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NEW APPLICATION

MemorandumRECEIVED
AZ CORP COMMISSION

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JUL 28 12 15 PM '99

Date: July 27, 1999
To: Docket Control
From: Ray T. Williamson, Acting Director, Utilities Division *RAY T. WILLIAMSON*
Subject: Docket for Distributed Generation & Interconnections Investigation *DOCKET CONTROL*

Please open a docket for the purpose of the Arizona Corporation Commission general investigation of Distributed Generation and Interconnections. The recommended caption is as follows:

General investigation of Distributed Generation and Interconnections for potential retail electric competition rules consideration.

In addition, please file the enclosed documents as correspondence for the new docket.

RTW/js: DGIIdckt.doc
 Enclosures (10 copies of 15 documents)

Arizona Corporation Commission
DOCKETED

JUL 28 1999

DOCKETED BY	<i>sd</i>
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AZ CORP COMM. 001017

JUL 26 12 16 PM '99

DOCUMENT CONTROL

From: "Leslie Lawner" <Leslie_Lawner@enron.com>
To: CC.UTIL(CSandoval)
Date: 6/23/99 8:47am
Subject: Enron comments on distributed generation

Ms. Sandoval, could you please forward this message with attachments to Ray Williamson of the ACC. Thanks

Dear Ray,

It looks like no one from Enron will be able to attend the interconnection/distributed generation workshop next week in Phoenix. I am forwarding you the comments we have filed in California on this issue and hope that they will be helpful to you and that we will be able to participate in future meetings. if there is a list to serve this on, please let me know. thanks.

----- Forwarded by Leslie Lawner/HOU/EES on 06/23/99 10:43 AM -----

Jeff Dasovich on 06/22/99 12:32:56 PM

To: Leslie Lawner/HOU/EES@EES
cc:
Subject:

greetings. jeff brown asked me to send these along. reply comments are forthcoming.

----- Forwarded by Jeff Dasovich/SFO/EES on 06/22/99 10:32 AM -----

BD <BDiamond@GMSSR.com> on 03/17/99 04:56:52 PM

To: paul_kaufman@enron.com
cc: jdasovi@ect

Subject:

March 17, 1999

Per your request, attached are the documents we filed today with the CPUC and CEC in regard to the Distribution OIR [R.98-12-015/99-DIST-GEN(1)]:

<<ECT-EES COVER PAGE.doc>>
<<ENRON DG OIR COMMENTS 0317.doc>>

and

<<Joint Commenters Cover Page.doc>>

<<INTERCONNECTION COMMENTS
0317.doc>> AND THE ATTACHMENT THERTO
<<MODEL RULE ON SYSTEM ENHANCEMENTS 0317.doc>>

Betsie Diamond
for
BRIAN T. CRAGG

CC: "Paul Kaufman" <Paul_Kaufman.ECT@enron.com>, "Jeff...

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Rulemaking on the Commission's Own Motion)	
to Solicit Comments and Proposals on	)	Public Utilities Commission
Distributed Generation and Competition in	)	Rulemaking 98-12-015
Electric Distribution Service.	)	(Filed December 17, 1998)
_____)	
Information Docket on Distributed	)	California Energy Commission
Generation and Competition in Electric	)	99-DIST-GEN(1)
Distribution Service	)	(Filed January 27, 1999)
_____)	

**OPENING COMMENTS OF
ENRON CAPITAL & TRADE RESOURCES CORP.
AND
ENRON ENERGY SERVICES INC.
ON DISTRIBUTED GENERATION AND
COMPETITION IN ELECTRIC DISTRIBUTION SERVICES**

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Attorneys for
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March 17, 1999

**OPENING COMMENTS OF
ENRON CAPITAL & TRADE RESOURCES CORP. AND
ENRON ENERGY SERVICES INC.
ON DISTRIBUTED GENERATION AND COMPETITION
IN ELECTRIC DISTRIBUTION SERVICES**

Enron Capital & Trade Resources Corp. and Enron Energy Services Inc. (Enron) respond to the invitation extended in the Commission order instituting this rulemaking with the following comments and proposals on distributed generation and competition in electric distribution services.

I. Introduction

In the attachment to the order instituting this rulemaking, the Commission posed this question: "Is there a need for further reforms in the structure and regulatory framework governing electricity distribution services, in light of current market developments. . . ?" Enron believes that the answer is unquestionably, "Yes." This conclusion stems from over a decade of experience bringing the benefits of choice and competition to California's energy consumers. In particular, Enron urges the Commission to consider the experience of other formerly regulated industries and to:

- (1) require structural separation of competitive functions from the operations of the regulated, transportation-only utility and require any utility merchant operations to be conducted through an unregulated affiliate;
- (2) build upon the Commission's current policy, which permits energy service providers to compete for the privilege of developing energy-related infrastructure and related facilities on behalf of the state's consumers;
- (3) eliminate existing, and reject additional, attempts to discourage competition by means of stand-by charges, residual load service tariffs, or other anti-bypass rate mechanisms that have the effect of eliminating the economic benefits a customer would otherwise realize by switching to lower-cost or more innovative alternatives;
- (4) require utilities to adopt tariff provisions that facilitate, rather than frustrate, interconnection to the utility's system by customers and competitors; and,

(5) begin to implement these changes now to ensure a workably competitive market once collection of generation-related transition costs comes to an end.

II. The Role of the Distribution Company in a Competitive Electric Industry

A. The Example of the Interstate Gas Pipeline Industry

Enron's vision of the future distribution company, which Enron urges the Commission to endorse, can be summarized in a few principles. These principles were derived from the experience of other industries that made the transition from regulated monopolies to workable competition. In particular, the experience of restructuring the interstate natural gas pipeline industry is especially instructive. Because the interstate pipeline experience provides a tangible and very successful experience from which to draw, Enron will illustrate its points with frequent references to the pipeline experience.¹

In the gas pipeline example, the Federal Energy Regulatory Commission (FERC) in the early 1990s recognized the need to end the inherent and persistent conflict facing the interstate pipelines in their dual role as owner-operator of essential facilities and competitor in the market for merchant services. In Order No. 636 in 1992, FERC ordered the pipelines to eliminate their merchant operations. Pipelines were also required to offer comparable service and flexible terms and delivery provisions to all customers, and to provide market participants with open access to information. FERC's policy decision drove innovation, enhanced choices and robust competition, each of which has benefited consumers, including incumbent LDCs. Indeed, due to the close correlation between gas prices and electricity prices, gas and electric consumers alike have benefited from the lower gas prices that FERC's actions have brought about.

The gas pipeline example provides an instructive and proven model for the future role of the electric distribution company. The restructuring of the interstate pipelines was very successful and widely acclaimed. Regulators have adopted a similar

¹ Enron's comments are confined to the changes in the structure of the interstate pipeline industry and do not touch upon the current rate policies governing the industry. Enron supports reform of those rate policies.

model in other industries as competition began to chip away at the traditional monopoly structure. For example, the Telecommunications Act of 1996 applied similar principles to the telecommunications industry (*see* 47 U.S.C. §§ 272-276, added by § 151 of the Act), and consumers continue to reap the benefits of increased competition in information services.

The Commission also applied this model, to a very limited degree, to intrastate gas pipelines. In particular, the Commission partially separated the distribution utilities from gas procurement activities by effectively eliminating their role in purchasing gas for non-core customers. (D.90-09-089.) Apart from the very limited core subscription service, utilities are no longer engaged in purchasing gas for non-core customers.² Yet non-core customers have enjoyed both highly competitive prices for gas and reliable and plentiful supplies in each of the western natural gas producing regions.³ Enron is not aware that any California utility has voiced concerns regarding reliability of supply or reasonableness of prices in today's highly competitive and substantially deregulated interstate gas markets. Indeed, a decade of experience proves that deregulated gas markets have provided very reliable supplies at prices that have declined in real terms.

In addition, the Commission has moved further toward implementation of the interstate gas pipeline model with its approval of the PG&E Gas Accord (D.97-08-055). While the Gas Accord was a negotiated settlement of a large number of issues, and does not address the central issue of the utility's role in gas procurement, the Gas Accord did result in a substantially more unbundled intrastate transportation, storage, and balancing services. As a result, shippers more nearly face the fully comparable transportation service which has been one of the greatest single benefits of the Order No. 636 regulatory model.

The Gas Accord does not, however, affect the services offered by SoCalGas or SDG&E. As a result, California, as a whole, is still not in a position to offer

² PG&E agreed to complete its exit from the merchant function for noncore customers as part of the Gas Accord.

³ Indeed, in support of its view that California's gas markets are already sufficiently competitive,

shippers conflict-free comparable service on a statewide basis, free from the inherent conflicts that currently plague the *status quo* structure. Nevertheless, in those cases where the Commission has acted, it has continued to move in the direction of the unbundled, comparable service model in use in the interstate pipeline market.

Although there are significant and undeniable differences between electric distribution, gas pipelines, and telecommunications, the economic and regulatory similarities transcend these differences. The pipeline model has worked well in a number of diverse contexts, and Enron is confident that it will also work well and bring comparable benefits to California's consumers if the Commission applies it to the state's electric and gas distribution systems. Indeed, Enron believes that the potential benefits of distributed generation, and the benefits of competition in distribution-related services generally, will be squandered unless California implements the sort of common-sense structural changes implemented in interstate gas markets.

The gas pipeline example is instructive in another sense. Although the focus of the order instituting rulemaking is on competition in electric distribution, it is becoming increasingly difficult to isolate the electric industry from the gas industry; the convergence of gas and electricity foreseen in the Natural Gas Strategy Report⁴ is already underway and accelerating. In fact, many of the technologies for distributed generation, such as mini-turbines or fuel cells, use gas to produce electricity, and firms using these technologies will face identical problems and obstacles in both industries. Thus, the problems and solutions of the gas industry are increasingly the problems and solutions of the electric industry. The Commission should take advantage of this aspect of convergence and learn from the experience of the gas industry.

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PG&E consistently points to the state's noncore sector.

⁴ "Strategies for Natural Gas Reform: Exploring Options for Converging Energy Markets," Division of Strategic Planning, California Public Utilities Commission (January 21, 1998).

B. Only Structural Separation of Monopoly and Competitive Functions Can Support a Competitive Market

The Commission has long understood that monopoly functions should remain with the regulated monopoly and potentially competitive functions should be opened to competition.⁵ To accomplish this separation, the Commission should unbundle all potentially competitive functions and permit the utility to compete to provide those services by transferring those functions to unregulated affiliates, consistent with the Commission's affiliate code of conduct.

In the current market structure, each utility faces inherent financial conflicts of interest. It provides transportation services to *itself* and to Electric Service Providers (ESPs), including its affiliates. It also procures electricity or gas for *itself* to sell to its own retail customers, in direct competition with other ESPs. The most direct way to address these conflicts and promote competition is through complete structural unbundling and the creation of a transportation-only utility – a true “pipes and wires” company. Only in this way can the Commission adequately mitigate the incumbent's substantial market power and assure that the newly-formed pipes and wires company is providing comparable, open, and non-discriminatory access to all ESPs.

This segregation of competitive functions in unregulated affiliates does not remove a valuable competitor from the market. To the contrary, the utility and its shareholders can continue to use their expertise to serve existing and new customers and to profit from that service through an affiliated business. The affiliate should not, however, be structurally integrated into the distribution system, and the affiliate should compete to purchase distribution services on an equal footing with every other customer.

⁵ In the PG&E Expansion decision, the Commission stated, “It is the CPUC's primary function to regulate monopoly utility services such as gas transmission, even as we loosen regulation over more competitive areas, like the buying and selling of the gas commodity itself.” D.94-02-042, 1994 Cal. PUC LEXIS 82 at *11; see also D.96-11-017, the PG&E Holding Company decision, in which the Commission described its obligation to balance regulation and competition in the following terms: “[W]e are left to strike a balance that will allow easing our oversight of competitive and unregulated enterprises of affiliates while retaining our ability effectively to regulate utility operations. As ever, we remain convinced that the utility's remaining powers as a natural monopoly be clearly vested in operating units that we may readily identify and regulate.” 1996 Cal. PUC LEXIS 1141 at *32.

