

BEFORE THE PUBLIC UTILITIES COMMISSION
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Order Instituting Rulemaking into Policies to Promote a Partnership Framework between Energy Investor Owned Utilities and the Water Sector to Promote Water-Energy Nexus Programs.

Rulemaking 13-12-011
(December 19, 2013)

**THE OFFICE OF THE RATEPAYER ADVOCATES' (ORA) COMMENT ON
THE ADMINISTRATIVE LAW JUDGE'S RULING SEEKING POST-
WORKSHOP COMMENTS ON TOOLS FOR CALCULATING: (1) EMBEDDED
ENERGY IN WATER AND (2) AN AVOIDED CAPACITY COST ASSOCIATED
WITH WATER SAVINGS**

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I. THE NEW TOOLS SHOULD BE ADOPTED NOW, WITH MINOR MODIFICATIONS, TO ESTIMATE THE QUANTITY OF EMBEDDED ENERGY IN WATER

The Avoided Embedded IOU Energy in Water Tool and Avoided Water Capacity Cost Tool (collectively the “New Tools”) – with some basic modifications and associated guidance from the Commission – are the best available method for quantifying the embedded energy in water. Although the New Tools are not perfect, their development involved extensive analysis and meaningful stakeholder input. The Commission’s adoption of a method of quantifying the embedded energy in water will facilitate the development and deployment of additional partnerships between Energy Investor Owned Utilities (IOUs) and Water Agencies on projects that save both water and energy, thereby increasing long-term benefits to both water and energy ratepayers. Therefore, in order to expedite the development and deployment of these partnerships, the New Tools should be adopted as soon as possible for pilot use in Water-Energy partnerships, with the modifications and guidance described below.

The New Tools, as presented in the Final Workshop Report, are close to being ready to be put to trial/pilot use by the Energy IOUs for Energy Efficiency projects, as a “Version 1.” Prior to adopting the New Tools, the Commission should:

- Make a few specific modifications to the New Tools;
- Adopt specific guidance regarding policies and practices for tool-use and cost-allocation;
- Provide a mechanism for updating the New Tools in the future; and
- Establish procedures for Energy IOUs and Water IOUs related to submission and review of proposed water-energy partnership projects for Commission regulated entities.

A. A few specific modifications should be made to the New Tools prior to their adoption for pilot use

1. The Resource Balance Year (RBY) field should be functional

In response to concerns expressed by parties of R.13-12-011, including ORA, Navigant provided an option for tool-users to override the default RBY, which is currently set to 2016. However, when the RBY is changed in the New Tools, the outputs of the tools do not change.

The RBY should be a functional field before the New Tools are adopted. As ORA has stated previously,¹ the RBY field is an important field, and assumptions regarding the RBY can significantly affect the outputs of the New Tools. The ability to adjust the RBY and have the outputs adjust accordingly is a critical feature of the New Tools.

The New Tools require the following modifications to adequately account for adjustments to the RBY:

- On the Energy side, when calculating avoided embedded energy: the New Tools should make use of the average existing embedded energy before the RBY, and the embedded energy of the marginal supply after the RBY. The average existing embedded energy represents the best available data for estimating energy savings associated with water conservation projects in the near-term, prior to the RBY. The embedded energy of the marginal supply represents the best available data for estimating energy savings in the longer-term, after the RBY. Both of these are existing tool inputs.
- On the Water side, when calculating the avoided water capacity costs:
 - Before the RBY:
 - If the Water Agency makes use of purchased water, the New Tools should use the commodity cost of water for the Water Agency in question before the RBY. The commodity cost of water is the best available estimate for the cost that the Water Agency would avoid due to water conservation projects in the near-term if the Water Agency is purchasing water.
 - If there is no commodity cost of water (i.e. the Water Agency is not purchasing water), the avoided cost of water prior to the RBY should be the variable cost associated with treating and distributing the existing supply. This is the best representation of the actual costs that the Water Agency would avoid in the near-term if a given water conservation project decreased water demand. Since a) a default value

¹ ORA Comments on July 1, 2014 Workshop and Workshop Report, filed 9/19/14, at pp. 5-6.; and ORA Comments on April 25, 2014 Workshop, Project Coordination Group Presentation, and Workshop Report, filed 8/15/14, at pp. 3-4.

for the variable cost for the existing supply has not yet been established, and b) this variable cost of water treatment and distribution is often a minimal, a default value of zero could be used for Version 1 of the New Tools, for pilot use, with further refinement in the future.

