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4-19-17
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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769.	Rulemaking 14-08-013 (Filed August 14, 2014)
And Related Matters.	Application 15-07-002 Application 15-07-003 Application 15-07-006
(NOT CONSOLIDATED)	
In the Matter of the Application of PacifiCorp (U901E) Setting Forth its Distribution Resource Plan Pursuant to Public Utilities Code Section 769.	Application 15-07-005 (Filed July 1, 2015)
And Related Matters.	Application 15-07-007 Application 15-07-008

ASSIGNED COMMISSIONER'S RULING REQUESTING COMMENTS ON THE INTEGRATION CAPACITY ANALYSIS AND LOCATIONAL NET BENEFITS ANALYSIS FINAL SHORT-TERM WORKING GROUP REPORTS

Summary

This ruling solicits comments on the Integration Capacity Analysis (ICA) and Locational Net Benefits Analysis (LNBA) Final Short-Term Working Group

reports. Parties are invited to respond to the questions below on the consensus and non-consensus recommendations contained in the reports that are ripe for resolution in a forthcoming Commission decision. The scope of that decision is anticipated to encompass, at a minimum: Demonstration Project compliance; ICA and LNBA use cases; final methodologies for system-wide implementation; implementation schedule; and regulatory processes. Another ruling will deal with Working Group report recommendations pertaining to long-term refinements to the ICA and LNBA tools and methodologies.

Background

The May 2, 2016 Assigned Commissioner's Ruling (1) Refining Integration Capacity and Locational Net Benefit Analysis Methodologies and Requirements; and (2) Authorizing Demonstration Projects A and B¹ (ACR) provided detailed methodological requirements for the ICA and LNBA and authorized the investor-owned utilities' (IOUs) to commence work on Demonstration Projects A and B. The ACR also directed the establishment of ICA and LNBA Working Groups to monitor and support demonstration project execution, and to continue to improve and refine the ICA and LNBA methodologies. The ACR clarified that ICA and LNBA Working Group activities were to be organized by:

1. Short-term work related to the [Demonstration Projects] and improvements to the [analyses] that could be adopted in a Q1 2017 [Decision]; and

¹ And subsequent rulings, e.g. *Assigned Commissioner's Ruling Granting the Joint Motion of San Diego Gas & Electric Company, Southern California Edison Company, and Pacific Gas & Electric Company To Modify Specific Portions of the Assigned Commissioner's Ruling (1) Refining Integration Capacity and Locational Net Benefit Analysis Methodologies and Requirements; and (2) Authorizing Demonstration Projects A and B*, issued August 23, 2016.

2. Longer-term work related to ongoing refinements to [the methodologies] beyond that time frame conducted in parallel, but not directly related, to the [Demonstration Projects]. Short term work should be addressed by the time of the submittal of the final Demonstration [Project] report[s]. Longer-term work may be addressed in the final report and may continue beyond the timeframe of [the Demonstration Projects]².

Accordingly, the ICA and LNBA Working Groups met a number of times over the course of Q3-Q4 2016³ to monitor IOUs' Demonstration Project work and discuss short- and long-term refinement topics. The IOUs submitted their Demonstration Project reports in mid- to late-December 2016. Following Demonstration Project report submission, the Working Group formulated recommendations on methodological modifications, use cases, implementation schedules, and regulatory processes from January through early March 2017.

The ICA and LNBA Working Groups submitted their Final Short-Term Working Group reports on March 15, 2017 and March 8, 2017, respectively. The reports contain a number of consensus and non-consensus recommendations pertaining to the IOUs' completion of Demonstration Projects A and B, implementation of the analyses across the IOUs' entire service territories, and potential topics to be considered for continued refinement of the ICA and LNBA tools and methodologies.

² ACR pp. 18-19.

