommendations. All subsequent sections, starting with, "Discussion of Three Broad Findings of the Review Group," on page 4, captures the discussion of each point in detail and offer greater insight in how each group reached its recommendations.

Policy Recommendations to the NCPA Commission

1. Allocate 10% of revenues received, for the exclusive benefit of Members, in proportion to their contribution to A&G expenses using data from the most recent complete fiscal year (e.g. FY18 revenue allocated in proportion to final FY16 data);
2. Allocate the balance of revenues received to Members and "non-Member Participants of NCPA Projects"² using the existing NCPA Power Management Cost Allocation Spreadsheet Model (otherwise commonly known as the "Nexant Model"), as such is defined in the Power Management and Administrative Services Agreement (PMASA);
3. Apply revenue allocation methods described in item 2 above to the portion of services that are not under a fixed-rate pricing structure;
4. Direct NCPA staff to review the revenue allocation methodology periodically, in the same frequency and timing that cost allocation methodologies are reviewed as such is defined in the PMASA (i.e. every 5 years), or more frequently if necessary;
5. Apply these adjustments in policy to Fiscal Year 2018 and subsequent years; and
6. Develop additional policy recommendations that will reserve a greater proportion of revenues for the exclusive benefit of Members in the event service contract proceeds exceed the cost of services provided.

Introduction

This paper presents Members' recommendations on how to allocate service proceeds that result from expanding power management services to third party customers. In fiscal year 2018, NCPA will provide such services to Merced Irrigation District and Placer County Water Agency. The NCPA Commission approved an Interim Policy³ on revenue allocation, which was based on the work product of a 5-

¹ The Commission formed the Review Group under Resolution 15-37, and it was comprised of volunteer representatives from Plumas Sierra, and the Cities of Alameda, Palo Alto, Roseville, and Santa Clara.

² The phrase, "NCPA Projects," is not used as defined in the Amended and Restated Facilities Agreement. Instead, the term is used in context to, "non-Member Participants to NCPA Projects," which is described in detail in subsequent sections of this paper.

³Staff Report 228:16 and Resolution 16-90, reviewed and approved at the December 1, 2016 Commission meeting.

Member Review Group, the Facilities Committee, and the Utility Directors. The Interim Policy has a one-year term and was applied to the NCPA FY18 budget.

Subsequent to the Commission’s approval of the Interim Policy, a subset of Utility Directors (UD Sub-Group) convened to address two outstanding issues:

- (1) Determine whether non-Member Participants of NCPA Project should be allocated a portion of revenues, and
- (2) Determine whether a New Business Development category of costs and revenues should be established, in lieu of allocating 10% of total revenues in proportion to Members’ contributions to A&G costs, as described in the Interim Policy.

Utility Directors from the Port of Oakland and the Cities of Redding, Santa Clara, and Palo Alto volunteered to serve on the UD Sub-Group to discuss and address these issues. The UD Sub-Group met on four occasions over six months. The UD Sub-Group’s recommendations were presented to the balance of the UDs on June 15, 2017, and were supported unanimously for Commission review.

The recommendations of the Review Group, Facilities Committee, UDs, and UD Sub-Group are itemized in the section, “Policy Recommendations to the NCPA Commission” above. Members base these recommendations on a number of findings identified by the Members throughout their discussions, and are itemized below. The Members support NCPA use the Nexant cost allocation model for allocating PM&AS revenues. The rationale for using the Nexant model is strong, including its many strengths in advancing several principles the Members used to help guide its analysis and recommendations. The Members support using two threshold tests to determine eligibility to receive new revenues, and support a way to address transition issues when NCPA’s Membership changes. The Review Group explored several detailed cases that test its support in these areas. These include applying new revenue (a) to unfunded liabilities (personnel-related costs), (b) to NCPA Administrative and General (A&G) expenses, and (c) to facilities that have non-Member participants. The UD Sub-Group unanimously supports allocating revenues to both Members and non-Member Participants of NCPA Projects, provided that additional policy elements be developed to that will reserve a greater proportion of revenues for the exclusive benefit of Members if service proceeds exceed the cost to provide those services.

The table below describes these findings that help form specific policy recommendations for consideration by the Commission.

Finding	Rationale, in Brief
Use the Nexant cost allocation model to allocate revenues	The model maps revenues to the functions that are producing that revenue; it is objective, repeatable, auditable; there is relatively low incremental cost to implement; it uses same drivers in allocating costs and revenues.
Use membership status as a threshold test, reserving revenues for Members, with exceptions made for non-Member Participants of NCPA Projects	It is a bright-line test, it represents a clear value proposition for existing and prospective Members, and it recognizes investments of Members and non-Member Participants of NCPA Projects that have built NCPA technology and staff development.
Use pricing structure as a threshold test, reserving revenues to Members and non-Member Participants of NCPA Projects that take NCPA Power Management services under a variable-rate price structure, or portion thereof	This concept matches revenues with the type of price-risk Members take on under Power Management service contracts. Under fixed-rate price structures, Members would be shielded from price increases. Allocating revenues toward these portions of Members’ portfolios create asymmetric risk/reward and does not balance equity with Members under a variable-rate structure (i.e. can change year-to-year).
Do not support the use of revenues toward unfunded liabilities (personnel-related costs)	The Review Group evaluated whether revenues should be used to offset NCPA’s unfunded liabilities (i.e. OPEB). The Review Group does not recommend allocating revenue in this fashion and expressed preference to allocate revenues to Members, individually, and allow Members to direct the use of these funds.
Support an allocation of revenues toward Agency A&G expenses (beyond what is already allocated to Power Management)	An overarching principle is to ensure that all Members benefit from the expansion of power management services to third parties. Allocating a portion of these service proceeds toward Agency A&G expenses offsets costs that all Members pay. Furthermore, staff has used historic data to allocate current year revenues, and Members did not object to this practice (i.e. using FY16 A&G costs to allocate revenues received in FY18).
Develop additional policy elements to apply when service proceeds exceeds the cost of service, reserving a greater proportion of revenues for the exclusive benefit of Members	Develop additional revenue allocation methods in the future. Broadly speaking, the portion of revenues that exceed the “cost of service” would be reserved for the exclusive benefit of Members to promote new membership, support retention of existing membership, and to add a clear value proposition of membership.

