XII. PALO VERDE GENERATING STATION UNIT 3 PROXY PRICE

PVNGS is a nuclear generating station about 50 miles west of Phoenix, Arizona. The facility consists of three separate, virtually identical generating units (PVNGS Units 1, 2 and 3) and a variety of common support facilities. PVNGS is owned by seven southwestern utilities, including EPE, whose ownership share is 15.8%. Arizona Public Service is the operator of the plant. Buraczyk Direct at 57.

Before PVNGS Unit 3 was completed, it became apparent that some of the participating utilities, including EPE and PNM, had committed themselves to more generation capacity than needed and that the cost of PVNGS was much higher than originally anticipated. LaRocque Direct at 19. In 1985, in light of an economic impact study that estimated that operation of PVNGS could result in a 68.4% rate increase for EPE's customers through 1988, producing rate shock, the Commission issued an order establishing a rate moderation task force to, among other things, investigate EPE's excess capacity issues and develop a rate moderation plan to fairly balance consumer and utility interests. Case No. 1942, Order Establishing Rate Moderation Task Force (2-25-85).

When issues surrounding the rate impact of PVNGS on EPE customers were not resolved by the task force, the Commission opened Case No. 2009 to examine the rate impact of PVNGS and appropriate rate moderation methods to alleviate that impact. Case No. 2009, Order Docketing Investigation (1-9-86). Case No. 2009 resulted in a stipulation approved by the Commission in which EPE agreed it would not request rate base treatment for its interest in PVNGS Unit 3. *Id.*, Final Stipulation, ¶1 (3-9-87). The stipulation provided, however, that if PVNGS Unit 3 qualified as the most economic resource, EPE could use it to serve its New Mexico load "under the same conditions that other utilities' plant could be used to serve (*e.g.*, economy energy sales)." *Id.*, ¶6. In its Final Order Approving Stipulation, the Commission said that the stipulation fairly balanced and allocated the risks and benefits of PVNGS between ratepayers and shareholders. *Id.*, Final Order Approving Stipulation at 9, ¶8 (5-18-87). The

Recommended Decision Case No. 20-00104-UT Commission noted that the stipulation did not expressly resolve whether EPE's decisions regarding PVNGS were prudent, but said that the stipulation, "and particularly the rate base exclusion of Unit 3, is a more than adequate surrogate for a litigated prudence determination." *Id.* at 8. The Commission concluded that the stipulation provided a reasonable rate moderation plan by limiting EPE's rate increases, excluding PVNGS Unit 3 from EPE's rate base and placing a price cap on additional power that EPE procured for New Mexico customers. *Id.* at 4. PVNGS Unit 3 was removed from EPE's rate base because capacity from PVNGS Unit 3 was not needed at that time to serve New Mexico customers. Tr. 1-14-21 at 113-14 (Schichtl).

After EPE emerged from bankruptcy in the late 1990s, the Commission, in a Final Order issued in Case No. 2722 in 1998, approved a stipulation that replaced the stipulation approved in Case No. 2009. Case No. 2722, Final Order at 6 (9-24-98). The stipulation provided in part that PVNGS Unit 3 would be excluded from EPE's cost of service and rate base and that PVNGS Unit 3 "shall be decertified and EPE's investment in Palo Verde Unit No. 3 shall be abandoned." *Id.*, Stipulation and Settlement Agreement, ¶ 9 (7-15-98). The stipulation also said:

EPE in its discretion may use Palo Verde Unit No. 3 to provide capacity or energy needed to serve EPE's New Mexico customers, including reserve margins as provided in Paragraph 7, and to the extent Palo Verde Unit No. 3 is so used, such firm capacity and energy shall be valued at the market price for the lowest equivalent firm capacity and related energy shall be allowed to recover the equivalent market price for firm capacity and related energy in base rates as purchase power expense. . . .

Id. (emphasis added). In its Final Order approving the stipulation, the Commission said, "The prudence of EPE's PVNGS investment to date is permanently resolved by the Stipulation, subject to permanent exclusion of Unit 3." Id., Final Order at 7.

Since 1998, the Commission has approved short-term market pricing proxies to compensate EPE for voluntarily using PVNGS Unit 3 capacity and energy to serve its New Mexico customers. Schichtl Direct at 24. PVNGS Unit 3 supplies about 39 MW of capacity and energy to EPE's New Mexico customers. *Id.* at 14.

The current proxy price used to compensate EPE for using PVNGS Unit 3 to serve New Mexico customers was approved in 2009 in Case No. 09-00171-UT and is based on a then-existing purchased power contract for wholesale purchases by EPE from Credit Suisse Energy, LLC which then represented the lowest available market price for firm capacity and related energy available to EPE. Case No. 09-00171-UT, Final Order Conditionally Approving and Clarifying Unopposed Stipulation at 19-20 (12-10-09); Unopposed Comprehensive Stipulation (10-8-2009). The contract terminated in 2010. Reves Direct at 8. The pricing in that contract uses a capacity price of \$9.25/kW-Mo times EPE's share of PVNGS Unit 3 and an energy price determined by multiplying the daily Permian natural gas index times a heat rate of 7600 Btu/kWh plus a \$3.50/MWh variable energy charge. This current proxy pricing has resulted in average costs of firm power to EPE's New Mexico customers ranging from \$36.26/MWh in 2015 to \$24.83/MWh in 2019. *Id.* at 8.

In Case No. 13-00380-UT, EPE requested continued use of its FPPCAC and continued use of the proxy price approved in Case No. 09-00171-UT. In its Final Order issued in Case No. 13-00380-UT, the Commission approved EPE's continued use of its FPPCAC but said nothing about EPE's request for continued use of the proxy price approved in Case No. 09-00171-UT. Final Order (1-8-14). However, the Recommended Decision in the 2015 EPE Rate Case states that the Commission approved continued use of the proxy price approved in Case No. 09-00171-UT. 2015 EPE Rate Case, Recommended Decision at 21. Neither the Recommended Decision nor the Final Order issued in the 2015 EPE Rate Case addresses continued use of the proxy price. In Case No. 18-00006-UT — EPE's next case requesting continuation of its FPPCAC — the Commission excluded from the scope of the case "the issue of the proxy pricing currently in effect for PVNGS Unit 3" and ordered the issue to be addressed in EPE's next base rate case — this case. Case No. 18-00006-UT, Final Order at 10, ¶¶ 30-32 (2-13-19). To the extent that the City argues that the proxy pricing for PVNGS Unit 3 approved in Case No. 09-00171-UT expired when the new rates approved in the 2015 EPE Rate Case took effect, that argument lacks merit.

The Commission has never disapproved nor changed the proxy price approved in Case No. 09-00171-UT, and EPE has continued to apply that proxy price.

In the 2018 EPE Fuel Clause Continuation Case, the Commission ordered EPE, in this case, to address the issue of proxy pricing for PVNGS Unit 3. Final Order Adopting Recommended Decision with Modification at 25-26. ¶D.

In this case, EPE proposes to use a proxy price that reflects the average cost of PVNGS Units 1 and 2, which both are in EPE's rate base and serve EPE's New Mexico customers. EPE proposes to change the proxy price for two primary reasons. First, Mr. Schichtl said that since 1998, the approved proxy prices have not provided for full PVNGS Unit 3 cost recovery. In fact, he says that in many years EPE did not fully recover PVNGS Unit 3 cash operating costs, let alone any portion of capital costs. Second, Mr. Schichtl said that basing the PVNGS Unit 3 proxy price on the average cost of PVNGS Units 1 and 2 more properly reflects the lowest equivalent market price of capacity and energy because the only equivalent market price for a carbon-free, baseload resource such as PVNGS Unit 3 is the price of another carbon free resource. While renewable resources are carbon-free, Mr. Schichtl said that renewable resources are not equivalent resources because they have capacity factors significantly lower than the 90% capacity factor of the PVNGS Units and they are intermittent. Schichtl Direct at 25-26.

EPE's proposed proxy price is \$48.50 per MWh and is comprised of a \$28.02/kW per month capacity charge and a variable energy price estimated to be \$8.21/MWh. The price is based on the TYP costs for PVNGS Units 1 and 2 capacity (\$40.29/MWh) and actual fuel costs (\$8.21/MWh). The \$48.50 price per MWh is an estimate because monthly nuclear fuel costs and MWhs will vary by month. *Id.* at 29; Hernandez 3rd Supp. at 6; Exh. AH-1-3S.

The current proxy price was on average \$24.83/MWh in 2019 and \$31.29/MWh in calendar years 2017 through 2019. Reyes Direct at 6. The average market price in 2019 for day-ahead firm power for all hours at the Palo Verde hub was \$31.15/MWh. *Id.* at 9. In 2019, New

Mexico customers paid \$7,751,365 for energy and capacity from PVNGS Unit 3. Borden Direct, Exh. JIB-2 at 3. Under EPE's proposed proxy price, New Mexico customers would have paid \$14,977,436 in 2019. See Hernandez 3rd Supp., Exh. AH-1-3S at 1.

If the Commission rejects EPE's proposed proxy price, EPE says that it will cease its voluntary use of PVNGS Unit 3 to serve New Mexico customers, which Mr. Schichtl said would result in EPE increasing the allocation of system generation resources to its New Mexico jurisdiction and immediately pursuing options to replace its PVNGS Unit 3 capacity in New Mexico. Schichtl Direct at 27. EPE's July 2020 L&R Table estimates that in 2021, EPE will have a margin of 3 MW over a 15% reserve margin and that in 2022, it will have a margin of 1 MW over that reserve margin. Buraczyk Supp., Exh. STB-1S.

Mr. Schichtl said that options to replace PVNGS Unit 3 capacity include purchasing or building gas-fired generation or purchasing renewable generation, the cost of which would be recovered through a direct assignment to New Mexico in EPE's FPPCAC. Schichtl Direct at 27.

Mr. Schichtl said that replacing PVNGS Unit 3 capacity with renewable generation currently is not an option because PVNGS Unit 3 is a baseload unit. He said that over time, renewable generation could replace PVNGS Unit 3 generation for part of the day, but for most of the day, the capacity might have to be replaced with fossil fuel generation. Mr. Buracazyk said that, in the short term, replacement energy and capacity likely would have to come from market purchases, an increased allocation of EPE's local natural gas generation units and new capacity procurements. Buraczyk Rebuttal at 23. He explained that on peak load days, EPE's existing generation is fully used to meet peak load and reserve margins, so PVNGS energy and capacity would have to be replaced by market purchases. On non-peak days, when EPE's existing generation is not fully used, EPE may be able to replace PVNGS Unit 3 energy and capacity with existing generation. He said that while it may be possible to replace PVNGS Unit 3 energy and capacity with a year-round market purchase which would include the cost to hold that capacity

year-round, it might still be necessary to replace some PVNGS Unit 3 energy and capacity with existing generation if sellers curtail their purchases. Buraczyk 3rd Supp. at 13-14.

While EPE proposes continued use of PVNGS Unit 3 to serve New Mexico customers if the Commission approves its proposed proxy price, it presents an alternative cost of service that reflects removal of PVNGS Unit 3 as a resource serving New Mexico customers if the Commission rejects its proposed proxy price. Schichtl Direct at 30. The alternative cost of service changes the jurisdictional allocators. Hernandez Rebuttal at 14; Tr. 1-20-21 at 939 (Hernandez). This alternative cost of service increases EPE's New Mexico revenue requirement by \$1,708,517. Hernandez Rebuttal, Exh. AH-4R. EPE currently recovers the cost of capacity and energy supplied by PVNGS Unit 3 to its New Mexico customers through its FPPCAC. Schichtl Rebuttal at 3. The alternative cost of service reflects only the base rate impact of not using PVNGS capacity and energy to serve New Mexico customers. It does not reflect the added fuel and purchased power costs that EPE expects would result from not using PVNGS Unit 3. Mr. Hernandez said that if EPE does not use PVNG\$ Unit 3 to serve New Mexico customers, "[t]he impact on the monthly FPPCAC charged to New Mexico customers will presumably be higher compared to today" because EPE's New Mexico jurisdiction would be allocated more fuel costs from EPE's system resources and power purchases needed to meet New Mexico's needs would be directly assigned to EPE's New Mexico jurisdiction. Hernandez Rebuttal at 13-14. However, Mr. Schichtl said that to the extent that natural gas generation replaces PVNGS Unit 3 capacity and energy, low natural costs could benefit New Mexico customers, but would expose them to fluctuations in natural gas prices relative to the more stable cost of nuclear fuel. Schichtl Direct at 31. Therefore, changing the proxy pricing mechanism will have no effect on EPE's proposed revenue requirement unless the Commission approves EPE's alternative cost of service, which would increase EPE's New Mexico revenue requirement by \$1,708,517.

The City says that before evaluating EPE's proposed proxy price, it is necessary to address the threshold issue of whether EPE needs the capacity and energy from PVNGS Unit 3

to serve its New Mexico customers. The City says that the answer is "no." City's Initial Posthearing Brief at 156. This threshold issue will not be addressed in this Recommended Decision for several reasons. First, in support of its position that EPE does not need the capacity and energy from PVNGS Unit 3, the City suggests that EPE's 15% reserve margin is too high. LaRocque Direct at 40. The appropriate reserve margin is a technical, complex question that is simply beyond the scope of this case. Second, in support of its position, the City also disputes the percentage contribution to peak that EPE assigns its solar energy resources in its L&R Table. Id. at 35-36. The appropriate percentage contribution to peak to be assigned to solar energy resources is likewise a technical, complex question that is simply beyond the scope of this case. However, because it is nevertheless an important issue, and an issue that has been raised in other EPE cases⁴⁷, a docket should be opened to determine the appropriate percentage contribution to peak of solar and wind resources that should be used by all of the IOUs for planning purposes and in their L&R tables. Third, while Ms. LaRocque and Mr. Reves said in their Direct Testimonies that capacity and energy from PVNGS Unit 3 is not needed to serve New Mexico customers, Reyes Direct at 13 & LaRoque Direct at 31-33, Mr. Reyes said at the hearing that if the Commission determines that a 15% reserve margin is appropriate, it is likely that a substitute resource would be needed to serve New Mexico customers until 2022 or 2023. Tr. 1-22-21 at 1512-13, 1526-27.

The City, the County, the AG and Staff oppose EPE's proposal to use a proxy price that reflects the average cost of PVNGS Units 1 and 2. They all state that EPE essentially seeks cost recovery as if PVNGS Unit 3 were in rate base. Reves Direct at 14 (stating that EPE's proposal is "a veiled attempt to secure rate base treatment for an asset that is not eligible for rate based cost recovery."); Crane Direct at 36 (stating that if the Commission believed that EPE was entitled to full cost recovery of PVNGS Unit 3, it could have included PVNGS Unit 3 in rate base); Solomon

⁴⁷ See Case No. 19-00349-UT, Recommended Decision at 48, 51, 56; Final Order at 9, ¶ 27; Case No. 19-00348-UT, Recommended Decision at 46-47, 50 (4-22-20), adopted by Order Adopting Recommended Decision (5-13-20).

Direct at 10 (stating that EPE's proposed proxy price would violate the stipulation approved in Case No. 2722 which requires PVNGS Unit 3 capacity and energy supplied to New Mexico customers to be valued at the market price for the lowest equivalent firm capacity and related energy available to EPE).

