Before the
Public Service Commission of Utah

In The Matter of the Investigation of the	)	Docket No. 14-035-114
Costs and Benefits of Pacificorp's Net	)	
Metering Program	)	

Direct Testimony of
Justin Barnes

On the Topic of
Grandfathering

On Behalf of
Utah Clean Energy

June 8, 2017

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1. INTRODUCTION

Q. Please state your name, business address and current position.

A. Justin R. Barnes, 401 Harrison Oaks Blvd. Suite 100, Cary, North Carolina, 27513. My current position is Director of Research with EQ Research LLC.

Q. Please describe your educational and occupational background.

A. I obtained a Bachelor of Science in Geography from the University of Oklahoma in Norman in 2003 and a Master of Science in Environmental Policy from Michigan Technological University in 2006. I was employed at the North Carolina Solar Center at N.C. State University for more than five years, where I worked on the *Database of State Incentives for Renewables and Efficiency (DSIRE)* project, and several other projects related to state renewable energy and efficiency policy.

In my current position I coordinate EQ Research's various research projects for clients, directly manage and perform research for an electric industry regulatory policy tracking service, contribute as a researcher to other standard policy service offerings such as a general rate case tracking service, and perform customized research and analysis for clients. I have testified before the Public Service Commission of South Carolina, the Oklahoma Corporation Commission, the Colorado Public Utilities Commission, and the Public Utilities Commission of Texas as an expert in distributed generation policy and rate design. My *curriculum vitae* is attached as Exhibit JRB-1.

Q. Have you previously testified before the Utah Public Service Commission

("PSC" or "Commission")?

A. No.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Utah Clean Energy ("UCE").

Q. What is the purpose of your testimony in this proceeding?

A. My testimony discusses grandfathering for existing net energy metering ("NEM") customers and long-term strategies for evolving distributed generation ("DG") rate structures should it be deemed necessary to do so. Based on this discussion, which includes an overview and analysis of how other states have addressed these issues, I recommend that in this proceeding the Commission:

1. Grandfather existing DG customers on the currently applicable rate structure for 20 to 25 years, where existing DG customers are defined as those that submitted an interconnection application before the latter of the date of a final Commission order in Docket No. 14-035-114 or the effective date of any tariff changes.
2. Pursue an incremental approach to evolving DG rate structures that focuses on long-term solutions for integrating DG as an integral part of the electric system.
3. Apply grandfathering to *future* DG customers for at 20 to 25 years to support long-term investments under any new rate design adopted in this proceeding.

2. OVERVIEW OF GRANDFATHERING AND ITS SIGNIFICANCE

Q. Please explain the principle of grandfathering as it relates to the current proceeding.

A. Grandfathering refers to a decision, usually made by a state regulatory commission, to allow DG customers to continue to take service under a rate structure in the event that it is discontinued for new participants. In the present context, it refers to both:

- Allowing NEM customers to continue to take service under their electric utility's existing NEM tariff for either a defined period of time, or in perpetuity, should net metering be discontinued.
- Allowing those same customers to continue taking service under a current rate structure should changes be made to rate structures that apply to DG customers.

The overall intent of grandfathering is to respect long-term customer investments made prior to the time when changes were known.

Q. When you refer to "existing customers", are you referring to those that have already installed DG or those that might install DG in the future?

A. I used the term "existing" to refer to current DG customers. However, once a customer installs DG, they become an existing DG customer from the reference point of future changes. In this way, a grandfathering policy establishes the predictability necessary for new or future DG customers to make investment decisions that require a long-term outlook.

Q. Does grandfathering have the effect of freezing a customer's rates?

A. No, as typically implemented it only applies to rate structure, not the actual rates. Consequently, a grandfathered customer would be subject to the same periodic rate fluctuations as any other customer within the same class, as well as changes in rate structure that apply to that class as a whole. These changes may include variable rate components, such as volumetric energy rates and cost adjustments as well as fixed rate components, such as a monthly service charge or minimum bill.

