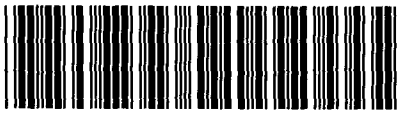

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APPLICATION OF EL PASO	§	BEFORE THE STATE OFFICE
ELECTRIC COMPANY TO	§	OF
CHANGE RATES	§	ADMINISTRATIVE HEARINGS

EL PASO ELECTRIC COMPANY'S RESPONSE TO SOLAR ENERGY INDUSTRIES ASSOCIATION'S FOURTH SET OF REQUESTS FOR INFORMATION QUESTION NOS. SEIA 4-1 THROUGH SEIA 4-4

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EL PASO ELECTRIC COMPANY'S RESPONSE TO
SOLAR ENERGY INDUSTRIES ASSOCIATION'S
FOURTH SET OF REQUESTS FOR INFORMATION
QUESTION NOS. SEIA 4-1 THROUGH SEIA 4-4

SEIA 4-1:

In the current proceeding, EPE lists the number of Residential DG customers as 1,807 and the number of Residential customers (exclusive of Residential DG customers) as 276,097.

a. Please confirm that the percentage of Residential DG customers as a total of all residential customers in this proceeding is 0.65%.

RESPONSE:

a. Confirmed. The percentage of Residential DG customers as a total of all residential customers in this proceeding (annualized as of the end of the test year) is 0.65%. See WP/P-7 Errata.

Preparer: Manuel Carrasco Title: Supervisor-Rates & Regulatory Affairs

Sponsor: Manuel Carrasco Title: Supervisor-Rates & Regulatory Affairs

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APPLICATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES	§ § §	BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

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SEIA 4-2:

EPE, in response to EFCA RFI 3-15, provided a listing of feeders along with the counts of customers and the counts of DG customers on each feeder.

a. Is it correct to assume that a feeder that is included in the EFCA 03-15 Attachment 1 (the full listing of feeders) that does not appear in EFCA 03-15 Attachment 3 (the listing of DG customers per feeder) means that feeder has 0 DG customers?

b. If the assumption in part a. above is correct, an analysis of EFCA 3-15 shows that 26.74% of feeders have 0 DG customers, 66.67% of feeders have fewer than 0.5% of customers with DG systems, and 93.02% of feeders have fewer than 1.5% of customers with DG systems. Please confirm if these figures are reflective of the feeders listed in EFCA 03-15.

c. Would EPE generally characterize Residential DG customers on their system as being geographically dispersed (that is, a small percentage of each feeder's customers is a Residential DG customer) or geographically concentrated (that is, a high percentage of each feeder's customers is a Residential DG customer)?

RESPONSE:

a. It is correct to assume that feeders shown in EPE's response to EFCA 3-15, Attachment 1, that do not appear in EPE's response to EFCA 3-15, Attachment 3, is the result of the feeder not having any customers with distributed generation (DG). EFCA 3-15, Attachment 1, is a list of all of EPE's Texas feeders, and EFCA 3-15, Attachment 3, is a list of all of EPE's Texas feeders with customers who have DG. Consequently, feeders with zero DG customers are not listed on EFCA 3-15, Attachment 3. EFCA 3-15, Attachment 3, is the result of a geographic information system (GIS) query that searches for customers with production and/or photovoltaic systems.

b. The figures listed in SEIA 4-2(b) are reflective of the feeders listed in EFCA 03-15 (+/- 3%).

c. EPE would generally characterize Residential DG customers on its system as being geographically dispersed.

Preparer:	Jason Villanueva William Pollard	Title:	Supervisor-Distribution Dispatching Superintendent-Distribution System
Sponsor:	R. Clay Doyle	Title:	Vice President-Transmission & Distribution and System Planning

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SEIA 4-3:

For Residential DG customers in EPE's service territory:

a. What percentage of Residential DG customers added solar to an existing house vs. constructed a new house with DG installed at or near the time of utility hookup? If an exact figure is not known, please estimate the approximate percentages.
b. For a Residential DG customer that added DG to an existing house, what additional distribution hardware beyond metering did EPE add to its distribution grid to accommodate the DG? If none, please confirm.
c. For a Residential DG customer that added DG to an existing house, what distribution hardware did EPE remove from its distribution grid to accommodate the lower levels of sales to the Residential DG customer? If none, please confirm.
d. If all Residential DG customers removed their DG systems from EPE distribution grid, what would be the impact on the distribution system? What hardware would EPE need to add or remove to accommodate this change?

RESPONSE:

a. EPE does not have information regarding the number of renewable energy systems added to existing homes or new construction homes. This information is not requested from the customer who is installing a renewable energy system.

b. With the current levels of DG penetration, EPE has not had to add additional distribution equipment (beyond metering) to accommodate DG. However, the feeder load masking effect of DG (i.e., full potential feeder load is not seen until cloud cover reduces the output of DG systems) is beginning to be of concern in the protection and planning process. EPE also suspects, and is investigating, whether the presence of DG has increased the duty cycle (number of on/off operations for line capacitors, or voltage regulator tap change operations) of automated line equipment.

c. EPE confirms that it has not removed distribution hardware from its distribution system to accommodate DG. Because of the masking effect of DG (see response to b. above) EPE has not, and cannot, remove equipment as a result of DG.

d. No distribution equipment would be added or removed. However, removing DG from the distribution system would result in more predictable feeder load and voltage profiles and would, potentially (see response to b. above), reduce the duty of voltage control equipment like voltage regulators and capacitor banks.