Mr. Reyes said that the only fair price to charge EPE's New Mexico customers for PVNGS Unit 3 capacity and energy is the Palo Verde market price. He argued, "New Mexico customers should not have to continue to pay above market price for a resource that they are not obligated to support through their rates." Reyes Direct at 11. Mr. Reyes, Mr. Solomon and Ms. Soules recommend valuing PVNGS Unit 3 power at the day-ahead firm energy prices for delivery at the Palo Verde hub compiled on the Intercontinental Exchange (ICE). Id.; Solomon Direct at 11; Soules Initial Posthearing Brief at 7-8. ICE compiles the day ahead prices offered for firm power to be purchased at the Palo Verde hub a day ahead of the delivery date. These daily prices consist of an on-peak price for the hours of 6:00 a.m. to 10:00 p.m., Monday through Saturday, MST. The off-peak price is for the hours 12:00 a.m. to 6:00 a.m. and 10:00 p.m. to 12:00 a.m., Monday through Saturday, and for all hours on Sundays and holidays. The index prices are a weighted average of the transactions for day-ahead firm power delivered on-peak and off-peak and reported daily by ICE. ICE pricing can change daily and hourly. Not only is the ICE Palo Verde Price Index available to EPE, but EPE sold Palo Verde energy between 2016 and 2019 and billed the counterparty for the energy based on the ICE Palo Verde Price Index. Reyes Direct at 10-11; Tr. 1-22-21 at 1505, 1516 (Reyes). If the ICE Palo Verde Price Index is used to determine the proxy price, New Mexico customers would pay the weighted average price for each calendar day for Palo Verde On-Peak and Off-Peak firm power as reported by the ICE. Reyes Direct at 3. In 2019, the average market price for day-ahead power for all hours at PVNGS was \$31.15 per MWh. Id. at 9.

Mr. Buraczyk said that ICE Palo Verde Price Index should not be used to determine the proxy price, for several reasons. First, Mr. Buraczyk said that while the ICE Palo Verde Price

Index is a recognized index for wholesale firm energy, firm energy is not the equivalent of capacity, and EPE uses PVNGS Unit 3 to offset additional capacity requirements to meet its planning reserve targets. Mr. Buraczyk said that for a short period of time and in small quantities, EPE has mitigated the need for new resource additions by relying on market purchases. However, he said that over the long term, EPE has a responsibility to secure resources to meet future load requirements. Buraczyk Rebuttal at 14.

Second, Mr. Buraczyk said that the ICE Palo Verde Price Index should not be used to determine the proxy price because firm energy transactions at the Palo Verde Hub can be interrupted for three reasons, the remedy for which is financial compensation. Although EPE is generally kept financially whole when it experiences an interruption of a firm energy transaction, it is typically forced to replace the loss of energy from the interrupted transaction through its own reserves or by seeking replacement power. Therefore, Mr. Buraczyk said, "This provision of substituting money for reliability makes a firm energy index an inappropriate surrogate for pricing capacity and energy." *Id.* at 15-17.

Third, Mr. Buraczyk said that using the ICE Palo Verde Price Index as a proxy price would expose New Mexico customers to price volatility and spikes during energy market shortfalls such as in August of 2020, when the Palo Verde on-peak index price increased to \$1,640 per MWh on August 18, 2020. *Id.* at 19.

The AG argues that the lowest equivalent market price for PVNGS Unit 3 energy and capacity does not have to come from another nuclear unit. Ms. Crane says that "[f]rom an operational prospective, energy from a nuclear unit is no different from energy from a gas-fired or renewable resource — each of these resources will keep the lights on." Crane Direct at 36. Therefore, Ms. Crane recommends that the Commission evaluate any proxy price relative to the cost of alternatives available to serve ratepayers. She said that the Commission should only authorize EPE to use PVNGS Unit 3 to serve New Mexico ratepayers if it is cost effective and provides a lower cost alternative for ratepayers. *Id.* at 37. Accordingly, she concluded that EPE

should be required to demonstrate that its proposed proxy price results in the lowest cost to ratepayers or it should initiate a procurement to obtain alternative resources that meet that requirement. Id. at 39. Ms. Crane dismissed EPE's claim that its cost of service would increase by approximately \$1.7 million if it reallocates system resources to its New Mexico jurisdiction to replace PVNGS Unit 3 capacity and energy. She said that EPE's claim does not consider the possibility of new replacement resources for PVNGS Unit 3 nor does it include a comprehensive analysis of the impact on ratepayers of various resource options. Id. at 38. Ms. Crane recommends that the Commission reject EPE's proposed proxy pricing and not include any amount in EPE's cost of service to replace energy and capacity from PVNGS Unit 3 because EPE has not provided sufficient information to allow the Commission to quantify the impact, if any, of replacing energy and capacity from PVNGS Unit 3. Id. at 39; Crane Supp. at 5. She recommends that the Commission require EPE to develop a comprehensive replacement portfolio based on the lowest reasonable cost alternatives. If the replacement portfolio includes resources for which the cost is typically recovered through EPE's FPPCAC, then EPE could seek approval to recover the costs through its FPPCAC in its next fuel clause continuation case. If the replacement portfolio includes resources for which the cost is typically recovered through EPE's base rates, then EPE could seek approval to recover the costs through base rates in its next base rate case. Crane Supp. at 5. If the Commission finds that it should adopt a new proxy price, Ms. Crane recommends adopting a price that is no higher than the average cost for all other generation resources serving New Mexico customers. Crane Direct at 39-40.

The County agrees with the AG and says, "The Commission should only authorize EPE to continue using PV-3 at a Proxy Price that demonstrates a net benefit to ratepayers and at the lowest cost while providing the same environmental benefits." County's Initial Posthearing Brief at 32-33.

Mr. Schichtl said that Ms. Crane's proposal to use a proxy price that is no higher than the average cost of all other generation resources serving EPE's New Mexico customers is superior

to using the ICE Palo Verde Price Index because it reflects firm power, i.e., capacity. However, he said that Ms. Crane's proposed proxy price is not an "equivalent" market price "and does not provide cost recovery for PV3." Schichtl Rebuttal at 11. Mr. Schichtl disagreed with Ms. Crane's assertion that nuclear power is not the only equivalent source of power for PVNGS Unit 3 power because he said that few generation resources can match the capacity factor and fuel price stability of nuclear generation. *Id.* at 10.

Regarding Ms. Crane's argument that EPE's alternative cost of service is not fair because EPE did not consider alternatives, Mr. Novela said that this case is not a resource planning case to identify a long-term replacement resource for PVNGS Unit 3. He said that if EPE does not use PVNGS Unit 3 capacity and energy to serve New Mexico ratepayers, its primary cost of service must be adjusted to reflect an increase in New Mexico's jurisdictional energy and demand allocators for the cost of replacement capacity and energy. Novela Rebuttal at 14-15.

EPE's proposal to use a proxy price that reflects the average cost of PVNGS Units 1 and 2 must be rejected. This proposal would compensate EPE for PVNGS Unit 3 power as if PVNGS Unit 3 is in rate base, which is completely at odds with the Commission's exclusion of PVNGS Unit 3 from rate base. Tr. 1-22-21 at 1528-29 (Reyes). Mr. Buraczyk acknowledged this when he said that EPE's proposed proxy price is "a proxy price for Palo Verde 3 that would be designed to essentially recover the costs associated with Palo Verde 3." Tr. 1-19-21 at 549. EPE's complaint that the existing approved proxy price has not provided for full PVNGS Unit 3 cost recovery is not legitimate because the Commission did not guarantee EPE full cost recovery for PVNGS Unit 3 if EPE voluntarily uses it to provide energy and capacity to New Mexico customers: rather, the Commission said that PVNGS Unit 3 energy and capacity would be valued at "the market price for the lowest equivalent firm capacity and related energy available to EPE." The Commission's exclusion of Unit 3 from rate base "indicates that it was not the intent of the NMPRC to guarantee full cost recovery for the use of PV Unit 3." Crane Direct at 36. Mr. Schichtl's denial that the Commission decertified and deregulated PV3 based on the cost of the resource, Schichtl

Rebuttal at 6, is blatantly wrong. If EPE wants full cost recovery for PVNGS Unit 3, it should seek a CCN to add PVNGS Unit 3 back in its rate base.

The Hearing Examiner takes EPE at its word that if EPE's proposed proxy price is rejected, EPE will cease using PVNGS Unit 3 to serve New Mexico customers. That leads to the question of whether to approve EPE's proposed alternative cost of service, which would increase EPE's New Mexico revenue requirement by \$1,708,517. The answer to this question is "no." The primary reason for rejecting EPE's proposed alternative cost of service is that EPE's own witness, Mr. Buraczyk, said that, if EPE ceases using PVNGS Unit 3 to serve New Mexico customers, EPE will rely on market purchases for any shortfall. This testimony occurred at the hearing in which Mr. Buraczyk was referencing EPE's L&R Table, which shows that EPE expects to obtain 195 MW of capacity from market resource purchases in 2021. Buraczyk Supp., Exh. STB-1S. Mr. Buraczyk said that if PVNGS Unit 3 is no longer used to serve New Mexico customers, "the 195 MW market purchase would obviously increase to 235 MW." Tr. 1-19-21 at 552 (emphasis added). Taking Mr. Buraczyk at his word, EPE will rely on market purchases to make up any shortfall from not using PVNGS Unit 3 to serve New Mexico customers, and EPE would recover the cost of any such market purchases through its FPPCAC, as it currently does. Approving EPE's alternative cost of service would authorize EPE to recover \$1,708,517 annually, through base rates, for the cost of replacement power that, according to its own witness' testimony, it would recover through its FPPCAC: it would grant EPE a windfall.

The AG is correct that if EPE elects to stop using energy and capacity from PVNGS Unit 3 to serve New Mexico customers, it must consider alternatives and demonstrate that the proposed replacement resource is the most cost effective choice. In *Public Service Company v. New Mexico Public Regulation Commission*, the New Mexico Supreme Court affirmed the Commission's decision that PNM was imprudent by failing to consider alternatives before repurchasing 64.1 MW of PVNGS capacity and renewing five PVNGS leases. The Supreme Court explained:

Recommended Decision Case No. 20-00104-UT ... By requiring PNM to demonstrate that that its management adequately considered alternatives when it decided to repurchase the 64.1 MW and renew the five leases, the hearing examiner and Commission reasonably applied the prudence Standard to PNM's decisions.

We pause, before concluding our analysis of this argument, to note that it was not inappropriate for the Commission to address whether PNM had demonstrated Palo Verde to be cost-effective or the lowest cost alternative. We observe that there is a meaningful relationship from the perspective of the ratepayers between the consideration of alternatives and the cost of the chosen generation resource. The goal of the consideration of alternatives is, of course, to reasonably protect ratepayers from wasteful expenditure. The failure to reasonably consider alternatives was a fundamental flaw in PNM's decision-making process.

PNM v. NMPRC, 2019-NMSC-012, ¶¶ 31-32 (citation omitted).

That EPE does not propose a new procurement to replace energy and capacity from PVNGS Unit 3, but proposes to allocate more of its existing resources to New Mexico, does not excuse EPE from considering alternatives. EPE proposes to replace one resource with another and must demonstrate that it considered alternatives and that the selected replacement resource is the most cost effective choice. Not only did EPE not so demonstrate, it did not even identify which of its existing resources it proposes to use to replace PVNGS Unit 3. The alternative cost of service which shows a \$1,708,517 increase in EPE's revenue requirement if it stops using PVNGS Unit 3 to serve New Mexico customers, does not identify which resources would be used to replace PVNGS Unit 3. It only shows the dollar increases in rate base, return on rate base, operating expenses and taxes. Hernandez Rebuttal, Exh. AH-4R. The only explanatory testimony is Mr. Schichtl's testimony that "[t]he alternative cost of service reflects increased allocation of existing EPE resources for New Mexico to fill the capacity and energy deficit left by discontinuing the use of PVGS Unit 3 to serve New Mexico load." Schichtl Direct at 30. As stated above, Mr. Schichtl's testimony that EPE would increase its allocation of existing EPE resources to make up any shortfall from not using PVNGS Unit 3 is discredited by Mr. Buraczyk's testimony.

Because the Hearing Examiner is recommending rejection of EPE's proposed proxy price, and EPE has made clear that it will cease using PVNGS Unit 3 to serve New Mexico customers if its proposed proxy price is rejected, it is unnecessary to approve a new proxy price. However, the Hearing Examiner nonetheless comments on the two alternative proxy prices proposed in this case in the event the Commission decides to approve a new proxy price. First, using the day-ahead firm energy prices for delivery at the Palo Verde hub compiled on ICE as a proxy price has merit. Contrary to Mr. Buraczyk's testimony, market purchases by EPE at the PVNGS hub are equivalent to capacity from PVNGS Unit 3. At the hearing, Mr. Reyes was asked, "[T]he [ICE] price itself excludes a capacity component. Isn't that correct?" Mr. Reyes responded, "That's not correct. It's firm power with contingency reserves." Tr. 1-22-21 at 1510-11. A seller must have contingency reserves, or backup resources, available for the entire time that it supplies firm energy. Id. at 1539. Mr. Reyes explained that "when you're paying for capacity, you're paying for the potential to generate, and having the rights to that potential to generate." Id. at 1535. He continued, "When you're buying firm energy, you're buying the energy from a particular resource at a particular time, and that resource and that energy is being backed up by additional reserves that are being supplied into the market through contingency reserves." Id. at 1536. Mr. Reyes said that firm power is only curtailable under "force majeure." Id. at 1514. EPE's argument is belied even more persuasively by its own L&R Table, which shows that EPE counts resource purchases, including market resource purchases and purchases under PPAs, as capacity available to meet its system demand and reserve margin requirement. See Buraczyk Supp., Exh. STB-1S; Tr. 1-22-21 at 1541 (Reyes). For purposes of showing capacity on EPE's L&R Table, EPE treats power from market purchases the same as power from EPEowned generation. EPE does not discount capacity from market purchases on its L&R Table. Tr. 1-22-21 at 1544-46 (Reyes). Mr. Buraczyk said that all of the capacity listed on the L&R Table is "absolutely necessary to meet our reserve requirement[.]" Tr. 1-19-21 at 549. He said that the MW of market purchases on the L&R Table are the amount that EPE will need to make

at the time of peak to meet its planning reserve obligation of 15%. *Id.* at 683. However, Mr. Buraczyk is correct that using a proxy price based on the day-ahead firm energy prices for delivery at the Palo Verde hub compiled on ICE would expose New Mexico customers to price volatility and spikes during energy market shortfalls because energy trading at the Palo Verde hub is not limited to nuclear energy trading. Any type of fuel can be traded at the Palo Verde hub, including natural gas. Tr. 1-22-21 at 1515 (Reyes). During the recent brutal cold snap, for the week ending February 12, 2021, on the on-peak Palo Verde price was around \$270.25 per MWh. https://www.spglobal.com/platts/en/market-insights/latest-news/electric-power/021221-texas-us-power-prices-rally-as-brutal-cold-snap-continues; see also Case No. 21-00064-UT, Order Setting Hearing; Notice of Hearing (3-24-21) (scheduling hearing on EPE's request to collect costs due to price spikes in natural gas markets due to recent cold weather event).