The general findings above are combined to form specific policy recommendations found in section, “Policy Recommendations to the NCPA Commission.” The discussion that follows describes the broad recommendations, applications in specific cases, and conclusions.

Discussion of Three Broad Findings of the Review Group

This section discusses three broad findings of the Review Group: (1) use the existing Nexant cost allocation model to allocate 90% of revenues received⁴, (2) implement two threshold tests to determine eligibility for revenue allocations, and (3) address transition issues with changes in Membership status by using lagged data for revenue allocation.

Use the Existing Nexant Cost Allocation Model to Allocate Revenues

Multiple Members have expressed several concerns with the Nexant model, both in general and in the context of allocating revenues. This includes, but is not limited to, the age of the Nexant study and time in motion study that is used to translate NCPA budgeted costs into Members’ allocated costs, that some Power Management activities may not be accurately captured by the Nexant model design (e.g. setup costs when adding new customers and/or resources), and the inherent challenges with allocating large fixed costs of shared resources using activity-based cost drivers. This matter was discussed at length by the membership in multiple forums.

Despite these concerns, the Members support the use of the Nexant cost allocation model to allocate revenues associated with the provision of Power Management services to new customers. This finding is based on the analysis of the Nexant cost allocation model mechanics and an analysis of cost allocation principles for revenue allocation, below.

ANALYSIS OF NEXANT COST ALLOCATION MODEL MECHANICS

The purpose of this analysis is to determine if the model’s design is suitable for allocating revenue. The model was explicitly designed to allocate PM&AS costs to Members who subscribe to power management services. It was not explicitly designed to allocate costs to third parties, nor was it explicitly designed to allocate revenues.

The Nexant cost allocation model uses a multi-step process to allocate all PM&AS overhead costs to all power management service-takers, specific to services provided⁵. This model first maps budgeted costs to specific service areas (e.g. schedule coordination, real-time dispatch). Costs are then allocated to members who take services in a service area, in proportion to appropriate cost allocation factors⁶.

The Nexant cost allocation model currently allocates revenue from additional services implicitly, using the same logic and methodologies used to allocate budgeted costs. To date, providing additional services to members and third parties has not changed NCPA’s cost levels. However, the level of service,

⁴ The rationale for the 90% value is presented in section, “Applying the Review Group’s Broad Findings to Three Specific Test Cases,” under subsection, “NCPA Administrative and General Costs.”

⁵ Some costs are allocated to Members via a direct assignment.

⁶ As determined by the Nexant study and as reviewed and approved by NCPA, Members, and/or the NCPA Commission.

or the activity represented by model inputs, has increased as services are expanded. The model is allocating the same amount of costs to a larger number of customers. This results in an allocation of costs to the new customer/service and a decrease in allocated costs to incumbents (i.e. existing members). The allocation of revenue is implicit within the Nexant model, since revenues materialize in the form of reduced allocation of costs. It is important to highlight that the allocation of cost and revenue are using the same logic and allocation factors. This means that revenues for a particular service are allocated to those who take the same service. Furthermore, it means revenues are allocated to this sub-group of Members in proportion to their cost allocation factors, a proxy for how much of that service area they draw upon.

For example, when Palo Alto and SVP brought new generation facilities to NCPA for scheduling services, the Nexant cost allocation model was used to determine the cost of all associated Power Management services. Each took a different level of service from NCPA for their respective facilities. SVP introduced the Tri-Dams facilities and are allocated costs for SCALD⁷ (scheduling coordination and load dispatch), only. SVP was allocated costs for these resources, which decreased the allocated costs to all other Members who paid SCALD, which is nearly all of them. In a slightly different example, Palo Alto introduced solar PV facilities and are allocated costs for SCALD; Forecasting; Resource Planning, Optimization & Risk Analysis; Industry Restructuring and Regulatory Affairs; Contract Maintenance, Negotiation and Administration and Litigation Support⁸. Palo Alto's allocation of costs increased in all of these areas, which decreased costs for all other Members who took services in these same areas.

When services are expanded to third parties⁹, the model will allocate revenues in this same manner. Suppose a new customer is added and it takes services under SCALD only. Its costs are based on the Nexant cost allocation model, and all Members who take services in SCALD will be allocated their share of revenues in proportion to the cost allocation factors associated with SCALD. Since Palo Alto and SVP contribute a substantial amount towards SCALD costs (nearly 60% combined), they would receive the most benefit to a new customer who subscribes to SCALD services.

This analysis examined the Nexant cost allocation model structure to assess if there were any major flaws if used to allocate revenues. The Members found no major flaws. In fact, the Nexant model allocates revenue today. Thus, the Members find the Nexant cost allocation model could be used to allocate revenues. To help determine if the Nexant model should be used for this purpose, the Members expanded upon this analysis to assess whether the Nexant model promotes any of the cost allocation principles, which is discussed next.

⁷ SCALD includes costs associated with dispatch & real time resource management, scheduling coordination and real time portfolio balancing, system control and data acquisition, and NERC/WECC compliance.

⁸ Provision of services is determined by the customer, members, and contracts with NCPA.

⁹ NCPA has used the Nexant cost allocation model when preparing quotes for prospective customers. The proposed scope of services is modeled as if for a Member, and the results are subject to review and revision through NCPA's established approval process. The final contract rate may differ from the Nexant model output.

ASSESSING THE NEXANT MODEL BASED ON COST ALLOCATION PRINCIPLES

The Review Group invested substantial time in developing cost allocation principles, which serve as guideposts in assessing the numerous proposals and ideas deliberated by the Review Group, Facilities Committee, and the UD Sub-Group. These principles represent the overarching goals and values Members sought to promote with its recommendations. In this analysis, the Members find that the use of the Nexant cost allocation model to allocate 90% of revenues received promotes most of these principles, specifically: (i) Causation, (ii) Equitable Allocation of Fixed and Variable, (iii) Transparency, (iv) Simplicity, (v) Durability, and (vi) Comparable Treatment. Each are be discussed below.

Using the Existing Model Support the Principle of “Causation”

The principle of “Causation” focuses on the underlying factors as to why costs (or revenues) are incurred and finding the most appropriate way to allocate them. New revenue manifests when a service is marketed successfully. Since the specific service is the cause of the revenue, the Members believe it should be allocated to those Members who also subscribe to the service. Moreover, the allocation should be made in proportion to Members’ allocation of cost in that service.

