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)

JOINT RESPONSE OF ENERNOC, INC., JOHNSON CONTROLS, INC., AND COMVERGE, INC. ("JOINT DEMAND RESPONSE PARTIES") TO RULEMAKING QUESTIONS

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EnerNOC , Inc., Johnson Controls, Inc., and Comverge, Inc., (collectively, Joint Demand Response (DR) Parties) respectfully submit this Joint Response to the questions posed for party responses in Rulemaking (R.) 14-08-013 (Distribution Resources Plans (DRPs)). This Joint Response has been prepared and served pursuant to the Commission's Rules of Practice and Procedure and Ordering Paragraph 4 of R.14-08-013.

I.
INTRODUCTION

As background, the Joint DR Parties are companies that currently aggregate residential, commercial, and industrial customers to participate in a significant number of DR programs managed by grid operators across the country. In California, the Joint DR Parties participate in DR programs offered by Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas and Electric Company (SDG&E) (collectively, the Investor-Owned Utilities ("IOUs")). The companies that make up the Joint DR Parties are:

- **EnerNOC, Inc**. (NASDAQ: ENOC) is a leading provider of cloud-based energy intelligence software (EIS) and services to thousands of enterprise customers and utilities globally. EnerNOC's EIS solutions for enterprise customers improve energy productivity by optimizing how they buy, how much they use, and when they use energy. EnerNOC's EIS solutions for utilities help maximize the value of demand-side resources,

including fully outsourced and utility-managed demand response and energy efficiency programs that drive customer engagement.

- **Johnson Controls (EnergyConnect Inc.) (**NYSE: JCI) Johnson Controls is a global diversified technology and industrial leader serving customers in more than 150 countries. The JCI Building Efficiency business unit is a leading provider of equipment, controls, and services for heating, ventilating, air-conditioning, refrigeration, security systems, and demand response.
- **Comverge, Inc.** (NASDAQ: COMV) Comverge is a leading provider of clean energy solutions that improve grid reliability and supply electric capacity on a more cost effective basis than conventional alternatives by reducing base load and peak load energy consumption.

Each of the Joint DR Parties has actively participated individually and jointly in Commission proceedings focused on the IOUs' DR programs, including the current DR Rulemaking (R.) 13-09-011 and other pending applications impacting DR services and products (i.e., Application (A.) 14-06-001, et al. (IOUs' Rule 24/Rule 32 governing DR providers' participation in CAISO wholesale markets)). Given both the involvement and expertise of the Joint DR Parties in the DR market in California, the Joint DR Parties intend to offer their unique perspective and experience through active participation in R.14-08-013.

II.
OVERVIEW OF JOINT DR PARTIES' PERSPECTIVE

A. Background

At the Commission's Business Meeting of August 14, 2014, both Commissioners and the Chief ALJ addressed the proposed rulemaking prior to its issuance as R.14-08-013 by a unanimous vote. The Joint DR Parties support the following comments made at that time by the Commissioners and Chief ALJ, which also inform responses to the questions posed by R.14-08-013:

- *ALJ Sullivan*:

  "AB 327 requires electrical corporations to submit to the Commission a distributed resources plan by July 1, 2015, and this plan must include mechanisms that lead to the cost-effective deployment of distributed resources and ensure their integration into the grid in ways that yield benefits to ratepayers … to translate the statutory goals and requirements of AB 327 into regulatory actions that guide the development of distributed resources plans in order to ensure the efficiency, effectiveness and safety of the actions taken in pursuing to these plans. The significance of this undertaking cannot be overstated … The integration of distributed energy and emerging technologies into the local distribution network will result in the utility of the future, a utility that provides the infrastructure needed to support and manage smart energy devices connected to the grid while both producing and using power."

- *Commissioner Picker*:

  "[T]hese technologies are already having impact in ways that nobody had ever predicted … there's been a lot of concern that a lot of variable power at the end of circuits can actually increase wear and tear on the existing system and to cause reliability issues … but it's a different thing because rather than just selling electricity to an individual homeowner… They're aggregating those customers and giving them power in this equation to actually sell assets back to the grid. That is nothing that was ever anticipated in any of our preexisting proceedings. It is new, it is striking … the future is approaching us quickly, but it's not evenly distributed. We better get on top of this."