Equally important, the separation of competitive and monopoly functions removes the inherent financial conflicts which pervade the current, flawed structure, and properly aligns the incentives of both portions of the utility. The regulated distribution company can focus on providing comparable, non-discriminatory service for all customers (and should receive fair compensation for providing such services) without worrying about how to accommodate the conflicting needs of an in-house department. Meanwhile, the unregulated affiliate can market its services free from persistent allegations of unfair and discriminatory practices. Enron urges the Commission to make the simple and effective reforms necessary to rid the current structure of the inherent conflicts and achieve this goal: require structural separation of all competitive services from monopoly activities, ensure that any utility merchant functions are conducted by unregulated affiliates, and reinforce this structural separation by requiring utilities to file an open-access tariff that applies equally to all parties serving retail load.

California has taken great strides toward the development of competitive energy markets. In its leadership role, the Commission has properly focused on eliminating or mitigating vertical market power (e.g., power plant divestiture) and other potential areas of market power abuse (e.g., affiliate code of conduct). For the Commission to reverse course and permit the powerful incumbent distribution utilities to re-integrate vertical functions (i.e., distribution and generation) by offering distributed generation products and services would represent a serious setback in the transition to truly competitive markets and would deprive customers of the significant benefits of competition.

Enron therefore urges the Commission to take the following actions:

- 1. Structurally separate all competitive services from monopoly activities.**

The first step in the process is to differentiate clearly workably competitive services from monopoly services and to transfer the competitive functions to unregulated affiliates subject to the Commission's affiliate transactions code of conduct. When both competitive services and monopoly services are housed in the incumbent distribution utility, the potential for anti-competitive activity is significant, and if abused,

that power would impede entry, choice and competition and harm consumers. Previous regulatory and other nonstructural attempts to control this anti-competitive behavior have proven lacking, while the structural separation of monopoly and competitive functions has been very successful. Once competitive services are removed from the utility, other competitors will quickly enter the market for those services. Consumers can begin to receive the benefits of this competition immediately.

At the same time, the utility can begin to concentrate exclusively on performing its essential monopoly functions. In simple terms, if the distribution company of the future is going to be a “pipes and wires” company, then the Commission should be focused on how to provide the utilities with the proper incentives to deliver the most efficient, safe and reliable pipes and wires services possible. Removing the distractions of the competitive functions from the distribution company will allow the utility to concentrate exclusively on concerns like safety, reliability, and customer satisfaction. The example of the interstate pipeline companies demonstrates how successful and profitable companies can be in this role. Once the pipeline companies were able to focus only on the business of moving gas, they adapted and shifted their efforts to grow profits by increasing throughput and transporting gas safely and reliably.

This separation of monopoly and competitive functions will have other benefits as well, if the experience of other industries holds true. Separating competitive from monopoly services in the interstate pipeline industry, for example, also lessened the potential for cross-subsidization between regulated and unregulated functions, since the separation of functions also resulted in a separation of costs, which exposed existing cross-subsidies.

Removing the competitive functions from the utility also changes the utility’s stance toward other competitors. Once the utility no longer competes with new entrants, but only provides essential inputs, the utility will begin to see these firms as customers, rather than as competitive threats, and its attitude will be one of cooperation, not resistance. And the same holds true for distributed generation products and services.

2. **Move all utility merchant functions to unregulated affiliates.**

The need for separation of functions is particularly strong with

regard to utility merchant functions, which include both procurement and sales. The only effective way to avoid the inherent and persistent conflict between monopoly functions and utility merchant functions is to remove all merchant functions from the regulated utility and transfer them to unregulated affiliates.

Removing merchant functions to unregulated affiliates does not in itself end the threat of anticompetitive behavior by two companies—the utility and the affiliate—that have common ultimate owners. To provide the market with the confidence that truly comparable service will be provided, the Commission must closely monitor and strictly enforce its affiliate transaction standards. In particular, affiliates that engage in merchant-related activities must be subject to the Commission’s affiliate transaction code of conduct.

Transferring the merchant function to an affiliate also creates a balanced set of benefits for all concerned parties. Consumers receive the many benefits of real and robust competition. Shareholders benefit from their interest in a firm that is free to a large extent from the Commission’s restrictions and is able to compete for market share and seek higher-than-regulated returns on the shareholders’ investment. Competitors, including competitors providing distributed generation and distribution-related products and services, benefit from the elimination of the utility’s inherent conflict and from the ability to compete on a fair basis to provide previously regulated products and services.

Even if complete structural unbundling of the utility merchant function cannot be achieved immediately, it is essential that the Commission oversee a complete unbundling of the utilities’ distribution revenue requirement to ensure that subsidies of the utilities’ merchant functions are eliminated and all suppliers, including the utilities’ merchant arms, are competing on a fair basis. For example, under the rules of the Independent System Operator (ISO), an ESP has to have a Scheduling Coordinator to be able to procure and deliver electricity over the transmission grid, and the ESP must also bear the costs of procurement, load forecasting, metering, data management, accounting, billing, obtaining legal services, marketing, and the like. The ESP should *not* also be required to subsidize the parallel costs of the utilities’ merchant operations. To

compete, the ESP must offer services its customers want at reasonable prices; it has no captive or default customers. The ESP's sole source of revenues to recover all of its costs of doing business in California is the market. To ensure fair competition, the utilities' merchant arms must be in the same position as the ESPs. To accomplish this, the Commission should require the utilities' merchant arms to take service under the same tariff as ESPs, and the Commission should completely unbundle the distribution revenue requirement, including administrative and general (A&G), and assign a separate revenue requirement to the merchant functions. Only then will the market power of the utilities in wires services be properly mitigated.

3. Require the distribution utility to provide service under a *pro forma* open access tariff, which also applies to the utility and its affiliates.

The FERC has found repeatedly that only open access tariffs that apply to all, including the utility and its affiliates, can provide non-discriminatory access and help mitigate the market power of the utility. In Order No. 888, which required all transmission-owning utilities to file a FERC-created *pro forma* transmission tariff, FERC found that the tariff had to be imposed on the industry to remedy the undue discrimination that existed in the industry and to ensure that such utilities "cannot use monopoly power over transmission to unduly discriminate against others."⁶ In response to repeated challenges, FERC has continued to require the *pro forma* tariff, noting that the *pro forma* tariff terms and conditions "are not mere 'practices' – *they are the very foundations of open access.*"⁷

Along with the tariffs, FERC instituted Order No. 889, which addressed the need to make information on the transmission and distribution system available in the market and required the utilities to separate their merchant function from their transportation function.⁸ As a result of that order, transmission and distribution

⁶ Order No. 888, FERC Stats. & Regs., ¶31,036, at 31,635 (1996).

⁷ New York State Electric & Gas Corporation, 82 FERC ¶61,310, at 62,232 n.28 (1998) (emphasis in original), citing American Electric Power Services Corp., 78 FERC ¶61,070, at 61,266 (1997).

⁸ Open Access Same-Time Information System (formerly Real-Time Information Networks) and Standards of Conduct, Order No. 889, 1991-96 Regs. Preambles, FERC Stats. & Regs., ¶31,035 (1996).

utilities must make information about the condition of the system available on equal terms to all market participants, ensure that their merchant arms obtain information, discounts, and service through the tariff, and follow a code of conduct to ensure that all market participants are treated the same. FERC has determined that Order Nos. 888 and 889 apply to all wholesale and retail transmission services and to wholesale distribution service. FERC has left it up to the states and to this Commission to determine how to achieve non-discriminatory open access for retail distribution services.

The Commission has achieved much since the enactment of Assembly Bill (AB) 1890 in 1996. It has ordered what amounts to a *pro forma* direct access tariff and has put in place stringent affiliate rules. But there is more to do to ensure non-discriminatory distribution access, mitigation of utility market power and support of a competitive market structure.

The Commission should take the next steps and require the utilities to (1) file a *pro forma* distribution service open access tariff that applies to all providers of retail electric supply and specifies the terms and conditions for distribution service (similar to FERC's transmission tariff); (2) unbundle the merchant arm (both procurement and sales) from the distribution company; and (3) require the merchant entity to obtain distribution service for its retail sales pursuant to the *pro forma* tariff and transmission service pursuant to the FERC-jurisdictional Transmission Owners Tariff and ISO Tariff.

As FERC found, this approach is the only way to eliminate the potential for the utility to unduly discriminate against competitors in the market. The approach also encourages the utility to view ESPs as their customers, which will give the utility the incentive to provide excellent customer service and to develop distribution products and services that ESPs want and need and from which the utility can profit. This new view would do much to encourage competition and put all suppliers on the same footing.

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III. The Need to Build Upon the Commission's Current Policy of Facilities-Based Competition

The Commission's view of facilities-based competition has evolved considerably over the last decade. In the later part of the 1980s, the Commission attempted to actively manage the entry into California by federally-regulated pipelines. The Commission's actions were motivated by the belief that competition, while benefiting some, might harm others. As a result, the Commission attempted to discourage entry by restricting bypass (or what was characterized as uneconomic bypass) through rate designs which impeded entry and whose costs were underwritten by other utility customers, as opposed to utility shareholders. In recent years, the Commission has rightly re-assessed its policies in light of the futility of attempts to prevent the entry of economic interstate pipelines into the state. When reviewing the Sempra-Enova merger, which joined the parents of SoCalGas and SDG&E, the Commission unequivocally concluded that all customers had benefited from increased competition for gas supply and gas transportation. D.98-03-073, 1998 Cal. PUC LEXIS 1, at *137-138.

Even more important is the reaction of the Commission to the "traditional" argument against new facilities-based competition, that a loss of customer load to the new competitor will cause rates for the utility's remaining customers to rise. The Commission squarely addressed that argument in the following passage:

"To eliminate the strongest threats [of bypass]—Kern River and Mojave—by permitting SoCalGas to exercise its options and own all pipelines in southern California would contradict all our recent pronouncements regarding the benefits of competition.

"We are also aware of one consequence of bypass: that those customers remaining on the SoCalGas system might be required to pay increased rates to compensate for the lost revenue caused by the bypass. Nevertheless, we have chosen competition and therefore competitors and the threat of competition must be encouraged. Our experience has been that core rates have declined due to gas-on-gas competition caused by Kern River's and Mojave's entry into the California market. We find that Kern River and Mojave are strong competitors and should be supported, not eliminated." *Id.* at *140-141 (emphasis added).

The Commission now clearly recognizes that competition requires viable competitors. More importantly, the Commission recognizes that California can foster entry, and with it innovation and lower prices, and simultaneously ensure that incumbents are treated fairly for past and future investments.⁹ This experience should inform the Commission's policy on distributed generation and competition in distribution-related services generally.

Nor is allowing competition in distribution inconsistent with Commission policy on the scope of regulation generally. In his concurrence to D.97-12-099, in which the Commission made permanent a pilot program for third-party design of certain distribution facilities, former Commissioner Knight provided insights which are directly relevant to the issues raised in the present rulemaking:

“The design of distribution services is clearly not a natural monopoly. . . . Eventually competition will develop for the construction and maintenance of distribution facilities. In my opinion, the construction of distribution facilities does not exhibit any of the characteristics of a monopoly function. Also, the maintenance of such systems may not be a naturally monopolistic function. This commission will have to re-visit the concept that the provision of distribution service is a natural monopoly. We have taken the first tentative steps toward allowing distribution competition. The provision of over-the-fence generation, allowing the unbundling and the competitive provision of meters and meter services, and allowing the competitive procurement of distribution system design . . . all begin to chip away at the façade of natural monopoly which the utility distribution companies argue and claim exists. The industry . . . is starting to grasp the eventual reality that competition in transmission services is coming . . . as part of the evolution of competitive energy markets. Soon they will have to come to grips with competition within the bastion of distribution. It is only a matter of time.”

⁹ The reforms that Enron recommends require the Commission to address the issue of stranded costs. However, the Commission should begin any consideration of stranded costs with the premise that stranded costs occur, if at all, only when the customer bypasses the utility distribution network altogether.

