Power Management
Administrative Cost Allocation Study
Review Group Activities

NCPA Facilities Committee
Special Meeting
February 16, 2016
Purpose of this presentation

- Request Facilities Committee recommendations on three cost allocation model inputs, effective FY17
  - Exempt HA schedules created by CAISO for Variable Energy Resources (VERs)
  - Adjust IT Unit Complexity Factor for VERs, affecting allocation of Systems Integration charges
  - Refresh labor-based cost allocation factors applied to Prescheduling budget line item (Issue 2)
Background

- Project background, scope, and issues discussed at January 6 FC meeting
- Seven topics addressed by the Review Group
- One additional topic identified prior to Jan 6 FC meeting
- Three actionable recommendations presented today
- Analysis and findings for the remaining topics will be provided to the FC in the Review Group’s written report
PIRP Program: Exemption of HA Schedules created by CAISO for VERs

- Generation schedules for Variable Energy Resources are revised frequently
- Produces large number of schedule counts
- Schedule counts are a proxy for work effort with scheduling activity
- VERs schedule revisions are created by the CAISO and processed by NCPA in an automated fashion
  - No measurable work
- Recommend exempting HA schedules created by CAISO for VERs from the Nexant cost allocation model, effective FY17.
PIRP Program: Systems Integration Charge

- NCPA software for PIRP
  - automate processing of HA schedules
- Per Facility Committee recommendation, VERs were assigned an IT Unit Complexity Factor of “2” instead of the standard value of “1”
- Each IT Unit Complexity Factor affects approximately $5,000, in FY17

- The Review Group is **undecided** whether this element of the previous PIRP Program should be restored.
## Issue 2: Refresh cost allocation factors applied to Prescheduling

<table>
<thead>
<tr>
<th>Case</th>
<th>Pool</th>
<th>BART</th>
<th>LEC</th>
<th>RSVL</th>
<th>SVP</th>
<th>TID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>59.49%</td>
<td>19.99%</td>
<td>5.44%</td>
<td>7.04%</td>
<td>7.04%</td>
<td>1.00%</td>
</tr>
<tr>
<td>Survey Result</td>
<td>42%</td>
<td>24%</td>
<td>19%</td>
<td>7%</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>Change</td>
<td>-17.49%</td>
<td>4.01</td>
<td>13.56%</td>
<td>-0.04%</td>
<td>-0.04%</td>
<td>0.00%</td>
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</table>
Description of Changes

- Pool: fundamental changes to workload
- LEC: increased complexity to DA and RT strategies
- BART: specialized bilateral trades
- Roseville: no change (Calaveras layoff expires FY16)
- SVP: no change (additional activity attributed to load-following and subsequently allocated to the Pool)
Impact of Additional Bid Strategies
Difference in Cost Allocation ($1,000)

<table>
<thead>
<tr>
<th>Case</th>
<th>Pool</th>
<th>BART</th>
<th>LEC</th>
<th>RSVL</th>
<th>SVP</th>
<th>TID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
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<td>$153</td>
<td>$42</td>
<td>$54</td>
<td>$54</td>
<td>$8</td>
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<tr>
<td>Survey Result</td>
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<td>$184</td>
<td>$146</td>
<td>$54</td>
<td>$54</td>
<td>$8</td>
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<tr>
<td>Change</td>
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<td>$31</td>
<td>$104</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
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</table>

• Based on budgeted cost of $767,809

• Note: Changes to the Pool and LEC are subject to additional allocations. Pool is based on the intra-Pool allocation factor (loads, resources, contracts) and LEC is based on Generation Entitlement Share percentages.
# Fully Allocated Impacts

