BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of the General Investigation to Examine Issues Surrounding Rate Design for Distributed Generation Customers.	)))	Docket No. 16-GIME-403-GIE

INITIAL BRIEF OF WESTAR ENERGY, INC. AND KANSAS GAS AND ELECTRIC COMPANY

I. Introduction

A. Background

This docket was opened as a result of the settlement reached by Westar and other parties in Westar's most recent general rate case, Docket No. 15-WSEE-115-RTS (115 Docket). Order Opening General Investigation, Docket No. 16-GIME-403-GIE, at ¶ 2 (July 12, 2016) (Order Opening Docket). In the 115 Docket, the parties reached agreement – which was approved by the Commission – that

> the issue of whether a separate Residential Standard Distributed Generation Tariff is necessary, and, if so, ***how to structure the Residential Standard Distributed Generation Tariff in order to properly recover just and reasonable costs from customers with distributed generation*** should be deferred to a generic docket. Westar and Staff will work together to develop a procedural schedule for that generic docket in order to ensure timely resolution of the issues to be addressed.

Stipulation and Agreement (S&A), Revised Paragraph 39, Docket No. 15-WSEE-115-RTS (emphasis added).

In its Order opening this docket, the Commission found:

> that when establishing an appropriate rate structure for DG customers the Commission must set rates that are just and reasonable. When determining rate structure the Commission has the discretion to consider the utility's quantifiable costs of providing service to a customer class, such as DG customers. Likewise, the Commission recognizes that quantifiable benefits of DG may decrease the utility's cost of providing service to DG customers . . .

> The Commission desires a thorough and thoughtful discussion of the appropriate rate structure for DG including the quantifiable costs and quantifiable benefits of DG. The Commission shares Westar' s concern regarding how benefits are to be quantified and allocated and will permit parties an opportunity to provide evidence showing that costs and benefits can be quantified and allocated in a manner which will result in just and reasonable rates for DG customers.

Order Opening Docket, at ¶¶ 8 and 10 (July 12, 2016).

As will be discussed in this Brief, the record in this docket demonstrates that (1) residential customers with distributed generation (DG) should be recognized as a separate class of customers because of their different usage characteristics,[1] (2) residential customers with DG should be charged a different, cost-based rate than is charged non-DG residential customers, (3) the Commission should allow utilities to implement rate designs for residential DG customers that will allow proper cost recovery from those customers including a three-part rate with a demand charge for private residential DG customers, (4) any verifiable, quantifiable system costs or benefits resulting from service to private residential DG customers can be determined and properly assigned to the appropriate group of customers through a class cost of service developed in a future rate case, and (5) implementation of a three-part rate for private residential DG customers can help foster the development of DG sources such as solar as an energy resource over the long-term term and incentivize conduct by DG customers that is beneficial to themselves as well as to all users of the grid. The record also demonstrates that, contrary to the arguments of some parties, continuing to include the DG customers as part of the larger residential rate class is contrary to the DG customers' interests; only by creating a separate rate group for the residential DG customers can

[1] Or, as is the case for Westar customers, residential customers with DG should continue to be recognized as a separate class of customers.

those customers be allocated the full amount of any test-period cost reductions that the DG customers' existence and operation delivers to the grid.

B. Description of Stipulation and Agreement

On June 16, 2017, the Staff of the State Corporation Commission of the State of Kansas (Staff and Commission, respectively), Westar Energy, Inc. and Kansas Gas and Electric Company (collectively, Westar), Kansas City Power & Light Company, Sunflower Electric Corporation, Mid-Kansas Electric Company, LLC, Southern Pioneer Electric Company, Kansas Electric Cooperatives, Inc., Midwest Energy, Inc., Empire District Electric Company, Brightergy, LLC, United Wind Inc.[2] and IBEW 304 submitted a Non-Unanimous Stipulation and Agreement (S&A) for approval by the Commission (parties in support of the S&A are referred to herein as the "Settling Parties").

The S&A recommends findings to the Commission that would resolve the issues in this generic docket related to rate design for residential customers with private DG. The S&A indicates that residential private DG customers should be uniquely identified within the ratemaking process because of their different usage characteristics and indicates that utilities may create a separate residential class or sub-class for DG customers with their own rate design, which appropriately recovers the fixed costs of providing service to residential private DG customers. Specifically for Westar, the Settling Parties agreed that Westar's Distributed Generation Residential Rate Schedule that Westar implemented in its last general rate case shall remain in place and effective for all residential customers installing distributed generation on or after October 28, 2015, and shall be treated as a separate class for purposes of future class cost of service studies and ratemaking generally.

[2] Brightergy and United Wind are not signatories to the S&A but indicated that they do not oppose its terms.

The S&A also indicates that the Commission should find that the existing two-part rate structure is inadequate for residential private DG customers and that (i) a three-part rate consisting of a customer charge, demand charge, and energy charge, (ii) a grid charge based upon either the DG output or nameplate rating, or (iii) a cost of service-based customer charge that is tiered based upon a customer's capacity requirements would be appropriate for residential private DG customers to better recover the costs of providing service to that class or sub-class of customers.[3] The S&A indicates that the listing of options for DG rate design does not preclude a utility from proposing any other appropriate rate design.

The S&A indicates that a customer education program must be implemented whenever new residential private DG rate structures are ordered, and that program should be completed as soon as practical after the Commission approves a new rate design.

The S&A asks that the Commission find that rates for private residential DG customers should be cost-based, that a class cost of service (CCOS) study provides sufficient support for design of a residential private DG tariff, and that no further study is necessary for the purpose of this docket or any future utility-specific rate case dockets regarding DG rate design. The Settling Parties also agreed that in the event the Commission were to require a value of resource study to be completed in a future proceeding as a consideration in the ratemaking process for DG customers, they believe that such a study should be utility-specific, and (i) occur within a utility-specific rate case docket; and (ii) include only quantifiable market-based costs and benefits to the utility.

[3] Westar witness Mr. Martin agreed with Commissioner Albrecht that the word "and" should be changed to "or" in paragraph 11 of the S&A because the listed rate designs are alternatives. Martin, Tr. at 130-31.

The Settling Parties agree that DG rate design policy is best determined in this docket (instead of further delaying such a determination) in order to provide certainty to all parties for the benefit of the orderly development of the private DG market in Kansas.

Generally, the S&A provides that any DG-specific rate design implemented subsequent to this proceeding to serve residential private DG customers would apply to those customers adding DG systems on or after the effective date of those tariffs. Customers with distributed DG systems implemented and operating prior to that date and served by other rate designs will be allowed to remain on those preexisting rates until January 1, 2030 to the extent permitted by Kansas law. On and after January 1, 2030, all distributed generation customers will be subject to the then-current residential DG rate design. However, with respect to Westar, the S&A indicates that the settlement approved by the Commission in Westar's last general rate case regarding the creation of the "Residential Standard Distributed Generation" tariff is still effective and customers who added DG on or after October 28, 2015, will be subject to the rate design changes that occur in future rate case dockets based on the policy established in this docket.

C. The Commission should approve the S&A because it meets the five-factor test and is in the public interest.

The Commission uses a five-part test to determine whether to approve a settlement. The factors the Commission considers are:

1. Whether each party had an opportunity to be heard on its reasons for opposing the Stipulation;
2. Whether the Stipulation is supported by substantial competent evidence;
3. Whether the Stipulation conforms with applicable law;
4. Whether the Stipulation results in just and reasonable rates; and
5. Whether the results of the Stipulation are in the public interest.

As will be discussed below, the S&A complies with each of the above factors and should be approved.

II. The evidence in the record establishes that DG customers should be uniquely identified in the ratemaking process by separating them into their own class or sub-class.

A. DG customers should be in a separate rate class because they are partial requirements customers with the ability to take power from and send power onto the grid.

The overriding principle in rate design is that of cost causation; the rate structure should reflect the underlying cost structure. Faruqui Initial Affidavit, at 14. To ensure that rates are designed properly, it is essential that rate groups contain customers that exhibit similar usage patterns with similar costs and cost recovery. However, residential DG customers are distinctly different from non-DG residential customers. *Id*. "DG customers export electricity to the grid at times and import electricity at other times. As a result, their net load profile looks very different from that of non-DG customers and their cost profiles are similarly different." *Id*.

Rates for the residential class were not designed for partial requirements customers. Approximately 75% of Westar's costs to serve residential customers are fixed. Faruqui Initial Affidavit, at 6.[4] However, only about 12% of those costs are recovered through fixed monthly charges.[5] As long as all members of the class purchased all their requirements for electricity from the utility, the rate design did not cause a significant problem. If anticipated levels of sales occurred, revenue recovery in the class would be assured. However, based on Westar's load research data, Dr. Faruqui estimated that partial requirements DG customers reduce their purchases of energy from the utility by approximately 49%. Faruqui, Tr. at 194-95. Given that the variable energy portion of the average bill for a Westar residential customer is approximately $88 per

[4] Fixed and demand costs to serve a typical residential customer equal $77 out of a total of $103. *Id*. $77/$103 = 0.75.

[5] Based on 2015 Westar revenue data, the customer charge was $12 per month out of $103 of monthly costs. *Id*. $12/$103 = 0.12.

month, Faruqui Initial Affidavit, at 6, the annual revenue loss to Westar from its 615 DG customers, Martin, Tr. at 82, would be over $318,000.[6][7] With that revenue loss, Westar would also experience a decrease in variable costs of about $117,500[8] resulting in a reduction in fixed and demand cost coverage of over $200,000[9] annually with just 615 DG customers on the system (resulting in approximately $325 of unrecovered cost per DG customer per year). In the absence of a change in rate design for DG customers, these costs would be recovered from all non-DG customers at the time of Westar's next rate case, completing the cost shift that is the reason dockets such as this have been created.

Opponents of the proposal to treat DG customers differently from non-DG customers suggest that DG customers are no different from customers that reduce their purchases from the utility through energy efficiency. However, even Climate and Energy Project (CEP) witness Gilliam admitted that energy efficiency customers who have not installed distributed generation do not generally have the ability to send power onto the distribution grid. Gilliam, Tr. at 399-400. And, there is no basis for treating net metered customers differently from parallel generation customers. As Westar witness Jeff Martin stated, "from the grid perspective they are still partial requirements customers. They still have the ability and unique characteristic of being able to generate their own power and so from the grid's perspective they look no different whether it's a net meter customer or a parallel generation customer." Martin, Tr. at 109-10. Staff witness Dr.