As the Order Instituting Rulemaking recognizes, the advent of distributed generation demonstrates that that time has come. The distribution function is clearly not a natural monopoly. Enron's experience, confirmed by the similar experience of numerous other potential competitors, is that California can responsibly expand competition in the energy distribution sector and do so in a way that is fair to all stakeholders. Some examples to support this experience include:

- An industrial customer recognizes that, since the cost of serving consumers at higher voltage levels is less than at lower levels, the customer can realize savings by taking service at a higher voltage level. Accordingly the customer seeks to design, construct, own, and maintain a substation and the line interconnecting with the utility network. Constructing and owning the substation and connecting line is less expensive than having the local utility distribution company (UDC) construct and own the substation and line.
- A semiconductor manufacturer requires greater reliability to support its operations, and it therefore constructs the necessary facilities to allow its plant to take power from two separate UDC circuits.
- A small industrial cogenerator finds it profitable to sell power to meet part of the electricity requirements of a neighboring facility in an across-the-fence arrangement. It constructs the necessary line and protective devices to allow the sale.
- The owner of a small fuel cell could provide cheaper energy and greater reliability to local customers if it could interconnect with the local distribution circuit.

These examples barely scratch the surface of opportunities that are now available to consumers but difficult to tap under the current structure. None of these examples should pose a threat to a distribution utility that is concentrating on being a "pipes and wires" company and that is focused on its customers' needs.

Enron urges the Commission to use this rulemaking to build in a responsible manner on the current foundation of facilities-based competition policies already in place. The experience of the last 25 years demonstrates that the introduction of competition in

what were once thought to be “natural” monopoly functions brings benefits in the form of lower prices, increased innovation, new products and services, and greater customer choice. The same benefits will flow from similar policies in distribution and distribution-related products and services.

IV. The Commission Should Eliminate Rate Designs or Charges That Discourage Competition

With the rise of competition for gas and electric distribution services have come additional, costly barriers to entry. These barriers continue to frustrate competition, maintain high prices, hinder innovation and deprive customers of significant benefits. Three prominent examples of these methods are business “retention” rates, the gas load exit fee or residual load service (RLS) tariff, and the electric stand-by charge.

The anti-competitive effects of these devices are easiest to see in the RLS tariff. Schedule GT-RLS of SoCalGas, for example, applies when a noncore customer arranges to take delivery of a portion of its gas requirements from a pipeline other than SoCalGas’s. If the customer’s load factor on the SoCalGas system drops as a result of taking the competitor’s service (and the load factor will drop in nearly all cases), SoCalGas imposes a charge that negates any savings the customer might have realized by merely taking advantage of the competitive market California has worked so hard and diligently to develop. In fact, the customer will in most cases wind up paying more for its transportation needs than when it took all of its transportation service from SoCalGas. Clearly, the RLS tariff is an efficient and effective deterrent to choice, competition, lower prices and better service.¹⁰

Under the current framework governing the electric industry, utility stand-by charges perform a similar anti-competitive function. Stand-by charges are based on the total potential demand of a customer. When the customer receives part of its electricity from a competitor of the local utility, the utility assesses a stand-by charge based on the

¹⁰ SoCalGas’s Schedule GT-RLS contains a provision that is still more damaging to choice and competition. It applies the RLS tariff to gas transportation services to all electric generation facilities

customer's total load. Again, like the RLS tariff, stand-by charges, seemingly by design, negate the savings a customer might otherwise receive by tapping into California's competitive energy markets. It is time to eliminate these practices altogether by reforming the current tariffs so that charges reflect only the utilities' cost of providing stand-by service, narrowly defined, and to recognize that incremental service is, in most cases, inexpensive for the utility. Without these reforms, distributed generation and competition in distribution-related services will fail in California.

Further, the three major electric utilities have proposed business retention rates, economic development rates, or flexible pricing options. These options are sometimes generically called "anti-bypass rates," and include targeted discounts to customers with access to the choices and competition that industry restructuring and regulatory reform have created. (See D.97-09-047; D. 96-08-025, 67 CPUC2d 297; D.95-10-033, 62 CPUC2d 24.) These discounts are intended to attract, grow or retain businesses within the utility service territories. The customer must demonstrate that, absent the discount, it would have relocated outside of the service territory, would not have located its business within the service territory, or would not have increased its load above historical levels. The Commission should only permit business discount rates that meet the following criteria:

- the rates are equal to or exceed the incumbent's marginal cost of providing the service;
- the incumbent's shareholders absorb any revenue shortfall resulting from the discounted price;
- the utility permits all other similarly situated customers to take service at the same rates, terms and conditions;
- the discounts are offered regardless of whom the customer selects as its energy or services provider;
- the offering of discounts complies fully with the Commission's affiliate rules; and
- the discounts apply only to the distribution portion of the bill.

owned by a customer even if the customer uses a competitor's transportation services at only one of its

Incumbent proposals for anti-bypass rates merely echo the interstate pipeline debate. The Commission should take the same position in such cases that it did in the Sempra-Enova merger and side with fostering competition and choice, which represents the most productive long-term strategy for California's energy consumers and its economy. Enron strongly urges the Commission to act quickly and firmly to eliminate or reform these and any other tariffs which have the effect of raising entry barriers and increasing costs for competitors, and ultimately, for consumers.

Finally, in order to enhance choice and competition, the distribution company should offer interruptible distribution service (like that available in the standard FERC transmission tariff) available at a discount to the full tariff rate, re-assess the desirability or continued applicability of demand ratchets, and reform the way in which rates for distribution service are calculated, applied and justified. Aligning the interests of the distribution company, customers, and ESPs will promote innovative rates and rate designs which encourage competition, choice, lower prices and more innovation.

V. The Commission Should Require Tariffs That Facilitate Rather Than Discourage Interconnection.

Enron has joined other parties in separate comments on the critically important issue of revising interconnection tariffs and practices. Enron will not repeat those comments' points here. In short, the Commission must take immediate action to counter the very negative effects of the current interconnection policies and practices. Without fair and objective interconnection policies and practices, and comparable access to the utility distribution systems, distributed generation and competition in distribution services cannot occur.

VI. The Commission Must Act Before the Transition Period Ends

The California experiment is at a crossroads. The utilities are projected to complete their collection of generation-related transition costs soon. For a workably

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competitive market to develop, the Commission must act to implement these fundamental changes before the Transition Period ends. The new market will not survive, let alone flourish, unless the role of the distribution company is established in such a way as to promote competition. The time to make those changes is now. Enron strongly supports this Commission's investigation into these matters and urges their quick resolution.

VII. Conclusion

As a result of advances in technology, the energy distribution sector no longer exhibits the attributes commonly ascribed to "natural" monopolies. The Commission's choices are to maintain the *status quo* regulatory structure, which will prevent the benefits of distributed generation and competition in distribution-related services from reaching consumers, or to foster choice and competition in a responsible manner that is fair to all stakeholders. Enron urges the Commission to embrace the latter choice and recommends that the Commission proceed with this rulemaking and develop pro-competitive policies governing distributed generation and distribution competition for the benefit of California's consumers and its economy.

Respectfully submitted,

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March 17, 1999

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**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Rulemaking on the Commission's Own Motion)	
to Solicit Comments and Proposals on	)	Public Utilities Commission
Distributed Generation and Competition in	)	Rulemaking 98-12-015
Electric Distribution Service.	)	(Filed December 17, 1998)
_____)	
)	
Information Docket on Distributed	)	California Energy Commission
Generation and Competition in Electric	)	99-DIST-GEN(1)
Distribution Service	)	(Filed January 27, 1999)
_____)	

**OPENING COMMENTS OF
JOINT COMMENTERS
ON DISTRIBUTED GENERATION AND
COMPETITION IN ELECTRIC DISTRIBUTION SERVICES**

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March 17, 1999

**OPENING COMMENTS OF
JOINT COMMENTERS
ON DISTRIBUTED GENERATION AND
COMPETITION IN ELECTRIC DISTRIBUTION SERVICES**

The Joint Commenters respond to the invitation extended in the Commission order instituting this rulemaking with the following comments and proposals on distributed generation and competition in electric distribution services. The Joint Commenters consist of Enron Capital & Trade Resources Corp., Enron Energy Services Inc., and Wild Goose Storage Inc.

I. Introduction

The Commission's call for comments is timely, because the members of the Joint Commenters are eager to inform the Commission about their experiences and frustrations in attempting to participate in California's electricity and gas markets and to bring the benefits of competition to the state's consumers and its economy. In particular, the Commission should be alerted to the fact that the practices of the electric and gas local or utility distribution companies (UDCs) with regard to interconnection to the UDC's system, unless corrected, will block any steps the Commission may attempt to take toward integration of distributed generation into the grid, or toward distribution-level competition generally.

The competition referred to in the future tense in the Order Instituting Rulemaking is already occurring, and the Joint Commenters' members have actively pursued projects to bring the benefits of competition to California. The lesson they have drawn from their experiences is an important one: Unless the Commission immediately reforms the current rules governing interconnection to California's gas and electric networks, distributed generation, and many other innovative new technologies and ventures, will simply never materialize. And California's consumers will suffer as a result. The need for Commission action is urgent, and the Joint Commenters accordingly ask the Commission to take immediate steps (in a separate phase of this rulemaking or in a separate proceeding) to develop interconnection rules that eliminate the potential for the

incumbent utilities to engage in anti-competitive practices and further frustrate competition and choice in California.

Ultimately, California must eliminate the incumbent utility's traditional role as "gatekeeper" to interconnection. This role may have made sense in the bygone era of vertically integrated, state-sanctioned monopolies, but it makes no sense today. Currently competitors must obtain from the utility access to the utility's bottleneck or essential facilities, and simultaneously compete with the very same utility for access services. A critical step to reduce the damage from this inherent conflict and the potential for continued anti-competitive behavior on the part of California's incumbent utilities is to move interconnection decisions out of the monopoly utility altogether.

The Joint Commenters believe that California must extract interconnection decisions from the monopoly utility immediately, but understands that it will not happen overnight. Accordingly, the Joint Commenters offer a model rule for consideration by the Commission and the parties as a practical, low-cost bridge to a structure free from the inherent conflicts imposed on the utility by the current framework.

II. How the UDCs' Interconnection Practices Discourage Competition: A Real-World Example

Abstract discussions of competition and distribution are inadequate to illustrate the frustration and expense that would-be competitors consistently encounter when they attempt to obtain reasonable terms for interconnecting with the UDCs' systems at both the distribution and transmission levels. The following account draws from the actual experience of a competitor in dealing with an UDC, and each of the Joint Commenters has had similar experiences. The Joint Commenters describe this experience in some detail to give the Commission a flavor of how serious the interconnection problem is.

The company in this example wanted to enter California's market and benefit the state's consumers and its economy by providing a service in competition with a portion of the utility's operations. As is frequently the case, the company, like distributed generators, needed to interconnect with the utility's bottleneck network facilities, and thus was put in the immediate position of having to negotiate with its competitor for

necessary services. The utility controlled not only the distribution system, but also the information the company needed to determine whether the proposed project was economically viable, and in particular the cost and details of interconnection. Even worse, the company had no way to verify the truth or accuracy of the limited information the utility reluctantly shared with it. It thus was put in the difficult position of having to rely upon the word of an entity—the UDC—whose economic interest was directly in conflict with the company's. In short, the utility—the company's direct competitor—controlled the economics of the company's proposed project. Needless to say, many potential competitors abandon their projects when they realize that they are in this extremely uncomfortable situation. Consequently, competition is frustrated, and consumers are the victims.

This particular company decided to press on and encountered still more obstacles. Since it was seeking an interconnection with the utility, it was forced to hire the utility, at considerable cost, to evaluate whether or not the utility system had sufficient capacity to accommodate the company's project. The resulting study took over two years to complete, and the utility provided no accounting of the charges it assessed for the study. Moreover, the UDC even refused to give the company a copy of the study data, claiming the data was competitively sensitive.

Still undeterred by this extra delay and cost, the company proceeded to the next stage, construction of the interconnection facility. Rule 2 of the California UDCs' tariffs governs the terms and conditions of construction of what the tariffs call "special facilities." Unfortunately for the company, nearly all special facilities are required under Rule 2 to be installed, owned, and maintained by the UDC. Again the company was forced to negotiate with the utility—its direct competitor—to obtain the design and construction of the special facilities the utility had unilaterally determined were necessary for a proper interconnection. Given that the utility represents the sole provider of these services, the considerable disadvantages the company faced in its attempt to negotiate a fair outcome are obvious.

Again the company was required to give considerable sums of money (in the millions of dollars) to the utility. Again the utility refused to provide any accounting of

what it did with the company's money. Again the company had no way of determining whether or not the utility was "gold-plating" the design and construction of the facility; it had to be content with taking the utility at its word.