- After the RBY: the avoided capacity cost in the longer-term should be the value calculated by the new Avoided Water Capacity Cost Tool associated with the marginal supply. The avoided capacity costs for the marginal supply would only be incurred after the existing supply is no longer available, and should therefore only be used after the RBY. The new Avoided Water Capacity Cost Tool is the best available method of estimating this avoided cost.

2. The default RBY should be changed from the current value of 2016, to 5 years from the date of adoption of the New Tools

One current default assumption in the New Tools is that recycled water is the marginal supply for the entire state. Another default assumption is that the RBY is 2016 for the entire state. Together, these assumptions represent that, in the absence of additional water conservation measures, all Water Agencies in California would be unable to meet existing demand starting in January 2016, and would at that time need to bring recycled water service online to meet existing demand. The New Tools provide an estimate of the cost of constructing these new recycled water facilities, and the embedded energy used by the recycled water facilities, and assumes that a given proposed water conservation project would offset these costs and energy expenditures.

There is insufficient evidence to support the conclusion that all water utilities in California will be in need of a new water supply by January 2016. Additionally, even if this were the case, new recycled water services take time to permit, build, and bring online. There are few Water Agencies that could have new recycled water infrastructure in place by the default RBY of 2016.

The default RBY should be changed to represent a more realistic timeframe for the need and availability of the default marginal supply. Using a value of 5 years from the date of the adoption of the New Tools as the RBY provides an optimistic representation of the timeframe

needed to permit, build, and bring online the default marginal supply. Once the RBY becomes a functional field in the New Tools, as recommended above, changing the default assumption should be a straightforward input adjustment.

B. The Commission should adopt the following policies and practices related to the use of the New Tools

1. For ease of review, the Commission should require that Water-Energy partnership projects that claim energy savings from the embedded energy in water be grouped together as a “program” in Energy Efficiency portfolios

Currently, Water-Energy projects and measures are scattered throughout the Energy Efficiency filings, with one or more entries in different categories (e.g. residential, commercial, local government partnerships, etc.) This makes it difficult for those interested in the filing to review the Water-Energy projects and measures. In future Energy Efficiency filings, the Commission should require Energy IOUs to group all projects that claim energy savings from the embedded energy in water together as a “program.” Both “mixed” hot and cold water projects, and “pure” cold water only projects should be included. For Water-Energy projects that do not claim savings related to the embedded energy in water, Energy IOUs should have the ability to choose whether to put those projects under the heading of the Water-Energy Nexus Programs, or elsewhere.

2. The Commission should require that Water-Energy partnership projects be cost effective to Energy IOU ratepayers on a project by project basis

The Commission should require Energy IOUs to demonstrate that the benefits to Energy IOU ratepayers outweigh the costs to those same ratepayers for all Water-Energy projects. Water-Energy partnership projects should be thought of as “custom projects,” where cost effectiveness is determined on a project by project basis. The Water-Energy partnership projects should, as discussed above, be included in Energy IOUs’ energy efficiency portfolios. The Commission should additionally require Energy IOUs to file a Tier 2 Advice Letter for each Water-Energy partnership project to demonstrate the cost effectiveness of that project.