The AG's proposal to adopt a proxy price that is no higher than the average cost for all other generation resources serving New Mexico customers lacks merit at least because of a lack of evidence in this case. The only evidence of the average cost of EPE's other generation resources serving New Mexico customers is in Exhibit STB-2S to Mr. Buraczyk's Supplemental Testimony, and there is reason to believe this evidence is unreliable. This is because this Exhibit shows that the cost of PVNGS is \$44.03 per MWh, but EPE's proposed proxy price, which is based on the average cost of PVNGS Units 1 and 2, is \$48.50 per MWh. Additionally, the Exhibit shows that the average cost of EPE's generation resources serving New Mexico customers, excluding PVNGS, is \$50.92 per MWh, which is even higher than EPE's proposed proxy price.

The Hearing Examiner's recommendations effectively leave EPE with only one short-term option for replacing PVNGS Unit 3 power: market purchases, the cost of which EPE can recover through its FPPCAC subject to a cost review for reasonableness or prudence, as EPE acknowledges. EPE's Initial Posthearing Brief at 182-83. However, as Mr. Buraczyk said, it is

not desirable to rely too heavily on market purchases to meet load. He said the 195 MW of market purchases projected for 2021 is more than he would like to rely on. He said that the appropriate amount for EPE is probably less than 100 MW. Mr. Buraczyk said that it would be great to be in a position in which EPE makes market purchases only for economic dispatch purposes, *i.e.*, to offset more expensive resources that are already committed to serving customers. He said that, at least for 2021, EPE is relying on market purchases as part of a plan, as opposed to relying on them for economic dispatch purposes. Mr. Buraczyk said that EPE's reliance on 195 MW of market purchases in 2021 came about because of unexpected strong load growth. Load from the summer of 2019 to the summer of 2020 grew by 9½ %, the greatest increase Mr. Buraczyk saw in his almost 38 years working for EPE. The maximum total system demand in the summer of 2020 was 2,173 MW, a level that EPE had not expected to reach until 2025 or 2026. Mr. Buraczyk said that some of that load growth is due to the Covid-19 pandemic and the weather, but a lot of it is due to load growth throughout EPE's service territory. Tr. 1-19-21 at 684-87, 690. Mr. Buraczyk summed up by saying,

Betting on the fact that there is going to be resources [market purchases] available, I don't believe that's a prudent utility practice. That's not what we should be doing. We need to be planning a system and making sure that all of our customers have a reliable resource.

Tr. 1-19-21 at 567. See also Buraczyk Rebuttal at 20 ("This is why it is essential for utilities to secure adequate amounts of capacity for meeting customer loads, and that capacity value is not encapsulated in the firm energy market pricing.").

The obvious solution to this dilemma is for EPE to file an application proposing to add one or more resources to its energy portfolio, consistent with the Commission's order in the 2019 EPE Newman Unit 6 CCN Case. Order Adopting Recommended Decision With Additional Instruction at 10, ¶ 33 ("The Commission further finds that EPE should be ordered to provide, in its next application for approval of any resource acquisition, whether by CCN or long-term purchased power agreement, a comprehensive plan showing how EPE will comply with the

renewable energy and zero-carbon requirements of New Mexico law."). The Hearing Examiner is tempted to recommend that the Commission order EPE to file an application proposing to add one or more resources to its energy portfolio within six months of issuance of a final order in this case. However, it is unclear whether the Commission has authority to issue such an order. See State ex rel. Egolf v. New Mexico Pub. Regulation Comm'n, 2020-NMSC-018, ¶ 30 ("We hold that the Commission does not have the authority to initiate an abandonment proceeding. Section 62-9-5 does not allow the Commission to compel a public utility to file for abandonment."). Acting conservatively, the Hearing Examiner will not make such a recommendation. However, EPE should know from Mr. Buraczyk's own testimony that it should file such application soon and that not doing so could result in finding EPE imprudent depending on the facts.

XIII. EPE'S EXPENSES — CONTESTED ISSUES

A. RATE CASE EXPENSES

1. APPLICABLE LAW

"[R]ate case expenses are one aspect of a utility's operating costs and are recoverable in a general rate proceeding." PNM Gas Servs. v. New Mexico Pub. Util. Comm'n, 2000-NMSC-012, ¶ 68, 129 N.M. 1. However, under Section 62-13-3(B) of the PUA, a utility must meet a "heightened burden" of demonstrating the reasonableness of its requested litigation expenses. Id., ¶ 73. Section 62-13-3(B) says:

In any commission rate proceeding in which the utility seeks rates to recover adjusted test year litigation expenses there shall be no presumption that the litigation expenses are prudent. Nothing in this section shall be construed to create or imply a presumption of prudence for any utility expenditures not addressed in this section.

As used in Section 62-13-3(B), "litigation expenses" means "all attorneys' fees, consulting fees and other costs of litigation, including in-house expenditures." Section 62-13-3(C).

SCHEDULE A PAGE 1 OF 1

EL PASO ELECTRIC COMPANY
2021 TEXAS RATE CASE FILING
SCHEDULE A OVERALL COST OF SERVICE
SPONSOR: CYNTHIA'S PRIETO / JENNIFER I BORDEN
PREPARER: MELODY BOISSELIER
FOR THE TEST YEAR ENDED DECEMBER 31, 2020

lin	(a) Line		(b)	1-7		(d) ng Rates	(e) At Propo	(f) osed Rates	(g)
No.	Description		Total Per Books		Adjustments		_		_
	Operating Revenues		TOTAL T ES DOORS		Adjustments	As Adjusted	Adjustments	As Adjusted	Adjust Ref
	Sales Revenues Base Rate Revenues								
1	Base (A)								
2	Non-firm	S	,10000		3,825,725	\$ 660,915,638	\$ 54,582,300	\$ 715,497,938	A.3 DC 1
3	Total Base Rate Revenues	-	3,781,799		532,119	4,313,918	•		A-3 PG 1
4	Fuel Revenues from Retail Sales	_	660,871,71		4,357,844	665,229,555	54,582,300	719,811,855	
-5	Other Sales For Resale Fuel Revenues		123,082,683		(8,580,447)	114,502,235	•	114,502,235	
6	Total Fuel Revenues		83,695,755 206,778,435		(54,108)	83,641,647		83,641,547	A-3 PG 1
7-	Other Sales For Resale Non-Fuel Revenues	····	2,722,610		(8,634,556)	198,143,882		198,143,882	
8	Other Sales Margins Retained by EPE		2,467,543		•	2,722,610		2,722,810	-
9	Provision for Rate Refund		2,407,043	,		2,467,543	•	2,467,543	
10	Total Sales Revenues	~	872,840,301	_	(4,276,712)	000 500 500			_
1.1	Other Operating Revenues		44,669,844		844,298	868.563,590	54,582,300	923,145,890	
12	Total Operating Revenues		917,510,145		(3,432,414)	45,514,142 914,077,731	(720,634)	44,793,508	A-3 PG 1
	Operating Expenses		3 , 0	_	(0,402,414)	814,077,731	53,861,668	967,939,397	
	Operating Expenses Operation & Maintenance Expenses								
	Fuel and Purchased Power								
13	Reconcilable		200 CO4 ERR						
14	Non-Reconcilable		200,521,598		(2,377,716)	198,143,882	-	198,143,882	A-3 PG 2
15	Total Fuel and Purchased Power		1,763,715		(0)	1,763,715		1,763,715	
16	Other Operation & Maintenance		326,345,754		(2,377,717)	199,907,597	-	199,907,597	
17	Total Operation & Maintenance Expenses		528,631,068		(13,147,721)	315,575,750	194,390	315,770,140	A-3 PGS 3-5
18_	Regulatory Debits and Credits	~~~	2,238,525		2,781,774	515,483,347 5,020,299	194,390	515,677,737	
19_	Depreciation & Amortization Expense		106,473,349		20,170,460	126,643,809		5,020,299	
20	Decommissioning and Accretion Expense		9,847,575		(9,709,472)	138,103	-	126,643,809	
21 22	Taxes Other Than Income Taxes		74,646,717		(154,014)	74,492,703	2,392,423	138,103	
23	Current Income Taxes Federal				, ,	,	2,352,423	76,885,126	A-3 PG 8
24	State		13,269,006		1,910,476	15,179,482	10,104,645	25,284,127	4 3 DC 0
25	Total Current Income Taxes		1.969,463		169,637	2,139,100	1,108,982	3,248,082	
26	Deferred Income Taxes		15,238,470		2,080,113	17,318,582	11,213,626	28,532,209	
27	Federal		14 042 200						
28	State		11,912,289 767,269		(4,768,757)	7,143,532		7,143,532	4-3 PG 9
29	Other		101,209		490,253	1,257,522	•	1,257,522	
30	Total Deferred Income Taxes		12,679,557	_	(4,278,504)	0 (04 077			
31	Amortization of Investment Tax Credits		(1,619,640)		(235,895)	8,401,053 (1,855,535)		8,401,053	
32	Total Operating Expenses	- \$	748,135,621	Š	(2,493,259) \$	745,642,361 \$		(1,855,535)	\-3:PG:9
33	Operating Income (Return)						13,800,439 \$	759,442,801	
		\$	169,374,524	\$	(939,154) \$	168,435,370 \$	40,061,227 \$	208,496,597	
34	Total Cost of Service	\$	917,510,145	s	(3,432,414) \$	914,077,731 S			
35	Rate Base (Schedule B-1)	\$	2,834,249,477		(223,913,897) \$	2,610,335,580 \$	53,861,666 \$ 689,214 \$	**	
36	Rale of Return on Rate Base		5 976%			6 453%	003,414 \$	2,611,024,794 7,985%	
37	Revenue Deficiency @ Proposed ROR on Rate Base	\$	50,429,253		s .	53,861,666	<u></u> e.	7 803%	
Note·	As discussed in EPE witness Carrasco's testimony, base in	evenu					P	-0	

Amounts may not add or fie to other schedules due to rounding $\frac{1}{2}$

EL PASO ELECTRIC COMPANY 2021 TEXAS RATE CASE FILING SCHEDULE A-1* COST OF SERVICE- RETAIL BY ACCOUNT SPONSOR ADRIAN HERNANDEZ PREPARER ADRIAN HERNANDEZ FOR THE TEST YEAR ENDED DECEMBER 31, 2020

	(a)		(6)		(c) At Existing	(d) ates		(e) At Proposed		(f) Rates	(g)	
Line No	Description	т	otal Per Books	Ac	drustments		As Adjusted	Adi	ustments		As Adjusted	Adjust Ref
	Operating Revenues					_						
	Sales Revenues											
	Base Rate Revenues											
1	Base	\$	528,887,914	\$	3,825,725 \$	5	532,713,639 \$;	41,817,778	\$	574,531,417	
2	Non-firm		3,642,224		532,119		4,174,343				4,174,343	
3	Total Base Rate Revenues		532,530,138		4,357,844		536,887,982		41,817,778		578,705,760	
4	Fuel Revenues from Retail Sales		81,322,716		(1,238,010)		80,084,706		-		80,084,706	
5	Other Sales For Resale Fuel Revenues		65,727,609		192,158		65,919,767				65,919,767	
6	Total Fuel Revenues		147,050,325		(1,045,851)		146,004,473		<u>-</u>		146,004,473	
7	Other Sales For Resale Non-Fuel Revenues		•		-		•		-		•	
8	Other Sales Margins Retained by EPE		-		-		•		-		•	
9	Provision for Rate Refund											
10	Total Sales Revenues		679,580,462		3,311,993		682,892,455		41,817,778		724,710,233	
11	Other Operating Revenues		26,798,328		844,298		27,642,626		(720,634)		26,921,992	
12	Total Operating Revenues		706,378,791		4,155,291		710,535,081		41.097,144		751,632,226	
	Operating Expenses											
	Operation & Maintenance Expenses											
	Fuel and Purchased Power											
13	Reconcilable		147,472,535		(1,468,061)		146,004,473		-		146,004,473	
14	Non-Reconcilable		1,426,324		5,125		1,431,449				1,431,449	
15	Total Fuel and Purchased Power	_	148,898,858		(1,462,936)		147,435,922		•		147,435,922	
16	Other Operation & Maintenance		250,738,400		(7,713,873)		243,024,527		149,680		243,174,207	
17	Total Operation & Maintenance Expenses		399,637,258		(9,175,809)		390,460,449		149,680		390,610,129	
18	Regulatory Debits and Credits		790,344		2,195,060		2,986,404				2,986,404	
19	Depreciation & Amortization Expense		82,207,721		16,881,199		99,088,920		-		99,088,920	
20	Decommissioning and Accretion Expense		7,963,676		(7,851,695)		111,981		0 000 044		111,981	
21	Taxes Other Than Income Taxes		66,168,599		13,745		66,182,344		2,329,211		68,511,555	
22	Current Income Taxes		40.004.040		4 700 554		11,774,399		7,594,051		19,368,450	
23	Federal		10,004,848		1,769,551		1,684,915		848,650		2,533,565	
24	State		1,525,596 11,530,444		159,318 1,928,870		13,459,314		8.442.701		21,902,015	
25 26	Total Current Income Taxes Deferred Income Taxes		11,530,444		1,920,010		13,433,314		0,442,101		21,002,010	
20	Federal		9,462,051		(3,740,326)		5,721,725		_		5,721,725	
28	State		613,658		381,355		995,013		_		995,013	
29	Other		010,000		301,033		330,012				000,070	
30	Total Deferred income Taxes	_	10.075,709		(3,358,971)	_	6,716,738		-		6,716,738	
31	Amortization of Investment Tax Credits		(1.309,809)		(196,161)		(1,505,971)		-		(1,505,971)	
32	Total Operating Expenses	\$	577,063,941	\$	436,238 \$	3	577,500,180 \$,	10,921,592	\$	588,421,772	
	· - ·		400.044.040		0.700.050		133,034,902 \$		30,175,552	e	163,210,454	
33	Operating income (Return)	\$	129,314,849	•	3,720,053	•	133,034,902 \$	•	30,175,552	3	103,210,434	
34	Total Cost of Service	\$	706,378,791		4,156,291	6	710,535,081 \$	•	41,097,144	\$	751,632,226	
35	Rate Base (Schedule B-1 1)	\$	2,039,760,521	S	3,610,428	5	2,043,370,948 \$	•	530,728	\$	2,043,901,676	
36	Rate of Return on Rate Base		6 340%				6 511%				7 985%	
37	Revenue Deficiency @ Proposed ROR on Rate Base	\$	45,253,435		\$	\$	41,097,144			\$	0	

EL PASO ELECTRIC COMPANY
2021 TX RATE CASE FILING
SCHEDULE A-2: COST OF SERVICE DETAIL BY ACCOUNT - TOTAL COMPANY
SPONSOR CYNTHIA S. PRIETO / JENNIFER BORDEN
PREPARER ALEJANDRA GUEVARA
FOR THE TEST YEAR ENDED DECEMBER 31, 2020