Still our determined company pressed on. Due to the unwarranted degree of discretion that Rule 2 grants the utility, the company had no choice but to have the utility construct the "special facility." In response, the company was given yet another bitter pill to swallow. Due to the utility's insistence that it construct the facility, the funds the company provided the utility to construct the interconnection are taxable revenue to the utility. The result: the company was also charged for the taxes on that extra revenue. Combining these "tax" charges with other add-ons *amounted to a "gross-up" of well over double the installed direct costs.*

Furthermore, under Rule 2, ownership of the special facility, paid for entirely by the company, must remain with the utility. For the privilege of allowing its competitor to own the facility the company paid for, the company was required by the tariff to pay the company a monthly cost of ownership charge. The company is not even permitted an opportunity to verify that this monthly charge is based on the actual costs of installing the facility.

After all this, the company was finally able to begin conducting the business it had identified so long ago, but it still is in the uncomfortable position of depending on the UDC, its direct competitor, to *operate* its system in a way that does not put the company at a competitive disadvantage.

Clearly, this kind of "business-to-business" transaction is unique to regulated industries. When confronted with the irregularity of the situation, the incumbent utility responds consistently by stating that Rule 2 forces it to act in this manner, that its actions are fully consistent with Rule 2 as currently structured, or some combination of these two arguments. It is no secret, however, that utilities have historically played a very influential role in shaping these rules—rules designed to accommodate a vertically integrated monopoly industry structure. But the Legislature and this Commission have eliminated the vertically integrated monopoly in California's electric and gas industries.

The time is therefore well overdue for the Commission to harmonize its interconnection rules with the realities of contemporary gas and electric markets in California.

The Joint Commenters have presented this company's tale at length because it illustrates concretely the sorts of obstacles that potential entrants face every day. This particular example was not selected for its shock value, though shocking it is. Rather, it unfortunately is representative of the experiences of the members of the Joint Commenters. Every member of the Joint Commenters could relate a comparably frustrating, costly and unwarranted experience. But the Joint Commenters' goal is not to focus unduly on the problem, and in the following sections the Joint Commenters attempt to explain the importance of interconnection at fair and reasonable terms to the growth and indeed the very existence of distribution competition. The Joint Commenters will then offer some practical solutions to these problems.

III. The Importance of Fair and Reasonable Interconnection to Competition

Fair and reasonable interconnection is of critical importance to competition and competitors—and by extension to California's consumers and its economy—and for that reason the Joint Commenters' opening comments focus solely on that topic.

A. The Current Interconnection Process Restrains Competitors

The importance of interconnection to unleashing distribution competition in California may be illustrated by an analogy to the personal computer market. Personal computers typically consist of several components—computer, monitor, printer, keyboard, mouse—that may or may not be made by the same manufacturer. Fortunately for consumers, a large degree of standardization has made it possible to connect components made by different manufacturers. When it comes to responding to customers' needs for special facilities and interconnection, the energy utilities today are comparable to a personal computer company that offers a bundled group of its products as a system—including its standard monitor, printer, and modem. The system works, but many consumers will want different components, e.g., larger monitors, more versatile printers, and faster modems, to meet their specific needs.

The utility-like PC company is happy to provide interconnections with other companies' products, but it will first have to perform a couple of engineering studies, at the customer's expense, to make sure that these other components won't cause the computer to crash. A patient consumer can eventually have the product he or she desires connected to the computer, but only at a high cost and after a lengthy process. Needless to say, the development of the personal computer industry would have been fatally retarded if its companies had retained the ability to sell bundled products in this fashion. Fortunately for consumers, U.S. and California competition policy and antitrust law tend to make this a very rare outcome in the computer industry, and provide the means to remedy the problem should it arise.

While such a state of affairs now seems incomprehensible for the computer industry, this condition persists among energy utilities. And it is no coincidence that the explosion in the personal computer market followed the industry's efforts to develop connection standards. By establishing a clear set of standards to replace the arbitrary, opaque and costly barriers the utilities have erected, and improving the ease of interconnection to the distribution and transmission systems, the Commission can foster a similar proliferation of products and services.

Ideally, competitors and their customers will have the ability to easily "plug in" to the UDC's system based on standards of interconnection which are clear, objective, unambiguous, and widely accepted. Those standards should enable a customer to maximize the use of the electric system and minimize the costs by making an intelligent choice among several options: accepting some or all of the UDC's offer of services, choosing an independent provider's offer of services, and self-providing some or all of the services. Obviously, the energy industries have unique characteristics that distinguish them from the personal computer industry. But enormous progress toward the plug-in ideal can nevertheless be made in this rulemaking. To further that goal, the Joint Commenters in the following section discuss some key principles for fair and reasonable interconnection standards.

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B. Attributes of Fair and Reasonable Interconnection

Simply put, fair and reasonable interconnection should be open and objective.

Utilities currently treat any arrangement that requires something different from the standard utility service under the “Special Facilities” provisions of Rule 2. As the illustration discussed previously shows, the customer or would-be entrant (called the “applicant” in Rule 2) typically must pay the utility large sums for a preliminary study that produces a few options, with no information about what assumptions went into the study or which options were considered and rejected or not even considered. Nor does the “applicant” receive a detailed invoice explaining the specific expenses incurred by the utility-competitor to undertake the study. After the applicant chooses one of the options resulting from the preliminary study, the utility requires another large sum of money to undertake the detailed design, which allows the utility to inform the applicant exactly how much it must pay the utility to construct the special facility. Like the preliminary study, the “detailed design” comes without details.

Perhaps this black-box approach to special facilities was justified in the old, static world of regulated monopolies, but its persistence in an era of competition is not justified. There are several competitive objections to this practice.

First, as distribution becomes more competitive, the UDC, unless it is restrained, will be transformed from the monopoly-competitor to the competitor with the greatest market power. The emergence of a more competitive market for distribution services brings with it the potential for anticompetitive behavior and the concomitant need for a greater sensitivity to, and elimination of, that potential. The current interconnection requirements give the UDC complete control over relevant information, an unbridled discretion to approve or disapprove the projects proposed by the UDC’s competitors, and strong financial incentives to frustrate those projects. The potential for anticompetitive behavior is obvious and too great to ignore. This reason alone supplies a compelling reason for the Commission to reform the interconnection status quo.

Second, the UDC’s control over the design and construction of “special facilities” means that the competitor will almost certainly pay too much for the services

the UDC insists on providing. Much of the design and construction work for interconnections and related facilities could be performed by qualified contractors, and competitive bidding for that work would undoubtedly result in lower costs. The UDC's current control over design and construction gives the UDC an unrestrained ability to extract monopoly profits for its provision of these services. The prices for these services, unlike other monopoly services, are not set by tariff or reviewed by the Commission for reasonableness (unless a competitor takes on the significant added expense of filing a formal complaint, assuming that it can meet the requirements for standing of Public Utilities Code Section 1702). Again, the potential for anticompetitive behavior justifies a change in the current interconnection rules.

Third, the UDC's control over the special facilities process also gives the UDC the power to "gold-plate" the system at the applicant's expense by requiring more upgrades and reinforcements than justified under accepted engineering practices. Because the UDC does not reveal the engineering assumptions that underlie its design for special facilities, there is no effective check on this type of unnecessary over-engineering. A recent case exposed and illustrated how utilities sometimes try to load these extra costs on individual customers. In *Western Massachusetts Elec. Co. v. Federal Energy Regulatory Comm'n*, No. 92-1665 (D.C. Cir. January 15, 1999), the Court upheld FERC's determination that the utility had improperly charged a generator for system upgrades in addition to the costs that were required only for an interconnection. The Court accepted FERC's ruling that the generator should be responsible only for the costs of interconnection and that grid upgrades that provide systemwide benefit should not be tacked on to interconnection costs. Greater openness and objectivity in the interconnection process could help avoid this type of overcharging.

Finally, in a rapidly changing, more competitive environment, rules which require that the utility own certain facilities no longer appear applicable or justified. As discussed in more detail in the next section, the Commission has adopted policies that allow third parties to design portions of the distribution system. The Commission should elaborate on these policies and adopt interconnection procedures that will allow customers or customer's agents to design, construct, and own the installations that the

utility now controls as “special facilities” under Rule 2. Interconnection and the ability for a customer or third-party provider to own certain facilities is also crucial for promoting competition in certain “upstream” functions, such as gas storage.

III. A Proposed Interim Solution to the Problem of Interconnection

A. The Competitive Vision

Any effective solution to the problems created by the current interconnection regime must come to terms with the enormous potential for anticompetitive activity by the UDC. As long as the UDC at once competes and controls bottleneck or essential facilities, offering distribution services and controlling the interconnection process, competition will be stunted, at best. Ultimately, California must remove the UDC from the business of determining whether the system can accommodate a project and what interconnection facilities are needed for the project, and remove the UDC’s control, reinforced by existing tariffs, over the design, construction, and ownership of what it determines are special facilities.

The Joint Commenters believe that the future model for interconnection must and will be based on open and objective standards, with which any proposed project or interconnection must comply. The standards will allow the sponsor of a project requiring interconnection to evaluate the project’s economic viability easily and inexpensively, and most importantly, the sponsor will be able to make that evaluation at the outset, before it has a substantial investment in the project. Open and objective standards will also allow for design and construction work to be performed by qualified engineers and contractors, so that system reliability is protected without resorting to unnecessary and anticompetitive “gold-plating.” Clearly articulated standards also provide a direct response to the utilities’ repeated objection that the current opaque, lengthy, and costly interconnection process is necessary to protect system integrity and reliability.

The Commission has experimented, with good results, with such a standards-based system. In D.97-12-099, the Commission made permanent a pilot program for applicant design of residential gas and electric distribution services. The

program allowed developers of residential subdivisions to use third-party engineers and consultants, rather than the utility's personnel, to design the distribution systems serving the subdivision. The pilot program was successful in part because the utility was compelled to articulate standards that independent parties could apply without jeopardizing system reliability. The same approach, expanded to all aspects of the distribution system, constitutes the Joint Commenters' vision for interconnection.

The Joint Commenters recognize that it will take time to establish a standards-based interconnection procedure, and that competitors cannot afford the luxury of the time it will take to work out the details of this vision. Competitors need an immediate solution to the interconnection problem articulated in these comments, and in that spirit, the Joint Commenters offer the following interim solution. Nonetheless, the Commission should immediately abandon the current interconnection policy based on utility monopoly over access and establish a policy built on sensible industry standards.

B. A Modest and Achievable Solution: A Model Rule on System Enhancements

To lessen the potential for anticompetitive abuses and other problems associated with the current interconnection process, the Commission should require the utilities to incorporate the attached Model Rule on System Enhancements and to delete or appropriately modify any provisions of their current tariffs that would be inconsistent with these reforms. The Model Rule is intended to substitute for the current provisions on Special Facilities in Rule 2. The Model Rule uses the term "System Enhancements" rather than "Special Facilities" because "System Enhancements" more accurately describes interconnection facilities and because in a competitive world there should be and is nothing "special" about interconnection. The Model Rule describes a fair, open, and timely process that allows competitors an opportunity to interconnect with the utility system on reasonable terms and that provides assurance that system integrity and reliability will be maintained. The broad outlines of this process are:

- The customer (referred to as the "applicant," as in Rule 2) approaches the UDC with a Request for System Enhancements (RSE). The UDC should have

a limited period to ask questions about the RSE so that the UDC understands the applicant's request.

- The UDC presents the applicant with a detailed, itemized estimate of the cost of preparing a Preliminary Study of the requested System Enhancements. If the applicant agrees to proceed, the UDC will produce the Preliminary Study within ten working days, at or below the estimated cost.
- The Preliminary Study must identify at least two options for installation of "special facilities" and must include an detailed, itemized estimate of the cost of each option.
- The applicant and the utility will then engage in technical discussions of the recommendations of the Preliminary Study to allow the applicant to explore and understand the basis for the options and the cost estimates. These discussions are limited to ten working days and are intended to result in an agreement between the parties on the configuration and design of the System Enhancements and a detailed cost estimate of the utility's costs of performing a Detailed Design.
- The utility will then prepare a Detailed Design of the proposed System Enhancements within twenty working days. The Detailed Design will include an itemized budget for the installation of the System Enhancements and a detailed accounting of the utility's charges for preparing the Detailed Design.
- Another discussion period of five working days follows delivery of the Detailed Design.
- The parties will then negotiate a contract for installation of the System Enhancements. The negotiations will be completed within five working days. The applicant also has the option of putting the installation of the System Enhancements out for competitive bidding by qualified contractors.
- At all crucial points in this process, the parties have the ability to invoke a dispute resolution process.