[6] The revenue loss is calculated as $88/customer/month x 615 customers x 12 months x 0.49 = $318,225.60.

[7] On average, these 615 customers were larger than the typical Westar customer (before installing PV) so the revenue loss may actually be larger than this amount. *See* Westar Exhibit 4, p. 2.

[8] The decrease in variable costs is calculated as $26/customer/month x 615 customers x 12 months x 0.49 = $117,526.50.

[9] $318,225.60 - $117,526.50 = $200,699.10.

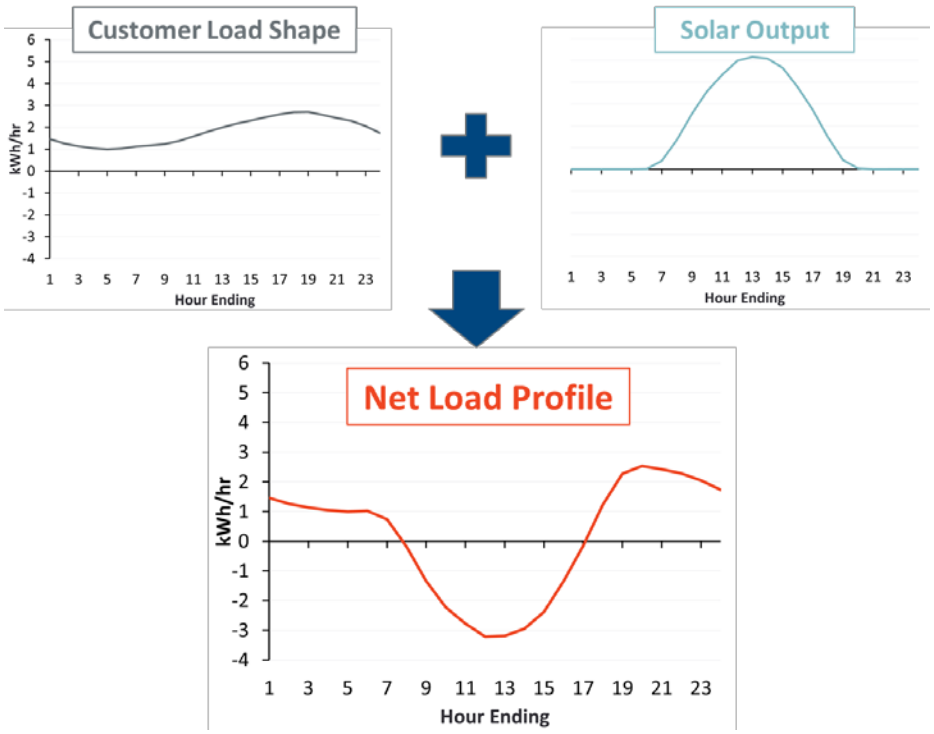
Glass agreed with Mr. Martin that, from the point of view of the grid, there is no difference between net metering customers and parallel generation customers. Glass, Tr. at 360-61.

Of the parties to this docket, only Cromwell Environmental, Inc. (Cromwell) took the position that net metering and parallel generation customers should be treated differently. However, Cromwell's testimony does not support such a result. Thus, Mr. Cromwell stated, "[t]he connection between the grid and the property is the same whether it's net metered or parallel generated. The difference is in compensation . . . ." Cromwell, Tr. at 372-73. However, the amount of compensation – which is set by state law – has no effect on the impact of DG on utility operations and cost causation and is completely irrelevant to whether residential DG customers should be considered a separate rate class.

B. There is Kansas-specific data in the record demonstrating the differences between DG and non-DG customers.

The record contains abundant Kansas-specific data that demonstrate the difference between DG and non-DG customers. In his Initial Affidavit, Westar witness Dr. Faruqui compared the residential load shape of a typical non-DG residential customer with an illustrative DG customer using Westar's load research data and solar data for Wichita, Kansas. The results of that analysis are displayed in Figure 2 at page 4 of Dr. Faruqui's Initial Affidavit and are shown below.

Figure 2: Residential Customer Load Profile, Average Summer Day

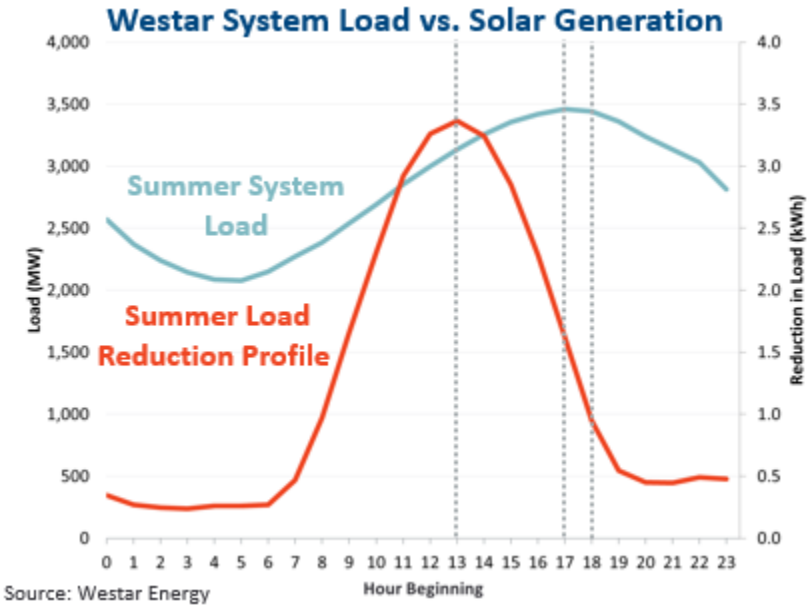


Notes: Solar data based on Wichita, KS. Load data based on Westar's 2013 residential load research sample. Based on illustrative assumption that the solar PV installation exactly offsets the customer's annual electricity consumption.

The "net load profile" which results from combining the customer's load profile with the anticipated generation from a solar source is significantly different from the load profile of a non-DG residential customer. And, it is the net load profile with which the grid and the serving utility must interact.

Further Kansas-specific data was provided in Westar Exhibit 4. Page 4 of Westar Exhibit 4 compares load shapes for individual customers before and after they installed DG on their residences. Each of the graphs shows the impact of solar generation on purchases of energy from Westar on a summer day reflecting generation from around the "hour beginning" at 8 (8:00 AM) through around hour beginning 18 (6:00 PM). In each case, the customer's post-installation purchases from Westar drop during daylight hours but return to approximately the same level as

before the DG installation at around 6:00 PM, Westar Exhibit 4, at page 4, *see* discussion at on page 19 – the approximate time of Westar's peak. Martin, Tr. at 147 ("Typically the system peak for Westar is closer to 6:00 PM at night . . . ."). Page 5 of Exhibit 4, shown below, illustrates the summer load curve for the DG customers on Westar's system and how that load relates to Westar's peak.



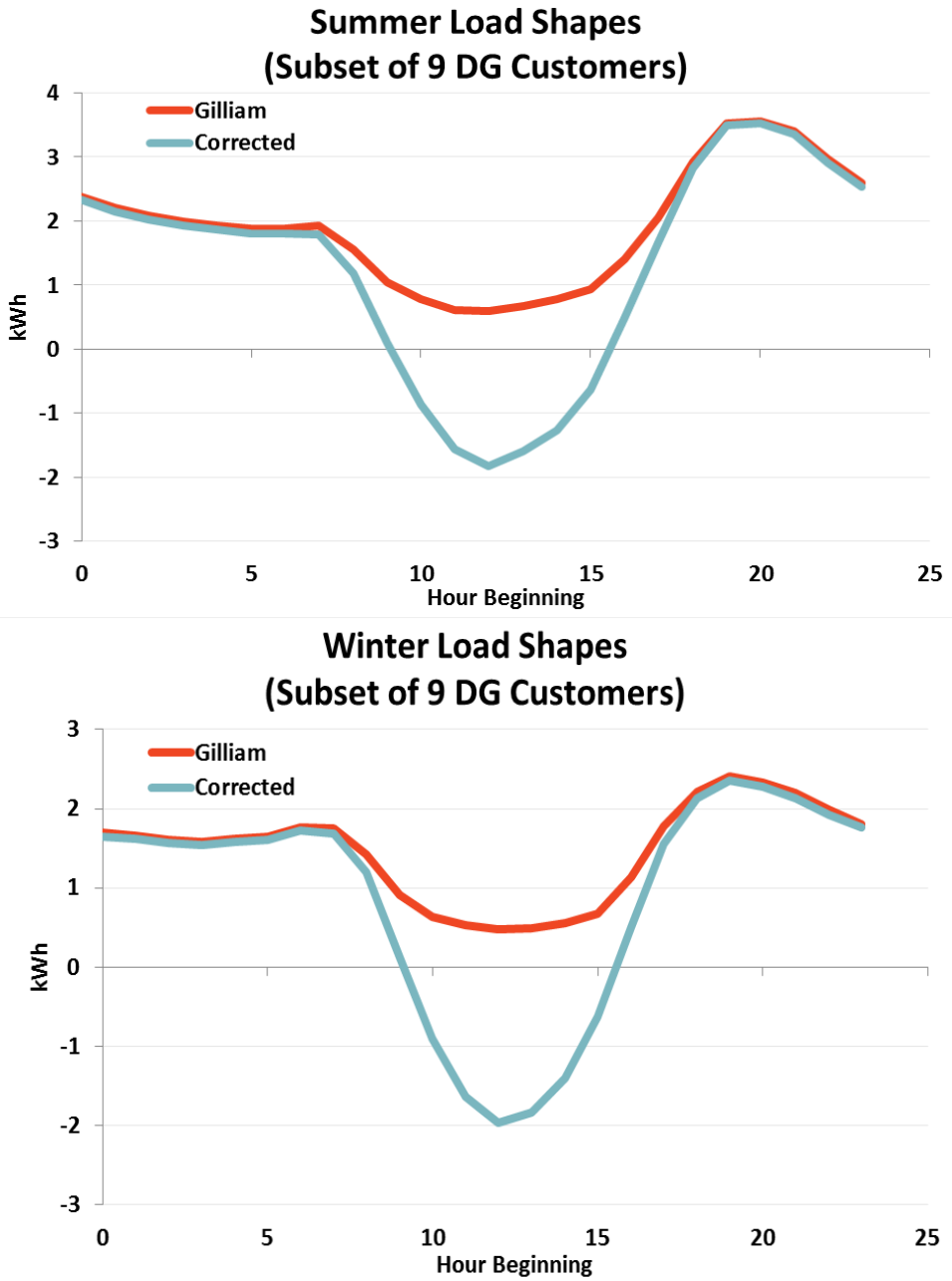
Evidence provided by intervenors in opposition to the settlement provided further Kansas-specific data that demonstrate the difference between DG and non-DG residential customers. Table 3 in the testimony of CEP witness Gilliam in opposition to the settlement shows that purchases of electricity by DG customers grandfathered under the Westar rate settlement were approximately one-third less than the amounts purchased by non-DG customers. Gilliam, Testimony Addressing Non-Unanimous Settlement, at 11; Gilliam, Tr. at 414-15. As he stated, that result "is not surprising. When you install solar, that the goal is to use less." Gilliam, Tr. at 415.