To illustrate that point, we return to the previous example where SVP was allocated costs for SCALD services when it introduced the Tri-dam facilities. SVP was allocated additional costs in this area for this addition. Would it have made sense for a portion of monies paid by SVP to be allocated to “Western Representation and Advocacy” or “Pooling Committee”? The Members do not believe so. The revenues are associated with the services provided in a specific service area and should be allocated to the Members who subscribe to that same area. This raises a second issue: in what proportion should revenues be allocated within a service area? The Members find the best allocator is the proportion of costs paid by Members who subscribe to that service area.

The Nexant model allocates costs and revenues in the manner identified in this analysis. It contains logic that isolates proportions of budgeted costs to specific services. Furthermore, the model contains model inputs specific to each Member that can serve as a means to allocate revenue for a given service to those who also take that service. Therefore, the Members find that using the existing Nexant cost allocation model to allocate revenues promotes the principle of “Causation.”

Using the Existing Model Support the Principle of “Equitable Allocation of Fixed and Variable Costs”

The principle of “Equitable Allocation of Fixed and Variable Costs” acknowledges that most of the costs allocated by the Nexant cost allocation model are fixed in nature, and many of the staffing and infrastructure of Power Management are shared resources (across multiple service areas and to several service takers within a service area). Finding cost (or revenue) allocation factors can be challenging, subjective, and open for prolonged debate. NCPA and its Members suffered through such a prolonged debate that eventually produced the Nexant cost allocation model.

Despite the many concerns Members have expressed with the current Nexant cost allocation model, the Members find that using the existing Nexant model to allocate both costs and revenues from new

services would promote the principle of “Equitable Allocation of Fixed and Variable Costs.” The Review Group evaluated “equitable” as (a) consistent treatment of cost and revenue from case to case, and (b) an objective means of executing an allocation. The Nexant cost allocation model promotes both. As described above, the Nexant cost allocation model allocates both costs and revenues simultaneously each time a new service is added, whether that is for a Member or a third party. These allocations are based on defined inputs identified in the Nexant study, are reviewed by NCPA and Members, and are ultimately approved by the NCPA Commission each budget cycle and with each proposal for new service. The process follows the same general process each time new services are rendered.

Using the Existing Model Support the Principle of “Transparency”

The principle of “Transparency” addresses the ease in which one can review the allocation methods, the repeatability and predictability in the relationship between inputs vs. outcomes, and the openness of the review process when the model is updated. The Members believe using the existing Nexant cost allocation model to allocate revenues promotes this goal, albeit with the caveat that the model may need updating and restructuring in some areas. Despite these concerns, the model can be used to generate simulations, outcomes can be repeated, and the methodology is laid out in a spreadsheet all Members have access to.

The process under which the Nexant model is updated and implemented each year is open and collaborative. The model inputs are provided to Members each year and all parties have an opportunity to review and comment before materials are sent to the Commission for final review and approval. There are a number of examples where this review process has identified issues and led to corrections or changes to methodologies.

For these reasons, the Members find that using the existing Nexant cost allocation model to allocate revenues supports the principle of “Transparency.” Model inputs are provided to and reviewed by Members each budget cycle, its formulae are visible and available in spreadsheet form, it can be used for simulation modelling and results are repeatable.

Using the Existing Model Support the Principle of “Simplicity”

The principle of “Simplicity” addresses the Members’ general preference to avoid cumbersome algorithms unless greater complexity adds measurable value. The Review Group and UD Sub-Group discussed a number of different ways in which NCPA could allocate revenues from new service, some that are hybrids of others, and concepts that move beyond revenue allocation and into designating use of funds.

- (a) Use the existing Nexant cost allocation model
- (b) Equally dividing revenue to each Member (i.e. $1/n$)
- (c) Using other allocation metrics, such as JPA percentages (i.e. load)
- (d) Peak demand for a defined time period
- (e) Proportionate share of a fiscal year budget

- (f) Allocating a portion of revenue broadly (e.g. 1/n) and allocating the balance of revenues using the Nexant model
- (g) Reserving a portion of revenue for a designated use, such as business development or new infrastructure.

As noted above, the principle of “Simplicity” encourages the use of straight forward methods unless there is value to adding complexity. Several possible methods contemplated above are simpler than using the Nexant cost allocation model, since few would characterize the existing Nexant model as simple.

Nonetheless, the Members discussed the merits of using the Nexant model to allocate 90% of revenue and finds it would promote the principle of “Simplicity.” First, the Nexant cost allocation model is used to allocate revenues today. Continuing to apply the model in this way adds no additional cost or effort to NCPA or Members staff. Second, the additional complexity introduced by the model, compared to the other allocation drivers listed directly above, add greater precision to the allocation of cost and revenue. Third, it is highly likely that the Nexant cost allocation model will continue to be used to allocate costs, even if a separate method is adopted to allocate revenue. Adopting an alternative method to allocate revenues would introduce a second allocation model/method to operate and maintain.

Using the Existing Model Support the Principle of “Durability”

The principle of “Durability” addresses the Members’ general preference toward algorithms that are robust and can withstand changes in the industry, NCPA membership, etc. The Review Group does not believe using the existing Nexant cost allocation model is a long-term solution. However, it is a strong solution until Members’ concerns can be addressed. The Nexant cost allocation model has proven to be the most durable cost allocation method used in NCPA’s history. It is an objective means to allocate cost and revenues, it has proven to be sufficiently flexible and adaptable to cope with significant industry changes, it is has become an integral part of NCPA’s budget approval process, and it serves as the basis for NCPA’s responses to RFPs for power management services. Also, the Nexant cost allocation model currently allocates revenue for services. No changes would be required to use the Nexant model to allocate revenues. To the extent the NCPA Commission approves changes to the Nexant model as has occurred from time to time, changes could be limited to one set of allocation algorithms (i.e. same algorithms used to allocate cost and revenue), increasing durability.

Using the Existing Model Support the Principle of “Comparable Treatment”

The principle of “Comparable Treatment” addresses the Members’ general preference for consistency. Members should be treated like other Members, generation resources should be treated like similar generation resources, etc.