³ ICA and LNBA Working Group meeting dates, materials, and summaries can be found at <http://drpwg.org/sample-page/drp/>

Integration Capacity Analysis

The ICA Working Group Short-Term Final Report submitted March 15, 2017 contains a number of consensus and non-consensus recommendations for which Commission policy guidance is needed. The forthcoming decision will rule on each of these recommendations. For reference, the recommendations are summarized below:

Table 1. ICA Working Group Report Recommendations for Commission Policy Guidance

Item No.	Report Section	Recommendation (Summary)	Consensus/ non-consensus
1	4	ICA Use Case: Inform and Improve the Rule 21 Interconnection Process Commission should adopt an interconnection use case for ICA and should [adopt a number of guiding principles related to incorporating ICA values into Rule 21], for discussion in a forthcoming Rule 21 proceeding.	Consensus
2	4	ICA Use Case: Informing the Distribution Planning Process and Decision Making Commission should provide guidance on ICA uses within planning context, and the role the WG is expected to play in developing these uses. Coordination with Track 3 needed.	Consensus
3	5.4	Development of Common IOU Methodology All three IOUs should employ a consistent methodology for the interconnection use case.	Consensus

Item No.	Report Section	Recommendation (Summary)	Consensus/ non-consensus
4	5.4	<p>Development of Common IOU Methodology Majority of WG recommends iterative methodology for interconnection use case, and for the value displayed in online maps to be value used in the interconnection study process. PG&E recommends a "blended" approach in which streamlined methodology is used for online maps, then iterative is used to analyze specific conditions within interconnection process.</p>	Non-Consensus
5	6.1	<p>Timeline for Implementation IOUs recommend implementing ICA within 12 months of CPUC decision on ICA methodology. CalSEIA recommends implementation within 12 months of ICA WG report filing. Many stakeholders have no opinion regarding the implementation timeline, only that short-term refinements are included when ICA is first rolled out system-wide.</p>	Non-Consensus
6	6.2	<p>Recommended Regulatory Process Commission should establish Tier 1 AL process to incorporate two types of modifications to ICA during the initial rollout: 1) incorporation of long-term/ongoing methodological refinements; 2) scope/schedule modifications based on short-term refinements or unexpected roadblocks in the implementation process.</p>	Consensus

Item No.	Report Section	Recommendation (Summary)	Consensus/ non- consensus
7	7	<p>Hourly Profiles, Frequency of Updates for Iterative Methodology IOUs provide rough cost estimates for monthly v. annual updates, 96 v. 576 hourly profiles. IOUs make detailed recommendations on these questions in Demo A reports. Subset of non-IOU stakeholders recommend 576 hourly profiles and weekly updates to changed circuits, though would accept monthly updates at a minimum. Non-IOU subset also recommends IOUs track implementation process, update process, and actual costs associated with each for three years, such that methodology can be revisited based on experience.</p>	Non-Consensus
8	8	<p>Frequency of Updates, Representativeness of ICA Value ICA should be updated frequently enough to provide an adequately representative value to inform developer project design and siting and for use in the interconnection process.</p>	Consensus
9	8	<p>Frequency of Updates to Reflect System Changes IOUs support system-wide monthly updates for initial rollout with consideration of higher frequency updates on case-by-case, on demand, or weekly basis. Other WG stakeholders believe ICA should be updated annually system-wide, and that specific nodes/feeders be updated weekly to reflect queued projects, new interconnections, or other system changes above a defined threshold.</p>	Non-Consensus

Item No.	Report Section	Recommendation (Summary)	Consensus/ non- consensus
10	9	<p>Presentation of ICA Results Six ICA results should be presented in online maps and downloadable datasets: three ICA values (uniform generation; uniform load; fixed PV) for two operational flexibility scenarios (reverse flow up to substation low-side busbar; operational flexibility limit [i.e., no reverse flow])</p>	Consensus
11	10.2.1	<p>Voltage Regulating Devices Consensus that voltage regulating devices should be “unlocked” (float) within iterative methodology, but no consensus w/r/t process and timing of implementation. IOUs recommend each IOU models voltage regulating devices in initial system-wide rollout as it did for Demo A and work with software vendors (Cyme) to include this functionality. Other WG members recommend IOUs work with software vendors to develop this functionality before initial system-wide rollout.</p>	Non-Consensus
12	10.2.2	<p>Operational Flexibility ICA values should be calculated with and without the No Reverse Flow at SCADA Devices constraint for initial system-wide rollout (see section 9), which is how the IOUs modeled these scenarios in Demo A per ACR requirements.</p>	Consensus
13	10.4	<p>Treatment of Pre-Existing Conditions ICA should be limited by pre-existing conditions (i.e., display an ICA value of zero) when adding DER degrades pre-existing condition; ICA should not be</p>	Consensus