Cross-examination of CEP witness Gilliam provided further Kansas-specific data that support the conclusion that that the load shapes for DG customers are significantly different from

those of non-DG customers. Westar Exhibits 6 and 7 presented a portion of the Westar load research data that were used by Mr. Gilliam in support of his testimony. Gilliam, Tr. at 404-405. For each of the customers presented, the data show zero or minimum purchases of electricity from Westar during the hours beginning at 9:00 AM through 5:00 PM. *See* Westar Exhibits 6 and 7. The graphs of DG customer purchases from the utility show no resemblance to the typical, non-DG customer load shapes shown in Dr. Faruqui's initial exhibit. *See* Faruqui, Initial Affidavit, Figure 2, at 4.

When Mr. Gilliam's analysis is corrected to reflect both the customer's purchases from Westar and its deliveries to Westar, it shows that DG customers have usage and load factors that deviate significantly from those of non-DG residential customers. Faruqui, Rebuttal Testimony in Support of Stipulation and Agreement, at 12. For convenience, Dr. Faruqui's Figure 1, *id*. at 10, is presented below:

Figure 1: Comparison of Load Shapes between Gilliam Consumption Data and Corrected Net Load Data



Note: The top panel compares average summer load shapes as calculated using Mr. Gilliam's consumption data to those calculated using the correct net load data. The bottom panel compares winter load shapes. Summer includes months from June through September; winter includes all other months.

Additionally, the initial comments of Cromwell provide additional Kansas-specific support for the proposition that DG customers' load characteristics are different from those of non-DG customers. In its initial comments, Cromwell presented a "small sample of electricity consumers." Cromwell Initial Comments, at ¶ 11. The information was presented in three tables and showed data from actual customers. Cromwell, Tr. at 381. Table 1 shows the load and peak demand for a "summer peaker with modest demand," *id*., before DG was installed at his house. *Id*. The customer's annual load was 12,937 kWh and his peak demand was 10.55 kW. Cromwell Initial Comments, at 4. The customer's load factor based on that data was 13.9%. Cromwell, Tr. at 382. Table 3 shows similar data for customers after solar panels have been installed. The customer with a summer peak and 8.25 kW solar array has annual consumption of 4312 kWh and a peak demand of 13.26, Cromwell Initial Comments, at 5, yielding a load factor of only 3.7%. Cromwell, Tr. at 382.

C. Gilliam's analysis of Westar's data is erroneous and misleading and should not be relied on because he only considers the time intervals when a DG customer is purchasing power from the utility and not any of the intervals when the DG customer is producing excess generation.

CEP witness Gilliam provided testimony in opposition to the S&A that he claimed showed that the electric usage of DG customers is similar to that of non-DG customers. However, his testimony is illogical and internally inconsistent, unsupported by the record and unreliable.

Based on his work, Mr. Gilliam concluded that the usage characteristics of DG customers are not significantly different from that of non-DG customers. Gilliam, Testimony Addressing Non-Unanimous Settlement, at 14. However, both Mr. Gilliam and Mr. Cromwell testified that the reason customers install DG is to reduce their electric bills. Cromwell, Tr. at 375, 387-79 ("The purpose of installing solar would be to lower one's consumption of electricity from conventional sources from the grid, yes."); Gilliam, Tr. at 398 (in which Mr. Gilliam agreed with

Mr. Cromwell's testimony). Thus, Mr. Gilliam contends that even though the main reason customers install DG is to reduce their consumption of electricity provided by the serving utility, DG customers consumption of electricity from the utility is "similar" to that of non-DG customers. That, quite simply, makes no sense.

In fact, as noted by Dr. Faruqui, Westar's load research data indicates that DG customers reduce their consumption of utility-provided electric energy by an average of 49 percent annually. Faruqui, Tr. at 194-95. DG customers often generate more than they consume resulting in energy being delivered to the utility. Martin, Tr. at 145-46, Given those undisputed characteristics – Gilliam agreed that DG customers sometimes deliver power to the grid, *e.g.*, Gilliam, Tr. at 406, 408, 409; Mr. Cromwell stated that DG customers will overproduce in order to offset their purchases from the utility, *e.g.*, Cromwell Initial Comments, at ¶ 10 – there simply is no way that the usage of utility-supplied energy by DG and non-DG customers can be "similar."

In his testimony in opposition to the S&A, Mr. Gilliam asserted that he was comparing "consumption characteristics" for a small group of DG customers with the consumption patterns of the population of non-DG residential customers. *See* Gilliam, Testimony Addressing Non-Unanimous Settlement, at 10. However, during his cross-examination, he admitted that the load research data did not provide the DG customers' total consumption of electricity, that is, "what the customer consumes in total on-site which is the sum of what the solar system or DG system provides and what is provided by the utility." Gilliam, Tr. at 403-04.

The reason such data was not available was stated by Dr. Faruqui. As he pointed out,

> the data is based on metering that only shows the amount of energy Westar delivered to the customers and the amounts they delivered to Westar. Because the DG generation is behind the Westar meter, Westar does not know how much energy the DG customers consume or when they consume it. Westar's meters only see the net effect of consumption and generation. In order to determine the customers'

> actual usage, Westar would have to have a meter on the customers' generation.

Faruqui, Rebuttal Testimony in Support of Stipulation and Agreement, at 4.

Mr. Gilliam's testimony is fatally flawed. As Westar witness Dr. Faruqui testified, Faruqui, Rebuttal Testimony in Support of Stipulation and Agreement, at 5, and as Mr. Gilliam admitted, Gilliam, Tr. at 405, Mr. Gilliam's analysis only considered the deliveries of energy to DG customers – recorded as Channel 1 – and ignored the deliveries of energy by DG customers to Westar – recorded as Channel 11. As Dr. Faruqui testified,

> Mr. Gilliam's exclusion of the Channel 11 data invalidates his analysis because he consequently fails to include in his analysis all of the hours in which the customer generates more than he or she consumes. Quite simply, the hourly consumption data upon which Mr. Gilliam bases his analysis and derives his conclusion does not accurately represent the customer's full interactions with the grid, which are accurately captured by the customer's hourly net load.

Faruqui, Rebuttal Testimony in Support of Stipulation and Agreement, at 6.

The data used by Mr. Gilliam was not sufficient to enable a comparison between the consumption of electric energy between DG and non-DG customers. The comparison he makes – that of purchases by DG customers from the utility (without consideration of their self-generation consumed on-site) versus total load of non-DG customers – is not an apples-to-apples comparison and provides no useful information for the determination of issues in this docket.

If the purpose of his analysis was to determine whether DG customers should be in a separate group from non-DG customers, Mr. Gilliam's intentional failure to include the Channel 11 data in his analysis created a fatal flaw. Whether DG customers impose different costs on the serving utility than non-DG customers cannot be determined without reviewing all of the interactions between the customers and the grid. An analysis that fails to consider deliveries of

energy to the utility by DG customers is not appropriate and should carry no weight in this proceeding.

Mr. Gilliam admitted that DG customers are using the grid in both directions, Gilliam, Tr. at 407-08, and that the time intervals when a DG customer is producing excess generation affect the total amount the DG customer pays to a utility each month because the excess rolls forward to offset purchases from the utility later in the month. *Id.* at 408-09. By ignoring the Channel 11 data, Mr. Gilliam is effectively saying that only deliveries from the grid are important. From a grid capacity and reliability standpoint, he is obviously incorrect. Having the capacity to manage both deliveries from and deliveries into the grid are critical to the utility/system operator. As Dr. Faruqui testified, the introduction of distributed generation into a distribution system can impose significant costs on the operating utility. *See* Faruqui, Tr. at 195-96. Such increased costs are due to the introduction of new flows into the distribution system and trying to change a system that was created to accommodate a one-way flow from the generator to consumer of electricity into a two-way flow. *Id*. at 218-19.

D. DG customers must be separated into a different class or sub-class in order to allocate both costs and benefits to them.

CEP and Cromwell suggest that DG customers remain in the larger residential class and continue to be provided utility service under the same rates as full-requirements residential customers. However, as long as DG customers remain a part of the residential class, any quantifiable costs or benefits attributable to DG can only be reflected as a reduction to the revenue requirement allocated to the residential class as a whole.[10] However, if DG customers are treated

[10]It is also noteworthy that not only would any test period cost reductions attributable to the DG customers be diffused among the larger residential class if the DG customers continued to be part of that class, a disproportionate amount of those cost reductions under the traditional two-part rate would be allocated to the energy component of rate design. This would be further contrary to the interests of the DG customers since they use almost 50% less energy from the

as a separate rate group or class, any test period cost reduction attributable to them can be allocated to them in the CCOS study and be incorporated into their rates appropriately.

In fact, as Staff witness Dr. Glass stated, in order to credit DG customers with test period cost reductions attributable to the DG customers, they have to be in a separate class. Glass, Tr. at 359. As he stated it: "If they are not in a separate class, I don't know how you do it." Id. Thus, Cromwell's and CEP's proposal and arguments to keep DG customer in the larger residential rate class are actually contrary to the interests of the DG customers.