The Nexant cost allocation model has been used to allocate revenues from Member services and the Review Group believes these same methodologies should be applied to revenues associated with revenues from third parties. Members have changed their portfolios numerous times since the Nexant cost allocation model was implemented. In each case, new inputs were added according to the model

structure, the Nexant study, NCPA contracts with Members, etc. In each case additional costs were allocated to the Member(s) who introduced the new workload and cost allocations were reduced for other Members who (a) participated in the same service area, and (b) were not adding new work. The Nexant cost allocation model was used to generate new revenue from Members who introduced new work to NCPA. The Members find revenue from third parties should be allocated using a comparable method, or the Nexant cost allocation model, in accordance with the principle of “Comparable Treatment.”

ANALYSIS OF ALTERNATIVES

In contrast to using the Nexant model to allocate 90% of revenue, the Review Group examined a number of alternatives to allocating 90% of the revenue received, listed below. The Members find the existing Nexant model best promotes the guiding principles.

Method	Strengths	Weaknesses
Existing Nexant Model to allocate 90% of revenues received (recommended)	See above	
Uniform allocation (1/n)	<ul style="list-style-type: none"> - Relatively simple and easy to implement - Predictable, replicable 	<ul style="list-style-type: none"> - Fails to meet several cost allocation principles; particularly causation, equity, transparency, and comparable treatment
JPA percentages		
Peak Demand for defined time period		
Contribution toward Budgeted Costs	<ul style="list-style-type: none"> - Same as above - In proportion to contribution toward cost - Stronger relationship to activity-based allocation of Nexant model 	<ul style="list-style-type: none"> - Mapping to specific programs and activities is weaker than using the model directly - Small incremental effort to use the model for greater precision since it's already in production
Hybrid 1¹⁰:	<ul style="list-style-type: none"> - Ensures recipients receive some base amount of revenues 	<ul style="list-style-type: none"> - Portion allocated between the two methods is subjective
<ul style="list-style-type: none"> - Uniform allocation - Nexant Model 		

¹⁰ These hybrid models would be applied to the 90% of revenue received. Thus, 10% of would be allocated in proportion to A&G costs (see section, “Policy Recommendations to the NCPA Commission”), leaving 90% to be allocated via some other means. These hybrids would allocate some proportion of the 90% via a direct allocator (e.g. 1/n) with the remainder allocated using the Nexant model.

Method	Strengths	Weaknesses
Hybrid 2: - Business development fund - Nexant Model	- Recognizes the current budget and Nexant model do not address BD functions	- NCPA prefers actions such as business development come from Commission policy and actions with funding considerations held in those forums.

Threshold Tests to Determine Eligibility for Revenue Allocations

The second broad finding is to implement two threshold tests to determine whether an entity is eligible to receive revenue and to what extent. The first test is based on Membership status, while the second is based on the pricing structure under which the Member is receiving Power Management services (i.e. variable or fixed rate pricing structure).

MEMBERSHIP STATUS

The Members generally support a first threshold test be based on Membership status, reserving revenues to NCPA Members, with an exception made for non-Member Participants to NCPA Projects. Reserving revenues for the benefit of Members creates a clear criterion in determining eligibility for revenue allocation, it is a clear and measurable benefit to NCPA Membership when marketing to potential new Members, and it reflects the investments and commitments that today’s membership has made in forming and continuing to fund NCPA. The exceptions made for non-Member Participants of NCPA Projects recognizes the strong financial commitments these entities have made to NCPA through their respective project agreements.

Types of Non-Members

The Review Group classified non-Members into 3 distinct groups based on their types of interactions with NCPA. First, there are service contracts with non-Member entities that individually subscribe to Power Management services. This includes entities like PCWA (Placer County Water Agency) and MEID (Merced Irrigation District), each of whom recently signed an agreement to take PM services on a contract basis. Second, there are non-Members who are part of a multi-party power purchase agreement that also includes NCPA Members. This is a hypothetical case since none exist in the NCPA portfolio. However, this case may materialize as Members increase purchase activity for RPS compliance. Third, there are generation asset(s) owned and operated by NCPA that include at least one non-Member Project Participant (a.k.a. non-Member Participants to NCPA Projects), which may represent an exception to this threshold test and will be addressed under “NCPA Generation Facilities with Non-Member Project Participants”.

Service Contracts with Non-Members. The Members finds no reason to systematically allocate any portion of revenue to Non-Members that individually subscribe to Power Management service agreements. The relationship between NCPA and these third parties is finite. It is defined by contract and risks, benefits, compensation, and service rates are defined. These parties negotiate with NCPA for services under a defined price structure for a define period of time, and these contract terms should be adhered to for the applicable term of the contract.

Multi-Party Contracts with Members and Non-Members. The Review Group discussed the scenario where (a) NCPA Members work with non-Members to jointly purchase RPS-eligible products, and (b) NCPA wins contracts to provide Power Management services for some of these resources. The Review Group deliberated to assess how these types of resources and purchasing arrangements may affect revenue allocations. A key assumption to this analysis is that the resource is owned by a third party and the Members and Non-members purchase the output of the resource via a Power Purchase Agreement (i.e. the resource is not owned and operated by NCPA).

Under this construct, the Review Group finds no reason why the Non-member entity should systematically be allocated revenue that NCPA may produce by expanding Power Management services. Said differently, the service rates that NCPA charges to these Non-Members should not be affected by additional revenues that offset costs of the Power Management program. The Non-Members' investment in NCPA is finite and defined under the terms of the contract that facilitates scheduling services. For all intents and purposes, these Non-Members' relationship with NCPA is similar to those Non-Members that contract for Power Management services on an individual basis.

The complicating factor for this situation is the presence of NCPA Members. The Review Group finds that it may be appropriate to use these resources' model input factors in allocating revenues. Recall that this Review Group's overarching finding is to use the Nexant cost allocation model to allocate revenues. Thus, any resources added to the Nexant cost allocation model will impact the allocation of both costs and revenues. The Review Group finds that it is appropriate to use the resource's operating characteristics (i.e. Nexant model inputs) associated with the Member-controlled portions of these jointly-owned facilities to allocate revenues to NCPA Members, with one caveat. The Review Group believes that the type of pricing arrangement that the resource, Member participants, and Non-Member participants use when contracting for Power Management services should also be used to determine eligibility for revenue allocation, which is discussed next.