Q. Why are electric rate structures important to NEM or DG customers?

A. NEM customers make significant, long-term financial investments in DG systems. Revisions to the fundamental structure of NEM or underlying rate structures can have dramatic impacts on these investments because retail rates are the foundation of a customer's expected savings. The ability to rely on projected long-term savings based on reasonable assumptions and predictable policy is a critical factor in a customer's decision to install a DG system.

According to analysis prepared by UCE Witness Melissa Whited, annual bill increases under Rocky Mountain Power's ("RMP or "the Company") proposal for a sampled set of NEM customers would range from $200 to $400 for customers averaging less than 1,200 kWh per month in electricity usage.[1] A small number of customers would see bills that are higher than their bills were before installing solar.[2] Ms. Whited's analysis also shows that payback periods for over 40% of the sampled customers would increase to more than 30 years under the proposed rates.[3] This contrasts with estimated payback periods of 15 years or less for roughly 75% of sampled customers under current rates.[4] Clearly, the impacts of the Company's proposed changes to DG rate structure are highly adverse and significant.

Q. Please elaborate on what expectations a customer would typically have when considering whether to install a DG system.

A. It is reasonable to assume that utility customers, including NEM customers, should anticipate changes to certain rate components over time. In this respect, NEM and other customers are accustomed to and mostly accept that periodic and typically gradual rate changes will occur. That is, customers have been conditioned to expect small rate changes from year to year (i.e., typically increases) rather than dramatic changes in rates or rate structure. This expectation is in large part attributable to the fact that regulators have historically made substantial efforts to avoid "rate shock" in ratemaking decisions, consistent with the principle of gradualism.

[1] Whited Direct, pages 9-10.
[2] Whited Direct, pages 9-10.
[3] Whited Direct, page 13.
[4] Whited Direct, page 13.

Q. Why is it reasonable for existing DG customers to be grandfathered into current rate structures should changes to NEM or other rates elements be modified?

A. As I described previously, DG customers have made significant, long-term financial investments in DG systems that would be significantly and adversely affected by RMP's rates proposal. They did so based on a reasonable assumption that historic rate trends and ratemaking practices would continue. Additionally, DG customers made their investments in an environment where other long-running solar-related policies and programs encouraged them to make these investments. Without grandfathering, the changes being contemplated here are punitive for those existing DG customers, who could not have known if, or how, rates, policies or programs would change, and how that might impact their investment.

Q. What policies and programs are you referring to that have historically encouraged solar and DG investments in Utah?

A. One of the most visible policies in this respect is a state tax credit for renewable energy systems, which has existed since 2001.[5] Legislation enacted during the 2017 session establishes a gradual phase-out in this incentive through annual step-downs in the maximum tax credit. The steps reduce the maximum in $400 annual increments starting in 2018, from the current level of $2,000 for systems installed during 2017 to $400 for systems installed in 2021.[6]

[5] Utah Code, § 59-10-1014.
[6] House Bill 23. Enacted March 17, 2017.

Another is the Utah Solar Incentive Program for RMP customers, which was established by the Commission in 2007 and extended in 2012.[7] Finally, one of the most visible elements of Utah's current NEM policy is the very high aggregate limit (20%) for customer participation, established by the Commission in 2009.[8] It is hard to grasp how the average prospective DG customer could see these policies, especially the two incentive programs, and not interpret them as an encouragement to install rooftop solar.

Q. Given that the Commission has been considering DG rate changes at some level for several years, is it correct to say that at least some current DG customers could have been aware that changes may be imminent?

A. Determining what a customer "should" have known about future rate changes and when they should have known it is problematic. Any backwards-looking analysis attempting to identify some form of benchmark date would be an incredibly subjective exercise. It would involve assumptions about how closely prospective DG customers follow Commission proceedings or activities at the Legislature, including their ability to make predictions about what either might do. It is not reasonable to expect that the average prospective DG customer is equipped to perform this type of evaluation. What a customer likely knew at any given time was that incentives were available and that their rates changed slowly over time.