While in general, individual projects within energy efficiency portfolios are not usually required to be cost effective on a project by project basis, Water-Energy partnership projects should be evaluated individually for the following reasons:

- If a Water-Energy partnership project is not cost effective to the Energy IOU (i.e. the Energy IOU is providing more funding to the partnership than the project's associated energy-side benefits), the Energy IOU is effectively providing a subsidy to the Water Agency and its customers. To avoid this subsidization from Energy IOUs to Water Agencies, each Water-Energy partnership project must be a cost-effective project for the Energy IOU.
- The Water-Energy partnership projects that rely on the New Tools for claimed energy savings require additional scrutiny. The New Tools have not yet been used by the Energy IOUs to evaluate Water-Energy partnership projects. The Energy Division and Navigant consultant team have provided example runs of the New Tools for demonstration purposes, however, the efficacy of the New Tools in evaluating actual on-the-ground Water-Energy partnership projects has not yet been demonstrated. Because the tools have not yet been fully vetted in this way, Water-Energy partnership projects that rely on the New Tools for claimed energy savings should be evaluated more carefully than other energy efficiency measures and programs.
- Requiring an Advice Letter submittal for each Water-Energy partnership project will allow interested parties to further evaluate the effectiveness of the New Tools in quantifying the embedded energy in water in actual on-the-ground partnerships during the New Tools' pilot phase. The New Tools require additional vetting with on-the-ground projects, and the Advice Letter submittal requirement will provide a mechanism for further evaluation.
- The cost effectiveness of partnership projects is difficult to assess using the Total Resource Cost (TRC) test, which currently is the primary test used in energy efficiency portfolio level assessments. The TRC test evaluates “the program costs paid by both the utility and the participants...[t]hus all equipment costs, installation, operation and maintenance, cost of removal (less salvage value), and administration

costs, no matter who pays for them, are included in this test.”² Because the TRC assesses all costs, no matter who pays for them, it is difficult to assess the cost effectiveness of a partnership project from solely an energy ratepayer’s perspective using the TRC. ALJ Edmister alludes to one piece of this challenge in his questions regarding portioning of measure costs in his ruling requesting comments concerning cost allocation.³ Recommendations for portioning of measure costs are further discussed below, however there is no perfect solution to this issue. Because of the challenges associated with TRC evaluations for partnership projects, Water-Energy partnership projects should be evaluated separately from the larger energy efficiency portfolio assessment, and should be evaluated using the Program Administrator Cost (PAC) test, as further discussed below.

When discussing cost allocation and cost effectiveness for Water-Energy partnership projects, it is important to remember that while most residents of California are both water and energy ratepayers, the service territories for water and energy vary greatly. When an Energy IOU partners with a specific Water Agency for a given project, all Energy IOU ratepayers are helping to fund that project, but only the ratepayers of that one specific Water Agency experience the water-side benefits of the project. Therefore, it is critical that all Water Energy partnership projects provide energy savings such that the benefits to Energy IOU ratepayers are greater than or roughly equal to the costs to those same Energy IOU ratepayers, and that those savings are quantified as accurately as possible.

The default values in the New Tools make use of generalized assumptions related to hydrologic regions. Within these hydrologic regions, the existing water supply, marginal water supply, RBY, and the energy intensity of the existing and marginal supplies can vary greatly. Therefore, the default values in the New Tools do not apply to each and every Water Agency in the region. To quantify the energy savings as accurately as possible, utility-specific overrides should be used instead of the default regional values. However, to facilitate the inclusion of Water-Energy partnership projects in energy efficiency budgets before the specific details of the partnership projects are known, there may be a need for generalized assumptions at a planning

² CPUC Standard Practice Manual, at p.18.

³ ALJ Edmister’s May 11, 2015 e-mali ruling (1) Granting motion of California Water Association for extension of time to file comments and (2) requesting comments concerning cost allocation at p. 4.

level. Therefore, a phased process should be adopted for Water-Energy partnership projects. In energy efficiency applications, more generalized, portfolio-level assumptions may be sufficient, since project-specific data may not yet be available. For these filings, it is reasonable to use the generalized regional default values provided by the New Tools. However, as more project-specific data becomes available, water utility-specific values should replace the generalized regional values, particularly when determining cost allocation and cost effectiveness for individual projects. Utility-specific inputs should be used to find the most desirable partnerships and for cost-sharing decision-making. This phased process will provide for a targeted approach, where specific projects with higher savings potential will be valued more than those with lower savings potential within the same hydrologic region.