III. The evidence in the record establishes that the existing two-part rate is problematic for DG customers.

A. It is undisputed that the two-part rate recovers fixed and demand costs through a variable charge.

There is no dispute concerning the fact that two-part residential rates recover fixed and demand costs through variable charges. *See* discussion above on page 6, and Faruqui Initial Affidavit, at 5-6. Staff witness Dr. Glass agreed and stated:

> The problem is that if you are collecting the demand charge which is – it's a fixed component of cost. You are collecting that demand charge through the energy charge. If you – if you have a fairly homogeneous set of residential customers, then that's really not too bad a problem. There's been a lot of studies, and energy and demand are highly correlated, 75 percent. If you don't -- if you start bringing in more heterogenic then you end up with a situation of having to recover from the customers that use more energy the lost revenue of the customers that use less energy, so that's what the problem is and that's where the concern about cross subsidization and that, that problem exists whether you have distributed generation customers.

Glass, Tr. at 341. No party to this docket has presented evidence to the contrary on this point.

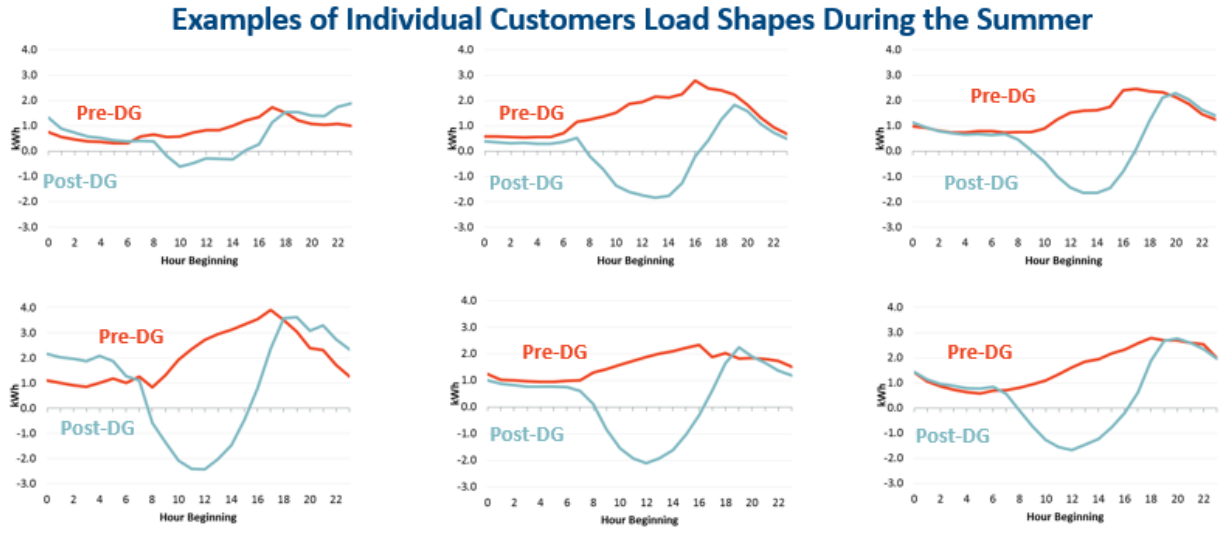
utility than the average residential customer. This results in even further dilution of the portion of the cost reductions that are received by the DG customers.

B. DG customers purchase less energy from the utility but do not reduce their peak demand for service from the utility which means the utility is required to have capacity to serve their entire demand even after they install DG.

It is also undisputed that DG customers significantly decrease their purchases of energy provided by the utility. In fact, as Mr. Cromwell stated: "The purpose of installing solar would be ***to lower one's consumption of electricity from conventional sources from the grid*** . . . ." Cromwell, Tr. at 375 (emphasis added). However, Mr. Cromwell stated that while DG customers will purchase less from the serving utility, "[w]hat the customer would typically do upon installing solar, in our experience, is actually to consume a little bit more, you know. It does tend to give someone an excuse to turn the air conditioner a little bit lower." Cromwell, Tr. at 378. Such "typical" behavior clearly would do nothing to decrease DG customers' total energy usage nor is it conduct that should be encouraged. If the DG customer neglects to adjust usage when the DG is not operating, it could increase usage and demand on the grid during peak conditions. A three-part rate can discourage such conduct and provide the DG customers with the price transparency necessary to enable them to adjust their energy usage patterns. In short, a three-part rate would enable a solar customer clearly to see the cost effects of his or her energy consumption and therefore better manage his or her use of electricity through the use of enhanced technology and/or a change in consumption patterns.

At the same time, however, installation of DG does little – if anything – to reduce the customer's reliance on the serving utility for its peak demand. As a summer peaking utility, Westar's peak tends to occur in the hour beginning at 6:00 PM. Westar Exhibit 4, at page 5. However, at that time of day, solar output is dropping as the sun begins to set and operates at only 28% of its peak output. *Id*. That is not surprising given that solar installers typically orient solar panels facing south to the maximum extent possible to maximize kWh generation. Brown Initial

Affidavit, at 17; Cromwell, Tr. at 380. As a result, Westar's load research data showed that DG customers' energy purchases from the utility dropped 49 percent but their peak demand for service by Westar dropped only 4.9 percent, Faruqui, Tr. Vol. 2 at 217, and their load factors dropped from 16 percent to in the range of 6 to 9 percent. *Id.* The changes in customer usage from prior to the installation of DG to after show this effect graphically. They are reproduced below from Westar Exhibit 4, at 4.



As the testimony of Empire witness Eichman indicates, the same effect is seen for winter peaking utilities. As Mr. Eichman testified, Empire has been a winter peaking utility for the last three years – 2014, 2015 and 2016. Eichman, Tr. at 297. Empire's winter peak occurs in the morning, specifically, the hour ending at 8:00 AM. *Id.* But as he testified, solar generators in the Empire territory "would put out very little between 7:00 AM and 8:00 AM on a cold winter morning." *Id.* at 298. In other words, just like solar generators on Westar's system, the solar generators in Empire's territory reduce the annual purchases from the utility by DG customers but have little effect on their peak demand for service by the utility.

C. The mismatch between rate design for DG customers and cost causation results in a subsidy in favor of DG customers.

As was noted above at page 6, rates for residential customers were not designed for partial requirements customers such as DG customers. As a result, the presence of partial requirements customers results in a revenue shortfall within the residential class. As Staff witness Glass testified, this is not a mere "hypothetical possibility of under-recovery – because DG customers reduce their purchases from the serving utility, they will necessarily pay less of the utility's demand costs. Glass, Tr. at 336; *see* Faruqui, Tr. at 201; Eichman, Tr. at 300-01. Unless DG customers are placed in a separate rate class, that shortfall will be recovered from the residential class as a whole in subsequent rate cases. Martin, Tr. at 80. As was noted, the revenue shortfall on Westar's system with only 615 DG customers is estimated to already be over $200,000 per year. *See* discussion aton page 7. With the rapid growth of DG customers on Westar's system,[11] the amount of the shortfall will only continue to grow. As is discussed below, the Commission should correct the subsidy issue now, before it grows even larger and becomes more difficult to address. Only by separating DG customers into a separate class can the shortfall be recovered from them alone. Failure to make that separation will result in a subsidy by non-DG customers to DG customers.

D. The argument that the exact amount of the subsidy is unknown is irrelevant.

The precise amount of the subsidy does not matter – the fact is that it exists and will grow as we add more DG customers to the system in Kansas. However, there is sufficient evidence in the record to estimate the amount of the subsidy. As discussed above at page 6, the subsidy per DG customer is approximately $326.34 per year.[12] However, there is no need to exactly quantify

[11] As Westar witness Martin testified, the number of DG customers on Westar's system has doubled since October 28, 2015. Martin, Tr. Vol. 1., at 125-26.

[12] $200,699.10/615 = $326.34.

the cost shift at this time. The class cost of service study done in a general rate case will determine the precise costs to provide the utility services used by DG customers (net of any test period cost reductions attributable to the DG customer group) and allocate those costs to that rate group and away from the full-requirements residential class.

IV. The evidence in the record demonstrates that a three-part rate and other identified rate designs address the problems with the existing two-part rate and are appropriate for residential DG customers.

A. There is ample support for use of a three-part rate for DG customers.

The costs of an electric utility to provide service to its customers fall into three broad categories: variable, fixed and demand. Variable costs – basically fuel (including purchased power) and variable O&M – constitute a relatively small portion of Westar's costs. Faruqui Initial Affidavit, at 5. Fixed costs, such as the costs associated with metering and billing, are generally customer-related and fixed on a per customer basis. *Id*. Demand costs are related to the recovery of the return on and of investments in generation, transmission and distribution made to ensure the utility's ability to provide service to its customers. *Id*. Under the existing two-part rate, however, significant amounts of demand and fixed costs are recovered through variable (*i.e.*, per kWh) charges. *See id.* at 5-6. The two-part rate simply is not appropriate for distributed generation customers. Glass, Tr. at 345-46.

By contrast, a three-part rate is consistent with cost causation. *See* Faruqui Initial Affidavit, at 12. Customer charges can be identified and recovered through a fixed customer charge. *Id*. Demand costs are identified in the class cost of service study performed in a rate case. Martin, Tr. at 149. Once demand costs are identified, the utility can propose a rate to recover those costs. *Id*.; Faruqui Initial Affidavit, at 12. Fuel and purchased power costs are already identified in ratemaking for KCC-jurisdictional utilities and recovered through their ECAs or fuel clauses,

Glass, Tr. at 332, and other variable costs would be identified through the CCOS study and recovered through the energy change. Faruqui Initial Affidavit, at 12.

B. A three-part rate gives an appropriate signal to encourage customers to control their demand and provide benefits to the system through reduced demand.