[7] Utah Public Service Commission Report and Order in Docket 07-035-T14. August 3, 2007; Order in Docket 11-035-104. October 1, 2012

[8] Utah Public Service Commission Report and Order in Docket 08-035-78. February 12, 2009

Q. Please elaborate on how the difficulties you describe above would affect grandfathering in practice.

A. Defining eligibility for grandfathering is one of the critical elements of grandfathering. Eligibility should respect investments and consumer choices made prior to any final changes. The date of any change (i.e., a Commission order or tariff effective date) is the only objective benchmark available for making this distinction. As I have described previously, any other date or deadline would be inherently subjective and arbitrary. There are numerous possibilities for an arbitrary benchmark, ranging from the date of the Company's 2013 rates application, where it first proposed DG-specific charges, to milestones in the current proceeding. None of these are appropriate. It would be unreasonable to base grandfathering eligibility on questionable assumptions when a clear objective standard (i.e., the date of a final decision) is readily available.

Furthermore, a departure from this objective standard would create a cloud of perpetual uncertainty among prospective DG customers, resulting in an environment where making any decision is incredibly risky. Prospective DG customers would never know what might be proposed in the coming years and how it would affect them. They would also be forced to react to any future utility proposals as though they would be adopted by the Commission. I urge the Commission to avoid this type of disruptive pattern in the strongest possible terms. Therefore, I recommend that the only objective benchmark for grandfathering is the date of a final Commission order or the date new tariffs become effective. I recommend that the later of these two dates be used (if they differ) to allow for a smooth transition process.

Q. Is grandfathering discriminatory insofar as it subjects new DG customers to rates that may be different from those of existing DG customers?

A. While it is true that grandfathering would create a distinction between the rates charged to existing vs. new DG customers, the distinction would not be unfair or disproportionate. First, as I discuss above, customers considering DG after the date of a Commission decision will have access to considerable information that existing DG customers did not have when making the same decision. Viewed in this lens, not allowing grandfathering is unfair to existing DG customers because it treats them the same despite the obvious and inescapable differences in available information. Second, it is hard to see that a distinction in rates is unfair to future DG customers when future DG customers will be no better and no worse off no matter what the Commission decides on grandfathering for existing DG customers.

3. GRANDFATHERING POLICIES IN OTHER STATES

Q. Have other state regulatory commissions addressed grandfathering for existing NEM customers?

A. Yes, within the spectrum of recent regulatory decisions affecting net metering and DG customer rates to varying degrees, grandfathering is perhaps the single most consistent element. I have developed a table (Figure 1) that provides an overview of how other state regulatory commissions have addressed grandfathering for existing DG customers in their consideration of changes to NEM and/or rate structures for DG customers.[9] As Figure 1 shows, while there are some small differences in how states have approached grandfathering, there are common conclusions as well.[10] The dominant conclusions with respect to grandfathering are that:

1. While certain elements vary from state to state, as a general policy principle, it enjoys universal support from regulators.
2. The most common durations are at least 20 years, ranging upward to indefinite or complete grandfathering in many states.
3. Grandfathering eligibility is based on a customer submitting an application either before some future benchmark or date certain, or the date of a decision.

[9] Note that Figure 1 does not include the numerous instances where proposals have simply been rejected or withdrawn, resulting in maintenance of the status quo. It also does not include grandfathering policies adopted by legislators in states such as Massachusetts and New Hampshire.
[10] Exhibit JRB-2 contains a reproduction of Figure 1 and the associated references.