PRICING STRUCTURE FOR POWER MANAGEMENT SERVICES

The Review Group supports a second threshold test that considers the pricing structure under which Power Management services are provided. Today, all services provided by NCPA Power Management to Members are priced under a variable-rate structure that allows each Member's and/or Participant's allocation of cost to increase or decrease from year-to-year. Members have sought Power Management services under a fixed-price structure to avoid risk of increasing costs. The Review Group's analysis and recommendations focus on the symmetry of risk Members face under these two broad categories of pricing structure.

This discussion is intended to recognize the type of pricing risks Members take on when contracting for Power Management services with NCPA. Those that take services under a variable-rate structure are exposed to increases and decreases in costs between budget years. Those that take services under a fixed-rate structure are not exposed to the same fluctuations, by design. The Review Group finds that the asymmetric risks that service-takers bear under these different pricing structures should influence revenue allocation. The chief argument is that revenue decreases Members'/Participants' net costs and

should be reserved for those that take on risks for future cost increases (i.e. variable-rate pricing structure). Those under a fixed-rate pricing structure do not take on risks of such increases.

Thus, the Members recommend excluding Nexant model inputs associated with any fixed-rate services from the revenue allocation process (i.e. apply this test to the portion of revenues allocated using the Nexant model). For example, suppose a Member purchases output from a resource and contracts for Power Management services under a fixed-rate service agreement for that resource. Any model inputs used to include and/or create the price for that specific resource would not be used in allocating revenues using the Nexant model. NCPA staff has evaluated this proposal and has determined it is feasible to implement.

Allocation of Revenues to New Members

The third broad finding of the Review Group is to consider how revenue allocation may be impacted if the NCPA membership level is changed. Before the current policy, it was generally understood that new Members would receive an allocation of cost and revenues like any other Member, effective upon Membership. The Review Group believes this creates a small transition issue. The current Members have provided the commitment and investments to build the capabilities that are being marketed today. The Review Group recommends that these historic investments receive some consideration when allocating revenues to Members that join NCPA from this point forward. This could be as simple as using a previous year's Nexant model run to allocate revenues. The use of historic data is intended to capture legacy investments. While imperfect, it helps to address this transition issue.

This proposal introduces other issues. Lagged data are used elsewhere in the Nexant cost allocation methods and have come under scrutiny in recent years (e.g. schedule counts and contract counts). Historic data may not reflect current or future conditions particularly in changing conditions. The transition issue identified above is by definition a "changing condition." However, absent better data, the Review Group finds this to be a suitable concept that offers a small recognition toward legacy investments.

Alternatively, the Review Group briefly discussed other means of recognizing legacy investments made by the current membership. This included concepts along the lines of buy-in fees. However, the Review Group does not believe these to be appropriate at this time. Introducing additional barriers to expanding services would not promote NCPA's current strategic objective, especially if those costs are in no way tied to the proposed services to be provided.

The Review Group also discussed how the allocation of revenue to new members would make less revenue available to the existing member base. Discussions included limited (assumed) cases where the allocation of revenue could result in an increase in the allocation of net costs to current members, giving the appearance of a cost increase. The Review Group does not believe these are a source of major concern that warrants specific action. One can assume that if a new Member joins (and takes Power Management services), their contribution toward Agency costs will be sufficient to offset any impact to the allocation of revenue.

Staff has adopted these concepts¹¹ when preparing the FY18 budget, which included NCPA's newest Member, the City of Shasta Lake. Staff allocated 10% of expected FY18 service proceeds in proportion to Members' contributions toward A&G expenses, per the Interim Policy¹². Staff used FY16 A&G cost data as a revenue allocator since it was the most recent and complete data available (i.e. net of end-of-year true up). However, using this approach will preclude any new Member from receiving any portion of the 10% of revenue allocated via A&G for two years (i.e. when FY18 actual data are used for the FY20 budget).

Applying the Review Group's Broad Findings to Three Specific Test Cases

The Review Group applied its broad findings to three specific cases, which follow:

1. Applying new revenues toward unfunded liabilities related to personnel costs;
2. Applying new revenues toward NCPA's Administrative & General costs, beyond what is allocated to the Power Management program; and
3. Applying new revenues to NCPA Projects that have Non-Member Participants

Unfunded Liabilities Related to Personnel Costs

On March 31, 2016, the NCPA Commission approved a formal Long Term Funding Plan for the Long-Term (NCPA) Retiree Medical Plan¹³. A component of that plan was to "consider [the use of] revenue [from new members or new services] to reduce the additional funding requirements [pending] a policy about allocation of revenue...by the Commission"¹⁴.

The Review Group agrees it is prudent to consider using new revenues to help prevent additional costs billed to Members. The Review Group believes this concept should be refined to allow each Member to direct how it may use its allocated portion of new revenue toward their allocated obligations contemplated under the long-term funding plan. In doing so, individual Members control their exposure to increased costs associated with this set of costs.

The Review Group shared a number of concerns over concepts that would direct new revenues to offset these costs without proper Member-by-Member accounting. These concerns stem from several inconsistencies with the Cost Allocation Principles that guide cost/revenue allocation analyses. These principles can be found in this paper, above, in section titled, "Assessing the Nexant Model Based on Cost Allocation Principles."

In summary, the Review Group believes an accurate accounting of both the costs and new revenues are paramount to ensure equity within the NCPA membership. To help build upon the work of the Finance

¹¹ Policy elements addressing transition issues with new Members were not specifically addressed in the Commission Staff Report associated with the Interim Policy. However, these concepts were included in the technical document that was included by reference in the Commission Resolution.

¹² This activity is reflected in the FY18 budget. Final allocation of revenue is subject change in the end-of-year true-up.

¹³ Please see NCPA Staff Report 132:16.

¹⁴ Ibid, at 3.

Committee, this Review Group offers additional criteria for the Commission’s consideration when developing a policy that determines how new revenue will be allocated. The Review Group’s contributions are as follows:

1. Revenues and costs should be accounted for on a Member-by-Member basis and in ways discussed in other areas of this paper,
2. Each Member be given control over its allocated share of new revenue, including the ability to direct any (or none) of its portion of new revenue to offset the Member’s allocated share of obligations contemplated under the Long-Term Funding Plan.