The cost-based price signals in the three-part rates proposed by Westar provide customers with the financial incentive to make investments in technologies or otherwise change their behavior in ways that are most beneficial to themselves and to the system. Technologies and behaviors that reduce a customer's demand should ultimately lead to a more efficient use of energy and the grid, reduced costs, and lower bills. Faruqui Initial Affidavit, at 16. And it has been shown that customers will modify their behavior in response to such incentives. As Dr. Faruqui stated:

> Three-part rates will incentivize customers to smooth their energy consumption profile – and therefore reduce their electricity bills. There is a widespread misperception that customers do not respond to changing electricity prices. This is contradicted by empirical evidence derived from more than 50 pilots and full-scale rate deployments involving over 200 innovative rate offerings over roughly the past dozen years. The pilots have found that customers can and do respond to new price signals by changing their consumption pattern.

Id. at 20.

Real world experience demonstrates that customers can and will reduce their peak demand when rates provide price signals and incentives for them to do so. As Dr. Faruqui explained there are many actions customers can take to reduce peak demand. For instance, customers can reduce demand by changing out light bulbs, Faruqui, Tr. at 221, and:

> You can make sure that the three LED TVs you have are not running at the same time unless people are sitting in front of them and the only example I would cite to elaborate on the point without listing all the appliances is home energy reports behavioral economics that has started in many parts of the US and abroad, you just show your bill -- your customer their bill compared to the 100 chosen neighbors and it's amazing just the mere act of showing that people on average

> use 2 percent average. How do they do it? American ingenuity is all I can say, but it has been verified in study after study.

Id. at 226. As Dr. Glass discussed, when Butler County Cooperative implemented three-part rates a quarter to a third of its customers changed their behaviors and reduced their demand. Glass, Tr. at 363.

Properly designed demand rates will also provide incentives for DG customers to provide generation when it is most beneficial to the system. Currently, solar installers install solar panels facing south to maximize kWh production. Cromwell, Tr. at 380. Implementation of three-part rates:

> . . . opens up the possibility of rewarding solar PV DG providers who are most successful at providing reliable energy to the grid and smoothing their own demand, whether through installing their panels so they face west rather than south, installing batteries to operate in conjunction with their generation or adjusting their own consumption patterns to reduce their demand peak and maximize the value of the energy they export to the grid.

Brown Initial Affidavit, at 42, *see* Martin, Tr. at 148.

C. The argument that residential customers cannot control their demand is unsupported.

Contrary to the assertions of opponents to the S&A, residential customers – and especially DG customers – have the ability to understand demand charges and can and do take action to reduce the impact of demand charges on them. As Westar witness Mr. Brown stated:

> First, DG customers are more knowledgeable about energy efficiency, energy production, and kW versus kWh than the average residential customer, because DG customers have made a conscious decision to not only generate their own power, but also to commit very substantial amounts of money into controlling their expenses for electricity. A critical element of that decision was selecting the kW size of the system. Second, the greater degree of knowledge of DG customers regarding energy and demand also provides them with the knowledge and ability to modify their consumption patterns so as to moderate energy demand in response to a demand charge.

> In addition, the DG system itself provides a form of hardware that enables the partial requirements customer to shift demand (e.g., pre- cooling) or offset demand (e.g., confining use of all resistance heating equipment to periods when DG is producing) on the utility system. Finally, while the cost of demand management hardware may be a valid concern for many customers, DG customers have already demonstrated the financial ability to procure hardware options when they purchased or leased their DG systems. Hardware for moderating demand is available at a much lower cost than the life- cycle cost of an average PV system.

Reply Affidavit of Ashley C. Brown, at 3.

Customers do respond to the price signal delivered by demand charges. In Arizona, for instance, where the utility has 120,000 residential customers on demand rates, customers have placed simple messages on their refrigerators reminding them not to use all their appliances at the same time and some have installed demand controllers that automatically ensure that they will not. Faruqui, Tr. at 215. Customers can take simple steps such as making sure that they do not turn all their major appliances on at the same time. *Id*. at 226. These are likely the kinds of behavioral changes that customers of Butler County Cooperative implemented when that utility implemented demand charges for residential customers. *See* Glass, Tr. at 363-64.

The ability of customers to respond to demand charges will be enhanced under the S&A because any utility implementing such rates is required to implement a customer education program to be completed as soon as practical after the Commission approves a new rate design. S&A, at ¶ 12.

D. The argument that a three-part rate is "punitive" is unsupported.

Some parties in opposition to the S&A have suggested that the implementation of demand rates for DG customers would be "punitive." That argument is misplaced.[13]

As the record shows, three-part rates have a long history. Three-part rates were first advocated as early as 1892 and implemented in the early 20th century. Glass, Tr. at 347-48; *see* Faruqui Initial Affidavit, at 12-13. Implementation of three-part rates properly aligns cost recovery through rates with the costs they are intended to reflect, Faruqui Initial Affidavit, at 12, and "will also encourage the adoption of emerging energy technologies and changes in energy consumption behavior that will lead to more efficient use of power grid infrastructure and resources." *Id*.

It is true that DG customers subject to three-part rates are likely to see increases in their bills, particularly if they choose not to response to the price signals in the demand charge. However, it must be remembered that such increases are from lower bills that resulted from their decreased purchases from the utility due to the installation of their DG resources, and that their bills will still be a lot lower than they would be without DG. Faruqui, Tr. at 221. The increase in DG customer bills is the natural result of the removal of the subsidy provided by non-DG customers and results from moving DG customers to a rate based on the costs to serve them due to their particular usage of the grid.

E. The argument that no utility commission has ordered mandatory three-part rates for DG customers is not persuasive.

At least 30 utilities in 17 states offer a three-part rate to residential customers. Three of these utilities are in Kansas, including Westar's Peak Management rate. Arizona Public Service

[13] In fact, the opposite of this statement is true – the existing tariff is punitive to non-solar customers. This conclusion is aggravated by the fact that low-income customers are essentially being required to subsidize the costs imposed by more affluent customers who can afford to install solar panels. *See* Brown Initial Affidavit, pp. 27-28.

(APS) has the most highly subscribed residential three-part rate in the US, with nearly 120,000 of its customers enrolled, and APS has proposed to make three-part rates the standard rate for all residential customers. Similar to Westar's proposal, Salt River Project (SRP) recently instituted a mandatory three-part rate for all residential customers who chose to install a new grid-connected distributed generation (DG) photovoltaic system after January 1, 2015. Mid-Carolina Electric Cooperative (South Carolina) and Butler Rural Electric Cooperative (Kansas) include demand charges as a mandatory feature of their residential rate offerings to all customers. Faruqui Initial Affidavit, at 18; Faruqui, Tr. at 222-23.

Additionally, three-part rates have been offered to commercial and industrial (C&I) customers for decades and "could be considered the norm for these customer classes." Faruqui Initial Affidavit, at 18. All of the major utilities in Kansas offer demand rates to their customers and each of these utilities provide demand rates to at least a portion of their C&I customers on a mandatory basis. *Id*. The demand component of the rates charged to C&I customers has led to the development and commercial deployment of demand control technology, which, absent those price signals, would not have been marketable. Brown Initial Affidavit, pp. 31-31.

There is more than enough evidence in the record supporting the need for a change to a three-part rate.

V. The evidence in the record demonstrates that a CCOS study is sufficient support for the design of residential DG rates and no further study is needed in this docket.

A. A CCOS study provides sufficient support for allocation of costs and benefits to and design of cost-based rates for DG customers.

Under the terms of the S&A, in each future rate case, the utilities will conduct and file a class cost of service (CCOS) study, with private DG customers separated into their own class. The CCOS study is sufficient to allocate costs and benefits to the residential DG class and no further

study is needed in order to set rates for the class. A CCOS study is a very detailed, specific study that will capture all measurable costs and benefits of the DG class without substantial additional cost and without further delay. "If a meaningful level of costs or benefits do become quantifiable in the future, subsequent CCOS studies will reflect this and the rate design implemented in each rate case can change over time as the class changes." *Id*.; *see also* Faruqui Reply Affidavit, at p. 3 ("Westar's cost of service study provides the foundation necessary to develop a three-part rate. There is no additional research or data that is needed to develop such a rate for residential DG customers").

Because utilities in Kansas set rates using an historical test year, any cost reductions actually realized by the utility in the test period will be reflected in the utility's revenue requirement when it files a rate case. Martin, Tr. 184 ("If any costs were actually imposed upon Westar for or benefits were actually incurred or realized by Westar during the test year" those costs or benefits would "be reflected when you calculate your revenue requirement in that case"). This includes cost reductions attributable to the existence and operation of DG. Commissioner Albrecht Question to Mr. Lutz, Tr. 255 (Mr. Lutz agreed that "because it's based on a historical test year the distributed generation that exists on the system in that test year would exist on the system, so to the extent there is any congestion or issue with congestion or a need to address that congestion through some capital expenditure of some sort, that's all going to come in within the context of that next case").

Despite his recommendation that a study in addition to the CCOS study is needed, CURB witness Kalcic agreed that any costs imposed and benefits provided by DG customers would be reflected in the utility's revenue requirement when it files a rate case.

> Q. And if there have been costs imposed on the company by distributed generation, those costs would be reflected?
>
> A. Yes, it would.
>
> Q. If a utility recognized a savings by virtue of the DG customers being on the system, you said it would have cost to operate. I think you said in your testimony –
>
> A. It wouldn't show up in the claim.
>
> Q. But the claim would be smaller than it otherwise would have been had those benefits not occurred?
>
> A. Correct.

Kalcic, Tr. 290.