The best way to ensure that Energy IOUs target the most cost effective and value-added partnership projects is to require that each Water-Energy partnership project undertaken by the Energy IOUs be cost effective. Towards this end, in determining the cost effectiveness for each project, the Energy IOUs should be required to submit Tier 2 Advice Letters for Water-Energy partnership projects that demonstrate cost effectiveness by:

- Using utility-specific data, instead of the defaults provided in the New Tools. The utility-specific data should be documented and justified. Using utility-specific data will encourage Energy IOUs to target the most cost effective and value-added projects for funding and deployment.
- Using the PAC test to determine cost effectiveness. The PAC test allows the partnership projects to be analyzed from the Energy IOU's perspective alone. Therefore, participant costs, including equipment costs, installation, etc., do not need to be taken into account. This allows the Energy IOU to determine the cost effectiveness of the project, and negotiate cost allocation with partners, prior to determining which portion of the participant costs should be allocated to the Energy IOU versus its partners. Participant costs, such as equipment costs, installation, and cost of removal, are used to calculate the TRC, however not all of these costs (nor all of the savings associated with Water Energy projects) accrue to the Energy IOU. Therefore, using the PAC test, which looks solely at the costs and benefits to the Energy IOU, is the most straightforward way to determine the cost effectiveness of a Water-Energy partnership project to Energy IOU ratepayers.

- Submit the inputs and outputs used in the New Tools as part of the Energy IOU workpapers for partnership projects, in order to demonstrate the cost effectiveness of these projects.

Additionally, the Commission should encourage the Energy IOUs to seek proportional sharing of costs between the Energy IOU and the partnering entity(s). Energy IOUs should strive for proportional cost-sharing as an ideal partnership. However, because it is feasible that a non-proportional partnership could be cost-effective and therefore beneficial to Energy IOU ratepayers, the Commission should not require that all partnerships have proportional sharing of costs, and should only require that these partnerships be cost effective to Energy IOU ratepayers.

3. The Commission should encourage Energy IOUs to target the Water-Energy partnership projects that are the most cost effective and offer the greatest added value in regards to energy savings

Energy IOUs should be encouraged to target the most cost effective and value-added partnership projects for funding and deployment. It could be a time-consuming and arduous task to fully evaluate each and every possible Water-Energy partnership project in the State using utility-specific data. Therefore, in lieu of evaluating all possible partnerships at a utility-specific level, Energy IOUs should be encouraged to target Water-Energy partnerships:

- With Water Agencies that have a high Energy Intensity (EI) of water
- With Water Agencies that have a high EI of marginal supply, and an imminent need for that marginal supply.
- That fund projects that would not otherwise be undertaken if not for the added incentive of funding from the Energy IOUs.

4. When utility-specific data is used to demonstrate embedded energy savings, the Energy IOUs should be required to submit workpapers that justify the values used

Energy IOUs should be required to submit workpapers that justify the values used when overriding the default values in the New Tools. Additionally, the Commission should provide guidance to Energy IOUs in terms of what types of data qualify as acceptable sources to justify the values. Some examples include:

- Urban Water Management Plans (UWMPs) should be used to determine the RBY and the marginal supply of water for each partnering Water Agency.
- The California Department of Water Resources (DWR) is currently developing standards for determining/reporting EI of water in UWMPs. Once developed, these standards should be used for determining the EI of the existing water supply for the partnering agency. The reporting standards should also be followed when reporting EIs in the associated workpapers.
- In general, inputs should be based on DWR sanctioned plans, state guidelines, General Rate Cases (GRCs), or other documents that are available for public review.