In addition to the changes set forth in the Model Rule, one other utility practice inhibits competitors. The utility demands payment in advance for each service that it

performs in connection with the study, design, and installation of "special facilities." Nearly all other businesses first provide the service to creditworthy customers and then bill the customer, with payment due in 30 to 60 days, to accommodate accepted treatment of accounts receivable and to allow adequate cash-flow management. The Commission should direct the utilities to follow more conventional billing practices for charges related to interconnection, provided that the customer meets reasonable standards of creditworthiness.

IV. Similar Interconnection Issues Arise in the Natural Gas Industry

The order instituting this investigation defined the scope of the proceeding in terms of reforming electric distribution service, and accordingly the Joint Commenters' comments have focused on the issues related to competition in electric distribution. But nearly identical issues arise with regard to gas services.

In fact, the same customer may face similar interconnection issues for both gas and electric service. A gas-powered mini-turbine or fuel cell must interconnect with the local gas utility on the input side and with the local electric distribution utility on the output side, and those interconnections may need to be made in a way that differs from the "standard" connections assumed in Rule 2. New or refurbished power plants face similar requirements on a considerably larger scale. Pure gas interconnections also raise the same competitive issues that occur in the electric context. For example, the Commission has determined that gas storage is a competitive service, and independent storage companies are likely to need to connect their facilities to nearby pipelines that may be owned by their competitors in storage, the traditional gas monopoly. The utility's dual role as owner-operator of bottleneck or essential facilities on the one hand, and direct competitor on the other, creates an inherent conflict of interest, and a critical need for fair interconnection rules and for protection against anticompetitive practices in the gas storage market and gas markets generally.

Because of the similarity of issues raised by interconnection practices in the two industries, the Joint Commenters urge the Commission to open a companion rulemaking to consider distribution competition and interconnection issues in the gas industry. At the

same time, the Commission needs to continue to pursue the reforms contemplated in the Natural Gas Strategy proceeding. The combination of these actions can make great progress toward bringing true competition in the natural gas industry.

V. The Time Is Ripe for the Commission to Act on its Policy of Promoting Competition

As in so many other areas over which it has oversight, the Commission has moved methodically, incrementally and responsibly toward competition and choice in distribution-related services, and away from monopolies and intrusive regulation.

For example, the Commission has approved the formation of new irrigation districts, which are allowed to provide electric service to customers within their boundaries. (*E.g.*, Res. E-3528 (Patterson Water District); Res. E-3549 (McAllister Ranch Irrigation District).) The Commission also declined to approve an agreement between PG&E and Modesto Irrigation District (MID) that would have allowed MID to purchase a portion of PG&E's transmission and distribution system. The Commission rejected the agreement because it feared that the agreement might reduce competition in those services. (D.98-06-020.) In the MID decision, the Commission stated its policies favoring competition in electric services, including distribution. The Commission noted that its general policy "is to promote competition in all markets where competition may be economic." (*Id.*, slip op. at 7.) More specifically, the Commission stated, "Where economic competition is possible, and where other public policy goals are not unduly compromised, our policies will promote competition in utility markets." (*Id.* at 8.) The Commission also observed, with considerable understatement, that "opening markets in electric generation may provide some impetus for competition in distribution services." (*Id.* at 12.)

As the Joint Commenters' comments have shown, competition in the generation market has already led to competition for many types of distribution service, and distribution competition is already underway. But the competition in distributed-related services that has occurred so far has not come easily. The UDCs continue to use their monopoly powers to discourage competition and competitors. The Commission is in a

position in this rulemaking to take an important first step to eliminate or substantially mitigate that power and promote competition and economic efficiency in general. That step is to revise Rule 2 and its provisions on special facilities to open up the process of designing, constructing, and maintaining interconnections with the UDC's system.

First steps, even small steps, toward greater competition will produce benefits far greater than those that are immediately discernible. Competition brings with it the benefits of innovation in products and services, a focus on customer service, lower prices costs, and greater customer choice.

For all the reasons stated in these comments, the Joint Commenters respectfully request the Commission to order the UDCs to revise their tariffs to allow for easier interconnection by competitors who are poised to offer consumers choice, innovation, and efficiency in distribution services. Specifically, the utilities should be ordered to revise Rule 2 to incorporate the Model Rule on System Enhancements and to delete or modify any conflicting language in their existing tariffs.

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March 17, 1999

MODEL RULE ON SYSTEM ENHANCEMENTS

1. If an applicant requests the utility to install System Enhancements, the applicant will submit a Request for System Enhancements (RSE) to the utility. The utility will respond with any questions it may have about the applicant's RSE within five working days, unless the applicant agrees to a longer response period.
2. The applicant will promptly provide answers to the utility's questions about the RSE, and the applicant and utility will cooperate in good faith to ensure that the utility adequately understands the RSE.
3. Any follow-up questions the utility may have as a result of the applicant's answers to the utility's questions about the RSE must be provided to the applicant within five working days of the date applicant provided the answers. The period for exploring the RSE through questions and answers shall not extend beyond fifteen working days from the date applicant submitted the RSE, unless extended by agreement of the parties, and all questions and answers must be resolved within that period.
4. If the applicant and utility are unable to resolve the utility's questions about the RSE, they shall promptly commence the dispute resolution process set forth in Paragraph 12.
5. At the end of the discussion period described in Paragraph 4, not to exceed 15 working days from the date the applicant submitted the RSE, the utility will provide the applicant with a detailed, itemized estimate of the cost of preparing a Preliminary Study of the requested System Enhancements. If the applicant agrees

to proceed, the utility will deliver a Preliminary Study of the requested System Enhancements within 10 working days and at or below the estimated cost, unless the applicant agrees to a longer study period or higher cost.

6. The Preliminary Study shall identify at least two options for installation of the System Enhancements requested in the RSE. The Preliminary Study must include a detailed, itemized estimate of the costs of installing the System Enhancements, a detailed explanation of the benefits and detriments of each option, and, if the utility favors a particular option, the rationale for favoring that option. For each option, the Preliminary Study must also assess whether the requested System Enhancements result in any benefits to the transmission or distribution systems and must identify any such benefits. The utility must also provide the applicant with a detailed, itemized bill accounting for the utility's charges for preparing the Preliminary Study.
7. After delivery of the Preliminary Study to the applicant, the applicant and utility may engage in technical discussions of the recommendations of the Preliminary Study. The duration of these technical discussions shall not exceed 10 working days, unless the applicant agrees to a longer discussion period. During these technical discussions, the applicant will have an opportunity to explore options not identified in the Preliminary Study, to examine the rationale and estimated costs of the options, and to understand and question the basis for the utility's cost estimates. The technical discussions should culminate in an agreement between the utility and applicant on the configuration and design of the System

Enhancements and a detailed, itemized estimate of the utility's cost of performing the Detailed Design.

8. If the applicant and utility are unable to agree on the configuration, design, or cost of the System Enhancements or related issues, they shall promptly commence the dispute resolution process set forth in Paragraph 12.
9. If the applicant agrees to proceed, the utility shall prepare and deliver a Detailed Design of the requested System Enhancements to the applicant within 20 working days of the date the utility and applicant agree on a configuration for the System Enhancements, unless the applicant agrees to a longer study period. The Detailed Design shall present a detailed, itemized budget for the installation of the System Enhancements, and a detailed, itemized bill accounting for the utility's charges for preparing the Detailed Design.
10. After delivery of the Detailed Design to the applicant, the applicant and utility may engage in technical discussions of the contents of the Detailed Design. The duration of these technical discussions shall not exceed 5 working days, unless the applicant agrees to a longer discussion period. During these technical discussions, the applicant will have an opportunity to explore and question the configuration and design components of the Detailed Design, to examine the rationale and estimated costs of the Detailed Design, and to understand and question the basis for the utility's cost estimates.
11. If the applicant agrees to proceed, the applicant and utility will negotiate the terms of a contract for installation of the System Enhancements within five working days, unless the applicant agrees to a longer contract negotiation period. The

applicant may also put the installation of the System Enhancements out for competitive bidding by qualified contractors. If the applicant and utility are unable to agree on the terms of a contract for installation of the System Enhancements within five working days after the date of delivery of the Detailed Design to the applicant, they shall promptly commence the dispute resolution process set forth in Paragraph 12.

12. If the applicant and utility are unable to come to an agreement or resolution on issues arising in the process described in this rule, either party may notify the other party in writing of the commencement of the dispute resolution process described in this paragraph. Within five working days of the commencement of the dispute resolution process, the parties shall meet and confer in good faith in an effort to resolve their dispute. If the parties are not able to resolve their dispute after meeting and conferring in good faith, they shall jointly prepare a statement precisely defining the nature of any remaining disputes and within five working days shall submit the disputes for resolution as follows: If the disputed issues relate to the transmission level, including interconnections at transmission-level voltages, the parties shall submit their dispute, as defined in the joint statement, to the California Independent System Operator (ISO), which will designate an arbiter to resolve the dispute within 10 working days. If the disputed issues relate to the distribution level, including interconnections at distribution-level voltages, the parties shall submit their dispute, as defined in the joint statement, to the California Public Utilities Commission (PUC), which will designate an arbiter to resolve the dispute within 10 working days. If the disputed issues relate to both

the transmission and distribution levels, the parties shall submit the appropriate disputed issues, as defined in the joint statement, to both the ISO and PUC for parallel resolution. The ISO and PUC will designate arbiters to resolve the entire dispute within 10 working days. Prior to or as an alternative to submitting their dispute to the ISO or PUC, the parties may agree to retain a mediator or to enter into binding or nonbinding arbitration of their dispute, or to employ such other alternative dispute resolution techniques as they may agree on.

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Jul 28 12 16 PM '99

**SPECIAL
OPEN MEETING OF THE ARIZONA CORPORATION COMMISSION CONTROL**

DATE: Wednesday, June 28, 1999

TIME: 9:30 a.m.

**Hearing Rooms 1 and 2
Arizona Corporation Commission
1200 West Washington Street - 1st Floor
Phoenix, Arizona 85007**

This shall serve as notice of a special open meeting of the Arizona Corporation Commission at the above location for consideration, discussion, and possible vote of the items on the following agenda and other matters related thereto. Please be advised that the Commissioners may use this open meeting to ask questions about the matters on the agenda; therefore, the parties to the matters to be discussed or their legal representatives are requested, though not required, to attend. The Commissioners may move to executive session for the purpose of legal advice pursuant to A.R.S. §§ 38-431.03.A.3. and/or 4. on the matters noticed herein.

The Arizona Corporation Commission does not discriminate on the basis of disability in admission to its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, as well as request this document in an alternative format, by contacting Cynthia Mercurio-Sandoval, ADA Coordinator, voice phone number (602) 542-0838, E-mail csandoval@cc.state.az.us. Requests should be made as early as possible to allow time to arrange the accommodations.

**BRIAN C. McNEIL
Executive Secretary**

ARIZONA CORPORATION COMMISSION WORKSHOP

DISTRIBUTED GENERATION & INTERCONNECTIONS

Purpose: Workshop to consider advancements in distributed generation technology and requirements for interconnection to the electric grid from an Arizona retail electric competition paradigm

AGENDA

1. Welcome
 2. Workshop Overview
 3. Keynote Presentation: Industry & National Perspective
 4. Panel: Local Experiences
- LUNCH
5. Distributed Generation Breakout Session
 6. Interconnections Breakout Session
 7. Panel: The Retail Competition Paradigm
 8. Where Do We Go From Here?



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JUL 28 12 16 PM '99

Fax Cover Sheet

To: Jerry Smith
Company: ACC
Department:

Date: June 10, 1999

DOCUMENT CONTROL

Phone:
Fax: 542-2129

From: Phil Cea Jr.
Department: Regulatory Affairs

Phone: 250-2487
Fax: 250-3399

Subject: Interconnection Dis Generation

Total pages including this sheet: 3

Comments:

Jerry, Attached is APS's response to Mr. Williamson's June 1st letter regarding APS's issues for discussion at the June 28th meeting. If you have any questions please call me at 250-2487 or Sharon Madden at 250-2027. Could you please call me so I know you received it?