Figure 1: Summary of Regulatory Decisions on DG Rate Structures and NEM						
State	**Grandfathering Allowed?**	**Case Decided by Litigation, Settlement or Rule?**	**Grandfathering Term/Duration**	**Grandfathering Eligibility Deadline**	**Outcome**	**Next Steps?**
AR	Yes (if NEM revised in Phase 2)	Rule	20 years (if Phase 2 changes)	Future; application before effective date of Phase 2 structure	Core of existing NEM maintained	Explore NEM modifications in Phase 2; overall DG policy in separate proceeding
AZ	Yes	Litigated	20 years from date of application	Future; application before the effective date of GRC decision	NEM eliminated; gradual reduction in export rates	Rate design in utility GRCs; next generation DG policies in other proceedings
CA	Yes	Litigated	20 years from interconnection year	Future; interconnection before 7/1/2017, or utility cap reached	Modest minimum bill; mandatory TOU; core of NEM maintained with small credit rate reduction.	NEM review in 2019; multi-faceted DER and grid 2.0 efforts
CO	N/A	Settled	N/A	N/A (existing NEM rate structure maintained)	Existing NEM rate structure maintained	Test new rate options; storage integration
HI	Yes	Litigated	Indefinite	Application before date of Order	NEM eliminated; new DG tariffs with minimum bills.	Phase 2 exploring DER market integration, enablement, grid services.
IA	Yes	Litigated	Indefinite	Application before effective date of any tariff changes	Expanded NEM under 3-year pilot	Review pilot outcomes, then decide next steps
LA	Yes	Rule	Indefinite	Future; application before utility cap reached	NEM maintained; monthly rollover changed to avoided cost from retail	Phase II addressing effectiveness of NEM rules and broader DG policies
ME	Yes	Rule	15 years	Future; in-service date before 12/31/17 (or future vintage year)	Gradual decrease in distribution component of NEM credit	Rule review when new penetration benchmark met
NV[11]	Yes (eventually)	Litigated, Settled	~20 years (through 11/30/2036)	Initially no grandfathering; upon revision, application within one week of initial NEM Order.	Higher fixed charge phase-in; NEM eliminated with gradual decline in export credit rate; NEM re-opened subsequently in SPPC territory.	Investigate "universally-acceptable" methodology for rooftop PV valuation & NEM systems. Legislation now targeting broader electricity market reforms
NY	Yes	Rule	Indefinite (existing); 20 years (Phase 1 NEM)	Installed by date of Order	NEM maintained for residential (NEM Phase 1); DER tariff for others	DER tariff refinement; Phase 1 NEM through 2020 or when new caps reached; ongoing broad energy transformation initiative
SC	Yes	Settled	~10 years (through 12/31/2025)	Future; Earlier of 12/31/2020 or utility cap met	NEM adopted	No specific next steps
VT	N/A	Rule	10 years	Application by 1/1/2017	Core of existing NEM maintained	Ongoing broad energy transformation initiative

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[11] This refers to past regulatory proceedings. As discussed further below, new legislation that awaits only the Governor's signature would reestablish NEM on a statewide basis.

Q. Would you like to discuss any specific states included in Figure 1?

A. Yes. Nevada has had an unusually complex experience with addressing grandfathering, ultimately resulting in the 20-year grandfathering period detailed in Figure 1. In December 2015, the Public Utilities Commission of Nevada ("PUCN") issued an order in a consolidated proceeding requiring all NEM customers -- including existing NEM customers -- to transition to a new rate structure over a four-year period.[12] The PUCN's decision — including its decision not to grandfather existing NEM customers — was widely unpopular. In fact, both major electric utilities involved in this proceeding, Nevada Power Company ("NPC") and Sierra Pacific Power Company ("SPPC"), supported grandfathering for existing NEM customers for 20 years.[13] In February 2016, in the same consolidated proceeding, the PUCN issued an order moderating its previous order by (among other things) extending the transition period to 12 years.[14]

Shortly after the latter PUCN decision, Nevada Gov. Brian Sandoval issued an executive order reconvening the New Energy Industry Task Force ("NEITF"), a diverse group of stakeholders that met for several months to develop recommendations on the "best energy policies for Nevada's future."[15] The executive order directed the NEITF and the Governor's Office of Energy to provide recommendations that included supporting DG and energy storage, with a specific focus on rooftop solar and NEM. In its final recommendations, the Task Force

[12] Public Utilities Commission of Nevada order issued December 23, 2015, in Dockets 15-07041 and 15-07042.