NCPA Administrative and General Costs

The concept of allocating 10% of revenues received in proportion to A&G costs was introduced by the Facilities Committee as a simplified method to ensure all Members benefit in revenue allocation. This concept received scrutiny by the UD’s, but it was ultimately included in the Interim Policy. Certain UD’s, particularly Redding’s, expressed interest in exploring the matter further to determine if there is a more accurate and/or equitable means of ensuring all Members benefit from the new activity.

There were two options discussed by this UD Sub-Group: continue to use the interim policy method (i.e. 10% via A&G), or adjust the way in which NCPA budgets and allocates costs for “new business development” particularly for personnel in A&G. The UD Sub-Group relied upon the principles of “Simplicity” and “Causation” to guide their evaluation of discussions, which are summarized briefly below.

- **Simplicity:** Members prefer straight-forward means of allocating costs / revenues but accept greater complexity when it offers greater accuracy or equity.
- **Causation:** Costs / revenues ought to be tied to the activity creating the cost or to the Member/Participant receiving the benefit, evaluated on a case-by-case basis.

The UD Sub-Group discussed but decided against adjusting the budgeting and cost allocation practices for A&G personnel. The concept would require A&G personnel to estimate the amount of time they would spend on developing new business, possibly correcting for forecast errors after the fact, and developing a cost allocation methodology for this new budget category. As discussions progressed, NCPA staff and the UD Sub-Group became concerned the proposal would introduce great complexity and a substantial amount of additional work without a clear value proposition to justify it. Thus, per the Simplicity Principle, the group opted to abandon this approach and focus their attention on the method contained in the interim policy to determine its suitability.

The UD Sub-Group recommends by a 4-0 vote that 10% of revenues continue to be allocated to Members in proportion to their contributions to A&G costs. This recommendation promotes two overarching principles: (1) Membership should have its benefits, and (2) all Members should benefit from the expansion of PM&AS services. Reserving a portion of revenues for the exclusive benefit of NCPA Members promotes the acquisition and retention of Members and it is consistent with the way in

which other owners of firms are rewarded with dividend proceeds. Separately, the group discussed the merits and basis of the 10% figure itself, and determined it is consistent with “return on equity” figures found throughout the industry. Therefore, this UD Sub-Group recommends that (a) 10% of revenues be reserved for the exclusive benefit of NCPA Members, and (b) allocate this portion of revenue in proportion to Members’ contributions to the A&G costs to ensure all Members receive a benefit.

NCPA Generation Facilities with Non-Member Project Participants

Members recommend non-Member Participants of NCPA Projects receive an allocation of revenue, as part of the allocation made through the Nexant model, provided that the revenue allocation policy be developed further at a later date to reserve a greater proportion of revenues for Members under certain conditions (see Section “New Concept For Future Discussion” below).

The Commission’s Interim Policy was based on recommendations of the Review Group, Facilities Committee, and the full set of Utility Directors. The UDs were briefed that the Review Group and Facilities Committee recommended revenues be allocated to non-Member Participants of the Geo and LEC projects, as part of the allocation made through the Nexant model, and that these recommendations were not unanimously supported in either committee. The UDs were also split on this issue during their November 2016 meeting. The UDs expressed interest in discussing this matter further and recommended that the Interim Policy not allocate revenues to non-Member Participants of NCPA Projects allow time for the UD Sub-Group to address this topic.

The Review Group and UD Sub-Group focused on different aspects before making their respective policy recommendations. The Review Group explored (R1) whether NCPA was contractually required to allocate revenues to LEC under the LEC governance agreements, (R2) the implications the pricing structure has on LEC Participants (i.e. a variable-rate pricing structure), and (R3) the general notion of Members having exclusive rights to revenues is appropriate for these facilities. The Review Group focused its discussions on the LEC because of its large proportionate size in both cost and potential revenue allocation¹⁵. The UD Sub-Group discussions were related to the types of risks and liabilities that face NCPA Members vs. non-Member Participants of NCPA Projects. The group sought to map revenues to those who take on those risks and liabilities, which can be classified into 3 categories: (U1) Price Risk, (U2) Project Risk, and (U3) Risks Associated with NCPA Failure. There were similarities between each group’s discussion items and these are combined in the subsections that follow. In particular, R3 is combined with U2, and R2 is combined with U1.

LEC GOVERNING CONTRACTS (R1)

The LEC is owned and operated by NCPA, it has a total of 13 Project Participants, 4 of which are not Members of NCPA, and the participation share¹⁶ between NCPA Members and non-Members is nearly

¹⁵ LEC contributed more than 10% of the Power Management & Administrative costs in FY 2016 and 2017. LEC would be allocated over 10% of revenues if the Nexant model is used to derive those figures.

¹⁶ The LEC governing documents use a defined term “Generation Entitlement Share” or “GES” to assess allocation of any and all liability, costs, and benefits.

50/50¹⁷. The LEC is not a traditional “NCPA Project” as defined in the Facilities Agreement. Membership status is a prerequisite in NCPA’s standard contracts. Thus, the LEC was established using different governing contracts¹⁸.

The LEC is allocated costs using the Nexant cost allocation model using the same methodologies applied to any other resources in the NCPA scheduling portfolio. Section 7.2 of the PSA notes, “NCPA shall use the same allocation method for allocating each category of NCPA Administrative Costs¹⁹ to the [LEC] as for other NCPA projects and programs.” NCPA General Counsel was asked to review the PMOA and PSA and to opine if NCPA is contractually obligated to allocate revenue to the LEC. General Counsel has concluded that the contract language does not obligate NCPA to allocate revenues to LEC. The contract contemplates project costs extensively but does not contemplate revenues. Thus, the question of whether to allocate revenues to LEC using the Nexant cost allocation model methodologies is a policy and business matter.