	(a)							
Line	(a)			(b)	(C)		(d)	4.5
No	i i	_		t Year	Company Adjustments		Company	(e)
	Description	n :	An	nount	To Test Year		Requested	. .
it	Fuel (Reconcilable & Non-Reconcilal						Noquesten	Reference
2	Purchased Power	NB)		120,047,454	(2,547,705)		117,499,749	
3	TY O&M Not Adjusted			82,237,860	169,988			WP A-3 Adj 2
4	Payroll Expense *	Š		59,915,137	100,000		82,407,848	WP A-3 Adj 2
5	Other Production Expenses	Ì		85,100,801	(422,894)		59,915,137	Schedule A-5
6	Transmission Expenses			81,799,464	(1,939,686)		84,678,107	WP A-3 Ad ₁ 3
7				6,029,792	128,885		79,859,778	WP A-3 Adı 6, 7, 13
8	Distribution Expenses			11,363,181			6,158,677	WP A-3 Adj 7, 24
-	Customer Accounts Expense			8,285,171	(78,903)		11,284,278	WP A-3 Adj 7
9	Customer Services Expenses			129,205	(131,278)		8,153,895	WP A-3 Adj 1, 7
				120,200	(645)		128,560	WP A-3 Adj 23
10	Administrative & General Expenses			70 972 700			1	WP A-3 Adj 4, 7, 8, 9, 10, 12, 13, 21, 22,
28	Factoring Expense			70,873,739	(7,511,514)		63,362,225	23, 24, 25, 26
29	Factoring Factor	2.0		·	•		-	
30	Uncollectible Expense	0.0	JUU	200000000%	%000000000000000	0.0	%000000000000	
31	Uncollectible Factor			2,849,257	(619,780)		2,229,477	WP A-3 Adi 1, 7
32	Depreciation Expense	0.30	534	467799503%	-1 2307073319423%	0.2	72226857615%	Ln 30/Ln 108
33	Amortization Expense			97,333,646	21,106,456		118,502,102	
34	Decommissioning Expense			9,139,703	(907,996)		8,141,707	WP A-3 Adj 14
35	Ad Valorem Taxes			9,647,576	(9,709,472)		138,104	WP A-3 Adi 14
36	Franchise Tax			28,273,987	831,015		29,105,002	WP A-3 Adi 5
37	Payroll Taxes			-	-		110,100,002	WP A-3 Adj 15
38	Other Non-Revenue Related Taxes			9,266,495	(1,128,991)		8,137,504	
39	Texas PUC Assessment			137,861	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		137,861	WP A-3 Adj 16, 25
40	TPUC Assessment Effective Rate	· ·		988,356	68,937			WP A-3
41	Other States PUC Assessment	0.16	100	86186559%	0 00000000000000%	0.46	1,057,293	WP A-3 Adj 17
42	Other States PUC Assessment Effect			888,139	21,444	0 10	04900274143%	Ln:39/Ln 109
43	Toyon State Core S	ive Rate 0.52	212	28445179%	0 0000000000000000	0.0	909,583	WP A-3 Adj 17
44	Texas State Gross Receipts Tax			10,007,659	698,025	0 51	82111553511%	Ln 41/Ln 110
45	Texas State Gross Receipts Tax Effect	dive Rate 1 63	030	25949850%	0 00000000000000%		10,705,684	WP A-3 Adj 17
	Texas Local Gross Receipts Tax	!	- 1	24,995,586		1 62	50514461452%	Ln 43/ Ln 109
46	Texas Local Gross Receipts Tax Effect	tive Rate 4.07		81897556%	1,743,417		26,739,003	WP A-3 Adi 17
47	Other States' Gross Receipts Tay		١٧	88.632	0 0000000000000000000000000000000000000	4 05	88023608423%	Ln 45/Ln 109
48	Other States' Gross Receipts Tax Effe	ctive Rate nos	210	53483242%	4,562		93,194	WP A-3 Adi 17
49	interest on Customer Deposits	0.03	2.50	33403242%	0 00000000000000%	0,05	30948472122%	Ln 47/Ln 110
50	Interest Rate on Customer Deposits	0.00	200	00000000%				
51	Inactive Customer Deposits	0 00	1	000000000	0 000000000000000%	0,00	00000000000	composite rate
52	State Income Taxes	ł.			-			
53	Federal Income Tax Amount		١.	2,736,734	1,768,871		4,505,605	WP A-3 Adj 18, 19
54	Amortization of Excess Deferred Taxes		1	23,561,652	7,010,472		30,572,124	WP A-3 Adi 20
55	Amortization of ITC			317,127	4,607,353		4,924,480	Schedule G-7 8
	Tax Savings			1,619,640	235,895		1,855,535	
	FIT Deduction 1 Interest Expense						1,000,000	Schedule G-7 8
58	FIT Deduction 2 Other Employee Bend	Gio	7	3,404,646	(2,065,182)		71,339,464	0.4.11.00
59	FIT Deduction 3 Other Permanent Drift	mis		4,369,029	(4,369,029)		11,000,404	Schedule G-7 8
60	FIT Deduction 4 Research & Developr	orences		229,376	(.,00,020,		229,376	Schedule G-7 8
	Transaction of Develop	INTERPORT		880,590	_		880,590	Schedule G-7 8
	1						080,590	Schedule G-7 8
		İ					1	
				1				
Amounte	may not add or to to an	l.		1			1	
	may not add or tie to other schedules d	le to rounding		1 i				
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EL PASO ELECTRIC COMPANY
2021 TX RATE CASE FILING
SCHEDULE A-2 COST OF SERVICE DETAIL BY ACCOUNT - TOTAL COMPANY
SPONSOR CYNTHA S PRIETO / JENNIFER I BORDEN
PREPARER ALEJANDRA GUEVARA
FOR THE TEST YEAR ENDED DECEMBER 31, 2020

	(a)	(b)		(c)		(d)	(e)
Line	- "	Test Y		Company Adjustments To Test Year		Company Requested	Reference
No	Description	Amo	uni	10 163(164)		requested	Relevance
61	Additional Depreciation					-	
52	FIT Addition 1 Business Meals Not Deductible		50,271			50,271	Schedule G-7 8
63	FIT Addition 2 AEFUDC Depreciation		1.308.686	4,046,468		5,355,154	Schedule G-7 8
64	FIT Addition 3 Amortization of Excess ADSIT		1,262,020	(197,418)		1,064,602	Schedule G-7 8
65	FIT Addition 4 Other		1,202,020	(1441)		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Schedule G-7 8
66			_			_	-
67	Miscellaneous Tax Adjustments FIT Rate	21 00000	00000000%	0 00000000000000%	21 00	000000000000	Schedule G-7 8
68	Weighted Cost of Debt Rate		00000000%	0 00000000000000%		200000000000%	Schedule K-1
69	Weighted Cost of Preferred Rate		00000000%	0 000000000000000%		200000000000	Schedule K-1
70	Weighted Cost of Equity Rate		00000000%	0 00000000000000%		300000000000%	Schedule K-1
71	Return Amount		69,374,526	39,122,069		208,496,595	Schedule A
72	Rate Moderation	•					
73	Electric Plant in Service	5.5	16,676,913	(826, 190, 837)		4,690,485,076	WP 8-1 Adj 1
74	Accumulated Depreciation		68,590,940)	892,375,951		(1,576,214,989)	WP B-1 Adj 2
75	Construction Work in Progress		14,062,220	(214,062,220)			WP B-1 Adj 7
76	CWIP Factor	27 30544	29867216%	0 00000000000000%	0.00	000000000000000000000000000000000000000	Ln 75/Ln 108
77	Property Held for Future Use			-		-	
78	Nuclear Fuel	1	25,676,192	(125,676,192)			WP B-1 Adj 3
79	Nuclear Fuel Factor	16 03105	90791980%	0 00000000000000%	0.00	000000000000%	Ln 78/Ln 108
80	Lead/Lag Working Cash Allowance		-	-		-	WP B-1 Adj 3
81	1/8 Working Cash Allowance		40,793,219	(1,321,952)		39,471,267	(Sum of lines 3-10, 30)/8
82	1/8 Working Cash Allowance Factor	4 44607	82093042%	-2 6213991727603%	4 07	78654891886%	Ln 81/Ln 106
83	Purchased Power Factor for 1/8 WCA	8 96315	53883254%	0 3370821350391%	8 51	37404509399%	Ln 2/Ln 106
84	Non-Working Cash Expenses			-		-	
85	Other Working Capital			-		-	
85	Materials and Supplies		65.512.878	(3,971,823)		61,541,055	WP B-1 Adj 6
87	Prepayments		18,997,423	(328,587)		18,668,836	WP B-1 Adj 6
88	Fuel Inventory		1,759,613	(9,794)		1,749,819	WP B-1 Adj 6
89	Other Rate Base Addition 1 Coal Reclamation Asset		2,744,081	(2,744,081)			WP B-1 Adj 3
90	Other Rate Base Addition 2 Regulatory Assets		19,073,068	(526,623)		18,546,445 4,753,137	WP B-1 Adj3 WP B-1 Adj3
91	Other Rate Base Addition 3 Misc Deferred Debits		6,697,300	(1,944,163) (33,901,647)		16,071,228	WP B-1 Adj 5
92	Other Rate Base Addition 4 Tax Regulatory Assets/Liabilities		49,972,875	(53,901,647)		(297,469,599)	WP 8-1 Adj 4
93	Deferred Federal Income Taxes	(4	63,676,832)	00,207,233		(2.31,403,530)	W C Noy 4
94	Pre 1971 Investment Tax Credits		(8,321,654)			(8,321,654)	WP B-1
95	Customer Deposits		(0,321,034)	_		(0,02,1,004)	,,, ,,
98	Property Insurance Reserve					_	
97	Injunes & Damages Reserve		104 35 4 500V	•		(31,754,535)	WP B-1-1
98	Other Rate Base Deduction 1 Customer Advances Construction		(31,754,536)	-		(31,754,550)	**I B-1-1
99	Other Rate Base Deduction 2 Coal Reclamation Liability		(00 000 0E 4)	26,009,854			WP B-1 Adı 3
100	Other Rate Base Deduction 3 Regulatory Liabilities		(26,009,854)			(283,625,229)	WP B-1 Adj 5
101	Other Rate Base Deduction 4 Tax Regulatory Liabilities	1,	288,569 ,2 66)	4,044,001		(200,020,225)	VII B-17Ago
102	Other Cost Free Capital		560,871, 71 1	58,940,144		719.811.855	WP A-3 Adj 1
103	Base Rate Revenue		123.082.683	(8,580,447)	,	114,502,235	WP A-3 Adi 1
104	Fuel Revenue		133,555,751	69,555	'	133,625,307	WP A-3 Ad) 1
105	Other Revenue		917,510,145	50,429,252		967,939,397	Schedule A
106	Adjusted Test Year Revenue Texas Revenue Requirement		706,378,791	45,253,435		751,632,226	Schedule A-1
107 108	Retail Revenue		783,954,394	50,359,697		834,314,090	Schodule A
108	Texas Retail Revenue		613,852,854	44,937,613		658,790,466	Schedule A-1
110	New Mexico Rotal Revenue		170,101,540	5,422,084		175,523,624	(Ln 108 - Ln 109)
111	Regulatory Debits and Credits		2,238,525	2,781,774		5,020,299	WP A-3 Adj 11
117	Hogeratory South and Stories						

Amounts may not add or tie to other schedules due to rounding

^{*} Payroll Expense excludes \$1,782,719 from Allocated Cleaning Accounts

EL PASO ELECTRIC COMPANY
2021 TEXAS RATE CASE FILING
SCHEDULE A-3: ADJUSTMENTS TO TEST YEAR
SPONSOR: JENNIFER I. BORDEN
PREPARER: ALEJANDRA MONTALVO
FOR THE TEST YEAR ENDED DECEMBER 31, 2020

			.0			
		Adjustments to Taxes O	ther than	Income	Tayas	
Lin	: '	(b) Schedule A		(c)	(d)	(e)
_No	Description Description	n Reference	Ref	kpaper erence	0.00	
1	Less:			9101100	\$ 76,885,126	ount
2	Amount per books	(Test Year) Line 21			74,646,717	
3	Adjustment	Line 21				\$ 2,238,409
İ	Justification for requ	uired adjustment:				
	Taxes Other than in	come Taxes				
	Property Taxes		WP/ A	3 Adj 15		
	Reference Direct Te	stimony of Sean M. Ihorn	:	, -		
4	Adjustment					
	Payroll Taxes					831,015
	EPE Payroll Tax	00	VVP/A-	3 Adj 16		
	i				(1,320,856)	
1 !		x Prior Period Adjustment			192,444	
		stimony of Cynthia S. Prieto)			
5	Adjustment					(1,128,412)
	Revenue Related Ta	xes Test Year Adjusted	WP/ A-3	Adi 17		
		stimony of Sean M. Ihorn		1.0, 17		
6	Adjustment					
	Revenue Related Tax	00 D	İ			143,961
			WP/ A-3	Adj 17		
-,		timony of Sean M. Ihom			ĺ	
7	Adjustment		<u> </u>			2,392,423
	Lobbying Labor - Payi	roll Taxes	WP/ A-3	Adı 25		
	Reference Direct Test	limony of Jennifer I Borden				
8	Adjustment					
9 :	Total Adjustment to Tr	avoc Cub				(579)
	- The Angeotracial (O) 12	axes Other than Income Ta	xes		\$	2,238,408
Amount	s may not tie due to roun					
	a may not tile dife to total	ding				
İ						
i						
İ						
i						

SOAH Docket No. 473-21-2606 PUC Docket No. 52195 CEP's 4th, Q. No. CEP 4-7 Page 2 of 2

RESPONSE:

- a. The list of each solar resource that was built to serve New Mexico (NM)'s customers and directly assigned to the NM jurisdiction are:
 - Hatch
 - NRG
 - Sun Edison 1
 - Sun Edison 2
 - Rio Grande

The Holloman solar site was built for Holloman Air Force Base and is directly assigned to this customer.

- b. Please see CEP 4-6 Attachment 2 and CEP 4-7 Attachment 1 for the calculations used in the solar adjustment made to the jurisdictional allocators.
- c. Please see El Paso Electric Company's ("EPE") response to CEP 4-7 (a) and (b).
- d. The list of each solar resource that was built to serve Texas jurisdiction is:
 - Wrangler
 - Stanton Tower
 - EPCC
 - Van Horn
 - Newman carport
- e. Please see CEP 4-6 Attachment 2 and CEP 4-7 Attachment 1 for the calculations used in the solar adjustment made to the jurisdictional allocators.
- f. Please see EPE's response to CEP 4-7 (d) and (e).

Preparer: Juan Cardenas

Title: Economist - Staff

Sponsor: George Novela

Title: Director - Economic and Rate Research

SOAH DOCKET NO. 473-21-2606 PUC DOCKET NO. 52195

APPLICATION OF EL PAS	O §	BEFORE THE STATE OFFICE
ELECTRIC COMPANY TO	CHANGE §	OF
RATES	. §	ADMINISTRATIVE HEARINGS

EL PASO ELECTRIC COMPANY'S RESPONSE TO CITY OF EL PASO'S FOURTH REQUEST FOR INFORMATION QUESTION NOS. CEP 4-1 THROUGH CEP 4-12

CEP 4-7:

In reference to the direct testimony of Mr. Novela at page 7, lines 15-18, provide the following information related to adjustments to the jurisdictional allocators.