Item No.	Report Section	Recommendation (Summary)	Consensus/ non- consensus
		limited by pre-existing condition when adding DER improves pre-existing condition.	
14	10.4	<p>Pre-Existing Conditions in System-Wide Rollout The treatment of Pre-Existing Conditions described in Recommendation 13 should be included in initial system-wide rollout, which would require the IOUs to create an automated process to efficiently evaluate feeders and substations for pre-existing conditions, if DERs make things better or worse, and whether to compute an ICA result based on if DERs improve or degrade the condition.</p>	Consensus
15	11.1.1	<p>DER Portfolios/CAISO Dispatch IOUs should continue to calculate ICA values as they did for Demo A, in which assumptions were not made regarding technology-specific DER portfolios or response to CAISO dispatch.</p>	Consensus
16	11.2	<p>Map Attribute Display The following attributes should be available across all three IOU maps: Circuit ID; Section ID; Voltage (kV); Substation; System; Customer class proportions on circuit; Existing generation (MW); Queued generation (MW); Total generation (MW); Hosting capacity for uniform generation (MW); Hosting capacity for uniform load (MW); and Hosting capacity for generic PV system (MW).</p>	Consensus

Item No.	Report Section	Recommendation (Summary)	Consensus/ non-consensus
17	11.3	<p>Computational Efficiency Methods for node reduction and limitation category reduction are appropriate for use in the initial system-wide rollout, though will need to reevaluate these methods as computing power and other factors change over time.</p>	Consensus
18	11.3	<p>Hourly Load Profile Reduction Differing opinions as to whether hourly load profile reduction should be used. IOUs tested reduction of 576 hourly profiles in Demo A, and they documented their thoughts on this method in their Demo A reports, but non-IOU WG stakeholders recommend continued use of a 576 profile (see Section 7).</p>	Non-Consensus
19	11.4	<p>ORA 12 Metrics of Success "Red" metric indicates full-scale deployment of ICA should be delayed until such issues are addressed. The only "red" metric: tweaks to circuit models in CYME/Synergi required for convergence are currently lost when new data from GIS and other data sources is incorporated into power flow circuit model. SCE however responds that it will create the necessary steps to maintain accuracy of the network models as part of the deployment and should not delay system-wide implementation.</p>	Non-Consensus

Item No.	Report Section	Recommendation (Summary)	Consensus/ non-consensus
20	11.5	<p>Localized Load Shapes from AMI/Other Source Each IOU should use the same method it employed in Demo A for initial system-wide rollout.</p>	Consensus
21	12	<p>Cost Recovery Commission should adopt a process to facilitate IOU requests for funding to support ICA implementation. Additional cost recovery may be necessary depending on the implementation requirements adopted by the Commission.</p>	Consensus

Stakeholder questions:

The forthcoming decision will address all of the recommendations contained in the Working Group report and stakeholders may address any of the recommendations in their comments. We are particularly interested in receiving stakeholder comments on the following questions:

1. Did the IOUs adequately execute Demonstration Project A according to the requirements of the May 2 and August 23 ACRs?
2. Is the Demo A methodology able to achieve the two ICA use cases defined in the ICA Report: Interconnection Streamlining/Online Maps and Distribution Planning?
3. For Interconnection use case:
 - a. Do you support the primary Working Group recommendation to use iterative methodology for online maps and interconnection purposes, or PG&E’s proposal to display streamlined results on maps and

use iterative methodology on a case-by-case basis?
Explain.

b. For iterative methodology, discuss your preference for the following update frequency and hourly profile options, given the cost estimates provided by the IOUs and other factors:

- i. monthly v. weekly updates for circuits with changed conditions (e.g., new DER interconnections or system upgrades);
 - ii. 576 v. 96 hourly profiles (one min/max day each month v. two representative min/max days per year)
4. Is the proposed 12-month implementation schedule and Tier 1 Advice Letter process for requesting non-substantive schedule or methodology refinements and implementing long-term refinements during the course of initial system-wide rollout reasonable? How should IOUs be required to confer with Working Group members before submitting modification requests?
 5. Should the Commission adopt interim IOU reporting requirements for the initial system-wide rollout? If so, what types of data, milestones, or other information should the IOUs report on?
 6. Should the Commission direct the IOUs to demonstrate, before ordering system-wide implementation, the automated process for identifying and evaluating feeders for pre-existing conditions and whether the ICA value is zero or non-zero depending on if DERs improve or degrade the pre-existing condition? Or, could the IOUs develop such a process during the implementation period and discuss it in an interim report?
 7. The report documents a “red” ORA metric of success regarding the loss of circuit model tweaks required for convergence upon incorporating new GIS or other data sources into the power flow circuit model. Should the Commission direct the IOUs to demonstrate, before ordering system-wide implementation, how they will maintain network model accuracy in the

course of regular updates? Or, could the IOUs develop such a process during the implementation period and discuss it in an interim report?

Locational Net Benefits Analysis

The LNBA Working Group Short-Term Final Report submitted March 8, 2017 contains a number of consensus and non-consensus recommendations for which Commission policy guidance is needed. The forthcoming decision will rule on each of these recommendations. For reference, the recommendations are summarized below:

Table 2. LNBA Working Group Report Recommendations for Commission Policy Guidance

Item No.	Report Section	Recommendation (Summary)	Consensus/ non- consensus
1	3.1	Demo B Compliance with ACR Formally recognize that Demo B projects/reports are in compliance with ACR requirements.	Consensus
2	3.1	LNBA Provisional Use Demo B methodology is appropriate for provisional use in IDER pilot, DRP Demo C, and Deferral Framework (recommendation reiterated in Section 3.2).	Consensus
3	3.2	LNBA Use Cases: Public Tool; Deferral Prioritization Demo B methodology can be used for two use cases: 1) public tool/heat map; 2) prioritizing candidate deferral projects.	Consensus
4	3.2	Expanded LNBA Use Case: Commission Guidance Needed Additional Commission guidance needed on expanded application of LNBA beyond the two Demo B use cases to meet LNBA use case of providing locational T&D inputs for cost-effectiveness and DER sourcing beyond deferral solicitations.	Non-Consensus

Item No.	Report Section	Recommendation (Summary)	Consensus/ non- consensus
5	3.3	System-Wide Implementation Timing Deferral Framework should be adopted before implementing LNBA system-wide.	Consensus
6	5.2.2	Continued Development of T&D Values T&D values to be included in future modifications of LNBA tool should only reflect grid services adopted by IDER CSF.	Non- Consensus

Stakeholder questions:

The forthcoming decision will address all of the recommendations contained in the Working Group Report and stakeholders may address any of the recommendations in their comments. We are particularly interested in receiving stakeholder comments on the following questions:

1. Did the IOUs adequately execute Demonstration Project B according to the requirements of the May 2 and August 23 ACRs?
2. Is the Demo B methodology able to achieve the two LNBA use cases described in the Report: 1) Public Tool/Heat Map and 2) Prioritizing Candidate Deferral Projects?
3. Elaborate on the Working Group recommendation that the Demo B methodology is not ready for system-wide implementation for these two use cases until the Deferral Framework is adopted, given the recommendation that the Demo B methodology is adequate for provisional use in the IDER Incentives Pilot, Demo C, and the Deferral Framework.
4. Implementation Questions (especially for IOUs):
 - a. What are the steps for expanding the spreadsheet tool system-wide and how long will that take?
 - b. What are the steps for expanding the heat map system-wide and how long will that take? To what

degree will system-wide heat map expansion build off of circuit models being developed for ICA?

c. Which values, tool/heat map improvements, and other long-term refinements could be seamlessly integrated into the tool and heat map after system-wide implementation? Or, is it necessary to finalize long-term refinements before implementing the tool and heat map system-side?

5. Provide feedback on the CPUC memo describing a future LNBA use case to develop locational T&D inputs for use in cost-effectiveness evaluations and DER sourcing activities. How must the tool evolve from a modeling or methodological standpoint in order to achieve this use case?

Comments

This ruling invites parties to comment on the Final Working Group reports, both in general and in response to the above questions. Parties may choose to respond to any number of the questions. Comments are due three weeks from the date of this ruling and are not to span more than 15 pages. Reply comments will not be accepted.

IT IS SO RULED.

Dated April 19, 2017, at San Francisco, California.

/s/ MICHAEL PICKER

Michael Picker
Assigned Commissioner