Once a utility's revenue requirement is established in a rate case, if residential DG customers are a separate class or sub-class, the CCOS study will allocate the net costs for the residential DG class (costs less any benefits provided) to that class. That allocation will be the basis for setting rates for the class. Through the CCOS study process, allocators are developed to ensure that the net cost of providing service to residential DG customers (the cost less any benefits provided by the class) is assigned to that class. Dr. Glass provided a detailed explanation of how the allocation process within the CCOS study would work:

> a cost of service study starts out with costs and then it allocates those costs to customer classes using allocators, using demand allocators. They are primarily demand allocators that are based upon the behavior of customers, so given that basic background, the costs that are – that are quantifiable, most of the costs are quantifiable, are things like distribution, transmission, generation, fuel, energy, that type of stuff, purchased power. Those would be – those are part of the behavior of customers, so if, in fact, it's found that, for example, transmission requires less, there's less transmission that's required or probably there's less O&M because of distributed generation customers. What you have to do is to blend and create a new allocator that would incorporate that. Well, you would do a study and you can do the study within the rate case, but you can ask the engineers can you figure out a way to differentiate the transmission

> costs of regular residential customers versus distributed generation customers.
>
> If it's distribution costs that are less, distribution costs are allocated, at least Staff's procedure for allocating distribution costs is non-coincidental peak. Well, if their distribution costs are less it should be reflected in their non-coincidental peak or it's reflected in their energy use. It's in one of those two that it's going to be reflected, right? Either they have less O&M because there's less energy flowing through, so their energy is going to reflect it or there's less -- they are demanding less demand on their -- on their distribution system or their part of the service territory and so the demand there, no coincident demand is going to reflect it. It's going to be one of the two. So what you do, you know, if you're really good at this, and this is the reason I am only outlining it, you can blend these two types of allocators together or you can use each allocator and figure out a way of using possibly a load factor to mesh them and it would -- it would capture that, that difference and it would be the distributed generation customers that would be paying less because that's the way you would allocate it so they would pay less. You're still going to have the same amount of revenue requirement. It's just it's going to be allocated different. They would be allocated less because of their energy use, because of their demand on non-coincident peak. That's just the way you would do it.

Glass, Tr. 325-326, 358-359.

As Mr. Martin explained, "[a]s we look at that bucket of demand costs, we will be able to look at residential DG customers specifically as a class and determine if they were able to lower that demand cost specifically because of their actions and therefore those benefits to the system will flow through the class cost of service and set a rate design based on that or those DG customers." Martin, Tr. 150; *see also* Lutz, Tr. 249 ("I think a lot of those costs are already in the study today embedded in the residential class as we have it, so if this stipulation is accepted and we are able to isolate the DG customer class, it's just a matter of moving those costs out of the common class and into the DG specific class"). When a utility files a CCOS study in a rate case, allocating certain costs, net of benefits, to residential DG customers, all intervening parties will have the ability to study the data and cost allocations and make their own allocation proposals.

Martin Reply Affidavit, at p. 8; *see also* Commissioner Albrecht Question to Mr. Lutz, Tr. 255 (Mr. Lutz agreed that "[a]ll the evidence would be filed in support of that. The other parties would have an opportunity to refute that, rebut that, present their own alternatives . . .").

B. CURB's, CEP's and Cromwell's suggestion that a separate study is needed is erroneous; allocation of costs and benefits to DG customers can be handled within the CCOS study.

CURB, CEP, and Cromwell make the erroneous argument that it is not possible to allocate benefits to residential DG customers through a CCOS study and that a separate study is needed. However, as Dr. Glass and other witnesses confirmed at the evidentiary hearing, is not necessary to conduct a separate study – the CCOS study will allocate the net costs imposed by the residential DG class to that class. Utility rates are based on costs as determined by a CCOS study. If there are cost reductions between the prior test period and the current test period, those cost reductions (*i.e.*, benefits) will be reflected in the current period revenue requirement and CCOS study. If any of those cost reductions are attributable to the DG rate group, the reductions will be allocated to that rate group in the CCOS, resulting in a lower total cost allocated to the DG class. But this will only occur if the DG customers are placed in a separate rate group from the broader residential rate class.

Dr. Glass explained that the "benefits that everybody talks about are almost all avoided costs. Avoided costs fit into a class cost of service . . . There's a lot of ways to allocate and so you can take care of that problem within the class cost of service. You don't have to go outside the class cost of service." Glass, Tr. 338. Mr. Lutz confirmed this conclusion when he explained that "the benefits, the cost reductions, whatever those might be that are brought into the company's books and records through the existence of these DG customers would flow through that study." Lutz, Tr. 245. There is "not new information or new studies that need to now be introduced into

that process to give more information, that that legacy process, if you will, is capable of handling what needs to be done here with DG rates." Lutz, Tr. 254.

If the Commission starts carving out classes of customers for separate studies, the process will quickly become burdensome and will not be consistent with the traditional ratemaking process. As Commissioner Apple recognized with his questions at the evidentiary hearing, conducting studies outside of the CCOS process for certain customer classes could be opening a "Pandora's Box." Tr. 285-287. Dr. Glass confirmed this concern when he indicated that doing a separate study for just one class of customers outside of the traditional CCOS process makes him nervous, and even more nervous if it is just done for one class. Glass, Tr. 339.

C. CURB's suggestion that the TRC and RIM tests should be used as part of a separate study in addition to the CCOS study is misplaced.

CURB suggests that the Commission should incorporate two tests that have previously been used by the Commission to determine whether to approve energy efficiency programs – the total resource cost (TRC) test and the ratepayer impact (RIM) test – into a separate study for DG customers. This suggestion is misplaced. These tests are threshold tests used by the Commission to determine whether to approve a specific program, such as an energy efficiency program. They measure the benefit to cost ratio of the proposed program. As Mr. Lutz explained, "if a TRC test is greater than one, it's indicative that a program is positive in cost benefit and should be included or moved forward. It doesn't talk about the rate making for that program. It's more of a threshold test." Lutz, Tr. 238-239. With respect to DG, the question in this docket is not whether to allow customers to install DG but instead what the appropriate ratemaking treatment for customers who make the decision to install DG should be. As a result, the TRC and RIM tests would have no relevance:

> I can see where the TRC could play a role in your original decision, but it seems that decision has been made. DG is reasonable. There

> is benefit to it. People are deploying it. TRC doesn't seem to be a relevant threshold test to apply, and even if you did, let's say it returns positive value, how does that then translate into the ratemaking process? It's not a billing determinant. It's not a revenue number. I am uncertain how to make that TRC inclusive into the ratemaking process. To me, I kind of view them as distinctly different. One enables your decision making. Now that you've made that decision you go on and do rate making utilizing our legacy class cost and rate making structure.

Lutz, Tr. 256-257.

D. CEP's and Cromwell's argument that a study should be required because utilities cannot yet quantify the costs imposed by residential DG customers is erroneous.

CEP and Cromwell suggest that utilities should not be permitted to move forward with establishing a separate class for residential DG customers and addressing the problems with rate design for that class – and instead should be required to do a study – because utilities cannot precisely quantify the costs imposed by residential DG customers. This suggestion is misplaced because the Commission will not actually be setting rates for DG customers in this docket.[14] Instead, the net cost to serve residential DG customers (the cost less any benefits provided) will be determined in each utility's rate case and rates will be set based on that determination. As a result, the fact that the utilities cannot specify exactly how much the costs for items like system planning or load flow management will increase as a result of residential DG customers is irrelevant. *See*, *e.g.*, Martin, Tr. 114-115. The S&A would simply separate residential DG customers into a different class and design rates using the traditional CCOS and cost allocation methodology. This would result in residential DG customers paying rates based on the cost of serving them, just as non-DG customers do, but under a different rate design because residential DG customers are

[14] In any event, the need for a separate rate class for DG customers is due to the special requirements they impose on the electric system. As has been discussed, establishing such a class will enhance the ability of the Commission to reflect the costs and benefits of DG installations in rates to DG customers.

different from non-DG customers and the existing rate design does not fully recover the costs of serving them.

VI. The evidence in the record demonstrates that an unquantifiable value of resource approach should not be used to set rates for DG customers.

A value of resource type of study – as advocated by CEP and Cromwell – would result in the consideration of out-of-test-period cost reductions and non-quantifiable external benefits and would result in the application of different ratemaking treatment for distributed renewable resources compared to utility-scale renewable resources, which would be unreasonable and discriminatory. Moreover, as discussed in the following section of the brief, it is unclear how out-of-test-period cost reductions and non-quantifiable external benefits can be allocated to DG customers without negatively impacting all non-DG customers, since, by definition, the historic test period revenue requirement is not reduced by out-of-period and unquantifiable items. As a result, the Commission should not require the completion of a value of resource study for DG before authorizing creation of a separate residential DG class and changes to the rate design for that class.

A. The Commission has already found in this docket that costs and benefits will only be considered if they have a quantifiable impact on the utility's costs; as a result, a value of resource study which would necessarily consider benefits that have not impacted the utility's cost of serve should not be required.

The Commission's Order Opening Docket, at paragraphs 8-10, indicates that consideration of any non-quantifiable external benefits of distributed generation in this docket is inappropriate. Thus, the Commission stated:

> When determining rate structure the Commission has the discretion to consider the utility's quantifiable costs of providing service to a customer class, such as DG customers. Likewise, **the Commission recognizes that quantifiable benefits of DG may decrease the utility's cost of providing service to DG customers**.

Order Opening Docket, at ¶ 8 (emphasis added). As a result, any consideration of benefits provided by DG customers should be limited to benefits that "may decrease the utility's **cost of providing service**." This language precludes discussion or consideration of any alleged external, non-quantifiable benefits attributable to DG. Because – as discussed above – a traditional CCOS study will incorporate any quantifiable costs and benefits provided by residential DG customers that actually affect a utility's cost of service (*i.e.*, revenue requirement), it is not necessary to conduct any additional study in order to set rates for residential DG customers. Any additional study would result in consideration of unquantifiable benefits that are not reflected in the utility's revenue requirement and would be inconsistent with the Commission's determination in this docket.

To ensure that the costs and benefits of residential DG being considered in the ratemaking process have a quantifiable impact on the utility's cost of service, they must be realized by the utility in a test year. Such an approach would be consistent with the traditional ratemaking approach, where all customers' rates are "based on the cost the utility incurred during a test year." Gilliam, Tr. 422. However, CEP's and Cromwell's suggestion that the Commission take more than a single-year or test-year snapshot of benefits when setting rates for residential DG customers would result in (1) the inclusion of benefits in the ratemaking process that have not actually impacted the utility's cost of service and (2) rates for residential DG customers being set using a method that is different than the method used for all other customers. In fact, Mr. Cromwell admits that he is asking that the "Commission apply a new or different ratemaking standard for setting rates for DG customers than for other electric customers." Cromwell, Tr. 390; *see also* Gilliam, Tr. 423.