Interconnection/Distributed Generation Issues Workshop

APS's response to Mr. Williamson's June 1, 1999 letter.

A Distributed Generation Source can be designed to either operate in an interconnected mode (parallel) with the Utility which could back-feed into the distribution system, or in a non parallel mode which could not feed into the distribution system. The issues are addressed for these two scenarios.

Parallel Issues:

1. **Reliability & Restoration** time of power outages - additional time needed for isolation/clearance purposes.
2. **Safety:**
 - Visible disconnect switch
 - Protective Relaying
3. **Reserved distribution capacity**
 - VA Load
 - VAR requirements (induction machines)
4. **Pricing**
 - Wheeling transmission and distribution
 - Stand by for Generation and Distribution facilities
 - Under utilized distribution facilities – contract demand
 - Supplying only peak loads (backup power)
 - VAR support
5. **Impact Studies/Customer charges by APS**
 - Interconnection review
 - Synchronization (synchronous machine)
 - Feeder size
 - Protective Relaying, fault current protection
 - Transfer tripping
 - Effects on other customers /potential islanding
 - Power quality issues: harmonics, spurious voltages etc
 - Feeder/Transformer size
 - Power factor
 - Interconnection Agreement
6. **Mapping**
 - Tracking
 - Maintaining system integrity/safety

7. Certification (IPP)
 - Who certifies?
8. Scheduling & Settlement if transmission is impacted
9. Interruptible benefits for 1 MW or larger
10. Avoided transmission lines/substations

Non-Parallel Issues:

1. Reserved capacity
 - VA Load
 - VAR requirements
2. Pricing
 - Standby for Generation and Distribution facilities
 - Under utilized distribution facilities – contract demand
 - Supplying only peak loads (backup power)

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DOCUMENT CONTROL

From: "Jan Stewart" <ruco@primenet.com>
To: CC.UTIL(jsmith)
Date: 6/10/99 5:27pm
Subject: Interconnection/Distributed Generation Issues Workshop - June 28, 1999

Jerry,

In response to Ray's May 27, 1999 letter, in regards to the above noted workshop, I am attaching a Word file containing a list of issues and discussion topics. Please call me if you have any questions.

Have a nice day!

Prem

CC: "Steve M Olea" <solea@cc.state.az.us>

Interconnection/Distributed Generation Issues Workshop
Arizona Corporation Commission
June 28, 1999

Issues

- . Technology-specific issues involved in deploying Distributed Generation (DG)
- . Permitting, siting and environmental qualification
- . DG systems integration in the distribution system affecting:
system reliability, safety, coordination, communication and control
- . Interconnection standards to be developed by the Utility Distribution Companies (UDCs)
and approved by the Arizona Corporation Commission
- . Business and technical issues associated with DG holding the potential for providing
ancillary services including voltage and frequency control, spinning reserve, load following,
asset management, and reliability enhancement
- . Regulatory issues
- . Stranded asset charges

Topics for Discussion

- . What technical attributes of DG would drive market adoption?
- . Which customer groups would opt for DG?
- . How would different price scenarios affect market penetration?
- . How would DG impact air quality standards?
- . Do we need a third-party verification and certification of equipment?
- . What should be included in the interconnection rules?
- . How should interconnection rules be standardized?
- . Should there be limits on plant size for interconnection?
- . What are other states doing to address the DG issues?
- . What is federal government doing to encourage R&D and provide funding to enhance and
accelerate DG technologies?
- . Will public policy considerations, such as green power and air quality, have a real effect on
the adoption of DG?
- . Is there a general agreement that DG is a partnership between utilities and customers that
can offer benefits to both sides?
- . What is the economic evaluation of DG contributing toward T&D deferrals and reduction in
system losses?

Other Suggestions

- . Obtain EPRI Distributed Resources Product Book when completed (Draft8 - June 1999 is
available).
- . Invite DG vendors and manufacturers to make presentations.
- . Develop a list of case studies and test results.

Tucson Electric Power Company

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Mail Stop DB203
220 West Sixth Street
P.O. Box 711
Tucson, Arizona 85702

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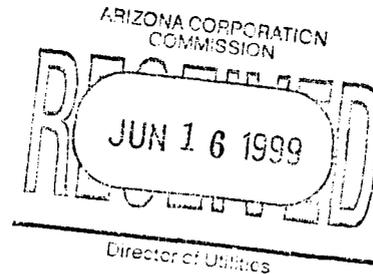
DOCUMENT CONTROL

Bradley S. Carroll
Counsel
Regulatory Affairs

(520) 884-3945
Fax: (520) 770-2000

June 15, 1999

Via Facsimile and U.S. Mail
Mr. Jerry Smith, P.E.
Engineering Section, Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

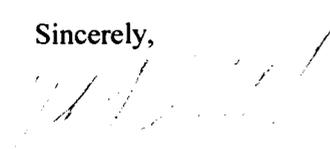


Re: TEP's List of Issues and Recommended Discussion Topics
for Interconnection/Distributed Generation Issues Workshop

Dear Mr. Smith:

Pursuant to Ray Williamson's May 28, 1999 letter, enclosed is TEP's list of issues and recommended discussion topics for the Interconnection/Distributed Generation Issues Workshop to be held on June 28, 1999. If you have any questions, please call Chuck DeCorse at 520-745-3251 or Tom Hansen at 520-337-7322.

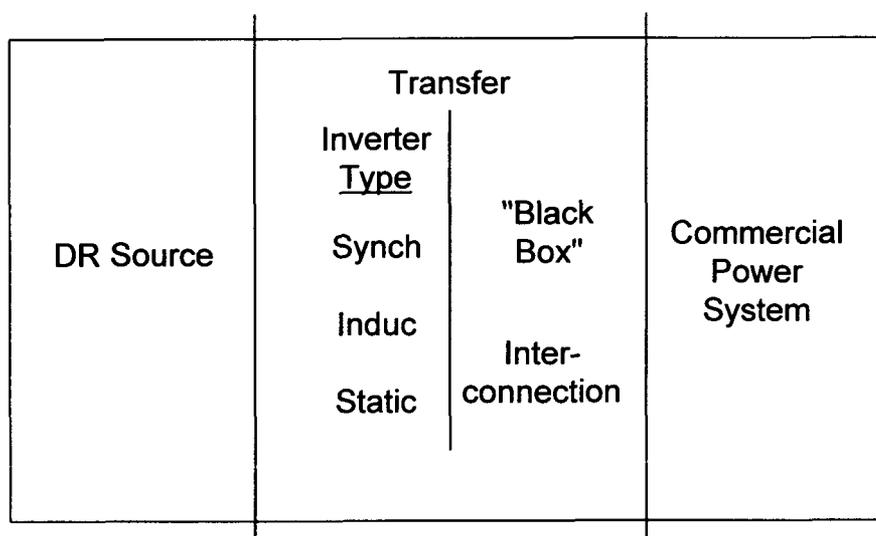
Sincerely,


Bradley S. Carroll
Counsel, Regulatory Affairs

Enclosure

cc: Tom Hansen
Chuck DeCorse

Interconnection Issues



1. Interconnection Issues can be referenced by the above diagram. There are three areas of concern, the distributed resource, the transfer, and the commercial power system. The area of interconnection is primarily convened with transfer although the three areas are not mutually exclusive. They are all related.
 - 1.1. Standard-ANSI/IEEE 1001-Interfacing Dispersed Storage and Generation Facilities with Electric Utility Systems. (Not adopted by IEEE but is a reference by new IEEE Interconnection committee)
2. Distributed Resource: Distributed Resource is a generic term for small sources of electric power that is not part of a large central power source. Individual sources may be associated with an electric utility grid or with an electric power consumer. It may be connected to the system for reliability, voltage control, base load operation, peak load reduction, energy recovery, disturbance reduction or stand-by-service.
 - 2.1. Potential types of distributed generation:
 - 2.1.1. Fossil chemicals (Fuel cells, inverter)
 - 2.1.2. Wind (Wind mill, generator, inverter)
 - 2.1.3. Solar thermal (Steam turbine, generator)
 - 2.1.4. Photovoltaic (Solar cells, inverter)
 - 2.1.5. Hydro (Water wheel, generator)
 - 2.1.6. Geo thermal (Steam Turbine, generator)
 - 2.1.7. Fossil thermal (Gas turbine, generator)
 - 2.1.8. Stored energy (flywheel, generator; battery, inverter)
 - 2.1.9. New technologies such as fuel cell automobiles connected to the grid.
 - 2.1.10. Other
3. There is need to establish the point of interconnection or point of common coupling-IEEE 929 defines this as the point at which the electric utility and the customer interface occurs.
4. There is a need to define the types of interconnection-There are two types of interconnection: one is the inverter as defined in IEEE 929, and the second is a

- generator. These can be further broken out on whether they are grid tied or stand alone which can operate independently from the grid.
5. Safety Issues need to be defined.
 - 5.1. The coordination and types of protection functions required need to be established
 - 5.2. Accidental energization of dead circuits should be addressed, Refer to IEEE 929 and UL 1741 for inverter guidelines.
 - 5.3. Inspection of systems needs to be addressed.
 - 5.4. Applicable National standards need to be agreed upon
 - 5.4.1. National Electrical Code
 - 5.4.2. National Electrical Safety Code
 - 5.4.3. IEEE 929.
 - 5.4.4. UL 1741-Static Inverters and Charge Controllers for use in Photovoltaic Power Systems
 6. Power Quality Issues need to be addressed
 - 6.1. Service reliability need to be addressed
 - 6.1.1. Harmonics levels guidelines need to be established-Voltage and Current
 - 6.1.2. Frequency Deviation guidelines need to be established
 - 6.1.3. Voltage Deviation guidelines need to be established
 - 6.2. National standards need to be agreed upon
 - 6.2.1. IEEE 519-1992-Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems.
 - 6.2.2. ANSI C84.1-Voltage Ratings for Electric Power Systems (60 Hz)
 - 6.2.3. ANSI C62.41-Recommended Practice on Surge Voltages in Low Voltage AC Power Circuits.
 7. Certification requirements must be established-(UL, CE, FM) of distributed generation units
 8. Periodic testing requirements should be addressed.
 9. International standards applicable to Arizona need to be investigated since we are so close to Mexico.
 10. Definition of environmental requirements needs to be established.
 - 10.1. Meets Arizona Department of Air Quality Standards
 11. Multi-unit distributed generation requirements need to be established-These are groups of individual distributed generators installed together for total generation to exceed the defined limit.
 12. Fuel Source Interconnection need to be investigated.
 - 12.1. Sources
 - 12.1.1. Natural Gas
 - 12.1.2. Land Fill
 - 12.1.3. All petroleum products

Robert S. Lynch

Attorney at Law

340 E. Palm Lane
Suite 140
Phoenix, Arizona 85004-4529

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AZ CORP COMMISSION

Office: (602) 254-5908

Fax: (602) 257-9542

Email: RSLynchAty@aol.com

JUL 28 12 16 PM '99

DOCUMENT CONTROL

FACSIMILE COVER SHEET

Date: June 10, 1999

Time: 4:30 P.M.

Please deliver the following pages to:

Name: Jerry Smith, P.E. FAX: 602-542-2129

Company: Engineering Section, Utilities Division
Arizona Corporation Commission

From: Robert S. Lynch

Total number of pages (including cover page): 3

Remarks/Special Instructions:

Please notify Peggy at (602) 254-5908 if you do not receive all of the pages.