ALLOCATING COSTS TO LEC / PRICE RISKS (R2 & U1)

The language in the PSA exposes the LEC Participants to a variable-rate structure for Power Management services and is a direct function of Power Management’s total budgeted costs. One specific example was raised in both the Review Group and UD Sub-Group discussions: How would it affect the allocation of costs to LEC (and Geo) if NCPA increases its staffing levels in the scheduling functions in response to the expansion of Power Management services? In this case, total costs have increased in areas where the LEC and Geo receives Power Management services, so the allocation of cost to LEC & Geo would increase. This point highlights how the pricing structure applied to NCPA Projects can result in an increased allocation of cost without a commensurate increase in work performed on behalf of the NCPA Projects. It should be noted that the same mechanism applies in reverse: if the Power Management costs were to decrease, the allocation of costs to LEC and Geo would also decrease, presuming the decreases occur in areas where the LEC and Geo receive services. The allocation of PM&AS costs to an NCPA Project are classified as “Project costs,” and are subsequently allocated to Project Participants in proportion to their Generation Entitlement Shares (regardless of membership status).

The same mechanics can be seen in the application of the Nexant cost allocation model today. As noted above, SVP and Palo Alto have brought additional resources to NCPA for Power Management services (among other Members). Once these resources were added to the Nexant model, all costs were reallocated. SVP and Palo Alto, respectively, would be allocated a larger share of costs because of the increased level of the various activities that drive the allocation of cost. As a result, the allocation of cost to LEC decreased in direct proportion to the relative activities that drive the allocation of costs. The

¹⁷ NCPA Members’ combined GES is 50.332% and non-Members combined GES is 49.668%.

¹⁸ The “Project Management and Operations Agreement” or “PMOA” and the “Power Sales Agreement” or “PSA.”

¹⁹ The Section 6.1 of the PMOA refers to Section 7.2 of the PSA for the purposes of cost allocations and includes reference to Power Management costs.

same will be true if Members remove resources from NCPA's portfolio. Assuming other things constant, all remaining service takers' costs, including LEC, would increase.

LEC's Non-Member Participants also pay a JPA assessment in an amount they would otherwise pay if they were NCPA Members.

THE THRESHOLD TEST OF MEMBERSHIP STATUS / PROJECT RISKS (R3 & U2)

The Review Group and UD Sub-Group examined this issue using its principles regarding membership status. To reiterate, the Member representatives of both groups strongly believe revenues should be reserved for NCPA Members. Membership should have its privileges. During these discussions, the Review Group & UD Sub-Group tested this principle as it relates to the LEC (and Geo) non-Member Participants to identify what differentiates Members and non-Members with respect to the plant. NCPA Members take on substantial operational, environmental, labor, general liability, etc. risks when investing in NCPA generation assets. In these respects, the non-Member LEC Participants have taken on a commensurate level of risk as NCPA Members. The governing documents have the same force and effect as NCPA Third Phase agreements on other NCPA-owned generation assets. It is a significant commitment and investment in the generation asset and NCPA.

RISKS ASSOCIATED WITH NCPA FAILURE (U3)

The UD Sub-Group discussed certain scenarios that contemplate risks if (a) NCPA fails to perform its scheduling tasks resulting in market costs or penalties, (b) LEC Participants vote to separate from PM&AS services from NCPA, and (c) NCPA fails as an organization (i.e. no longer exists). The underlying concern common to all 3 scenarios is to determine if any action or event absolves non-Member Participants of NCPA Projects from paying their allocated share of costs, leaving the liability for Members to cover. In this context, "cost" is considered broadly to include direct project costs and indirect costs of NCPA. NCPA staff researched the LEC governance documents and the "Membership Exit and Withdrawal Agreement" between NCPA and TID and presented its findings with the UD Sub-Group in a separate discussion paper. The LEC contracts highlight the strong financial commitments LEC Participants make to NCPA related to all project costs, which includes specific reference to costs of retiree benefits. The "Membership and Withdrawal Agreement" highlights how NCPA and its Members interpreted similar language when TID withdrew from the JPA and ended its membership in NCPA. TID agreed to issue payment to cover its pro-rata share of unfunded pension and retiree medical expenses.

REVIEW GROUP & UD SUB-GROUP FINDINGS FOR LEC

In the end, the Members voice unanimous support for allowing revenues to flow to non-Member Participants of NCPA Projects as part of the allocation made through the Nexant model. However, the UD Sub-group adds a caveat to its recommendation. Specifically, the UD Sub-Group supports the concept of allowing revenues to flow to non-Member Participants of NCPA Projects, for the reasons noted above, but only up to the portion of revenues represented by the "cost of service" to provide those services to third parties.

Prior to the adoption of the Interim Policy, the Review Group did not arrive at a unanimous position with respect to LEC. Alameda, Plumas, SVP, and Roseville favor a position that would allocate revenues to the LEC, and subsequently to non-Member participants of LEC. Palo Alto favored a position that would allocate revenues to the Members that participate in LEC, but not the non-Member participants of LEC. The Facilities Committee also supported allowing revenues to flow to non-Member Participants of NCPA project, with one dissent. The Utility Directors suggested the Interim Policy be narrowed to allow revenues to flow to Members only to allow the UD Sub-Group to discuss the matter.

The UD Sub-Group determined that non-Member Participants to NCPA Projects appear to carry commensurate risks as Members in price risk, project risk, and in the event of NCPA's failure, which satisfied the principles of Causation and Comparable Treatment. Palo Alto's representatives introduced the concepts outlined in the next section, "New Concept For Future Discussion," which would reserve a greater proportion of revenue for the exclusive benefit of Members. These concepts satisfy principles related to Member benefits. For the reasons outlined in the discussion above, and with the understanding that the revenue allocation policy will be developed further, the UD Sub-Group supports by a 3-0-1 vote²⁰ that the Interim Policy be changed such that the portion of revenues allocated via the Nexant model be expanded to allow revenues to flow to non-Member Participants of NCPA Projects.

The Members covered a large number of topics when deliberating on this issue. The strongest arguments supporting the two main outcomes are reiterated below.

The main arguments in support of allocating revenues to LEC²¹, including to non-Member Participants, are as follows:

1. LEC Participants have taken on a substantial level of risk and liability, for the life of the project, through the LEC governance contracts. The liabilities are commensurate with NCPA owned and operated facilities, including the CT1, CT2, Geothermal, and Calaveras Projects. In this sense, non-Member LEC Participants differ very little compared to Members. The level of risk exceeds that of other resources contracted for by Members through bilateral arrangements (i.e. owned and operated by third parties, purchased through a PPA).
2. LEC Participants are subject to an allocation of cost that can change from year to year. The change in cost can be independent of any service provision or activity level caused directly by LEC (e.g. increase staffing levels because of the expansion of services).
3. Current customs and practices allow LEC's allocated costs to increase or decrease when service levels are changed elsewhere in the NCPA portfolio (e.g. when Palo Alto and SVP introduced solar projects and the Tri-dams facilities, respectively).