- *Commissioner Peterman*:

  "The time has come. I think more so than adding complexity, it will help just reveal what the current complexity is and help us make better decisions in our rate cases and our proceedings going forward … The key is going to be not only identifying what are the technical attributes our system will need going forward, but also then what are the supporting economic policies that we need to pursue … We have a lot going on in terms of demand response and electric vehicles and energy storage that will help shape these plans, and so I look forward to seeing them in our work going forward."

- *Commissioner Florio*:

  "[T]his may be the most important proceeding at this Commission in the next several years … what's happening in a customer-driven way out there in the world is challenging our traditional systems … it offers the promise of a much better, more resilient, more economical system, but it is hard stuff … But then the economic factors, the technology factors, the policy framework that we put together are just critical, and if there is ever a time when we need the best thinking of the folks out there who are interested in this area … this is opening the box and allowing a lot of other people to play around with what's inside it, and that's got to be done thoughtfully and carefully but the promise is very significant."

- *Commissioner Sandoval*:

  "[We are] moving to accelerated fundamental transformation of the grid with DG and things that were not originally contemplated but clearly are a part of the future … glad to hear about the recognition of some of the DG resources that they can actually contribute to grid value, such as voltage and voltage-ampere reactive … there is a lot of science that says that we actually need to take steps to protect voltage in the system or else risk voltage collapse … some companies that are doing some very interesting things for distributed VAR support that could be done either at a distributed level down to the circuit level, or at the grid level, or a combination of both."

- *President Peevey*:

  "Technology is opening the box … Regulatory lag is apparent in this area. What is happening now in the energy space … the change is occurring at a faster pace than any of us anticipated … We're moving toward what telecom has experienced, where the change is so rapid that we can't keep up with it, and some of us bemoan that fact, others welcome that fact, but that's what's coming to the energy sector in the electricity side… I hope that we're successful in reflecting in smart policies the technology change that is upon us … but I am under no illusions as to what it will produce. Nor do I think that the companies themselves are necessarily on top of all this. They're buffeted by the change."[1]

With these insights in mind, the Joint DR Parties respond in the following section to the questions posed in R.14-08-013 and, in doing so, offer their initial comments on this rulemaking, but also provide an overall perspective on the issues raised by this rulemaking below. The Joint DR Parties look forward to participating in this rulemaking and providing more detailed input on these important issues as the proceeding progresses.

B. Joint DR Parties' Perspective

R.14-08-013 states that the "purpose of this rulemaking is to guide the IOUs in the development of their DRPs [Distribution Resource Plans] and to review, approve or modify and approve the plans as envisioned in AB [Assembly Bill] 327.[2] As noted in R.14-08-013, AB 327 is a "multi-part bill that affects multiple aspects of the provision of regulated utility service and

[1] August 14, 2014 Commission Business Meeting Archive at http://www.californiaadmin.com/cpuc.shtml.
[2] R.14-08-013, at p. 4. The Joint DR Parties note that the acronym "DRP" also has been used to refer to "Demand Response Provider." For purposes of this Joint Response, "DRP" will be used to mean "Distribution Resource Plan" to be consistent with R.14-08-013.

of the energy market," but that this rulemaking focuses on the addition by AB 327 of Public Utilities (PU) Code Section 769. [3] Section 769 "addresses investor-owned electric utilities (IOUs') electric distribution planning and the Commission's obligation to review, modify and approve the IOUs' Distribution Resources Plans (DRPs)." [4] In turn, R.14-08-013 identifies 11 issues within the preliminary scope of this rulemaking, to ensure that the DRPs comply with Section 769, and begins the "process of moving the IOUs towards a more full integration of Distribution Energy Resources (DERs) in to their distribution system planning, operations and investment."[5]

In examining these issues and responding to the questions posed by R.14-08-013, it is first important to note that California has promoted DERs in many different forms throughout the years. The State has supported energy efficiency and demand response as the preferred resources at the top of the energy procurement "Loading Order" adopted in the Joint Agencies' Energy Action Plan (EAP). In addition, California has enacted, and this Commission has implemented, a Renewable Portfolio Standard (RPS) Program; there is a goal of 12,000 MW of distributed generation by 2020; and the Commission has a storage target of 1,350 MW of storage by 2020. These resources represent the preferred resources on which the State will first rely to meet energy demand and preserve and advance a clean, reliable electricity system.