- a. A list of each solar resource that was built to serve the New Mexico jurisdiction's customers and was directly assigned to the New Mexico jurisdiction and removed from the New Mexico retail customers energy and demand usage used in the jurisdictional allocator.
- b. All calculations to arrive at the energy and demand usage adjustment for each solar resource that was built to serve the New Mexico jurisdiction's customers and was directly assigned to the New Mexico jurisdiction and removed from the New Mexico retail customers energy and demand usage used in the jurisdictional allocator.
- c. All workpapers supporting the calculations in (a) and (b) above.
- d. A list of each solar resource that was built to serve the Texas jurisdiction's customers and was directly assigned to the Texas jurisdiction and removed from the Texas retail customers energy and demand usage used in the jurisdictional allocator.
- e. All calculations to arrive at the energy and demand usage adjustment for each solar resource that was built to serve the Texas jurisdiction's customers and was directly assigned to the Texas jurisdiction and removed from the Texas retail customers energy and demand usage used in the jurisdictional allocator.
- f. All workpapers supporting the calculations in (d) and (e) above.

SOAH DOCKET NO. 473-21-2606 PUC DOCKET NO. 52195

APPLICATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES

BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

EL PASO ELECTRIC COMPANY'S RESPONSE TO
CITY OF EL PASO'S FOURTH REQUEST FOR INFORMATION
QUESTION NOS. CEP 4-1 THROUGH CEP 4-12

CEP 4-6:

The following questions are in reference to the direct testimony of George Novela.

- a. In reference to the direct testimony of Mr. Novela at page 7, lines 1-5, provide the total system coincident demand calculated for the test year.
- b. In reference to the direct testimony of Mr. Novela at page 7, lines 1-5, provide the total New Mexico jurisdiction and wholesale customer's Rio Grande Electric Cooperative ("RGEC"), jurisdictional coincident demand that was subtracted from total system coincident demand to calculate the Texas jurisdictional coincident demand.
- c. Provide the final calculated Texas jurisdictional coincident demand.
- d. Provide all other jurisdictional allocators by jurisdiction used in the jurisdictional separation and assignment of costs.
- e. For items (a) through (d) above provide all workpapers supporting each calculation.

RESPONSE:

- a. Please see CEP 4-6 Attachment 1 for the total system coincident demand calculated for the test year.
- b. Please see CEP 4-6 Attachment 1 for the calculations used to derive Texas jurisdictional coincident demand.
- c. Please see CEP 4-6 Attachment 1 for the Texas jurisdictional coincident demand.
- d. Please see CEP 4-6 Attachment 2 Voluminous for all the jurisdictional allocators.

SOAH Docket No. 473-21-2606 PUC Docket No. 52195 CEP's 4th, Q. No. CEP 4-5 Page 2 of 2

RESPONSE:

- a. Refer to pages 410 and 411 of El Paso Electric Company's ("EPE") FERC Form 1 for the years 2018, 2019, and 2020. Please see CEP 4-4, Attachments 1, 2, and 3. The exact locations are:
 - Newman Power Station carport structures
 - Wrangler Substation
 - Stanton Tower (EPE Headquarters)
 - El Paso Community College Valle Verde Campus
 - Van Horn, TX (EPE office)
- b. See EPE's response to CEP 4-7
- c. See EPE's response to CEP 4-7
- d. NA.

e. No is period specified in the question. See response to CEP 4-5 a.

Preparer: Adrian Hernandez Title: Senior Rate Analyst – Rates

Sponsor: Adrian Hernandez Title: Senior Rate Analyst – Rates

Larry Hancock Manager - Plant Accounting

SOAH Docket No. 473-21-2606 PUC Docket No. 52195 CEP's 4th, Q. No. CEP 4-4 Page 2 of 2

RESPONSE:

- a. Refer to pages 410 and 411 of El Paso Electric Company's ("EPE") FERC Form 1 for the years 2018, 2019, and 2020. These are included as CEP 4-4 Attachments 1, 2, and 3. The exact location is at the Rio Grande Power Station carport structures.
- b. See EPE's response to CEP 4-7
- c. See EPE's response to CEP 4-7
- d. NA.
- e. No period is specified in the question. See response to CEP 4-4 a.

Preparer: Adrian Hernandez

Title:

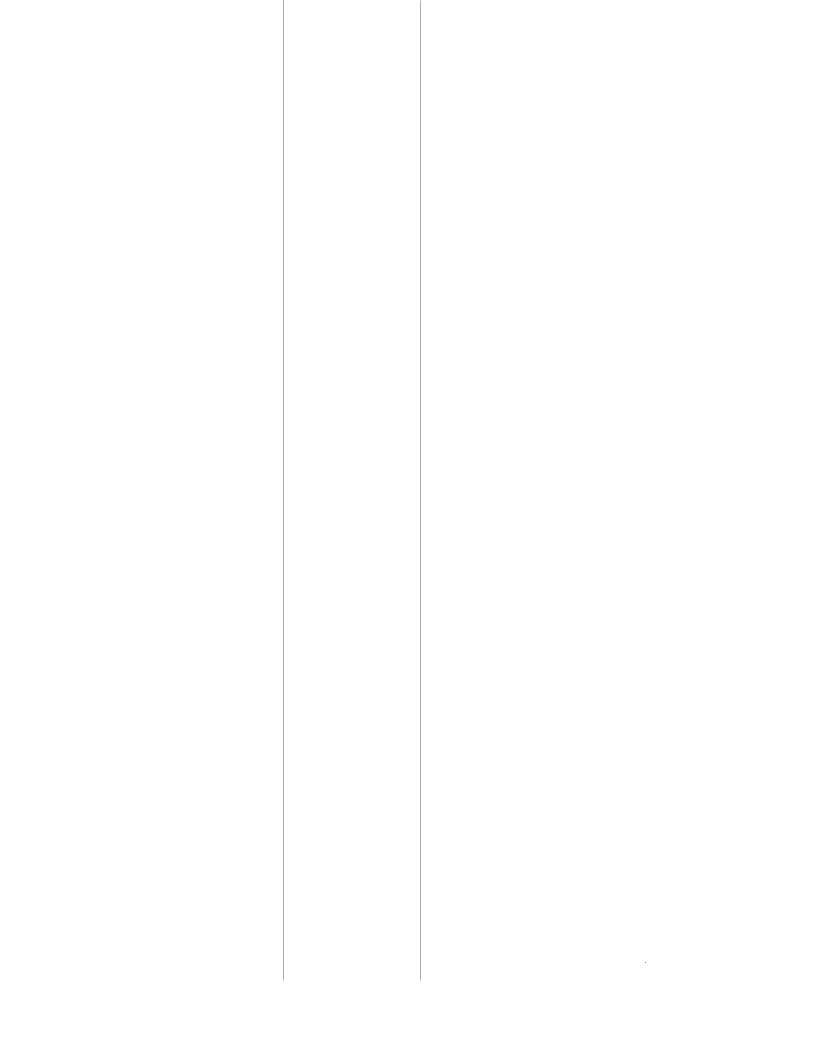
Senior Rate Analyst - Rates

Sponsor:

Adrian Hernandez Larry Hancock

Title:

Senior Rate Analyst - Rates Manager - Plant Accounting



SOAH DOCKET NO. 473-21-2606 PUC DOCKET NO. 52195

APPLICATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES

BEFORE THE STATE OFFICE

OF

ADMINISTRATIVE HEARINGS

EL PASO ELECTRIC COMPANY'S RESPONSE TO CITY OF EL PASO'S FOURTH REQUEST FOR INFORMATION QUESTION NOS. CEP 4-1 THROUGH CEP 4-12

CEP 4-4:

In reference the direct testimony of Mr. Hernandez at page 8, lines 29-31, provide the following regarding the Rio Grande Generating Station, identified as "NMSOL" in the JCOS study related to purchase power contracts in New Mexico entered into to meet RPS requirements in New Mexico:

- a. Provide a complete list identifying each PPA where adjustments were made for the jurisdictional energy and production demand allocation factors to reflect purchase power agreements specific or direct assignment to Texas or New Mexico. Also, for each PPA provide the name of facility, exact location, capacity size in Mw, energy generated in each of last three years, total cost of operating the facility including O&M in each of the last 3 years, and cost per kwh generated for each of last 3 years. For each facility identified in (a.) above provide the adjustment made for the jurisdictional allocation factor. Also include all workpapers and supporting calculations for the adjustment.
- b. For each facility identified in (a.) above provide the jurisdictional allocation factor. Also include all workpapers and supporting calculations
- c. For each facility identified in (a.) above provide the jurisdictional demand allocation factor. Also include all workpapers and supporting calculations for the adjustment.
- d. For each facility identified in (a.) above provide the PPA contract.
- e. For each facility identified in (a.) above provide the expected energy and demand capability.

SOAH Docket No. 473-21-2606
PUC Docket No. 52195
CEP's 4th, Q. No. CEP 4-3
Attachment 1
Page 1 of 1

Renewable Facility	Juwi(Newman)
Fuel type	Solar
Rated Capacity (MW)	10

	Delivered		
	Energy [1]	Total	Cost per
2018	kWh	\$	kWh
January	1,772,830	\$97,505.41	\$0.055
February	1,740,760	\$95,741.73	\$0.055
March	2,427,919	\$133,535.52	\$0.055
April	2,734,704	\$150,408.73	\$0.055
May	3,004,939	\$165,271.65	\$0.055
June	2,756,861	\$151,627.36	; \$0.055
July	2,435,549	\$133,955.20	\$0.055
August	2,557,902	\$140,684.58	\$0.055
September	2,288,522	\$125,868.70	\$0.055
October	1,518,385	\$83,511.15	\$0.055
November	1,817,850	\$99,981.77	\$0.055
December	1,269,693	\$69,833.12	\$0.055
Total		\$1,447,924.92	\$0.055
			•
	Delivered		
	Energy [1]	Total	Cost per
2019	kWh	\$	kWh
January	1,561,514	\$85,883.28	\$0.055
February	1,602,012	\$88,110.68	\$0.055
March	2,240,035	\$123,201.94	\$0.055
April	2,791,201	\$153,516.03	\$0.055
May	3,043,813	\$167,409.72	\$0.055
June	3,002,556	\$165,140.59	\$0.055
July	2,681,361	\$147,474.84	\$0.055
August	2,596,455	\$142,805.04	\$0.055
September	2,221,851	\$122,201.80	\$0.055
October	2,306,383	\$126,851.07	\$0.055
November	1,396,206	\$76,791.33	\$0.055
December	1,526,896	\$83,979.27	\$0.055
Total	26,970,283	\$1,483,365.59	\$0.055
	Delivered		
	Energy [1]	Total	Cost per
2020	kWh	\$	kWh
January	1,764,465	\$97,045.58	\$0.055
February	1,927,547	\$106,015.07	\$0,055
March	2,120,035	\$116,601.91	\$0.055
April	2,945,047	\$161,977.60	\$0.055
May	3,297,555	\$181,365.52	\$0.055
June	3,074,368	\$169,090.24	\$0.055
July	2,871,950	\$157,957.26	\$0.055
August	2,458,923	\$135,240.74	\$0.055
September	2,367,120	\$130,191.61	\$0.055
October	2,315,713	\$127,364.19	\$0.055
November	1,868,433	\$102,763.83	\$0.055
December	1,702,236	\$93,622.97	\$0.055
Total	28,713,392	\$1,579,236.52	\$0.055
	,:,: 3-	 	-

Delivered energy equals gross production net of station power.

SOAH Docket No. 473-21-2606 PUC Docket No. 52195 CEP's 4th, Q. No. CEP 4-3 Page 2 of 2

b. See El Paso Electric Company's ("EPE") response to CEP 4-7.

c. See EPE's response to CEP 4-7.

d. Refer to CEP 4-1, Attachment 2 Voluminous.

e. Refer to CEP 4-1, Attachment 2 Voluminous.

Preparer: Adrian Hernandez

Title: Senior Rate Analyst - Rates

Sponsor: Adrian Hernandez

Title: Senior Rate Analyst - Rates

SOAH DOCKET NO. 473-21-2606 PUC DOCKET NO. 52195

APPLICATION OF EL PAS ELECTRIC COMPANY TO RATES	i i	BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS
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EL PASO ELECTRIC COMPANY'S RESPONSE TO CITY OF EL PASO'S FOURTH REQUEST FOR INFORMATION QUESTION NOS. CEP 4-1 THROUGH CEP 4-12

CEP 4-3:

In reference the direct testimony of Mr. Hernandez at page 8, lines 22-25, provide the following regarding the ten Mw PSEG Newman Solar PPA purchase power contract:

- a. Provide a complete list identifying each PPA where adjustments were made for the jurisdictional energy and production demand allocation factors to reflect purchase power agreements specific or direct assignment to Texas or New Mexico. Also, for each PPA provide the name of facility, exact location, capacity size in Mw, energy generated in each of last three years, total cost of operating the facility including O&M in each of the last 3 years, and cost per kwh generated for each of last 3 years. For each facility identified in (a.) above provide the adjustment made for the jurisdictional allocation factor. Also include all workpapers and supporting calculations for the adjustment.
- b. For each facility identified in (a.) above provide the adjustment made for the jurisdictional allocation factor. Also include all workpapers and supporting calculations for the adjustment.
- c. For each facility identified in (a.) above provide the adjustment made for the jurisdictional demand allocation factor. Also include all workpapers and supporting calculations for the adjustment.
- d. For each facility identified in (a.) above provide the PPA contract.
- e. For each facility identified in (a.) above provide the expected energy and demand capability.

RESPONSE:

a. See CEP 4-3, Attachment 1. Refer to CEP 4-1, Attachments 1 and 2 Voluminous for more details.

SOAH Docket No 473-21-2606 PUC Docket No 52195 CEP's 4th, Q No CEP 4-2 Attachment 1 Page 4 of 4

Renewable Facility	Sun Edison 1(Chaparral)
Fuel type	Solar
Rated Capacity (MW)	10

!		 	10	!	
SunE EPE	2, LLC - Purchased Power				
i	Delivered	Agreen	nent		
2018	Energy [1]		Total	Co	st per
January	kWh		\$	k	Wh
February	2,226,370		\$233,523.42	SO	10489
March	2,159,810	i '	\$226,541.95	- 1	10489
April	2,775,530	!	\$291,125.23		10489
May	2,910,700		\$305,303.19		10489
June	2,532,490	i .	\$265,632.65		10489
July	2,417,860		\$253,609.35		10489
August	1,973,060	1	\$206,954.55		10489
	2,279,330		\$239,078.70		10489
September October	2,166,520		\$227,246.09		10489
i	1,603,440		\$168,184.79	SO 1	10489
November	2,042,120		\$214,197.97	\$0.1	10489
December	1,621,320		\$170,060.22		10489
Total	26,708,550		\$2,801,458.11	•	.0489
			7-7-02) 100:11	, 50.H	.0489
	Delivered			1	
	Energy ^[1]		T	İ	
2019	kWh		Total		
January	1,903,760		\$.	
February	1,944,180	i	\$199,685.21	\$0.1	0489
March	2,520,830		\$203,925.25		0489
Aprıl	2,894,900		\$264,409.52	\$0.10	0489
May	3,125,910		\$303,646.29	\$0.10	-
June	2,954,210		\$327,876.73	\$0.10)489
July			\$309,867.29	\$0.10)489
August	2,697,070		\$282,895.33	\$0.10)489
September	2,592,840		\$271,962.76	\$0.10)489
October	2,233,490		\$234,271.19	\$0.10)489
November	2,582,480	:	\$270,876.24	\$0.10	489
December	1,735,690		\$182,056.09	\$0.10	489
Total	1,850,220		\$194,070.00	\$0.10	489
	29,035,580	:	\$3,045,541.90	\$0.10	489
		_			
	Delivered			1	
	Energy [1]		Total		
2019	kWh		\$	ĺ	
January	1,986,810		\$208,396.10	\$0.104	400
February	2,048,880		\$214,906.59	\$0.104	
March	2,329,130		\$244,302.49	F F	
April	3,124,980		\$327,779.52	\$0.104	
Мау	3,317,070		\$347,927.94	\$0.104	
June	3,127,960		\$328,092.02	\$0.104	
July	2,858,070		\$299,782.50	\$0.104	
August	2,533,340		An	\$0.104	
September	2,523,370			\$0.104	
October	2,602,740			\$0.104	
November	2,340,180		A	\$0.104	
December	2,383,760		\$245,461.12	\$0.104	
Total	31,176,290		AA A = = = =	\$0.104	
	0.7170,230		\$3,270,080.22	\$0.1048	39
[1]	l i			1	

Delivered energy equals gross production net of station power.