<table>
<thead>
<tr>
<th>Member/Participant</th>
<th>Pool</th>
<th>LEC</th>
<th>Member Specific</th>
<th>Net</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda</td>
<td>$(23,781)</td>
<td>- $</td>
<td>- $</td>
<td>$(23,781)</td>
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<tr>
<td>BART</td>
<td>- $</td>
<td>$6,870</td>
<td>$30,849</td>
<td>$37,719</td>
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<tr>
<td>Biggs</td>
<td>$(1,819)</td>
<td>$279</td>
<td>- $</td>
<td>$(1,540)</td>
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<tr>
<td>Gridley</td>
<td>$(2,142)</td>
<td>$2,044</td>
<td>- $</td>
<td>$(98)</td>
</tr>
<tr>
<td>Healdsburg</td>
<td>$(5,282)</td>
<td>$1,710</td>
<td>- $</td>
<td>$(3,572)</td>
</tr>
<tr>
<td>Lodi</td>
<td>$(24,883)</td>
<td>$9,888</td>
<td>- $</td>
<td>$(14,995)</td>
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<tr>
<td>Lompoc</td>
<td>$(7,792)</td>
<td>$2,119</td>
<td>- $</td>
<td>$(5,673)</td>
</tr>
<tr>
<td>Palo Alto</td>
<td>$(39,180)</td>
<td>- $</td>
<td>- $</td>
<td>$(39,180)</td>
</tr>
<tr>
<td>Plumas Sierra</td>
<td>$(10,642)</td>
<td>$818</td>
<td>- $</td>
<td>$(9,824)</td>
</tr>
<tr>
<td>Port of Oakland</td>
<td>$(9,666)</td>
<td>- $</td>
<td>- $</td>
<td>$(9,666)</td>
</tr>
<tr>
<td>Roseville</td>
<td>- $</td>
<td>- $</td>
<td>- $</td>
<td>$(342)</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>- $</td>
<td>$26,802</td>
<td>- $(342)</td>
<td>$26,461</td>
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<tr>
<td>Ukiah</td>
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<td>- $</td>
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<tr>
<td>Azusa</td>
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<td>- $</td>
<td>$2,900</td>
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<td>CDWR</td>
<td>- $</td>
<td>$34,869</td>
<td>- $</td>
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<tr>
<td>MID</td>
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<td>- $</td>
<td>$11,152</td>
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<tr>
<td>PWRPA</td>
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<td>$2,777</td>
<td>- $</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>$(134,250)</td>
<td>$104,086</td>
<td>$30,166</td>
<td>$2</td>
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</table>
Issue 2 Recommendation

- NCPA staff seeks a recommendation from the FC to update the cost allocation factors applied to the Prescheduling budget line item, as stipulated above, effective FY17 budget.
QUESTIONS?
SUPPLEMENTAL MATERIALS
Issue 1: Current practice for resource additions

- A given budget uses schedule counts from the last full calendar year as a cost allocation factor
  - Examples: CY14 is used for FY16 budget
  - CY15 is used for FY17 budget

- A new resource is added to the model if it is online as of the effective data of the applicable budget
  - Example: Resources brought online on or around July 1, 2015 would be included in the FY16 budget
  - Would be based on forecasted performance data

- Resources introduced later in the FY are not included in the budget
Issue 1: Current practice for resource additions

- Resources may be captured via a mid-year adjustment if the resource is of material size
  - Single facility of 40 MW or larger, or
  - Multiple facilities with aggregated capacity of 50 MW or more
- Some resources do not satisfy either test
  - No costs in FY the resource enters the portfolio
- The resources will be added to the next FY budget cycle, using historic CY data
Issue 1: New Resources can avoid certain costs for up to 1.5 fiscal years

- If COD occurs 12/31/2015 and the resource is 30 MW:
  - Resource will not be included in FY16 budget
  - Will not trigger mid-year adjustment
  - Will be added to FY17 budget, using CY15 data
  - CY15 Schedule Counts include 1 day of operations

- Thus, the resource:
  - Pays no costs in FY16, when it is introduced to the portfolio
  - Pays FY17 all capacity-related costs plus scheduling-related costs based on 1 day of operational information (essentially zero)
  - Pays no scheduling-related costs for 1.5 fiscal years
Issue 1: Findings & Recommendations

- Mid-year adjustment criteria (plant capacity) is not correlated with cost allocation factor (schedule counts)
  - Some risk small resources can generate material work, as measured by schedule counts
  - Cost allocation may not capture this work for some time
- The current process
  - Has functioned reasonably well
  - Prevents undue administrative burden on staff
  - Balances equitable cost allocation with cost stability
- Low probability of risk, recommend no change to existing practices
Issue 2: Description of Changes: LEC

- Prescheduling activities related to LEC have evolved since the resources was brought online
  - Initially deployed rudimentary strategies and practices in the Day Ahead market, only
  - Today, prescheduling manages a number of considerations and strategies affecting Day Ahead and Real Time activity
  - RT market strategies are developed by the Prescheduling unit and communicated to real-time operations
Issue 2: Description of Changes: BART