5. Energy IOUs should be directed to use a percentage of the total participant cost in the E3 calculator that corresponds to the percent of cost allocated to the Energy IOU (vs. the project partners) for that project

As discussed above, the PAC test should be used to determine cost effectiveness for Water-Energy partnership projects. However, these partnership projects will also be a part of the Energy IOUs' energy efficiency portfolio, which additionally makes use of the TRC test. Therefore, a TRC test value will also need to be calculated for Water-Energy partnership projects. The TRC test, as discussed above, includes participant costs, such as equipment costs, installation costs, cost of removal, etc. The Commission has not yet provided guidance to Energy IOUs on what portion of the total amount of participant costs should be included in the TRC test for Water-Energy partnership projects.

The portioning of the participant costs is not a straightforward question, because in Water-Energy partnership projects, the customer receiving a given incentive is both a water ratepayer and an energy ratepayer. When a customer chooses to take advantage of a given Water-Energy measure and incurs related costs, he/she incurs these costs as both a water ratepayer and an energy ratepayer. Therefore, when accounting for the costs attributable to the Energy IOU for use in the E3 calculator and TRC test for these projects, these costs should be divided between the water and energy partnering entities. When dividing these costs, the ratio should not be fixed, but should instead depend on the nature of the partnerships.

As discussed above, the PAC test should be used to determine cost allocation for Water-Energy partnership projects, and to ensure cost effectiveness of those projects. Once the cost

allocation for a project is determined (e.g. the amount that the Energy IOU will pay towards program administration, customer rebates, etc.), then the percentage of the total cost of the project that the Energy IOU will be contributing can be determined. This percentage should then be applied to all relevant participant costs for use in the TRC test and in the E3 calculator.

In future iterations of the New Tools, this percentage, and/or the amount of the participant cost that will be input into the E3 calculator, could be an output of the New Tools.

6. Energy IOUs should be allowed to account for savings attributed to the embedded energy in water. However, none of the water-side benefits or savings should accrue to Energy IOUs

In determining savings for Water Energy programs and projects, Energy IOUs should be allowed to account for the savings attributed to the embedded energy in 100% of the water saved by the project. Additionally, Energy IOUs should continue to be allowed to account for the site-savings attributed to hot water projects.

Energy IOUs should not be allowed claim any benefits of Water-Energy projects besides the two listed above. Water avoided costs, environmental avoided costs, and other avoided costs and benefits should not be included when calculating savings. These additional benefits are either: 1) societal benefits that accrue to all members of society and should not be funded exclusively by Energy IOU ratepayers; or 2) benefits that accrue to a specific subset of the Energy IOU ratepayers (e.g. the subset of Energy IOU ratepayers that reside in the Water Agency district where a partnership project is being funded), and should not be funded by all Energy IOU ratepayers.

7. The water savings values used in the New Tools should come from widely recognized, independent sources

The water savings values used in the New Tools should be substantiated based on data, using recognized, third party certifications, such as the U.S. Environmental Protection Agency's (EPA) Water Sense program,⁴ or in Energy IOU workpapers filed with the project. These water savings values should be well documented in Energy IOU workpapers.

⁴ Water Sense program information and product search available at <http://www.epa.gov/watersense>.

8. The net-to-gross (NTG) ratios should be applied before cost determining cost effectiveness of Water-Energy partnership projects, and the NTG ratios should be project-specific values

One important issue that has not been discussed in detail thus far in this proceeding is the NTG ratio. The NTG ratio has been used in Energy Efficiency filings to account for free-ridership – the concept that a certain percentage of customers who make use energy efficiency incentive programs would have put the measure into place regardless of the incentive. Therefore, there is no additional energy savings associated with that customer claiming that incentive. Currently in Energy Efficiency filings, the NTG ratio is accounted for prior to determining cost effectiveness, since the NTG ratio impacts the cost effectiveness of a given project or measure.

Currently, the New Tools do not apply a NTG ratio. Therefore, the cost effectiveness ratios determined by the New Tools effectively use a NTG ratio of 1.0. This is an unrealistic assumption. If the outputs page of the New Tools is to be used for cost allocation or to determine cost effectiveness without first applying a NTG ratio, the cost effectiveness of the Water-Energy projects would be significantly overstated. Therefore, it is imperative that the Commission require Energy IOUs to apply the NTG ratio to Water-Energy partnership projects prior to determining cost allocation and cost effectiveness of those projects.