Renewable Facility	Sun Edison 1(Chaparral)	
Fuel type	Solar	
Rated Capacity (MW)	10	

SunE EPE 1, LLC - Purchased Power Agreement
Delivered

	Delivered		
	Energy ^[1]	Total	Cost per
2018	kWh	\$	kWh
January	1,822,872	\$189,669.83	\$0.10405
February	1,771,710	\$184,346.37	\$0.10405
March	2,162,314	\$224,988.75	\$0.10405
Aprıl	2,406,389	\$250,384.79	\$0.10405
May	2,638,893	\$274,576.85	\$0.10405
June	2,300,806	\$239,398.86	\$0.10405
July	1,682,306	\$175,043.95	\$0.10405
August	1,732,028	\$180,217.53	\$0.10405
September	1,848,252	\$192,310.59	\$0,10405
October	1,568,031	\$163,153.63	\$0.10405
November	1,938,315	\$201,681.65	\$0.10405
December	1,374,543	\$143,488.59	\$0.10439
Total	23,246,459	\$2,419,261.39	\$0.10407
			•
	Delivered		
	Energy [1]	Total	
2019	kWh	\$	
January	1,914,332	\$199,186.26	\$0.10405
February	1,784,568	\$185,684.27	\$0.10405
March	1,979,839	\$206,002.27	\$0.10405
Aprıl	2,466,630	\$256,652.86	\$0.10405
May	2,694,696	\$280,383.10	\$0.10405
June	2,671,968	\$278,018.31	\$0.10405
July	2,315,571	\$240,935.16	\$0.10405
August	2,366,217	\$246,204.88	\$0.10405
September	1,853,739	\$192,881.56	\$0.10405
October	2,192,729	\$228,153.40	\$0.10405
November	1,544,835	\$160,740.09	\$0.10405
December	1,649,756	\$171,657.13	\$0.10405
Total	25,434,881	\$2,646,499.29	\$0.10405
			*
	Delivered		
	Energy [1]	Total	
2020	kWh	\$	
January	1,779,261	\$185,132.08	\$0.10405
February	1,802,083	\$187,506.73	\$0.10405
March	1,847,958	\$192,279.98	\$0.10405
April	2,633,060	\$273,969.90	\$0.10405
May	2,795,432	\$290,864.65	\$0.10405
June	2,386,080	\$248,271.66	\$0.10405
July	2,280,360	\$237,271.47	\$0.10405
August	1,900,862	\$197,784.66	\$0.10405
September	1,911,118	\$198,851.80	\$0.10405
October	2,165,014	\$225,269.68	\$0.10405
November	1,927,101	\$200,514.81	\$0.10405
December	1,578,007	\$164,191.65	\$0.10405
Total	25,006,334	\$2,601,909.07	\$0.10405
	17,55-	Y=100=1000.07	A0.TO-102

^[13] Delivered energy equals gross production net of station power.

7-19-21 item 65

SOAH DOCKET NO. 473-21-2606 PUC DOCKET NO. 52195

APPLICATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES

BEFORE THE STATE OFFICE

OF ADMINISTRATIVE HEARINGS

EL PASO ELECTRIC COMPANY'S RESPONSE TO CITY OF EL PASO'S FOURTH REQUEST FOR INFORMATION QUESTION NOS. CEP 4-1 THROUGH CEP 4-12

CEP 4-1:

In reference the direct testimony of Mr. Hernandez at page 8, lines 11-16, provide the following:

- a. Provide a complete list identifying each PPA where adjustments were made for the jurisdictional energy and production demand allocation factors to reflect purchase power agreements specific or direct assignment to Texas or New Mexico. Also, for each PPA provide the name of facility, exact location, capacity size in Mw, energy generated in each of last three years, total cost of operating the facility including O&M in each of the last 3 years, and cost per kwh generated for each of last 3 years.
- b. For each facility identified in (a.) above provide the adjustment made for the jurisdictional allocation factor. Also include all workpapers and supporting calculations
- c. For each facility identified in (a.) above provide the adjustment made for the jurisdictional demand allocation factor. Also include all workpapers and supporting calculations for the adjustment.
- d. For each facility identified in (a.) above provide the PPA contract.
- e. For each facility identified in (a.) above provide the expected energy and demand capability.

RESPONSE:

a. See CEP 4-1, Attachment 1 for a list Purchase Power Agreements ("PPAs") and company-owned solar projects. See El Paso Electric Company's ("EPE") response to CEP 4-2 for PPAs and additional information included in allocation factor adjustment. See EPE's responses to CEP 4-4 and 4-5 for company-owned solar facilities included in

SOAH Docket No. 473-21-2606 PUC Docket No. 52195 CEP's 4th, Q. No. CEP 4-1 Page 2 of 2

allocation factor adjustment. No separate O&M costs are included in the PPAs. References made to the response to CEP 4-7 for capacity amounts reflected in allocation factor calculation.

- b. See EPE's response to CEP 4-7.
- c. See EPE's response to CEP 4-7.
- d. See CEP 4-1, Attachment 2 Voluminous.
- e. See CEP 4-1, Attachment 2 Voluminous.

Preparer: Adrian Hernandez Title: Senior Rate Analyst – Rates

Sponsor: Adrian Hernandez

Title: Senior Rate Analyst – Rates

David C. Hawking

David C. Hawkins Vice President – Sustainability & Strategy

PPA	State RPS	Canneitus			
Hatch Solar Energy Center 1, LLC	Yes	Capacity	Location	COD	Term
Solar Roadrunner, LLC		5MW	Hatch, NM	8-Jul-11	
SunE EPE2, LLC	Yes	20MW	Santa Teresa, NM		2.5
SunE EPE1, LLC	Yes	12MW	Las Cruces, NM	29-Aug-11	20
	Yes	10MW	Chaparral, NM	2-May-12	25
Macho Springs Solar, LLC	No	50MW		25-Jun-12	25
Newman Solar LLC	No	10MW	Luna County, NM	23-May-14	20
		101010	El Paso County, Tx	30-Dec-14	30
Company Owned		····			
Texas Community Solar	No	3MW			
Holloman Solar	No		El Paso County, Tx	2017	n/a
NMSU Solar/Battery Project	No	5MW	Otera County, NM	2018	
	NO	3MW/1MW	Dona Ana County, NM	Est. 2021	n/a n/a

EPE Small	Company	Owned (Pilo	tl Solar	Drojecte

Project		Owned (Pilot) Solar Projects		
	Capacity	Location	COD	
Newman Carport Structures	64 kW	Newman Power Station		Technology
Rio Grande Carport Structures	64 kW	Rio Grande Power Station	2009	Crystalline/Fixed
Wrangler	48 kW		2009	Crystalline/Fixed
Stanton Tower	31 kW	Wrangler Substation	2011	Concentrated/Dual Axis
Paso Community College (EPCC)		EPE Headquarters	2012	Crystalline/Fixed
/an Horn	14 kW	Valle Verde Campus	2012	
	20 kW	Van Horn, Tx	2013	Crystalline/Fixed
				Crystalline/Fixed

EL PASO ELECTRIC COMPANY

SOAH Docket No. 473-21-2606 PUC Docket No. 52195 CEP'S 4th, Q. No. CEP 4-1 Attachment 2 Page 1 of 1

VOLUMINOUS

CEP 4-1 Attachment 2 is a VOLUMINOUS attachment.

SOAH DOCKET NO. 473-21-2606 PUC DOCKET NO. 52195

APPLICATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES

BEFORE THE STATE OFFICE
OF
ADMINISTRATIVE HEARINGS

EL PASO ELECTRIC COMPANY'S RESPONSE TO CITY OF EL PASO'S FOURTH REQUEST FOR INFORMATION QUESTION NOS. CEP 4-1 THROUGH CEP 4-12

CEP 4-2:

In reference the direct testimony of Mr. Hernandez at page 8, lines 20-22, provide the following regarding the four purchase power contracts in New Mexico entered into to meet RPS requirements in New Mexico:

- a. Provide a complete list identifying each PPA where adjustments were made for the jurisdictional energy and production demand allocation factors to reflect purchase power agreements specific or direct assignment to Texas or New Mexico. Also, for each PPA provide the name of facility, exact location, capacity size in Mw, energy generated in each of last three years, total cost of operating the facility including O&M in each of the last 3 years, and cost per kwh generated for each of last 3 years. For each facility identified in (a.) above provide the adjustment made for the jurisdictional allocation factor. Also include all workpapers and supporting calculations for the
- b. For each facility identified in (a.) above provide the adjustment made for the jurisdictional allocation factor. Also include all workpapers and supporting calculations for the adjustment.
- c. For each facility identified in (a.) above provide the adjustment made for the jurisdictional demand allocation factor. Also include all workpapers and supporting calculations for the adjustment.
- d. For each facility identified in (a.) above provide the PPA contract.
- e. For each facility identified in (a) above provide the expected energy and demand

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Allete, Inc. (ALE) (Real Time Quote from BATS)	Zacks Rank:
\$59.37 USD -0.60 (-1.00%)	Style Scores: S B Value I G Growth I B Momentum I C VGM
Updated Sep 23, 2021 03:34 PM ET	Industry: Rank: Bottom 24% (192 out of 252) Industry: Utility - Electric Power
	(a) View All Zacks #1 Ranked Stocks

Quote Overviev	٧	Enter Symbol	Q
Stock Activity	of the state of th	Key Earnings Data	Starts of home 1941 - 1964 and 1
Open	59.90	Earnings ESP	0,00%
Day Low	59.58	Most Accurate Est	0.81
Day High	60.58	Current Qtr Est	0.81
52 Wk Low	49.98	Current Yr Est	3.15
52 Wk High	73.10	Exp Earnings Date	11/8/21
Avg. Volume	237,978	Prior Year EPS	3.35
Market Cap	3.13 B	Exp EPS Growth (3-5yr)	6.00%
Dividend 2	.52 (4.20%)	Forward PE	19.04
Beta	0.47	PEG Ratio	3.17
Utilities » Utility - Electri	¢ Power	remain a standard and	mari
Research Repor	for ALE		

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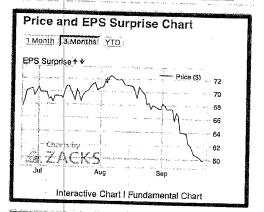
ALLETE's (ALE) Q2 Earnings Miss Estimates, Revenues Beat 08/09/21-12:14PM EST Zacks

Alliant (LNT) Q2 Earnings Beat Estimates, Revenues Up Y/Y 08/06/21-10:41AM EST Zacks

ALE: What are Zacks experts saying now? Zacks Private Portfolio Services

Allete (ALE) Misses Q2 Earnings Estimates 08/04/21-6:45AM EST Zacks

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https://www.zacks.com/stock/quote/ALE?q=ALE



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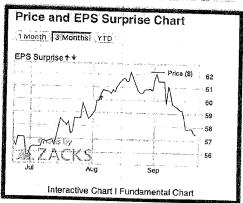
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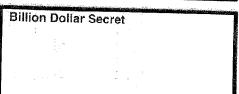


Alliant Energy Corporation (LNT) (Real Time Quote from BATS)	Zacks Rank: 3 3 3-Hold	
\$57.38 USD	Style Scores: D Value F Growth Momentum D VGM	- }
-0.06 (-0.10%) Updated Sep 23, 2021 03:35 PM ET Add To: Portfolio	Industry Rank: Bottom 24% (192 out of 252) Industry: Utility - Electric Power Wiew All Zacks #1 Ranked Stocks	

	-	2-1	e sold
Quote Overview		Enter Symbol	Q
Stock Activity	a permittang s	Key Earnings Data	termination
Open	57.48	Earnings ESP ()	0.00%
Day Low	57.29	Most Accurate Est	0.93
Day High	57.98	and the special contract of th	0.93
52 Wk Low	45.99	Current Yr Est	2.59
52 Wk High	62.35	Exp Earnings Date	11/1/21
Avg. Volume	889,321	Prior Year EPS	2.43
Market Cap	14.37 B	Exp EPS Growth (3-5yr)	5,89%
Dividend 1.6	1 (2.80%)	Forward PE	22,22
Beta	0.35	PEG Ratio	3.77
Utilities » Utility - Electric Research Report Analysis (5) (Snap	s for LN	T	ts»
News for LNT Zacks News for LNT NiSource's (NI) Unveils N	Achile Anns	for LNT	
09/22/21-1:00PM EST Zac FirstEnergy's (FE) Capex 09/21/21-12:52PM EST Zac	: & Clean En		
LNT: What are Zacks exp Zacks Private Portfolio S	erts saving	now?	mediti - Sovieti e gang
Alliant Energy's (LNT) Art 09/14/21-11:58AM EST Zac	n Prices \$3(ks	DOM Green Bonds Due 203	31







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Quote Overview	:	Enter Symbol	Q
Stock Activity	efateur verhalfulfulfulfulfu	Key Earnings Data	TYTT - Minery-in
Open	83.42	Earnings ESP ®	1.26%
Day Low	83.29	Most Accurate Est	1.61
Day High	84.22	Current Qtr Est	1.59
52 Wk Low	69.79	Current Yr Est	3.76
52 Wk High	90.77	Exp Earnings Date 🕔	11/3/21
Avg. Volume	1,061,607	Prior Year EPS	3.50
Market Cap	21.49 B	Exp EPS Growth (3-5yr)	7.34%
Dividend 2.2	20 (2.63%)	Forward PE	22.21
Beta	0.26	PEG Ratio	3.02
Utilities » Utility - Electric	Power	The state of the s	iliz kinak nagaji
Research Repor	s for AE	iE ·	
Paragar Ed. Salar	101 262	(a) All Zacks' Analyst Repor	rts»
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Zacks News for AEE	Other New	s for AEE	
Why Ameren (AEE) is a 09/15/21-10:45AM EST 2	Top Divider	nd Stock for Your Portfolio	· • • • • • • • • • • • • • • • • • • •
Duke Energy's (DUK) U 09/08/21-8:46AM EST Zac	nit Inks Dea	I for Possible Rate Hike	

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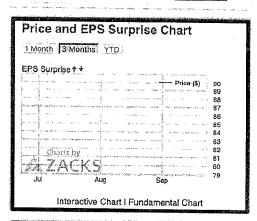
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American Electric Power Company, Inc. (AEP) (Real Time Quote from BATS) \$82.45 usp

-0.27 (-0.33%)

Updated Sep 23, 2021 03:35 PM ET

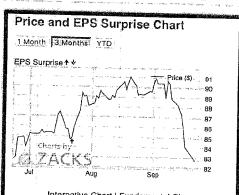
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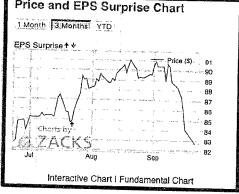
Style Scores:	B Value I F Growth I A Momentum I A VCM
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dustry Rank:	Bottom 24% (192 out of 252)

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Quote Overviev	4	Enter Symbol	Q
Stock Activity	• recordancy medicina move, i	Key Earnings Data	Emoliphy in class powers style, a
Open	82.60	Earnings ESP 🚳	0.00%
Day Low	82.27	Most Accurate Est	1.50
Day High	83.32	Current Qtr Est	1.50
52 Wk Low	74.80	Current Yr Est	4.70
52 Wk High	94.21	Exp Earnings Date	10/28/21
Avg. Volume	2,475,619	Prior Year EPS	4.44
Market Cap	41.38 B	Exp EPS Growth (3-5yr)	5,72%
Dividend 2.	96 (3.58%)	Forward PE	17,59
Beta	0.27	PEG Ratio	3.07
Utilities » Utility - Electri	c Power	Visited System wildly on a second to have	_
Research Repor	ts for AE	P	The street, and

5 Years From Now, You'll **Probably Wish You Bought** This Stock The Motley Fool Don't Miss Out

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American Electric's (AEP) 287 MW Wind Project Begins Operations

09/13/21-8:43AM EST Zacks AEP: What are Zacks experts saying now?