²⁰ Barry Tippin (Redding) was not present at the June 6, 2017 meeting and has not opined on the Subgroup's recommendation at the time of this writing.

²¹ The discussion and text below focused on LEC, but the same concepts and findings apply to Geo.

4. The project economics of LEC were attractive, but participation levels from NCPA Members were insufficient to build to the proper scale to achieve those economics. Thus, NCPA expanded its participation base to include non-Members to increase participation levels.

The main arguments in support of limiting the allocating revenues to LEC, to Members only, are as follows:

1. Membership should have a clear benefit in order to promote the Agency. Allocation of revenues can serve that purpose.
2. NCPA General Counsel has opined that NCPA is under no contractual obligation to allocate revenue to the LEC. Also, to this Review Group's knowledge, there was no expectation that revenues would be allocated to LEC Participants at the time contracts were executed.
3. Scope creep: The same logic applied above (i.e. for allocating revenues to non-Member participants) can be applied to other NCPA Projects (i.e. Geothermal and TID) and future projects organized in similar fashion.
4. Causality: Members are ultimately responsible for directing and funding Agency activities, including building Power Management programs and developing staff capabilities. These activities are the services being marketed to non-Member agencies and any returns from the successful marketing should be returned to Members.

New Concept For Future Discussion

The UD Sub-Group introduces an idea that addresses how revenue allocation could be applied if NCPA's cost of service is less than the market value of comparable services and potentially reserves additional revenue for the exclusive benefit of Members. NCPA uses the Nexant Model to estimate the "cost of service" when responding to RFPs for power management services, and it considers this information when determining its proposed contract price to third parties. It is generally understood that NCPA's cost of service to provide PM&AS services is above market. Therefore, it is difficult for NCPA to include a margin to its cost of service when submitting proposals. However, the UD Sub-Group notes that this cost vs. market relationship may reach a crossover point if NCPA continues to be awarded contracts (because its average fixed cost decreases). To that end, the UD Sub-Group introduces the following concept as a framework for additional policy development.

Suppose NCPA is approached by a third party seeking PM&AS services, NCPA's cost of service for this third party is \$400,000, and the market for comparable services supports a price of \$500,000. Further suppose NCPA bids its service at the "market rate" (\$500,000) instead of its cost of service (\$400,000) and is awarded the contract by the third party. This creates \$100,000 in "margin" (i.e. revenue less cost). How should NCPA allocate this \$500,000 in revenue between Members and Non-Member Participants to NCPA Projects?

The interim revenue allocation policy and proposed revisions to the policy do not differentiate portions of revenue (because revenues are equal to cost of service). Under the current policy, 10% of revenues received, or \$50,000, would be allocated to Members in proportion to their contributions of A&G costs

and 90%, or \$450,000, would be allocated to Members and non-Member Participants of NCPA Projects using the Nexant model, which includes \$50,000 of the “margin.”

The UD Sub-Group takes issue with allocating any portion of “Margin” to non-Members. This concept was shared broadly within the Membership during subsequent meetings of the Facilities Committee and the Utility Directors and these ideas received strong interest from the balance of the Members. Stated differently, no Member was in favor of the opposite position (i.e. allocating Margin to non-Member Participants of NCPA Projects).

The following list summarizes the main points of this policy idea identified to date. The Members strongly recommend future revenue allocation methods follow these concepts, but recommend deferring policy development activities until NCPA and the Membership determine the effort is timely (e.g. when NCPA produces “margin” over its cost to provide power management services to third parties).

- Cost of service should be determined using the Nexant model, or its successor, consistent with today’s practices.
- Revenue would be allocated in two or more parts, differentiated by the portion attributable to cost of service vs. the portion attributable to margin.
- The portion attributable to the cost of service (\$400,000) should be allocated to Members & non-Members, using the Nexant model, or its successor. This ensures non-Member Participants to NCPA Projects continue to receive benefits, consistent with their variable-rate pricing structure.
- The portion attributable to the margin (\$100,000) should be reserved exclusively for Members. This adds to the value proposition of membership at NCPA.
- The practice of allocating 10% of the total revenue may continue. Doing so has certain implications subject to further discussions.

Implementation

There are 3 areas Member discussions addressed implementation details. These are (1) effective date of the policy recommendations above, (2) identifying how the Nexant model will be used to allocate revenue, and (3) periodic review of the revenue allocation policy.

The UD Sub-Group recommends the policy recommendations presented in this paper become effective for the beginning of Fiscal Year 2018. Staff used the Interim Policy to develop the FY18 budget, and the policy recommendations presented in this paper modifies the allocation by allowing revenues to flow to non-Member Participants of NCPA Projects. Thus, if this effective date is approved, it will create a budget variance that NCPA staff recommends be addressed at the end-of-year true up. Staff estimates the budget variance to be relatively small, with approximately \$32,000 of revenue being allocated to the 5 non-Member Participants of NCPA Projects and Members’ allocated share of revenues decreasing by the same amount.

As noted above, all members in all forums agreed to use the Nexant model to allocate revenues, in general. The Review Group explored 3 ways to implement this and recommended using a method that

would require full model runs of the Nexant model. This concept did not receive full support, with Plumas Sierra dissenting. The Utility Directors also reviewed this issue on November 10, 2016, and also supported the full model run. This did not receive unanimous support receiving 7 supporting votes out of 12. Staff prepared the FY18 budget based on a full model run of the Nexant model.

The recommendations presented above are intended to remain in place, with periodic review. Staff recommended that the period review be tied to the same frequency and timing that the Nexant cost allocation model (i.e. power management cost allocation methods) are required to be reviewed as described in the Power Management and Administrative Services Agreement, which is approximately once every 5 years.

Summary & Conclusions

NCPA has successfully marketed its Power Management services to third parties, with substantial services and associated proceeds commencing in fiscal year 2018. NCPA and Members have invested substantial time and effort developing findings and recommendations to allocate those revenues to Members. Findings are documented throughout this paper and specific recommendations, which can be found in section, “Policy Recommendations to the NCPA Commission.”