[13] Incidentally, both SPPC and NPC are owned by Berkshire Hathaway, the same company that owns RMP.

[14] Public Utilities Commission of Nevada order issued February 17, 2016, in Dockets 15-07041 and 15-07042.

[15] Executive Order 2016-04, issued February 23, 2016, by Nevada Gov. Brian Sandoval.

advised the Nevada Legislature to consider bills in 2017 that, among other things, would require 20-year grandfathering for existing NEM customers and customers with active NEM applications as of December 31, 2015.[16]

Roughly in parallel to the NEITF proceedings, in July 2016, NPC and SPPC filed proposals with the PUCN to allow grandfathering for 20 years for NEM customers who either installed an eligible DG system or received interconnection approval prior to December 31, 2015. In September 2016, the PUCN approved a settlement directing the two utilities to provide NEM grandfathering for a 20-year period ending November 30, 2036, and instructed them to notify eligible NEM customers who had not yet interconnected a NEM system that they may opt in to the grandfathered rate until February 28, 2017.[17] The PUCN subsequently extended the opt-in deadline to July 1, 2017. [18]

Q. Have any other developments related to NEM and DG customer rates been made since the grandfathering decisions?

A. Yes, in December 2016, as part of its final decision in SPPC's general rate case, the PUCN directed SPPC to allow grandfathering to all new residential and small commercial ratepayers who installed NEM systems in 2016, and re-opened net metering under the grandfathered rates for an additional 6 MW of new customer-generators beginning January 1, 2017.[19]

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[16] New Energy Industry Task Force Final Recommendations, issued September 30, 2016.
[17] Public Utilities Commission of Nevada order issued September 21, 2016, in Dockets 16-07028 and 16-07029.
[18] Public Utilities Commission of Nevada order issued April 7, 2017, in Docket 17-03028.
[19] Public Utilities Commission of Nevada order issued December 28, 2016, in Docket 16-06006.

Furthermore, on June 4, 2017, the Nevada Legislature passed legislation (A.B. 405), which restores the availability of retail NEM in Nevada, while gradually reducing the NEM credit rate for new customers as capacity benchmarks are achieved. It also establishes forward-looking 20-year grandfathering for NEM customers under the credit rate that is available when they file their completed NEM application. The bill had nearly unanimous support, with only two nay votes in the state Assembly and none in the Senate.[20] On June 5, 2017, Governor Sandoval publicly announced he would sign A.B. 405 into law in the upcoming days.[21]

Q. Why are other states' policy decisions on grandfathering for NEM customers or DG policy in general relevant to this proceeding?

A. Ultimately all states and their Commissions value their autonomy. Their policy decisions are governed by their unique legal frameworks, policy priorities, and objectives. Despite these inherent differences, it is significant that after carefully considering the issue states have consistently arrived at the same conclusions with respect to grandfathering. Nevada's experience is particularly noteworthy because the ultimate decision on grandfathering enjoyed broad support from utilities and solar industry stakeholders, and was aligned with recommendations from a Governor's task force.

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[20] Nevada Legislature. A.B. 405 Final Passage Votes. *See:* https://www.leg.state.nv.us/Session/79th2017/Reports/history.cfm?BillName=AB405

[21] Las Vegas Review-Journal. "Sandoval says he will sign bill to bring rooftop solar back to Nevada." June 5, 2017. *See:* https://www.reviewjournal.com/news/2017-legislature/sandoval-says-he-will-sign-bill-to-bring-rooftop-solar-back-to-nevada/

Apart from grandfathering, as I discuss in the following section, decisions in other states provide insight into the range of options available, common principles, and broader DG policy strategies. For its part, Nevada is now also pursuing this type of gradual and strategic path.