What CEP and Cromwell are suggesting is that rates for residential DG customers be reduced for avoided costs that might occur in the future, outside the test period; *i.e.*, long-term avoided costs. The problem is that this approach would lower the revenue requirement allocated to the residential DG class before costs are actually avoided, resulting in an overall shortfall in revenue requirement recovery. To avoid that result, the shortfall would have to be allocated to other classes, further enhancing the subsidy from non-DG customers in favor of residential DG customers that exists today. *See, e.g.*, Kalcic, Tr. 291-292 (assigning additional benefits to the residential DG class "would shift the results of the cost of service study, change the slices of the pie" and cause "a reduction from one class of customers and an increase for somebody else").

B. CEP's and Cromwell's suggestion that a value of resource study that considered externalities be required is inconsistent with Commission precedent and would result in discriminatory treatment of distributed renewable resources.

The Commission has previously indicated that it will not consider externalities in the energy efficiency context or when establishing a revenue requirement for utility-owned renewable resources. CEP's and Cromwell's suggestion that a value of resource study that considers benefits including reduction in air pollution and carbon emissions – benefits that CEP admits are also provided by utility-owned renewable resources but have never been considered by the Commission when setting rates for those resources, Gilliam, Tr. 424 – is inconsistent with this Commission's precedent and would result in discriminatory treatment in favor of distributed renewable resources.

Consideration of societal benefits in the ratemaking process is inconsistent with previous Commission orders where the Commission indicated it would not consider the value of externalities because they were very difficult to quantify. In previous dockets, the Commission has made it clear that it does not believe externalities – such as indirect environmental and health benefits – should be considered when evaluating programs proposed by utilities. The Commission does not rely on the societal test when evaluating energy efficiency programs proposed by utilities

because "attempting to quantify such indirect societal environmental and health benefits is difficult" and the "analysis may also be viewed as less closely related to the Commission's policy objectives arising from its statutory duty and role as a regulator of utility rates." *In the Matter of a General Investigation Regarding Benefit-Cost Analysis and Program Evaluations for Energy Efficiency Programs, Order Setting Energy Efficiency Policy Goals, Determining a Benefit-Cost Test Framework, and Engaging a Collaborative Process to Develop Benefit-Cost Test Technical Matters and an Evaluation, Measurement, and Verification Scheme*, Docket No. 08-GIMX-442-GIV, at ¶ 36 (June 2, 2008) (emphasis added); see also *In the Matter of a General Investigation of Energy-Efficiency Policies for Utility Sponsored Energy-Efficiency Programs*, Order, Docket No. 12-GIMX-337-GIV, at ¶ 15 (March 6, 2013) (stating that quantifying indirect societal environmental and health benefits is difficult and the societal test is vague).

Although utility scale renewables provide the same societal benefits that renewable DG provides,[15] the Commission has never allowed an adder for the value of societal benefits to the cost of renewable generation constructed by a utility. In fact, as Westar indicated in its Initial and Reply Comments, the Commission expressly denied such an adder – despite the fact that it is contemplated by Kansas statute – when requested by Westar for the first set of wind farms Westar constructed. *See* Final Order, *In the Matter of the Petition of Westar Energy, Inc. and Kansas Gas and Electric Company (collectively "Westar") for Determination of the Ratemaking Principles and Treatment that Will Apply to the Recovery in Rates of the Cost to be Incurred by Westar for Certain Electric Generation Facilities and Power Purchase Agreements under K.S.A. 2003 Supp. 66-1239*, Docket No. 08-WSEE-309-PRE, pp. 39-40 (Dec. 27, 2007).

[15] In fact, when looking at utility-owned resources such as community solar, given that the utility can choose the site for community solar, but cannot for other private solar units, the community solar facilities are actually more likely to provide system benefits than or randomly selected sites for private DG.

Consideration of external benefits when setting rates for residential DG customers but not when determining a revenue requirement for a utility-owned renewable resource would be unduly discriminatory. Dr. Faruqui explained this result in his Initial Affidavit:

> If a price has been assigned to a certain externality, in other words, if it has been internalized, and that prices is part of the utility's cost structure, then it is economically efficient to reflect the price of that externality in rates for all customers. However, it would violate the core principles of ratemaking if only certain customers or technologies were charged or compensated for their impact on those externalities.
>
> For instance, investments in rooftop solar PV that are artificially subsidized through the current rate structure could potentially instead be made in lower cost utility-scale solar or energy efficiency, while achieving many of the same benefits. All technologies and customers should be on a level playing field when developing residential rate design.

Faruqui Initial Affidavit, at p. 26. CEP admits that their request for consideration of external benefits would result in residential DG resources being treated differently than utility-owned renewable resources:

> Q. Would you agree that all forms of renewable energy whether utility scale or distributed generation would help reduce carbon emissions and air pollution?
>
> A. Yes, but those are not at issue in this case.
>
> Q. Are you aware that this Commission has not considered those benefits in determining a revenue requirement for utility scale renewable resources?
>
> A. Yes.
>
> Q. But you want distributed generation to be treated differently?
>
> A. I want distributed generation to be treated fairly.
>
> Q. But differently from the utility scale resources, correct?

A. In some ways, yes, and that goes beyond the difference that you just described now.

Gilliam, Tr. 424.

Consideration of external benefits when setting rates for residential DG customers would also result in non-DG customers paying more to obtain the external benefits than needed, because the same benefits can be obtained from utility scale sources at a much lower price. Societal values such as those mentioned by CEP are likely "available at a much lower price from other sources (for example, large-scale solar and wind installations provide carbon-free electricity at much lower cost than private rooftop solar)." Brown Reply Affidavit, at p. 11. The appropriate price to be paid for a given benefit "should always be considered within the wider context of whether other resources might be able to offer the same values at lower cost." *Id*. The "'value' approach to the societal benefits of DG that leads to traditional customers paying extra to purchase environmental benefits they could get much more cheaply elsewhere makes no sense." *Id*. at p. 12. Customers have the right to receive a just and reasonable cost-based price for their energy and should not be required to pay more for one type of resource, which is valued using a method that is not being applied to any other utility resources. Martin Reply Affidavit, at p. 7.

C. A value of resource study has never been used by any Commission to set rates and CEP and Cromwell have no proposal regarding how such a study would actually be incorporated into the ratemaking process.

No state Commission has used a value of solar study as a basis for setting rates. Brown Reply Affidavit, at p. 14. Instead, regulators have preferred either cost-based or market-based rates to a "value" type of analysis. Id. at p. 15. As a result, CEP's and Cromwell's proposal in this docket would be completely inconsistent with the approaches taken by other Commissions across the country. Perhaps because using the results of a value of resource study to set rates has not been done in other jurisdictions, CEP and Cromwell offer no proposal regarding how the results

of such a study would be incorporated into the ratemaking process. Because the benefits that might be identified in a value of resource study do not fit into any FERC account, or within the utility's books and records, those alleged benefits do not "really belong through the remainder of the process." Lutz, Tr. 259. As Mr. Lutz testified:

> My struggle has been with how to translate the results from a cost benefit study which to me I equate to the value of solar studies that have been discussed in our efforts up to this point, but my struggle is how do you then translate those results as I've seen them in the examples from other jurisdictions? How would those results then be translated into the class cost or how would those be translated into your rate making? There are what I believe to be constraints within the statutes as far as what could be done as far as adjusting the rate for excess energy or whatever those are, limit the usability of that information.

Lutz, Tr. 244.

As Mr. Lutz recognized, because consideration of potential long-term benefits not realized by a utility in the test year – such as future avoided costs and environmental externalities – would not fit within the traditional ratemaking process, the only way to consider them would be through the payment the utility makes to the residential DG customer for excess energy. This is true because, as discussed above, there is no mechanism for incorporating benefits not realized in the cost of service into the ratemaking process and reducing the utility's revenue requirement for these types of benefits would result in an additional under recovery of revenue requirement and shifting of costs to non-DG customers. However, in Kansas, the legislature has already determined the appropriate price residential DG customers are to be paid for excess generation. As the Commission found in its Order Opening Docket, the Kansas Net Metering and Easy Connection Act and the Parallel Generation Act clearly address the rate an electric utility is to pay a customer with his or her own generation for energy produced in excess of the customer's own consumption (NEG or net excess generation). Order Opening Docket, at ¶ 9.

D. Value of resource studies are highly subjective, time-consuming, and expensive and the costs would ultimately be borne by customers.

Value of resource studies have been shown to be highly subjective with the results being very predictable based on the author of the study. These studies "fail by their own standards, because they are inherently so complex and require so many judgment calls about parameters and inputs that even the best-intentioned studies are inevitably subjective and controversial." Brown Reply Affidavit, at p. 13. Mr. Brown explained in his Reply Affidavit that "value of solar" studies

> are inherently so complex and require so many judgment calls about parameters and inputs that even the best-intentioned studies are inevitably subjective and controversial. If reasonably complete, value of solar studies are extraordinarily complex and, to be done correctly, these studies require a great deal of time and expense. Moreover, the results, no matter how honestly derived, are always going to be highly subjective, full of debatable and contentious assumptions, and subject to severe criticism by any number of interest groups.

Id. at p. 13; *see also* Faruqui Reply Affidavit, at pp. 3-4. CEP acknowledges that the costs of the studies they recommend would be borne by customers. Gilliam, Tr. 426. Yet, CEP continues to recommend that the Commission require such studies, despite the fact that they are highly subjective and time-consuming and unnecessary to set rates, as discussed above.

VII. The evidence in the record demonstrates that now is the time to act to set rate design policy for residential DG customers.

Cromwell and CEP argue that the current low levels of rooftop solar adoption in Kansas mean that the Commission should delay making changes to the DG rate. This argument fails. The fact that there is a lower level of rooftop PV deployment in Kansas actually means that this is the ideal time for the Commission to act to correct the existing subsidy. As Mr. Brown explained in his Reply Affidavit, the "timing of good rate design is like the Chinese proverb about planting a tree – the best time to do it was 20 years ago; the second best time is now." Brown Reply Affidavit,

at p. 6. As Westar explained in its Reply Comments, there are significant benefits to correcting the DG rate design before rooftop PV is adopted in larger numbers. Those benefits include:

- Lower levels of adoption make it easier to address issues like grandfathering of existing DG customers. The "impacts of grandfathering on customers – and the contentiousness of the issue – grow as more customers adopt rooftop PV." Faruqui Reply Affidavit, at pp. 5-6.