However, by the addition of these technologies, the "system" is undergoing a significant change in the way that reliability and planning occur and the way that resource needs are being met. The most significant shift is from utility central planning to a more disaggregated system. Resource decisions are and will be increasingly made at the customer level to address customer-specific needs. Yet, the IOUs, as the operators of distribution systems, and the California

[3] R.14-08-013, at p. 2; see, AB 327 (Stats.2013, Ch. 611).
[4] R.14-08-013, at p. 2.
[5] R.14-08-013, at pp. 4-6.

Independent System Operator (CAISO), as the operator of the transmission system, must ensure safe and reliable service for all. This responsibility becomes more complex as resource decisions are made more and more by customers and not the utility.

Yet these distributed decisions by individual customers can also provide benefits that go beyond the individual customer site. Those benefits include having resources at the local level to address local resource needs, such as reducing peak demand on the distribution system, managing local outages, or fluctuations in services, and increasing local load factors. It is possible for local reliability to be improved. The alternative is to continually add central-station generation and transmission away from load pockets, which is expensive and can create adverse environmental impacts.

As customer-developed DER resources increase, the way in which distribution and transmission system planning are done must incorporate this shift in an intelligent way. Distribution and transmission systems must be able to accommodate 2-way flow of electrons to and from customer premises. Distribution and transmission sizing must not only incorporate potential growth by potential customer type and location, but also consider whether that sizing suggests flattened load shapes as a result of customer-investment in on-site technologies to mitigate traditional peak demands, the basis of historical infrastructure investments.

In addition, this on-site investment of DER may shift the needs of the system from peak management to stabilizing the system when changes in consumption versus generation occur at customer locations. Another challenge is to coordinate dispatches of particular technologies at particular times for the good of the system.

But a driver of all of these underlying concerns will be to develop a process by which distributed resource decisions will be made and to determine who is going to make them. If

resource planning and development are changing and will continue to change, then regulatory policy and oversight also need to change.

However, with the exception of the EAP, the Commission, the State, and its utilities have looked at each emerging technology in a vacuum and in isolation compared to its relationship with the other DERs, whether the resource or technology is renewable resources, demand response, energy efficiency, distributed generation, electric vehicles, or storage. As a result, the State has developed individual siloed policies around each of these technologies and has not looked at the inter-relationship and potential value across technologies.

Individual Commissioners and Commission staff have responsibility and expertise for specific technologies, but within any one silo there is limited knowledge and expertise of other DERs. This is not a criticism of the Commission necessarily, as the same siloing exists in other industries. However, in order for DERs to be transformative and effective, state policy, particularly regulatory policy, needs to focus more on the forest and less on the trees. Understandably, some focus on individual technologies may be important at the incubator stage; but, if policy is developed to encourage the selection of the right resource, in the right place, at right time, then perhaps incubation will occur naturally.

Said differently, rather than picking winners and losers through regulatory fiat, the right choices will be made if the right criteria for making these choices are established. This approach may reduce the need for the Commission to mandate specific resource selection because the selection will be obvious based upon the identified local need. This outcome, however, will only be true if there is a way to communicate that need so that the utility is not the exclusive holder of information, subject to privacy, safety and security concerns. To that end, the Joint DR Parties

ask that guiding principles for this rulemaking include greater transparency and coordination in resource decisions.

III.
JOINT DR PARTIES' RESPONSES TO QUESTIONS POSED IN R.14-08-013

To address the issues included within the preliminary scope of this proceeding, R.14-08-013 poses 16 questions (and related subparts) for party comment. The Joint DR Parties provide their initial responses to these questions as follows, mindful of page limitations set for each by R.14-08-013.[6] The Joint DR Parties reserve the right to provide further input on these questions in its Reply to the initial responses of other parties.

1) *What specific criteria should the Commission consider to guide the IOUs' development of DRPs, including what characteristics, requirements and specifications are necessary to enable a distribution grid that is at once reliable, safe, resilient, cost-efficient, open to distributed energy resources, and enables the achievement of California's energy and climate goals?*

The general challenge is that distribution planning presents increased complexity. This complex integration of technologies, including DERs, must, of course, be cost-effective. The Joint DR Parties recommend that cost-effectiveness, which at this stage focuses on the Total Resource Cost (TRC) Test,[7] be adhered to when considering DER deployment. Beyond this, actionable steps with measurable results are needed to produce timely results that maximize and build on identified benefits.