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Evergy (EVRG) to Gain From Investments, Strategic Partnerships 09/01/21-10:12AM EST Zecks

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Avista Corporation (AVA)

indicates the important links in (Real Time Quote from BATS)

\$39.11 USD

-0.21 (-0.53%)

Updated Sep 23, 2021 03:37 PM ET

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Style	Scores:	B Value I	E Growth I	(D) Momentum	8
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Quote Overview	1	Enter Symbol	Q
Stock Activity	AND OF BUILDING	Key Earnings Data	ATTEC STREET
Open	39.46	Earnings ESP 🕾	0.00%
Day Low	39.11	Most Accurate Est	0.08
Day High	39.78	Current Qtr Est	0.08
52 Wk Low	32.26	Current Yr Est	2.03
52 Wk High	49.14	Exp Earnings Date	11/3/21
Avg. Volume	361,187	Prior Year EPS	1.90
Market Cap	2.74 B	Exp EPS Growth (3-5yr)	5.11%
Dividend 1.	9 (4.30%)	Forward PE	19.42
Beta	0.61	PEG Ratio	3.80
Utilities » Utility - Electric	Power	the secondary of the se	

Research Report for AVA



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News for AVA

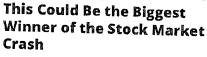
Zacks News for AVA

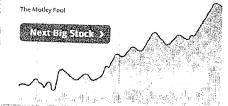
NRG Energy's (NRG) Investments, Clean Energy Goals Bode Well 09/06/21-1:13PM EST Zacks

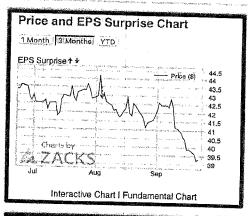
NRG Energy (NRG) to ssue \$1.1B Sustainability-Linked Bonds 08/10/21-2:28PM EST Zacks

AVA: What are Zacks experts saying now? Zacks Private Portfolio Services

New Strong Sell Stocks for August 6th 08/06/21-8:13AM EST Zacks







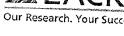




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CMS Energy Corporation (Real Time Quote from BATS) \$60.93 usp -0.56 (-0.91%)

Updated Sep 23, 2021 03:37 PM ET

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Style Scores:

Zacks Rank: 8

B Value I G Growth I Momentum I G VGM

Industry Rank: Bottom 24% (192 out of 252)

industry: Utility - Electric Power

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Options

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Quote Overview		Enter Symbol	Q
Stock Activity	e coca: e passeoues e else	Key Earnings Data	roper in our soul relative
Open	61.51	Earnings ESP 💲	0.00%
Day Low	60.93	Most Accurate Est	0.69
Day High	61.87	Current Otr Est	0.69
52 Wk Low	53.19	Current Yr Est	2.70
52 Wk High	67.98	Exp Earnings Date	11/4/21
Avg. Volume	1,438,728	Prior Year EPS	2.67
Market Cap	17.81 B	Exp EPS Growth (3-5yr)	6.91%
Dividend 1.	74 (2.83%)	Forward PE	22.77
Beta	0.19	PEG Ratio	3.30
Utilities » Utility - Electric	Power	The state of the s	and odd to subsect our budge.

Research Reports for CMS

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FirstEnergy's (FE) Capex & Clean Energy Goals Augur Well 09/21/21-12:52PM EST Zacks

Regions Financial (RF) Approved as Freddie Mac Multifamily Lender 09/17/21-10:45AM EST Zacks

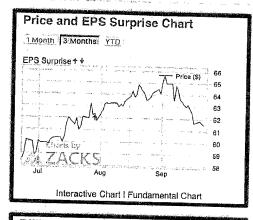
CMS: What are Zacks experts saying now? Zacks Private Portfolio Services

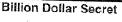
CenterPoint (CNP) Proposes 335 MW Solar PPAs in Indiana 08/30/21-7:51 AM EST Zacks



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DTE Energy Company (DTE) (Real Time Quote from BATS) \$113.68 USD

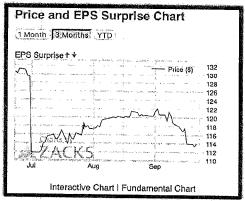
-0.27 (-0.24%) Updated Sep 23, 2021 03:37 PM ET

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Style Sco	res: 🕼	B Value I	(D) Growth I	(F) Momentum I	O VGM
Industry I	Rank: ₡	Bottom 24%	6 (192 aut of 2	52)	100000000000000000000000000000000000000
Industry: Utili	ty - Electric F	ower			

Quote Overvie	w	Enter Symbol	Q
Stock Activity		Key Earnings Data	No. c edital da impre-
Open	114.65	Earnings ESP 19	0.00%
Day Low	113.68	Most Accurate Est	1.64
Day High	114.96	Current Qtr Est	1.64
52 Wk Low	94.30	Current Yr Est	5.93
52 Wk High	123.91	Exp Earnings Date	10/26/21
Avg. Volume	1,054,710	Prior Year EPS	7.19
Market Cap	22.08 B	Exp EPS Growth (3-5yr)	6.00%
Dividend	3.30 (2.90%)	Forward PE	19.21
Beta	0.63	PEG Ratio	3.20





Research Reports for DTE

Analysts [Snapshiot 5]



Ali Zacks' Analyst Reports »

News for DTE

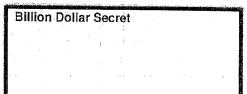
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Alliant Energy's (LNT) Arm Prices \$300M Green Bonds Due 2031 09/14/21-11:58AM EST Zacks

NRG Energy's (NRG) Investments, Clean Energy Goals Bode Well 09/06/21-1:13PM EST Zacks

DTE: What are Zacks experts saying now? Zacks Private Portfolio Services

Pinnacle West (PNW) Rides on CAPEX & Clean Energy Goals 08/31/21-12:36PM EST Zacks



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Quotes & News **Duke Energy Corporation** indicates the important links in the menu (DUK) Quote Overview

(Real Time Quote from BATS)

\$98.39 USD

-0.15 (-0.15%)

Updated Sep 23, 2021 03:37 PM ET

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Zacks Rank: 3-Hold

Style Scores:

☑ Value I ☐ Growth I ☐ Momentum I ☑ VGM

Industry Rank: Bottom:24% (192 out of 252)

Industry: Utility - Electric Power

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Quote Overvi	ew	Enter Symbol	Q
Stock Activity	nach amethyddio ybrottemer tita na ybrothyn y eren	Key Earnings Data	u decembro de desembro
Open	98.61	Earnings ESP 🕸	1.38%
Day Low	98.32	Most Accurate Est	1.84
Day High	99.45	Current Qtr Est	1,82
52 Wk Low	80.41	Current Yr Est	5.21
52 Wk High	108.38	Exp Earnings Date	11/4/21
Avg. Volume	3,011,239	Prior Year EPS	5.12
Market Cap	75.81 B	Exp EPS Growth (3-5yr)	5.29%
Dividend	3.94 (4.00%)	Forward PE	18.92
Beta	0.26	PEG Ratio	3.58

Research Reports for DUK

Analysis 👝 Snapshot 🚽

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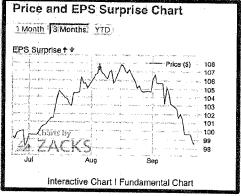
Vistra (VST) Increases Greenhouse Gas Emission Reduction Target 09/23/21-7:17AM EST Zacks

NiSource's (NI) Unveils Mobile Apps, Aids Customer-Friendly Move 09/22/21-1:00PM EST Zecks

DUK: What are Zacks experts saying now? Zacks Private Portfolio Services

Dominion (D) to Jointly Build Solar Project on Former Mines 09/15/21-10:08AM EST Zacks







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Entergy	Corp	oration	(ETR)
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(Real Time Quote from BATS)

\$103.02 USD

-2.97 (-2.80%)

Updated Sep 23, 2021 03:39 PM ET

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Zacks Rank; ()



Style Scores:



B Value I Growth I A Momentum I G VGM

Industry Rank: Bottom 24% (192 out of 252)

Industry: Utility - Electric Power

View All Zacks #1 Ranked Stocks





Quote Overview

Guote Overview		Enter Symbol	Q
Stock Activity	EPERCONSTITUTE OF THE PARTY OF	Key Earnings Data	indrana - Andrewsky deservation of
Open	105.48	Earnings ESP 🐠	0.00%
Day Low	103.43	Most Accurate Est	2,47
Day High	105.90	Current Otr Est	2.47
52 Wk Low	85.78	Current Yr Est	6.02
52 Wk High	115.02	Exp Earnings Date	10/27/21
Avg. Volume	1,815,172	Prior Year EPS	5.66
Market Cap	21.30 B	Exp EPS Growth (3-5yr)	1.35%
Dividend 3.8	30 (3.59%)	Forward PE	17.62
Beta	0.57	PEG Ratio	13.05
Hilling . Harry	_		

Utilities » Utility - Electric Power

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Exelon (EXC) Gets Nod to Continue Illinois Nuclear Plants 09/14/21-9:31AM EST Zacks

Entergy (ETR) Up 6.8% Since Last Earnings Report: Can It Continue? 09/03/21-10:31AM EST Zacks

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Hurricane Ida Hits Louisiana Hard: 4 Utilities in Spotlight 09/02/21-7:37AM EST Zacks



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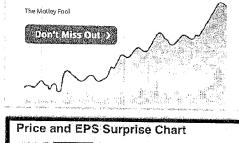


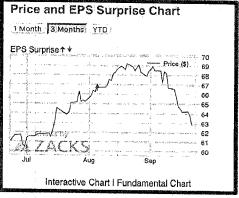
Billion Dollar Secret

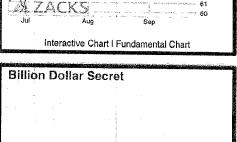
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Research Reports for EVRG

Oils-Energy » Alternative Energy - Other

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3.22

News for EVRG

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Zacks News for EVRG Other News for EVRG

Evergy (EVRG) to Gain From Investments, Strategic Partnerships 09/01/21-10:12AM EST Zacks

0.38

PEG Ratio

Zacks Industry Outlook Highlights: TotalEnergies, Equinor, Chesapeake Energy and Evergy 08/13/21-5:45AM EST Zacks

EVRG: What are Zacks experts saying now? Zacks Private Portfolio Services

3 Alternative Energy Stocks to Buy Amid Investment Concerns

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Hawaiian Electric Industries, Inc. (HE)

(Real Time Quote from BATS)

\$40.97 usp

-0.03 (-0.07%)

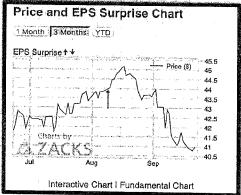
Updated Sep 23, 2021 03:43 PM ET

Ada To Portfolio

Style Scores:	B Value 1 D Growth I B Momentum I C VGM
ndustry Rank:≪	Bottom 24% (192 out of 252)

Quote Overview	<i>i</i> '	Enter Symbol	Q
Stock Activity	terebra managagata an	Key Earnings Data	entropia de les anticologicos
Open	41.06	Earnings ESP 🧐	0.00%
Day Low	40.64	Most Accurate Est	0.53
Day High	41.43	Current Otr Est	0.53
52 Wk Low	31.83	Current Yr Est	2.15
52 Wk High	45.97	Exp Earnings Date	11/5/21
Avg. Volume	471,493	Prior Year EPS	1.81
Market Cap	4.48 B	Exp EPS Growth (3-5yr)	7.26%
Dividend 1.	.36 (3.32%)	Forward PE	19.07
Beta	0.24	PEG Ratio	2.63

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4 Utilities Poised to Gain From Improving Electric Demand 09/01/21-7:59AM EST Zacks

Should Value Investors Fick Hawaiian Electric (HE) Stock New? 08/25/21-9:49AM EST Zacks

HE: What are Zacks experts saying now? Zacks Private Portfolio Services

Hawaiian Electric (HE) Beats on Q2 Earnings, Raises EPS View 08/13/21-9:04AM EST Zacks

https://www.zacks.com/stock/quote/HE?q=HE

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IDACORP, Inc. (IDA)

(Real Time Quote from BATS)

\$103.84 usp

-0.28 (-0.27%)

Updated Sep 23, 2021 03:43 PM ET

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Style S	cores; 👀	C Value I	Growth I	Momentum I	D VGM
Industr	y Rank: ⊯	Bottom 249	% (192 out of 2	(52)	

Quote Overview		Enter Symbol	Q
Stock Activity	nades sidiya, langar	Key Earnings Data	to describing the majority of
Open	103.97	Earnings ESP 🚳	0.00%
Day Low	103.79	Most Accurate Est	1.90
Day High	104.95	Current Otr Est	1.90
52 Wk Low	78.91	Current Yr Est	4.85
52 Wk High	110.21	Exp Earnings Date	11/4/21
Avg. Volume	201,526	Prior Year EPS	4.69
Market Cap	5.26 B	Exp EPS Growth (3-5yr)	3.87%
Dividend 2.8	4 (2.73%)	Forward PE	21.47
Beta	0.51	PEG Ratio	5.55

Research Reports for IDA

Analys: [L]	Sintenu (2)

Utilities » Utility - Electric Power

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News for IDA

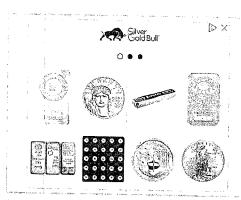
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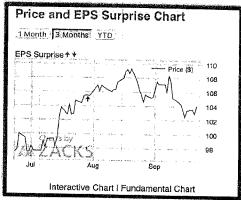
Why IdaCorp (IDA) is a Great Dividend Stock Right Now. 09/22/21-10:45AM EST Zacks