Additionally, NTG ratios should be project-specific values. Using project-specific NTG ratios will encourage Energy IOUs to seek out the projects with the largest added value – projects that would not have already been undertaken with or without additional incentives from the Energy IOU. If a blanket NTG ratio were to be used for all Water-Energy projects, this would not incentivize Energy IOUs to seek out partnerships that provide this added value.

The Commission should require that Energy IOUs provide justification for the project-specific NTG ratios used for cost allocation and cost effectiveness determination in workpapers.

9. Water-Energy partnership projects should be required to follow the same EM&V protocol as all other Energy Efficiency programs

To ensure that energy efficiency funds are utilized in areas with real savings, EM&V for all programs within energy efficiency should follow the same protocol. It is important to evaluate projects on an ex-post basis to determine if the actual savings differ from the projected

savings. There should not be any special “carve-outs” for Water-Energy projects that could make the savings for these projects appear greater than they are. Therefore, Water-Energy partnership projects should follow the same EM&V protocol as activities planned and reviewed through the energy efficiency portfolio process.

10. The Water Avoided Costs Tool and/or the associated default values in this Tool should not be used for decision making or cost allocation purposes

The Water Avoided Costs defaults need additional refinement, the specifics of which are discussed below as recommended future updates to the New Tools. The Water Avoided Costs Tool does not need to be 100% accurate in order to calculate the embedded energy in water, the associated avoided costs, and the cost effectiveness of Water Energy partnership projects to Energy IOUs. Therefore, updates to this tool are not necessary in order to move forward with establishing an agreed upon method for quantifying the embedded energy in water.

Additionally, while not yet 100% accurate, the Water Avoided Costs Tool can provide a general sense of the benefits that would accrue to a Water Agency undertaking a partnership project, and can therefore be helpful in informing cost allocation negotiations for these projects.

However, this tool is not yet at the level of refinement necessary to be used for decision making or cost allocation purposes in relation to Water IOUs. Therefore, until further refinements are made, the Water Avoided Costs Tool should be used exclusively for the purpose of informing cost allocation negotiations for Water Energy partnership projects, and not for any other purpose at the Commission.

11. The future-use of saved water should not be considered in quantifying the embedded energy in water and the energy savings that can be attributed to water conservation projects

In the ALJ’s 4/29/15 ruling seeking post-workshop comments on the New Tools, the question was posed as to whether a particular reduction in water use really reduces Water-Energy use. Specifically, the ruling states at p. 4:

“In a time of general water scarcity, one water user’s reduced use might not necessarily reduce aggregate water consumption. That is, if user X reduces water use, there is more water available for user Y, who increases usage accordingly. Writ more broadly, if user X reduces water use, a water utility that services X may still

pump and treat the water that X would have consumed, and store it for future use. In either scenario there is arguably no reduction in marginal water use, and so not necessarily any energy savings associated with X's reduced water use.”

While it may be true that in a time of water scarcity, such as in the current California drought, reductions in demand can free up water for other possible consumption, it is difficult to make assumptions about what those future-uses of the saved water may be. Additionally, the New Tools primarily account for savings in water and energy related to the marginal supply (currently, the New Tools exclusively make use of the marginal supply, however ORA recommends herein that this not be the case in the adopted tools). Even if Water Agencies continue to pump and treat the same amount of water when a water conservation project reduces demand, it is unlikely that those reductions in demand would not delay the necessity for a marginal supply of water. Regardless of the amount of water pumped and treated in the immediate condition, there will be avoided costs and energy savings associated with the delayed need for a marginal supply of water. The New Tools account for these avoided costs.