Preparers:	Jessica Sosa Ty Pollard	Title:	Analyst Finance-Associate Superintendent-Distribution System
Sponsors:	James Schichtl Clay Doyle	Title:	Vice President-Regulatory Affairs Vice President-Transmission & Distribution and System Planning

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SEIA 4-4:

Exhibit GN-2 contains the load forecast for EPE's system, and includes a reduction in Total System Net Energy and Total System Demand for energy and capacity resulting from DG and EE resources.

a. If all Residential DG customers removed their DG systems from EPE distribution grid, what would be the impact on EPE's bulk power system (i.e. production and transmission assets)? What hardware would EPE need to add or remove to accommodate this change?
b. If the DG and EE resources that were forecast in GN-2 were not constructed, what would the impact to the forecast be? All else equal, would this increase or decrease the cost to serve EPE customers?
c. Assuming that Residential DG customers were part of the Residential class, if all Residential DG customers removed their DG systems from the EPE distribution grid, what would be the expected impact be on the Residential class MCD and the Residential class 4CP be?
d. If the answer to part c. above is that the expected result would be that the MCD and 4CP demand of the Residential class would increase, all else equal, would that tend to increase or decrease the costs to serve Residential customers?

RESPONSE:

For clarification, Exhibit GN-2 shows forecasted annual energy requirements and peak demand requirements. The reduction to peak demand for DG reflects the reduced capacity of these generators at the time of EPE's system peak demand. Annual DG and EE amounts are incremental for that year, all other amounts are annual totals or system peaks.

a. Residential DG on the EPE distribution grid is intermittent, so as a practical matter the energy and capacity for these resources is "removed" from the grid periodically and EPE's bulk power system responds in order to continue providing service to these retail loads.

EPE has not performed an analysis of the bulk power system response specific to increased load resulting from the removal of DG resources portfolio impacts. Given the total capacity of residential DG, the system would most likely respond with either increased generation output from other resources or changes in power purchases.

When Residential DG systems stop generating power on EPE's distribution grid, the result may include occurrence of subtle changes in power flows and voltages on EPE's bulk power system transmission assets because DG is dispersed across the EPE distribution grid. There would be no change in the physical makeup (i.e., hardware) of the existing bulk power system if residential DG systems were removed.

b. All other things equal, if the DG and Energy Efficiency (EE) resources had not been constructed (did not exist), the Native System Energy and Native System Demand forecasts would be higher by the amount of the DG and EE forecasts.

The cost of service impact in this scenario would depend on how EPE would have planned and acquired resources to serve the hypothetical load forecast. Given the magnitude of the energy and demand requirements historically, it is unlikely that EPE's system would look different than it does today, though the operational requirements of units or extent of power purchases may have been modified. It is unlikely that the changed load requirements would have required the construction of a new generation resource or change the timing of the construction of generation resources over the last several years. Going forward, planned resources would be impacted by the altered load requirements, though again the cost of service impact would depend on the changes in resources acquired. Customer generation creates redundancy in resources on a near term basis, and may potentially defer less expensive resources in the future, both of which can increase costs to the customer.

c. EPE has not conducted any analyses to determine the effects of all DG customers removing their DG systems. However, EPE has produced a load study based on Residential DG customers' total household load. Please see EPE's response to EFCA 1-1, Attachment 1. Also, see Exhibit GN-7 to the direct testimony of EPE witness George Novela for the Residential DG total household load study and a comparison of the Residential DG total household load and the non-DG Residential Load. As shown in the load studies, Residential DG customers have a larger total household load and energy consumption than that of the average residential customer. Even after including their DG system, residential DG customers can consume more delivered load than the average non-DG residential customer at the time of the coincident peak. EPE expects that in the absence of DG systems, the Residential 4-Coincident Peak (4-CP) Demand would see a relatively small increase given the number of customers that have a DG system. EPE anticipates there would also be a slight increase for the Residential Class' Maximum Class Demand (MCD) during the summer months, and little to no change in the winter, since the MCD for Residential customers occurs during the evening hours.

d. All other things equal, including residential DG customers in the Residential class (absent their DG systems) would increase the total cost of service for the class.

Preparer:	Omar Gallegos	Title:	Director-Resource Planning & Management
	David Tovar		Manager-System Planning
	Teodulo Soto		Economist- Senior
	Enedina Soto		Economist- Senior
Sponsor:	George Novela	Title:	Manager-Economic Research
	David C. Hawkins		Vice President-System Operations, Resource Planning and Management
	James Schichtl		Vice President-Regulatory Affairs