2) *What specific elements must a DRP include to demonstrate compliance with the statutory requirements for the plan adopted in AB 327?*

The focus to fulfill much of AB 327, specifically, PU Code §769, requires detailed assessment of all stakeholder views. As R.14-08-013 explains:

[6] R.14-08-013, at p. 6.
[7] In California, the Total Resource Cost test is the primary if not pivotal test for most DSM cost-effectiveness.

> "Section 769 *requires* IOUs to submit DRPs that recognize, among other things, *the need for investment to integrate cost-effective DERs and for actively identifying barriers to the deployment of DERs*…. Notably, the Commission is authorized to modify and approve an IOU's DRP '*as appropriate to minimize overall system costs and maximize ratepayer benefit from investments in distributed resources*.'"[8]

The Commission and all stakeholders need to develop transparent methods, tools, criteria, and guidelines appropriate to the tasks of valuing, and maximizing the value, of DERs. The challenge in doing so starts with integrating previously siloed technologies and programs for transparent, coordinated consideration in this proceeding.

3) What specific criteria should be considered in the development of a calculation methodology for optimal locations of DERs?

Locational analysis needs to rely on geospatial data, extant urban planning, economic assumptions, and, of course, traditional utility planning assumptions. The most important single criteria for the methodology must focus on the avoided or marginal cost. This step is not only appropriate policy, but, if undertaken first, will result in far less complexity.

The problem with traditional tools is that regression performs well when data history is indicative of the future. However, with electric vehicles (EVs), photovoltaics (PVs), storage, and new emerging resources, there is little history or data that is truly applicable. This situation is further complicated by emerging new commuter rail lines, changing economic sectors, and evolving convergence of water, gas, and other factors.

In these circumstances, it becomes clear that geospatial forecasts and load simulations are required to supplement traditional econometrics to be able to accurately forecast local grid conditions. Advanced geospacial and planning inputs are essential to analyze the kinds of case scenarios recommended by More Than Smart and to address the question of what resources work best and in what amount.

[8] R.14-08-013, at p. 3; emphasis added.

Avoided costs must be estimated across both the grid (KVAR, voltage, power factor, losses, etc.) and the supply side (KW, KWH, ancillary service benefits, etc.). The respective methods must be made consistent to properly determine whether either KW reduction or KVAR injection is more important, particularly to decide whether DR has more value.

4) *What specific values should be considered in the development of a locational value of DER calculus? What is optimal means of compensating DERs for this value?*

The Joint DR Parties do not have a response to this question at this time, but reserve the right to reply to the opening responses of other parties on this issue.

5) *What specific considerations and methods [are needed] to support the integration of DERs into IOU distribution planning and operations?*

The California Standard Practice Manual should be used, with a focus on the TRC test, to enable the integration and optimization of these resources as needed. Of significance here, the Joint DR Parties reiterate the importance of adopting transparency as a guiding principle in designing these integration plans.

6) *What specific distribution planning and operations methods should be considered to support the provision of distribution reliability services by DERs?*

The Joint DR Parties do not have a response to this question at this time, but reserve the right to reply to the opening responses of other parties on this issue.

7) *What types of benefits should be considered when quantifying the value of DER integration in distribution system planning and operations?*

The economic benefits of energy, capacity, voltage/VAR, as well as the non-energy benefits of deferred power plant emissions and GHG, should be summed to value DER.

8) What criteria and inputs should be considered in the development of scenarios and/or guidelines to test the specific DER integration strategies proposed in the DRPs?

The Joint DR Parties do not have a response to this question at this time, but reserve the right to reply to the opening responses of other parties on this issue.

9) What types of data and level of data access should be considered as part of the DRP?

The Joint DR Parties do not have a response to this question at this time, but reserve the right to reply to the opening responses of other parties on this issue.

10) Should the DRPs include specific measures or projects that serve to demonstrate how specific types of DER can be integrated into distribution planning and operation? If so, what are some examples that IOUs should consider?