Additionally, if existing demand declines, some Water Agencies may continue to pump and treat the same amount of water and find different sources of demand, however other Water Agencies would in fact decrease the amount supplied, either in the form of a reduced amount of purchased water, or a reduced amount of water treated and pumped. It would be difficult to accurately model the infinite possibilities for this issue. At this juncture, the best way to move forward is to assume that the value of the water and energy saved by Water-Energy projects is equal to the savings if the water were not put to a different use, both for existing (pre-RBY) and future (post-RBY) conditions.

C. The New Tools should be updated in the near future

Once the Commission has adopted the New Tools to facilitate voluntary water-energy nexus partnerships, it will be important to track the experiences of those using the new tools. There are default values that will be used in many cases, and other cases when more utility-specific overrides will be used for tool-inputs. It will be valuable for all parties to review the ease of using the tool, the reasonableness of the tool outputs, and the administrative effort required, as well as to evaluate whether the New Tools and associated procedures actually encourage water and energy saving partnerships.

Additionally, there are four specific areas in which the New Tools currently do not provide an accurate representation of the estimated avoided cost of water and avoided embedded energy associated with water conservation projects. These areas, discussed below, likely have a minimal impact on embedded energy estimates, and a larger impact on the avoided cost of water. If, as recommended herein, the avoided cost of water outputs are to be used as solely a point of information for developing partnerships, these fields do not need to be updated before pilot use of the New Tools commences. However, these fields should be updated in the near future. Additionally, if the avoided cost of water outputs are to be used for anything beyond informational purposes, these fields should be updated before the New Tools are adopted, even for pilot use.

Moving forward:

- A workshop should be convened to review the efficacy of the New Tools
- The New Tools should be updated to reflect the findings of the workshop
- Four specific aspects of the New Tools should be updated in the near future
- EM&V procedures should be updated to include water-energy projects.

1. A workshop should be convened to review the efficacy of the New Tools

Utility partners should collect such information regarding tool inputs and outputs, and participate in a workshop after the Decision is approved. The workshop should be designed to expedite feedback on the New Tools after a period of testing of not more than 18 months, so that any necessary adjustments to the tools can be made sooner rather than later. The agenda of the workshop should include the following:

- A demonstration, by each Energy IOU, of its use of the New Tools on an existing Water-Energy Nexus partnership project.
- Discussion of default values vs utility specific data – what choices were made and why?
- Review of how many partnerships were facilitated by the New Tools to date, kinds of projects, and their associated savings.
- Discussion of Water-Energy partnership projects avoided or altered due to information provided by the New Tools.

- Discussion of proposed changes to default values, functions, or any application of the New Tools.
- Discussion regarding whether there are demonstrated patterns in existing partnerships that warrant consolidating individual projects into measures that span across various Water Agencies.

Presentations and feedback provided during the workshop should be collected in a report. Comments responding to the workshop and decisions regarding any necessary updates to the tools and their incorporation should be completed in a timely fashion.

The budget for the workshop and any subsequent adjustment to the water energy nexus tools should be funded through the Energy Efficiency proceeding(s).

2. The New Tools should be updated to reflect the findings of the workshop

From workshop discussions and based on information from Pilots, assess if default values or functionality of the calculator needs adjustment via workshop report and comments. Like other functions related to energy efficiency and its evaluation, further tool development and portfolio integration should be funded out of the energy efficiency budget.

3. Four specific aspects of the New Tools should be updated within two years of the issuance of the Decision adopting the New Tools

There are four specific aspects of the New Tools that it is already apparent need further refinement.

- The Avoided Water Capacity default values should be determined and included, i.e. the cost of constructing a new recycled water distribution system.
- Recycled water avoided cost values should be differentiated for potable and non-potable water.
- The variable cost associated with treating and distributing the existing water supply should be added as an input field, and a default value should be established for this field.
- Wastewater RBY should be added to both of the New Tools.