- Customer education is easier before higher adoption levels – and a greater split between customers who are grandfathered and those who are not – occur. "It is easier to educate customers about their rate options when the vast majority are in a similar situation than when they have become bifurcated." *Id*.

- Correcting the DG rate design now provides certainty to customers who are considering investing in private DG. *Id*. at p. 6; Brown Reply Affidavit, at p. 6; Martin Reply Affidavit, at p. 4. Providing clarity with respect to the rate design now will "give clarity to those customers considering investing in solar and should help encourage further growth of that industry in Kansas." Martin Reply Comments, at p. 5. Customers who install private DG are "making a large investment, and it is important to set rules that stabilize the long term, rather than changing the rules mid-stream." Brown Reply Affidavit, at p. 6.

The decision to change rate design does not "get easier or less controversial once many homeowners have made significant investments in private rooftop solar systems. Once that happens, the already difficult discussion of cross subsidies becomes even more complicated." Brown Reply Affidavit, at p. 6. Acting now will ensure that the minimum number of customers possible will be impacted by the change after they have already installed private DG systems. Martin Reply Comments, at p. 5.

As Mr. Gilliam admitted, under the current grandfathering provisions applicable to Westar, all new residential DG customers (as well as those who installed DG after October 28, 2015) will be subject to rate design changes that occur for the residential DG class.[16] Gilliam, Tr. 419. The

[16] Under the settlement agreement approved by the Commission in the 15-115 Docket, DG customers that had installed and connected their DG systems to Westar's system prior to October 28, 2015, are grandfathered under the

number of residential DG customers on Westar's system continues to grow – Westar had approximately 300 residential DG customers prior to October 28, 2015, and that number has grown to approximately 615, Martin, Tr. 125-126, and the associated revenue shortfall already exceeds $250,000 per year. *See* discussion above at 6. As Mr. Gilliam himself stated: "the longer we delay in correcting the problems with rate design, the more customers will have already installed DG and be affected by those changes." Gilliam, Tr. 421.

The lack of clarity that currently exists regarding the rate design for residential DG customers creates uncertainty. This lack of clarity reduces the ability of customers considering installing private DG to make an economic evaluation of the investment and on solar installers' ability to make sales. *See* Martin Reply Affidavit, pp. 4-5. Even CEP agrees that "the uncertainty that exists with respect to rate design for solar customers right now would cause customers to maybe decide not to install DG." Gilliam, Tr. 420. Providing clarity with respect to the rate design now will give clarity to those customers considering investing in solar and should help encourage further growth of that industry in Kansas. Martin Reply Affidavit, pp. 4-5.

VIII. The S&A complies with the Commission's five factor test for approval of settlements.

In its order in Docket No. 08-ATMG-280-RTS, the Commission set out the five factors it uses to evaluate settlement agreements.[17] Those factors are:

1. Whether each party had an opportunity to be heard on its reasons for opposing the Stipulation;

2. Whether the Stipulation is supported by substantial competent evidence;

"Residential Standard Service" tariff; however, DG customers who install and connect their DG systems on or after October 28, 2015, take service under the "Residential Standard DG" tariff and will be impacted by any tariff change that is implemented as a result of this docket. *See* Martin Reply Affidavit, at p. 4.

[17] Order Approving Contested Settlement Agreement, p. 5, Docket No. 08-ATMG-280-RTS (May 12, 2008).

3. Whether the Stipulation conforms with applicable law;

4. Whether the Stipulation results in just and reasonable rates; and

5. Whether the results of the Stipulation are in the public interest.

Id. As the testimony filed in support of the S&A by Westar witness Jeff Martin, Staff witness Dr. Robert Glass, KCP&L witness Brad Lutz, and KEC and Southern Pioneer witness Richard Macke establishes, the S&A filed in this docket complies with these five factors and should be approved in its entirety by the Commission.

All parties had an opportunity to be heard on their reasons for opposing the S&A. All but three parties to the docket either support or do not oppose the terms of the S&A. Although CURB is opposing the S&A, their opposition is limited to one issue – the question of whether the benefits of residential DG can be considered within the context of a CCOS study or whether a separate study is needed. Martin in Support of S&A, p. 7. As discussed above, CURB's concern on this issue is misplaced. Otherwise, CURB fully supports the terms of the S&A. All parties to the docket had the opportunity to participate in the settlement conference on June 5, 2017, and in the multiple phone calls and emails that occurred subsequent to that date. All parties, including the two opposing the S&A, were provided with draft copies of the S&A and given the opportunity to provide comments and decide whether or not to support the S&A. *Id.*

The S&A is supported by substantial competent evidence. As Westar discussed in the earlier sections of this brief, each element of the S&A is supported by significant evidence in the record, including some of the evidence providing by the parties that are opposing the S&A. *See also* Martin in Support of S&A, pp. 7-11 (summarizing support for each provision of the S&A).

The S&A conforms with applicable law. The Kansas Net Metering and Easy Connection Act specifically permits residential DG customers to be placed in a separate class and charged a rate different than the rate charged to non-DG customers. K.S.A. 66-1265(e). The Parallel Generation Act does not contain any prohibition on placement of residential DG customers in a separate class or making changes to the rate design for those customers. K.S.A. 66-1,184. The terms of the S&A regarding grandfathering are designed to be consistent with the Commission's order regarding grandfathering for Westar customers in Docket No. 15-WSEE-115-RTS and with the terms of the Net Metering Act regarding grandfathering (*see* fn. 6 on page 5 of the S&A and K.S.A. 66-1266). Additionally, the Commission – and Kansas law – strongly favors settlements. The Commission has explained:

> In general, Kansas favors compromising and settling disputes when the agreement is entered into intelligently, and in good faith. Of the Commission's vast array of cases, settlements are particularly favored when the controversy involves complex litigation taking considerable time and expense to litigate, including the time and expense of multiple appeals.

In Re Atmos Energy, Order Approving Contested Settlement Agreement, Docket No. 08-ATMG-280-TS, at ¶ 10 (May 12, 2008); *see also Bright v. LSI Corp.*, 254 Kan. 853, 858, 869 P.2d 686, 690 (1994) ("the law encourages settlement").

The S&A will result in just and reasonable rates for both residential DG customers and non-DG customers. Although no rate change will occur immediately as a result of the S&A, if approved by the Commission, the S&A would allow utilities to make changes to rate design for residential private DG customers in their next general rate case. The S&A outlines three rate design options that would be permissible for utilities to use and indicates that the actual rates will be set using the results of a CCOS study. *See* S&A, ¶ 11. As discussed above, after the residential DG customers are placed in a separate rate class, when the utilities prepare the CCOS study for

their next general rate case, the costs that residential DG customers impose on the system will be separately identified. The Commission will therefore be able to set cost-based rates for those customers at that time.

The three rate design options identified in the S&A for residential private DG customers will all help to reduce the subsidy that currently exists in favor of DG customers at the expense of all other residential customers. Martin in Support of S&A, p. 12. The rate structures will ensure that residential private DG customers pay their share of the fixed costs utilities incur to serve them. The rates themselves will be cost-based and will be subject to review by the Commission, Staff, and other intervening parties in our next rate case. *Id*. As a result, the rates that will ultimately be implemented if the Commission approves the S&A will be just and reasonable.

The results of the S&A are in the public interest. The S&A is supported by a variety of parties, all with varying interests and a duty to protect the interests of those it represents. The S&A is supported by the investor-owned utilities, the electric cooperatives, IBEW 304, and Staff and is not opposed by Brightergy or by United Wind, both of whom are installers of renewable distributed generation. Additionally, CURB supports the majority of the settlement and only has limited concerns, as discussed above. Martin in Support of S&A, p. 12.

The separation of residential private DG customers into a separate class or sub-class and application of the rate structures authorized in the S&A will help to eliminate the subsidy that currently exists in favor of DG customers at the expense of all other residential customers and will ensure that residential private DG customers are paying their share of the fixed costs they impose on the system. Martin in Support of S&A, p. 13. Additionally, addressing these issues now will actually foster the growth of the solar industry by providing certainty to customers and incenting

behavior from solar installers and customers that enhances the benefits DG can provide to the grid. *Id*. Additionally, as Mr. Brown explained in his Initial Comments:

> Recent analysis by the Rocky Mountain Institute suggests the possibility that a three part rate may be very successful in reconciling the interests of solar customers with a set of incentives that drive the efficiency and development of solar technology and that establish a fair and level playing field for solar and other technologies, while eliminating cross-subsidies from non-solar to solar customers . . . **Far from being anti-competitive, a rate tailored to distributed generation customers creates opportunities, not only for rooftop solar, but for efficiency enhancing technologies, and levels the playing field for other valuable resources to compete more fairly.**

Brown Initial Affidavit, at pp. 57-58 (emphasis added). Approval of the S&A in this docket will further the interests of all parties involved and set clear policy for Kansas that will allow future development of solar in the state with a level playing field and without furthering the subsidies and rate design issues that exist today.

V. Conclusion

Westar requests that the Commission accept the terms of the S&A to address the problems that exist with the current rate design for residential DG customers. Further delay will only enhance the problems, cause uncertainty for customers deciding whether to install DG, and result in additional, costly, and time-consuming proceedings. Therefore, Westar requests that the Commission approve the S&A in its entirety.

Respectfully submitted,

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VERIFICATION

STATE OF KANSAS)
) ss.
COUNTY OF DOUGLAS)

Cathryn J. Dinges, being duly sworn upon her oath deposes and says that she is one of the attorneys for Westar Energy, Inc. and Kansas Gas and Electric Company; that she is familiar with the foregoing **Initial Brief**; that the statements therein are true and correct to the best of her knowledge and belief.

Cathryn Dinges
Cathryn J. Dinges

SUBSCRIBED AND SWORN to before me this 21st day of July, 2017.

Donna G. Quinn
Notary Public

My Appointment Expires: 8/28/2020

Donna G. Quinn
NOTARY PUBLIC~STATE OF KANSAS
MY APPT EXP: 8/28/2020

CERTIFICATE OF SERVICE

I hereby certify that on this 21st day of July, 2017, the foregoing **Initial Brief** was electronically served on all parties of record.

Cathryn Dinges
Cathryn J. Dinges