- BART’s contractual requirements are unique
  - Structured by contract arrangements with transmission service provider and 3rd party wholesale suppliers, not the CAISO, per se
  - Disjointed activities in Day-Ahead and Two-Day-Ahead scheduling time frames
  - Relies upon various work products from external parties, affecting workflow
  - Specified source contracts
Issue 2: Description of Changes: Roseville & SVP

- Roseville & SVP are Operating Entities of Calaveras Project
- Pre-schedulers stated they spend more time on SVP than Roseville.
- Adjustments made in phase 3 of the surveys, described below.
Issue 2: Adjustment to Survey Results: Roseville

- Recent reduction in Prescheduling efforts related to Roseville Hydro OE driven by short-term layoff agreement.
  - Not indicative of current planning horizon
  - These allocation factors are intended to represent “typical” operating conditions
  - Short term contract set to expire FY16
  - Factors can be updated to reflect future changes in contract arrangements, if necessary
- Result: hold constant at 7%
Issue 2: Adjustment to Survey Results: SVP

- Additional communications and efforts between NCPA and SVP prescheduling units determined to be focused on DVR for load following purposes
- This is not a SVP activity, but is a Pool activity
- No change in Prescheduling time spent on SVP’s Hydro OE role
- Recommend holding SVP’s percentage constant (7%) and allocating any additional time to the Pool (3%).
Issue 2: Summary of changes

- The make up of Pre-schedulers’ workload has changed since the last survey was conducted.
- Changes in market rules, contract requirements, and NCPA’s deployment of market strategies with greater complexity have altered how Pre-schedulers spend their time.
- In other cases, short-term events may affect Pre-schedulers’ time (e.g. short-term layoff, drought conditions, wildfires), but these are not appropriate to include in static cost allocators.
Issue 3: Schedule/Contract Counts Impact to the Pool

- Issue 3 analyzed the impact of the recent change to the intra-Pool allocation factor
  - From Loads & Resources (weighted 78/22)
  - To Loads, Resources, & Contracts (simple average)

- Goals:
  - Describe the process (user documentation)
  - Identify any inappropriate use of inputs (e.g. duplicate use)
    - Example: A contract count is used to allocate costs to the Pool as a whole, and subsequently to disaggregate Pool costs to Pool members
Issue 3 Findings

- Schedule Counts & Contract Counts:
  - Are not used to allocate costs to the Pool as a whole
  - Are not used in duplicate fashion
  - Affect cost allocation to Pool members
  - Influence a substantial proportion of costs (50%)

- Schedule Counts (for resources) do not influence intra-Pool allocations (but resource capacity does)
- Contract Counts do influence intra-Pool allocations

Conclusion: no structural flaws in the use of loads, resources, and contracts for intra-Pool allocations
Issue 4: Pooling vs. MPP/GPP Functions

- Issue 4 analyzed the PM functions performed under the Pooling Agreement vs. the Market/Gas Purchase Program Agreements
  - Note: MPP and GPP are separate agreements

- Goal:
  - Determine if Nexant’s analysis re: Pool and MPP agreements is valid, given the age of the analysis
Issue 4 Findings

- Much of Nexant’s original work is accurate.
  - See Nexant Phase I report, Table 3-4
- New areas of work draw on existing PM functions
  - LEC, RPS, GHG
- Conclusions:
  - PM services are largely unaffected by the expansion of MPP, introduction of GPP, and various activities associated with LEC, RPS, and GHG.
  - Nexant’s conclusions and recommendations are still applicable today, especially with Members’ collective review and approval of Pool, MPP, and GPP costs each budget cycle
Issue 5: Variable Energy Resources

- Issue 5 is a scenario analysis
  - Treats all generation resources in same fashion by adjusting plant capacity rating capacity factor
  - Commission approved this methodology for Variable Energy Resources (VERs), only
- Purpose: This is a test case only. The RG does not recommend applying this method throughout the model
Issue 5 Findings

- Broadly applying adjusted capacity ratings throughout the model produces substantial changes in allocated costs
- Large resources with high capacity factors receive substantial cost increases
- Some resources with low capacity factors receive virtually no cost allocation
- Other resources’ capacity factors vary by cyclical conditions (i.e. hydro & precipitation) which introduces potentially large fluctuations in cost allocations