Robert S. Lynch

Attorney at Law

340 E. Palm Lane
Suite 140
Phoenix, Arizona 85004-4529

Office: (602) 254-5908
Fax: (602) 257-9542
Email: RSLynchAty@aol.com

TELECOPIED ONLY

(Fax number: 602-542-2129)

MEMORANDUM

TO: Mr. Jerry Smith, P.E.
Engineering Section, Utilities Division
Arizona Corporation Commission

FROM: Robert S. Lynch 

DATE: June 10, 1999

SUBJECT: Additional technical issues that need to be addressed
prior to full competition in 2001 but which do not need
to be resolved prior to the commencement of competition
in 1999

Ray Williamson issued a memo on May 27, 1999 designating you as the victim of choice for suggestions on topics for a workshop on issues covering the above-referenced topic. The workshop is entitled Interconnection/Distributed Generation issues. It is impossible to tell from the memo whether this workshop is to address issues only an engineer could love or related issues that cover processes and potential rulemaking in the future. On the chance that the portfolio for the workshop might include the latter, I am submitting the following issues:

1. How to devise a process to achieve solutions in the murky area of jurisdiction between FERC and the ACC.
2. How to deal with transmission and distribution asset transfers either to affiliates or to third parties.
3. How to deal with continued obligations to perform existing contracts in the face of function transfers due to formation of affiliates.
4. How to devise a separate, simplified rulemaking process for considering these issues and other issues and possible amendments to the competition rules without being encumbered by the fact-oriented rulemaking processes in the current rules.

Mr. Jerry Smith, P.E.
June 10, 1999
Page 2

5. How to deal with questions and issues that are beyond the intended scope of this workshop, which may include the above.

I hope you will have copies of others' suggestions available for the attendees at the workshop on June 28th. Thank you for the opportunity to submit these suggestions.

RSL:psr
cc: Arizona Transmission Dependent Utility Group

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From: "Linda Buczynski" <LBuczyn1@mail.ci.tucson.az.us>
To: CC.UTIL(jsmith)
Date: 6/3/99 3:53pm
Subject: INTERCONNECTION/DG WORKSHOP

JUL 28 12 17 PM '99

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Jerry I am definitely interested in participating, but unfortunately I will be unable to attend the first MTG. I'll be in Wisconsin attending a course entitled "Interconnecting Distributed Generation to Utility Distribution Systems".

Vinnie Hunt will be there on June 28 for the City of Tucson. Could you please include me on any notification list?

Linda Buczynski
City of Tucson
(520) 791-5111 x332
(520) 791-5389 (F)
lbuczyn1@ci.tucson.az.us

And PLS see the attached for some suggested topics of discussion.

THANKS.

CC: "Vinnie Hunt" <VHunt1@mail.ci.tucson.az.us>

INTERCONNECTION/DISTRIBUTED GENERATION ISSUES WORKSHOP

SUGGESTED DISCUSSION TOPICS

1. Impact on Distribution Planning
2. Reliability Requirements
3. Stability Concerns
4. Power Quality Requirements
5. DG Islanding and Public Safety
6. Safety for Utility Personnel
7. Protective Relays for Various Generator Types, Interface Transformer Connections, and Loads
8. Telemetry Criteria for Various Loads and Configurations

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From: "Miessner, Chuck" <cmiessner@newenergy.com>
To: "jsmith@cc.state.az.us" <jsmith@cc.state.az.us>
Date: 6/7/99 3:01pm
Subject: dg workshop

JUL 28 12 17 PM '99

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Jerry,

Thanks for the opportunity to participate in the upcoming distributed generation workshop. We have been involved with a local distributed generation organization called the Distributed Energy Association of Arizona, DEAA, which includes equipment manufacturers, customers, engineering consultants, energy companies and other interested professionals from Arizona.

Below is a list of potential topics for the workshop, which are recommended by DEAA. In addition, we (DEAA) are willing to supply speakers who have been involved regionally and nationally in many of these issues. In particular, Sarah McKinley, the Executive Director of the Distributed Power Coalition of America will be attending the Workshop and has agreed to kick-off the Workshop with an overview of issues and current actions in other states, if you think that's appropriate.

Please review our suggestions and then lets talk about potential speakers.

You can contact me directly at
(520) 918-6453 or
cmiessner@newenergy.com

Thanks,
Chuck.

Chuck Miessner
Director of Operations and Regulatory Affairs.
New Energy Ventures

Recommended Topics

1. Overview at the national and state level
2. Utility practices and issues (presented by APS and/or SRP)
3. Safety of the distribution system and standardized interconnection standards and agreements
4. Equipment pre-certification and environmental impact issues

5. Standby, supplemental & maintenance power, CTC charges, net metering, selling into the grid and QF issues.
6. Compliance with state and local codes.
7. Potential benefits of distributed generation to the utility distribution system

CC: "Drummond, Dave" <ddrummond@newenergy.com>

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From: "Miessner, Chuck" <cmiessner@newenergy.com>
To: "Jerry D. Smith" <JDS@CC.STATE.AZ.US>
Date: 6/10/99 10:52am
Subject: RE: dg workshop -Reply

Jerry,
if you want some suggestions for speakers, the ADGEE also has some suggestions/volunteers; these are typically folks who are involved in DG issues on a national basis - manufactures, providers, and consultants. I'll forward some names for you to consider and screen (i'll send thurs or fri). several of the topics would lend to a panel of speakers including utilities, manufacturers, and providers.
chuck.

-----Original Message-----

From: Jerry D. Smith [mailto:JDS@CC.STATE.AZ.US]
Sent: Wednesday, June 09, 1999 12:44 PM
To: cmiessner@newenergy.com
Subject: dg workshop -Reply

Thanks for the suggestions - look forward to your participation in workshop.

INTERCONNECTION/DISTRIBUTED GENERATION ISSUES WORKSHOP

SUGGESTED DISCUSSION TOPICS

1. Impact on Distribution Planning
2. Reliability Requirements
3. Stability Concerns
4. Power Quality Requirements
5. DG Islanding and Public Safety
6. Safety for Utility Personnel
7. Protective Relays for Various Generator Types, Interface Transformer Connections, and Loads
8. Telemetry Criteria for Various Loads and Configurations

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JUL 28 12 18 PM '99

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From: Jeff Jacobson <jeff.jacobson@swgas.com>
To: CC.UTIL(jsmith)
Date: 6/9/99 10:59am
Subject: DG Workshop

Jerry,

Southwest Gas appreciates the opportunity to participate in the DG Workshop scheduled for June 28th. Southwest has promoted the use of cogeneration technologies in all of our service territories for many years. We have been long time members of the Distributed Energy Association of Arizona (DEAA) and have reviewed the suggested agenda and topics submitted to you by the DEAA. Southwest agrees with the DEAA that the seven topics listed need to be discussed in depth, in particular, standardized interconnection agreements statewide and back-up and supplemental energy rate schedules by the wires companies that do not stymie competition.

We look forward to meeting with you on the 28th.

Jeff

CC: CC.SMTP("ed.gieseeking@swgas.com")

From: Scott McCullough - PLANDEVX <ScottMcCullough@mail.maricopa.gov>
To: "jsmith@cc.state.az.us" <jsmith@cc.state.az.us>
Date: 6/23/99 4:28pm
Subject: utility commission

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Jerry,
Please include me on your list of contacts and persons who receive minutes for the emerging utility process. here are my vitals:

DOCUMENT CONTROL

Scott McCullough
301 West Jefferson St., Rm. 300
Phoenix, AZ 85003

Phone - 602-506-7164
Fax - 602-506-3601
Email - scottmccullough@mail.maricopa.gov
<mailto:scottmccullough@mail.maricopa.gov>

Hope to hear from you soon. thanks

Distributed Energy Association of Arizona

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Robert Baltes,
Director
Ray Bauman,
Director
Willis Boettcher,
Director
Greg Czaplowski,
Director
Dave Drummond,
Director

Walter Metcalf,
Director/Secr.
Bill Murphy,
Director/Prog.
Roger Newton,
Director/Treas.
Brian O'Donnell,
Director/V.P.
Edward Salgian,
President

May 4, 1999

Mr. Ray Williamson
Acting Director
Utilities Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

RE: Distributed Energy Service

Dear Mr. Williamson:

Distributed generation provides all Arizona consumers with the opportunity for improved quantity and quality of competitive energy service. The Distributed Energy Association of Arizona believes that distributed generation is a desirable option, which should be made simple and convenient.

DEAA encourages the Commission to expedite its process towards electric competition under the Commission's present framework. While proceeding with the rules implementation, DEAA respectfully requests that a special docket be opened to address the application of distributed generation in the context of the Rules. A working group of technical personnel might be created. A workshop to explain the workings of distributed generation within the new electric competitive environment is also requested by DEAA.

While implementing the proposed Arizona Electric Competition Rules, DEAA urges that the following elements be applied:

1. No competitive transition charge (CTC) for Self-Generation.
2. Interconnection for Distributed Generation must be safe, but easy with a pre-

DEAA
P.O. Box 10594
Phoenix, Arizona 85064-0594

certification process for units for 500 kW and below and standardized interconnection agreement for units over 500 kW.

3. Distributed Generators shall be entitled to interconnect with the distribution system and receive backup and supplement power at fair prices from the utility distribution company (UDC).
4. Standby and other charges for Self-Generation from local distribution companies must be standardized, simplified and at a fair price. For Distributed Generators of 500 kW and below, only distribution charges should be assessed.
5. Owners of Self-Generation for residential, commercial and industry should not be required to become an electric service provider.
6. Net metering should be allowed for small (500 kW), self-generators.

DEAA proposes that the Distributed Generation Working Group would conduct its work on a parallel track with the adoption of the proposed Rules so as not to delay their implementation. DEAA hopes that these technical considerations might be resolved within the next 4-6 months and any concerns may be explored and resolved.

Thank you for our opportunity to visit with you and the other Commission staff members. We look forward to working with you in the future.

Sincerely,



Edward Salgian

President

Transmitted by facsimile, original mailed.

01EA

RE-00000C-94-0165

BRIAN C. McNEIL
EXECUTIVE SECRETARY



CARL J. KUNASEK
CHAIRMAN
JIM IRVIN
COMMISSIONER
TONY WEST
COMMISSIONER

ARIZONA CORPORATION COMMISSION

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May 27, 1999
MAY 27 12:15 PM 1999

Reu
Jay

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To Parties Interested in Retail Electric Competition:

In a Procedural Order dated May 7, 1999, Chief Hearing Officer Jerry Rudibaugh ordered that parties to the Retail Electric Competition Rules docket submit "requests to schedule workshops in which the parties can meet and come to consensus on technical issues in need of resolution for the implementation of competition in the provision of retail electric services."

On May 13, 1999, a number of parties filed comments and suggestions in response to the Procedural Order. Staff has reviewed those responses and divided them into two categories. First, there were responses that mentioned "technical issues" as requested by the Chief Hearing Officer. Second, there were responses that mentioned certain "policy issues" in the rules. "Policy issues" will not be addressed in the workshops. Since "policy issues" are not what was contemplated by the Chief Hearing Officer as appropriate for a workshop format, they should be handled in the formal rule amendment process.

Staff believes that there are two sets of technical issues that need to be addressed prior to the start of retail electric competition: metering issues and load profiling issues. Metering and load profiling issues have been addressed, since 1997, by the Metering Committee of the Unbundled Services and Standard Offer Working Group. Staff believes this is the appropriate group to hold the workshops. Therefore, Staff has scheduled the following workshops.

**UNBUNDLED SERVICES AND STANDARD OFFER
WORKING GROUP
METERING COMMITTEE MEETINGS**

Metering Issues Workshop
July 1, 1999
9:30 a.m. to 3:00 p.m.
Hearing Room
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

Load Profiling Workshop
July 12, 1999
9:30 a.m. to 3:00 p.m.
Hearing Room
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

In addition to the two technical workshops listed above, Staff believes there is a need to commence a more long-term working group process to discuss technical issues that need to be addressed prior to full competition in 2001, but do not need to be resolved prior to the

Retail Electric Competition Interested Parties
May 27, 1999
Page 2

commencement of competition in 1999. Staff has, therefore, scheduled an initial workshop to address "Interconnection and Distributed Generation Issues".

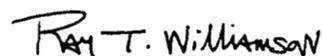
Interconnection/Distributed Generation Issues Workshop
June 28, 1999
9:30 a.m. to 3:00 p.m.
Hearing Room
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

I am asking interested parties to submit a list of issues and recommended discussion topics for the Interconnection/Distributed Generation Issues Workshop. Please send the list of issues vial mail, e-mail or fax by June 10, 1999 to:

Mr. Jerry Smith, P.E.
Engineering Section, Utilities Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007
E-mail: jsmith@cc.state.az.us
Fax: (602) 542-2129

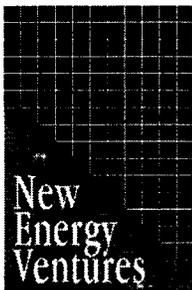
We look forward to seeing you at the workshops.