The Joint DR Parties do not have a response to this question at this time, but reserve the right to reply to the opening responses of other parties on this issue.

11) What considerations should the Commission take into account when defining how the DRPs should be monitored over time?

The Joint DR Parties do not have a response to this question at this time, but reserve the right to reply to the opening responses of other parties on this issue.

12) What principles should the Commission consider in setting criteria to govern the review and approval of the DRPs?

The principles to set criteria for review and approval of DRPs should be based, again, on cost-effectiveness, analytic transparency, and robust consumer data sharing (assuming customer confidentiality is addressed).

13) Should the DRPs include discussion of how ownership of the distribution may evolve as DERs start to provide distribution reliability services? If so, briefly discuss those areas where utility, customer and third party ownership are reasonable?

The Joint DR Parties do not have a response to this question at this time, but reserve the right to reply to the opening responses of other parties on this issue.

14) What specific concerns around safety should be addressed in the DRPs?

The Joint DR Parties do not have a response to this question at this time, but reserve the right to reply to the opening responses of other parties on this issue.

15) What, if any, further actions, should the Commission consider to comply with Section 769 and to establish policy and performance guidelines that enable electric utilities to develop and implement DRPs? Attachment 1 to this order is a complete copy of AB 327 as enacted.

The Joint DR Parties do not have a response to this question at this time, but reserve the right to reply to the opening responses of other parties on this issue.

16) Appendix B to this rulemaking is a white paper that articulates one potential set of criteria that could govern the IOUs DRPs. Please review the attached paper and answer the following questions:

- *Integrated Grid Framework: the paper opens by presenting an 'Integrated Grid Framework,' what additions or modifications would you suggest be made to this framework?*

The Joint DR Parties agree with elements of the paper, including the following:

- Multi-stakeholder engagement is essential in the distribution planning process and greater transparency into the process, as well as data availability, are critical.
- The plethora of incentives, programs, and policies for clean resources are not well coordinated, which requires an integrated system or convergence view. This step requires coordinating regulatory policy across technologies and reducing silos within and across state agencies.
- Efficient exchange of information, in a manner that protects customer privacy and the safety and security of the network, is required to allow parties and customers to know and understand the type of need that exists, where it exists, and how best to meet it.
- Focus is required on how integration of flexible DER is enabled to gain optimal benefits, reduce barriers, and reduce costs to participate.

The "integrated grid framework" proposed by the paper, however, seems unnecessarily complex.[9] Implementation of this framework also appears excessively complex. Existing distribution planning needs to focus on efficient integration and optimization of DER.

- *Integrated Distribution Planning: what, if any, additions or modifications would you suggest to the Integrated Distribution Planning section of this paper?*

  Integrated distribution planning correctly starts in the paper with a discussion of the ratepayer perspective that identifies the need to "*[e]nsure ratepayers realize the net benefits from the optimal use of distributed resources at minimal cost to integrate these resources into the electric system.*"[10] While the approach suggested by the paper seems unnecessarily complex, it appropriately focuses on integrated planning and analysis.

- *Distribution System Design-Build: what, if any, additions or modifications would you suggest to the Distribution System Design-Build section of this paper?*

  The Joint DR Parties suggest that much of this discussion be simplified to clarify objectives and to focus on cost-effectiveness.

IV.
CONCLUSION

This important proceeding strongly suggests the need to integrate previous DER silos and perform resource assessments in new ways, as new technology is indeed here and will likely dominate the clean energy space of the future. The Joint DR Parties restate their initial responses that (1) multi-stakeholder engagement is essential to this process, particularly to gain greater transparency and data availability; (2) coordination of clean DER requires an integrated system or convergence approach that depends on a coordinated, transparent regulatory policy and

[9] R.14-08-013, Appendix B (More Than Smart Report Final), at pp. 6-7.
[10] R.14-08-013, Appendix B (More Than Smart Report Final), at p. 7; emphasis original.

process; (3) efficient exchange of information is crucial for parties and customers to have knowledge of needs that exists, where these needs are, and how best to meet them; and (4) greater focus is required on how to enable integration of flexible DER to optimize benefits, reduce barriers, and reduce costs to participate. With these initial responses in mind, the Joint DR Parties look forward to participating and offering new contributions to this proceeding as it progresses.

Respectfully submitted,

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