Q. How did the states represented in Figure 1 arrive at the parameters defining their grandfathering policies?

A. The eligibility deadlines vary primarily because of differences in underlying laws and how a state progressed through consideration of changes. Ultimately, they rely on establishing the type of objective benchmark I recommend so as to provide predictability for customers and to respect prior investments. The terms or duration are likewise primarily based on this broad principle with the added considerations of customer expectations for payback, long-term electricity cost savings, system lifetimes, and contract (e.g., system lease) terms. The central theme remains the preservation of customer expectations, which include both simple investment payback and long-term savings.

Q. Is the 20 to 25-year grandfathering duration you recommend for currently existing DG customers consistent with practices in other states and how they made these determinations?

A. Yes. As discussed in the testimony of UCE Witness Melissa Whited, customer payback periods are variable. For instance, system costs have changed over time and each DG system is unique from a design and energy production standpoint.

Roughly 75% of the current customers in her sample would be expected to have payback periods of 15 years or less.[22] However that leaves roughly 25% with longer expected payback periods, and as she acknowledges, the sample size is smaller than would be ideal for such an analysis. My recommendation is based on preserving the opportunity for investment payback for all existing customers despite these differences. It is also consistent with the most common grandfathering terms in other states, which range from 20 years to indefinite.

Q. How do you recommend the Commission arrive at a grandfathering term for future DG customers (i.e., those that submit an interconnection application after the date of a final Order in this docket)?

A. The simplest method would be to establish a system lifetime or indefinite term. This is the logical approach if the Commission elects to adopt a durable DG rate design that it has determined to be fair and reasonable. If the Commission were to adopt a phased or interim approach, the term should be long enough to support long-term investments by future DG customers under the chosen design. If an appropriate term can be determined based on analysis presented in this proceeding I recommend that the Commission adopt a term in its final order to avoid creating a period of uncertainty for prospective customers. That term should be at least as long as the term adopted for existing DG customers.

If an appropriate term cannot be finally determined without additional analysis of the adopted rate design, I recommend that the Commission establish the

[22] Whited Direct, page 13.

grandfathering term for existing DG customers (i.e., my 20 to 25-year recommendation) as a minimum term for future DG customers. This could be extended based on further analysis, but not be shortened. Should the Commission proceed along this path, I strongly urge it to expeditiously work to adopt a final term that provides certainty to future DG customers.

4. ESTABLISHING A TRANSITION AND LONG-TERM SOLUTIONS

Q. Assuming that changes are made to NEM or DG rate structures in this proceeding, how do you recommend the Commission approach these changes?

A. I urge the Commission to plot a path towards building a forward-looking strategy that recognizes the wide array of forces that are changing the U.S. electricity industry, including but not limited to the proliferation of DG. In practice, this approach has several identifying characteristics:

1. A durable grandfathering policy, which would apply to current and future DG customers under the parameters discussed previously.
2. If the Commission determines a change to existing policy towards DG is warranted, gradual and incremental changes to ensure an orderly transition from existing policies to a durable solution (i.e., phased approaches).
3. The establishment of broader DG integration and “Grid 2.0” type efforts that investigate and seek to facilitate beneficial evolution of rate structures,

expanded customer rate options, energy storage deployment, the provision of grid services by DG, enhanced distribution planning, and the refinement of utility business models.

State approaches to implement these defining characteristics differ in their details as described briefly in Figure 1.

Q. Please elaborate on your recommendation that changes be incremental or gradual and why this is a reasonable approach.

A. By incremental I am referring to an approach that is similar to that adopted by regulators in New York and Maine, and the Nevada Legislature, where any changes adopted would be incremental. One possible approach would be to classify any near-term changes as “Phase One”. New DG customers would be Phase One customers subject to a grandfathered rate structure. Subsequent phases, if necessary, might create “Phase Two” DG customers who enroll after a Phase Two decision. The phasing coupled with grandfathering would create a predictable environment for Phase One DG customers as the Commission investigates how it should address the establishment of a long-term, durable solution. It would also allow time to consider the adoption of policies that facilitate the deployment of more advanced DG systems that are capable of providing and expanded set of grid-support services.