Sincerely,



Ray T. Williamson
Acting Director
Utilities Division

RTW:lh



Chuck Miessner
NEV Southwest, L.L.C.
5151 East Broadway, Suite 1000
Tucson, AZ 85711
cmiessner@newenergy.com

MEMO

DATE	June 11, 1999
TO	Jerry Smith, ACC Staff
RE	Distributed Generation Workshop

Jerry,

Below is a suggested list of speakers from the Distributed Energy Association of Arizona. All of these are involved with distributed generation issues at the national level. Most are available and will attend at their own expense. E-Source may require reimbursement for travel expenses. I think that several of the topics, such as safety and interconnection issues, would lend to a panel of local utility personnel along with one of these speakers from the industry.

Please contact me directly for any questions: (520) 918-6453.

Thanks,
chuck.

National overview	Sarah Mckinley Executive Director Distributed Power Coalition of America (202) 216-5944
Technologies and applications	Nick Lensenn E-Source (303) 440-8500 ext 108
Utility Practices and issues	APS,SRP,TEP,AEPCO
Safety, interconnection issues	Encorp (working on a name)
Equipment pre-certification	Mark Skaronski Allied Signal (310) 323-9500
Standby charges, CTC, selling to the grid	David Townley Director Business Development NEV Technologies (213) 996-6131
Compliance with State and local codes	Alan Olsen City of phoenix (they have expressed an interest in attending, but I don't know if they will speak)
Benefits of DG on utility distribution system	E-Source

RECEIVED
AZ CORP COMMISSION

From: "John Ault" <jwa@krsaline.com>
To: CC.UTIL(jsmith)
Date: 6/18/99 3:41pm
Subject: Additional Topic for Interconnection/Distributed Generation Issues Workshop

JUL 28 12 19 PM '99

DOCUMENT CONTROL

Mr. Smith,

Please consider adding the topic outlined in the two attached documents.
Thank You for your consideration in this matter.

John W. Ault
K. R, Saline & Associates

K. R. Saline & Associates, PLC

Kenneth R. Saline P.E.
Dennis L. Delaney P.E.

Writer's Email:
jwa@krsaline.com

160 N. Pasadena, Ste. 101
Mesa, AZ 85201-6764
(602) 610-8741
Fax: (602) 610-8796

June 17, 1999

Mr. Jerry Smith, P.E.
Engineering Section, Utilities Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

Re: Aggregation of Consumer Loads: Recommended discussion topic for the
Interconnection/Distributive Generation Issues Workshop

Dear Mr. Smith:

Our concern is that this very critical issue is not receiving the careful deliberation it deserves. Aggregation is the pivotal concept for successfully establishing the economies of scale for the small residential and commercial customers can invest and support distribution generation including renewables. Since the major supporters of renewable generation is the small independent user, aggregation is a necessary component which will permit enough small consumers to aggregate and economically justify and utilize distributive generation. Aggregation will also encourage a competitive retail market from which the small residential and commercial customers must be empowered to aggregate independently from the utility Electricity Suppliers.

Finally, the ACC Rules should be rewritten in order to become consistent with HB 2663. Attached is a letter to Betty Pruitt which articulates the significance this issue will have on the customers ability to effectively compete in a deregulated market environment and pursue distributive generation resources.

Please add this important issue to your list of topics to be discussed at the Workshop.

Sincerely,

John W. Ault

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June 3, 1999

Ms. Betty K. Pruitt
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Re: White Paper addressing Competitive Aggregation - A Pivotal Service for the Small Customer

Dear Sir / Madame:

The Arizona Corporation Commission Electric Competition Rules, as currently written, pertaining to Aggregation and Self Aggregation, are **not** in the best interest of the consumer for reasons specified below. Our concern is that this very critical issue is not receiving the careful deliberation it deserves. Aggregation is the pivotal concept for successfully establishing a competitive retail market from which the small residential and commercial customers must be empowered to Self Aggregate and Aggregate independently from the utility Electricity Suppliers. The ACC Rules should be rewritten in order to become consistent with HB 2663.

ACC Staff has recently scheduled several Working Group Meetings to discuss Load Profiling and Interconnection / Distributed Generation Workshops, in response to Chief Hearing Officer, Jerry Rudibaugh's order dated May 7, 1999. These forums are the ideal forums to raise Aggregation as another technical issue which needs additional discussion, consensus and closure. The importance of aggregation, to the small customer's ability to access the competitive markets and for the creation of an efficient retail market, cannot be overstated and should be thoroughly addressed in these Working Groups. We have set forth below the reasons aggregation should be reconsidered in the ACC Rules.

1. Amending the ACC Rules to become consistent with House Bill 2663 would create fundamentally sound State regulation for both Public and Private Utilities.

House Bill 2663 states very clearly that "PUBLIC POWER ENTITIES SHALL ALLOW THE AGGREGATION OF LOADS BY MULTIPLE CUSTOMERS".

The act of aggregating multiple customer loads into purchasing blocks is an axiom found in HB 2663 as demonstrated by the language quoted above. The ACC Rules are not consistent with the law. HB 2663 does not require Self-Aggregators or Aggregators to obtain Commission certification of any type, i.e., a CC&N. The ACC Rules, as currently written, do require Energy Service Providers to obtain certification and the ACC Rules state "Aggregator means an Electric Service Provider that combines retail electric customers into a purchasing group". This establishes Energy Service Providers as the only entities that are permitted by the ACC to aggregate loads. This creates a serious inconsistency between the ACC Rules and HB 2663, that may require revisions to the ACC Rules. The Legislature recognized the importance of separating the customers' right to aggregate loads, from the functions of Electricity Suppliers.

The Rules and HB 2663 already require providers of electricity to be certified by the ACC. Aggregation is not the act of supplying electricity to a customer, however, aggregation is a right of the small customers to achieve economies of scale via the consolidation of their combined purchasing power by aggregating their loads. This allows the small customers to purchase power on the same level as the large users and compete on a comparable basis. Without aggregation the small customer is being discriminated against because they are being deprived of any market position if they are prevented from achieving economies of scale by consolidating their loads. Only through aggregation will a consumer, have the freedom and opportunity to achieve the economies of scale of the large customers, without the inherent discrimination of size.

The Arizona Corporation Commission should revise the Electric Competition Rules in the interest of preserving all Customers' rights to exercise their power of "Customer Choice". The ACC should not knowingly deny aggregation of loads by multiple small customers to achieve economies of scale, and the ACC should not continue to support Rules inconsistent with the Legislature's HB 2663.

Consistency between the Public Power Entities regulated by the Legislature and the Affected Utilities regulated by the Arizona Corporation Commission, is imperative to avoid the difficult prospect of a customer having to learn and follow **two** sets of Rules here in Arizona. Many customers that will wish to aggregate multiple loads that reside in different geographical service territories and under different regulatory schemes, should not be subjected to the rigors of having to follow **two** inconsistent sets of aggregation practices as defined in HB2663 and the ACC Rules.

2. Consumers Empowered: Self Aggregation and Aggregation

The ability of the small customer to independently self aggregate or aggregate is one of the fundamental principles required for open access to promote true competition across the Western Interconnected grid and is completely supported by the Legislature. "Aggregation / Customer Choice " have been some of the most repeated phrases during deregulation and probably the some of the least understood.

The consumers lose, if the customer is not permitted to aggregate loads and is only provided a limited number of choices determined by the Electricity Suppliers. The ACC Rules as currently written limit aggregation to those Electricity Suppliers which are holders of a CC&N and thereby preclude small customers from aggregating their loads. This essentially forces every small customer to acquire service from the same major utilities entrenched in the State and region. Customers are being denied any rights to design and develop their own methods to secure economical energy service from alternative Electricity Suppliers because the ACC Rules do not provide for aggregation of loads by multiple customers. Please note that the power trader's current "unit of measure" is megawatts, not watts; It could take 200 homes to use 1 megawatt. This is a prime example of the size disparity that is currently in place. Preventing the Customers from achieving the size to "shop" the market becomes a very limiting factor that can stagnate the healthy development of a robust market. The ACC Rules already recognize that the large users will likely access the market initially. Aggregation is the only instrument by which the gap of disparity between the small customer and large customer will be closed. Allowing aggregation is the only means which can prevent the small customer from being "left behind" in the race for securing lower cost power.

The consumers must be granted the right to determine whether the new Electricity Suppliers in the market can provide better products than the utilities' status quo. Aggregation empowers the customer to not be reliant on the subsidiaries of the traditional monopolists or new marketers. Customers that take the initiative to organize into strong buying groups should not be penalized with increased regulation or the added burden of being required to obtain a CC&N. Customers should be unfettered by such unnecessary regulatory burdens. HB 2663 recognizes and supports this axiom as legislated into law. Preserving the Customers' right to aggregate loads and shop Electricity Suppliers, expands the customer's ability to effectively participate in competitive markets and stimulates greater competition. It allows the small customers to act like a large customer and negotiate competitive pricing from the Electricity Suppliers. Aggregation of loads by multiple customers will put downward pricing pressure on energy prices because the Electricity Suppliers will be competing to be the supplier of choice. Aggregation will also serve as a catalyst for competition, because allowing the small customer to expand the demand for new electricity suppliers, will accelerate market transition. Burdening the small customer with greater regulation is anti-competitive and contrary to free market theory, eliminates prospects of customer advantages through economies of scale, and diminishes market efficiencies.

3. Net Metering and Aggregation: An effective financial incentive for developing Renewable Resources

The Renewable Portfolio Standard will introduce a wide array of new technologies to be used for generating electricity. These technologies will be used for the development of load side generation or distributive generation. Due to the size and location of load side generation, customers will have the opportunity to purchase environmentally friendly generation resources that will reduce their electric bills and potentially provide the customer with a profit via net metering.

Net Metering allows, the customer to use electrical energy produced from the distributive generation directly against the customer's loads, on a kilowatt for kilowatt basis. With aggregation the energy generated can be put on the electric grid for consumption by the aggregated group. Aggregation would permit more efficient use of energy by the customers, if net metering and aggregation are permitted.

The aggregation of loads by multiple customers, coupled with provisions for net metering are probably the two key ingredients for developing renewable resources which:

- ▶ May need to be added to the ACC Rules on Electric Competition
- ▶ Stimulate the distributive Generation market for solar and renewable resources
- ▶ Remove regulatory barriers and create customer incentives to actively participate in the market
- ▶ Apply downward pricing pressure on energy prices due to Customer's choosing alternative distributive generation
- ▶ Create incentives for applications of new technologies
- ▶ Achieves economies of scale and supports small renewable resource projects

4. CC&N: An effective regulatory disincentive for Developing Competitive Markets

Currently as the rules are written, for a consumer to aggregate individual loads of multiple customers or even if a group of consumers, like a home owners association, wished to aggregate all the residential loads and choose an Electricity Supplier, they would be required by the ACC Rules to apply for a Certificate of Convenience and Necessity. A hearing before the ACC would follow to prove to the Commission the customer's fitness to obtain a CC&N. The customer will have to develop or purchase the technical and legal capability to complete the application process in hopes of obtaining a CC&N. At the completion of this expensive regulatory process, there is no guarantee that the Commission will grant a CC&N. Regulation of customers wishing to aggregate, poses a very discouraging process to those residential/commercial customers looking to aggregate loads and access lower cost electricity supplies. This additional regulatory burden only falls upon the small customers, because the large customers are of significant size to efficiently and effectively access the market (even though large customers could benefit from aggregation as well). Therefore the

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current ACC Rules creates an anti-competitive regulatory barrier for the customers with loads less than 1MW by preventing them from achieving economies of scale necessary to effectively access the market.

Saddling consumers with the time consuming and expensive regulatory bureaucracy, rules, and costs totally defeats the purpose of providing them with open access and Customer Choice. The ACC Rules create regulatory barriers which limit the consumer's ability to actively take advantage of the newly formed competitive markets. The average consumer is not willing to spend the money, time, and effort to pursue regulatory permits, when the point of deregulation is to spend less on regulation and more to identify the lowest cost Electricity Supplier to reduce their bills. The Legislature recognized this fact and the Commission should adopt the necessary Rule changes to reflect it. By amending the Rules, the Commission would benefit the consumer, establish consistency with HB 2663, and advance competition to a higher level of efficiency for all customers.

Sincerely,

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