The avoided costs tool is missing two important aspects of recycled water projects: first, the costs of distribution infrastructure necessary for non-potable water, and second, distinguishing avoided costs of non-potable from potable recycled water systems. Currently, most recycled water projects in the state involve using recycled water for non-potable uses. These projects require a separate distribution system from the potable water system, often referred to as “purple pipe” distribution systems (due to the color of the distributions system pipes). A new non-potable recycled water system often requires a significant distribution system investment due to the need for this separate purple pipe infrastructure, including installing new pumps, mains, and service connections. Expanding existing recycled water systems requires similar upgrades. In contrast, potable recycled water projects (either indirect potable reuse, or direct potable reuse) would generally not require such extensive distribution system upgrades. Therefore, the costs (and avoided costs) for distribution system capacity is not the same for recycled non-potable water projects and recycled potable water projects. However, potable vs. non-potable recycled water projects were not analyzed separately in the avoided water capacity costs study, and are not included in the Water Avoided Costs Tool. Non-potable recycled water projects should be distinguished from potable recycled water projects, with differing avoided water capacity costs as necessary.

Also, as discussed above in relation to the RBY, the New Tools currently do not provide a default value for the variable cost of water for the existing water supply. If there is no commodity cost of water (i.e. the Water Agency is not purchasing water), the avoided cost of water prior to the RBY should be the variable cost associated with treating and distributing the existing supply. The New Tools should be updated to include this as an input field, and a default value should be established for this field.

Additionally, given the significant amount of avoided embedded energy and avoided water costs that are estimated by the New Tools to be associated with wastewater, the New Tools should be updated to include a functional RBY for the wastewater treatment and associated facilities.

4. EM&V procedures should be updated to include water energy nexus projects

The use of the New Tools, and guidance regarding inputs and the outputs should be incorporated into the Energy Efficiency Evaluation, Measurement, and Verification (EM&V) procedures, directed by the Commission.

D. Procedures must be established for Energy IOUs and Water IOUs related to submission and review of proposed water-energy partnership projects

Water-Energy partnership projects for Water IOUs should be analyzed in future General Rate Cases (GRCs) as a part of the water conservation budgets. In the interim, for participation in partnership programs before the Water IOUs next GRC cycle, Water IOUs should file:

- A Tier 3 Advice Letter if the program will have less than 5% impact on revenue requirement for each and every district; and
- An application if there will be a revenue requirement impact of greater than 5% in any district.

A similar process is in place for Water IOUs for recycled water projects, which also often result from partnerships opportunities that may develop between GRC cycles.⁵

Water-Energy partnership projects for Energy IOUs should be looked at within the Energy Efficiency proceeding. Submissions should be consistent with determinations in the Energy Efficiency proceeding. Additionally, Energy IOUs should be required to submit a Tier 2 Advice Letter for each Water-Energy partnership project demonstrating the cost effectiveness and detailing the specifics of the project. The Advice Letter submittals should include workpapers showing the New Tool inputs and outputs, as well as substantiation for the input values.

Cost allocation and other policies and practices related to Water-Energy partnership projects should not depend on whether there is a drought emergency or there are energy reliability challenges. The most effective way to incorporate the effects of a drought emergency in the context of Water-Energy partnership projects is to use utility-specific inputs in the New Tools that reflect the reality of the drought for water utilities. Utility-specific inputs that could be affected by a drought emergency include: the embedded energy in the existing water supply,

⁵ As detailed in D.14-08-058, issued 8/29/2014.

the RBY, the marginal supply of water, and the embedded energy in the marginal supply of water. Changing these values in the inputs to reflect drought conditions will change the outputs of the New Tools to effectively take drought conditions into account when calculating the cost effectiveness of water conservation projects for Energy IOU ratepayers. As discussed above, water ratepayers and energy ratepayers are not necessarily the same for any given IOU service territory. Therefore, while the drought is certainly affecting the entire State, having a blanket "adder" or additional leniency in distribution of energy efficiency funds towards drought programs would not be an equitable way to address the issue of the drought. The Commission's expedient adoption of a method of quantifying embedded energy in water is the best way to address the current drought emergency in this proceeding, as it allows more funding to go towards Water-Energy programs by increasing the quantified energy-side benefits for Water-Energy partnership projects.

Respectfully submitted,

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