Q. What options are available for employing a gradual or incremental transition approach?

A. As shown in Figure 1, a suite of incremental options exist, such as minimum bills, gradual reductions in the credit rate for exports, and the use of time-of-use ("TOU") rates that more precisely reflect cost of service. Melissa Whited's testimony provides recommendations on the most appropriate options in the present proceeding.[23] If any new rates are adopted, it would be reasonable for grandfathered DG customers to have the option to switch to those rates if they wish to do so.

Q. Why do you recommend that the Commission establish a broader effort to address DG integration and grid evolution issues?

A. There are several reasons why this would be appropriate. First, as described previously I support a gradual or phased approach to pursuing rate changes. Incremental steps should be taken with the understanding that future refinements may be necessary as technology advances, and customer and grid needs evolve. That type of refinement should include consideration of whether or when refinement is necessary under a well-defined set of long-term goals and objectives.

Second, these refinements would be best addressed in an integrated, coordinated, and comprehensive process rather than a piecemeal manner. While this proceeding addresses a fairly narrow set of issues, potential revisions to NEM and residential DG customer rate structures, the changing character of the electricity industry encompasses a much larger set of evolving policies and

[23] Whited Direct, pages 33-35.

practices that affect the utility/customer relationship and regulatory decisions. Those include more general issues of rate design and customer rate options, energy efficiency, demand response, distribution planning, grid modernization, and the relative customer and utility roles in providing or procuring grid services.

Finally, a broader outcome-oriented effort would serve as a forum for new issues to be raised and would help facilitate a common understanding among stakeholders of priorities and the direction of future changes. In other words, it would provide a roadmap that guides integrated efforts, which in turn provide the support and information necessary to pursue future refinements to DG policies, customer options, and other decisions.

Q. What do you recommend in terms of initial objectives, steps, or policy changes?

A. At the highest level it is important to acknowledge that increased interest from customers in managing electricity costs and having choices in how their energy needs are met is not going away. Thus the overarching objective should be supporting their ability to do so in a way that benefits ratepayers as a whole. Initial efforts of this type in other states have included developing and testing new rate options that different types of consumers may choose from, facilitating customer investments in energy storage by establishing clear standards for energy storage interconnection, exploring the value of advanced technologies like energy storage and advanced inverters, and investigating and testing mechanisms that facilitate the provision of grid services from DG systems.

Many of the states pursuing these policies are represented in Figure 1, such as Arizona, California, Colorado, Hawaii, and New York. However, similar efforts are underway in other states, including but not limited to New Hampshire, Maryland, Rhode Island, Illinois, and Ohio. From a process standpoint, I recommend that the Commission initiate a stakeholder process targeted at identifying near and long-term priorities, as well as technical and policy issues. The specific priorities may depend at least in part on the Commission's decision in this proceeding, but at a minimum I believe that prompt attention should be given to the topic areas I have identified above given their relevance to this proceeding.

5. CONCLUSION

Q. Please summarize your recommendations to the Commission.

A. I recommend that the Commission:

1. Grandfather existing DG customers on the currently applicable rate structure for 20 to 25 years, where existing DG customers are defined as those that submitted an interconnection application before the later of the date of a final Commission order in Docket No. 14-035-114 or the effective date of any tariff changes.

2. Pursue a gradual approach to evolving NEM rates and rate structures that focuses on long-term solutions for integrating DG as an integral part of the electric system.
3. Apply grandfathering to *future* DG customers for at 20 to 25 years to support long-term investments under any new rate design adopted in this proceeding.

Q. Does this conclude your testimony?

A. Yes.