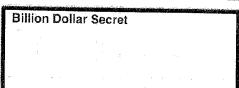
IDACORP (IDA) Rewards Shareholders With 5.6% Dividend Hike 09/20/21-10:46AM EST Zacks

IDA: What are Zacks experts saying now? Zacks Private Portfolio Services

What Makes IdaCorp (IDA) a New Buy Stock 09/13/21-11:00AM EST Zacks







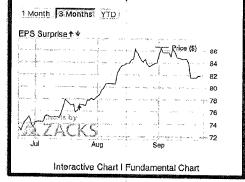
restera Energy, inc. - NEE - Stock Price Today - Zacks 9/23/21, 2:47 PM Crypto Earnings Screening Finance Portfolio Education Video Podcasis Q. Join : Sign In Help Action Alerts PLUS | TheStreet 🚵 ZACKS [DX Join Jim Cramer's Investment Club and Access His Exclusive Daily Rundown Videos From The NYSE ION THE CLUB NOW Our Research. Your Success. Quotes & News NextEra Energy, Inc. (NEE) indicates the important links in Zacks Rank: ® (Real Time Quote from BATS) 3-Hold Quote Overview \$81.32 USD Style Scores: D Value I F Growth I B Momentum I D VGM -0.58 (-0.71%) Zacks News Updated Sep 23, 2021 03:46 PM ET Partner News Industry Rank: Bottom 24% (192 out of 252) Zacks Research Add To Portlolic Industry: Utility - Electric Power * Snapshot Analyst Report Wiew All Zacks #1 Ranked Stocks 🖎 Trades from * Style Scores Detailed Estimates Comparison to Industry Zacks Experts View **Quote Overview** Enter Symbol α More Research Stock Activity Key Earnings Data Broker Recommendations Open 82.18 Earnings ESP @ -0.28% Full Company Report Day Low 81.32 Most Accurate Est Earnings Dates and 0.71 Day High **Ann**ouncements 81.94 Current Otr Est 0.71 Key Company Metrics 52 Wk Low 66.79 Current Yr Est 2.52 Broker Reports 52 Wk High 87.69 Exp Earnings Date 🍪 10/20/21 Investment Guru **Ins**iders igannicio Avg. Volume 6,060,439 Prior Year EPS Earnings Transcripts 2.31 **Dividend History** Market Cap 160.64 B Exp EPS Growth (3-5yr) 8.32% Read More Dividend 1.54 (1.88%) Forward PE 32.48 Beta 0.19 PEG Batio Price and EPS Surprise Chart Price, Consensus and EPS Surprise 3.91 1 Month 3 Months YTD Utilities » Utility - Electric Power Fundamental Charts EPS Surprise ↑ \$ Comparative Interactive Charts Research Reports for NEE 86 Price and Consensus 84 Shapshow 21 All Zacks' Analyst Reports » 82 Price & EPS Surprise 12 Month EPS 78 News for NEE Broker 76 Recommendations 74 Zacks News for NEE Other News for NEE Financials Is Invesco S&P 500 Equal Weight Utilities ETF (RYU) a Strong ETF Financial Overview Right Now? Interactive Chart I Fundamental Chart 09/23/21-5:20AM EST Zacks Income Statements

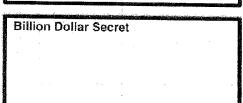
NexiEra Energy (NEE) Gains As Market Dips: What You Should Know

This 1 Utilities Stock Could Beat Earnings: Why it Should Be on Your

09/20/21-4:50PM EST Zacks

NEE: What are Zacks experts saying now? Zacks Private Portfolio Services





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1 oz 2021 American Eagle Platinum Coln... \$1,164,52



1 oz Pure Assorted Gold \$1.804.34



1 oz Randon Year American Eagle Gold Col. \$1,874.54



1/10 oz Ba the Coral Sea Gold Coin | Per... \$206.11

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NorthWestern Corporation (NWE)

(Real Time Quote from BATS)

\$58.48 usp

-0.64 (-1.08%)

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Zacks Rank:



3-Hold

Style Scores;

Value I Growth I Momentum I D VGM

Industry Rank: Bottom 24% (192 out of 252)

Industry: Utility - Electric Power

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Quote Overvies	N	Enter Symbol	Q
Stock Activity	tion of anti-ordinal system is the artificial to	Key Earnings Data	elignet to the proper
Open	59.01	Earnings ESP @	0.00%
Day Low	58.48	Most Accurate Est	0.5
Day High	59.61	Current Qtr Est	0.58
52 Wk Low	47.43	Current Yr Est	3.60
52 Wk High	70.80	Exp Earnings Date	10/20/21
Avg. Volume	303,116	Prior Year EPS	3.35
Market Cap	3.05 B	Exp EPS Growth (3-5yr)	4.79%
Dividend 2	.48 (4.19%)	Forward PE	16.42
Beta	0.45	PEG Ratio	3.43
Utilities » Utility - Electr	ic Power		grap

Research Report for NWE



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NorthWestern (NWE) Beats Q2 Earnings and Revenue Estimates 07/27/21-6:55PM EST Zacks

What's in the Cards for Xcel Energy (XEL) in Q2 Earnings? 07/26/21-11:06AM EST Zecks

NWE: What are Zacks experts saying now? Zacks Private Portfolio Services

FirstEnergy (FE) to Post Q2 Earnings: What's in the Offing? 07/21/21-9:36AM EST Zacks

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Bluemint Arthus Stretch Four Way Stretch Swim Shorts Orange Dolphin

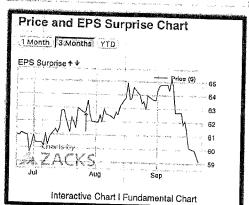


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Uge chergy corporation - UGE - STOCK PRICE TOday - Zacks 9/23/21, 2:48 PM Finance Portfolio Education Join Sign In Help 1 oz 2021 American Eagle Platinum Coin 1 oz 2027 1 oz 2021 1 oz Pure Assorted Gold Platinum Coin Bilver GoldBull \$1.164.52 \$1,804.34 \$1,879.85 \$1,095,91 Our Research, Your Success, Quotes & News OGE Energy Corporation indicates the important links in the menu Zacks Rank: (OGE) 3 3-Hold Quote Overview (Real Time Quote from BATS) Style Scores: D Value I F Growth I B Momentum I VGM \$33.71 USD Zacks News Partner News +0.16 (0.48%) Industry Rank: Bottom 24% (192 out of 252) Updated Sep 23, 2021 03:46 PM ET Zacks Research Industry: Utility - Electric Power * Snapshot Add To Portfolio Analyst Report View All Zacks #1 Ranked Stocks 🗷 Trades from Style Scores Detailed Estimates Comparison to Industry Zacks Experts View **Quote Overview** Q Enter Symbol More Research DX Silver Gold Bull Stock Activity Key Earnings Data * Broker Recommendations Open 33.56 Earnings ESP 4 NA Full Company Report Day Low 33.49 Most Accurate Est NA Earnings Dates and Announcements Day High 34.00 Current Otr Est NA Key Company Metrics 52 Wk Low 28.58 Current Yr Est 2.18 **Bro**ker Reports 52 Wk High 36.74 Exp Earnings Date 10 11/4/21 Insiders Avg. Volume 1,004,799 Prior Year EPS Earnings Transcripts 2.08 Dividend History Market Cap 6.72 B Exp EPS Growth (3-5yr) 4.45% Dividend 1.61 (4.80%) Forward PE Chans 15.39 0.67 PEG Ratio Price, Consensus and EPS Surprise 3.45 Price and EPS Surprise Chart 1 Month 3 Months YTD Utilities » Utility - Electric Power Fundamental Charts EPS Surprise ↑ ♦ Comparative Price (\$) Interactive Charts Research Reports for OGE 36 Price and Consensus 35.5 All Zacks' Analyst Reports » Price & EPS Surprise 35 12 Month EPS 34.5 News for OGE 34 Recommendations 33.5 Zacks News for OGE Other News for OGE Financials. Hawaiian Electric (HE) Beats on Q2 Earnings, Raises EPS View Financial Overview 08/13/21-9:04AM EST Zacks Interactive Chart | Fundamental Chart Income Statements OGE Energy (OGE) Q2 Earnings Top Estimates, Revenues Rise Y/Y

08/11/21-8:18AM EST Zacks

08/02/21-10:40AM EST Zacks

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Tiny Tech With Huge Patents

Check out this small technology company



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Otter Tail Corporation (OTTR)

(Real Time Quote from BATS)

\$56.02 usp

+0.91 (1.65%)

Updated Sep 23, 2021 03:46 PM ET

Add To Portfolio

Style Scores:	D Value I D Growth I	Momentum I D VGM	
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dustry Utility - Electri	c Power	•	

Quote Overv	iew	Enter Symbol	Q
Stock Activity	A maketil of pre-shringers, secureous	Key Earnings Data	PRESE LIBOR RIGGE
Open	55.40	Earnings ESP 👘	0.00%
Day Low	55.11	Most Accurate Est	1.08
Day High	56.43	Current Qtr Est	1.08
52 Wk Low	35.61	Current Yr Est	3.55
52 Wk High	58.60	Exp Earnings Date	11/1/21
Avg. Volume	127,825	Prior Year EPS	2.34
Market Cap	2.29 B	Exp EPS Growth (3-5yr)	4.70%
Dividend	1.56 (2.83%)	Forward PE	15.52
Beta	0.40	PEG Ratio	3.30

Research Report for OTTR

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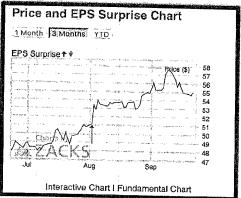
NRG Energy (NRG) to Redeem \$500M of 6.625% Senior Notes 09/23/21-12:44PM EST Zacks

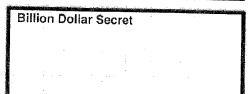
Sail Through Market Volatility With These 4 Low-Beta Stocks 09/22/21-8:47AM EST Zacks

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4 Reasons to Add Exelon (EXC) to Your Portfolio Right Now 09/21/21-11:02AM EST Zacks







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Pinnacle West Capital Corporation (PNW)

(Real Time Quote from BATS)

\$72.62 USD

-0.33 (-0.45%)

Updated Sep 23, 2021 03:47 PM ET

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Zacks Rank:	4-Sell
Style Scores:	B Value I E Growth I G Momentum I O VGM
Industry Rank:	Bottom 24% (192 out of 252) Power
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Quote Overview		Enter Symbol	ব
Stock Activity	terinormasen ey meyer.	Key Earnings Data	Phys Height Children
Open	72.75	Earnings ESP ®	0.00%
Day Low	72.62	Most Accurate Est	2.89
Day High	73.55	Current Qtr Est	2.89
52 Wk Low	69.89	Current Yr Est	4.96
52 Wk High	91.88	Exp Earnings Date	10/29/21
Avg. Volume	902,652	Prior Year EPS	4.87
Market Cap	8.23 B	Exp EPS Growth (3-5yr)	5.00%
Dividend 3.3	2 (4.55%)	Forward PE	14,70
Beta	0.30	PEG Ratio	2.94
Utilities » Utility - Electric	Power		

Research Reports for PNW

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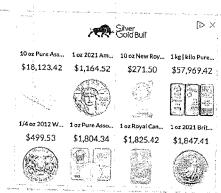
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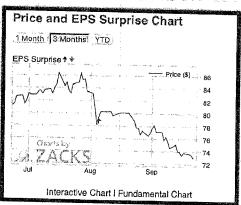
FirstEnergy's (FE) Capex & Clean Energy Goals Augur Well 09/21/21-12:52PM EST Zacks

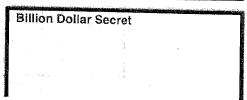
Pinnacle West (PNW) Rides on CAPEX & Clean Energy Goals 08/31/21-12:36PM EST Zacks

PNW: What are Zacks experts saying now? Zacks Private Portfolio Services

Should Value Investors Pick Pinnacle West (PNW) Stock Now? 08/26/21-8:30AM EST Zacks







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Portland General Electric Company (POR)

(Real Time Quote from BATS)

\$49.07 USD

+0.62 (1.28%)

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Zacks Rank:	3 3-Hold	
Style Scores:	B Value I D Growth I B Momentum I B VGM	
Industry Rank:	Bottom 24% (192 out of 252)	
Industry: Utility - Electric F View All-Zacks #1 F		

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Quote Overview		Enter Symbol	Q
Stock Activity	- 12 Saughter Specific Trees.	Key Earnings Data	Antolia (Northead
Open	48.46	Earnings ESP 🐠	-2.74%
Day Low	48.33	Most Accurate Est	0.71
Day High	49.25	Current Qtr Est	0.73
52 Wk Low	34.25	Current Yr Est	2.76
52 Wk High	52.47	Exp Earnings Date	10/29/21
Avg. Volume	455,159	Prior Year EPS	1.72
Market Cap	4.33 B	Exp EPS Growth (3-5yr)	A
Dividend 1.7	2 (3.55%)	Forward PE	17.55
Beta	0.36	PEG Ratio	2.04
Utilities » Utility - Electric	Power		
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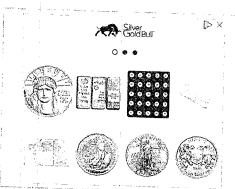
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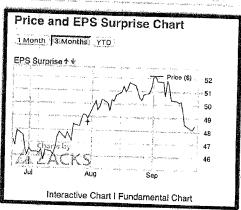
Zacks Private Portfolio Services

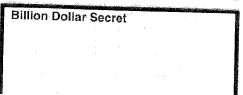
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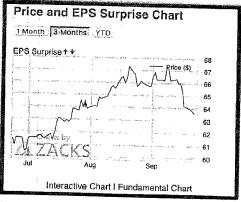


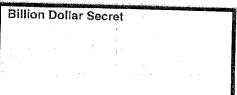
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Quote Overview		Enter Symbol	Q Q
Stock Activity	ombiggstop than egg	Key Earnings Data	Constitution of the Consti
Open	63.62		1.65%
Day Low	63.39		1.23
Day High	64.08	Current Qtr Est	1,21
52 Wk Low	52.01	Current Yr Est	3.35
52 Wk High	67.54	Exp Earnings Date	11/4/21
Avg. Volume	3,946,157	Prior Year EPS	3.25
Market Cap	67.35 B	Exp EPS Growth (3-5y	r) 4.93%
Dividend 2.6	34 (4.15%)	Forward PE	18.99
Beta	0.45	PEG Ratio	3.85
Utilities » Utility - Electric Research Report Analyst (2) Shape	s for SO		ports »
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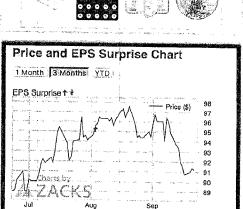
Option Chain Options Greek Montage

Financials Financial Overview The Elicity Oroup, Inc. " WED - Stock Mice roday - Zacks 9/23/21, 2:50 PM Funds Crypto Earnings Screening Finance Portfolio Education Video Podcasts Services Q Join Sign in Help 🕰 ZACKS Quotes & News WEC Energy Group, Inc. indicates the important links in Zacks Rank: (WEC) 3-Hold Quote Overview (Real Time Quote from BATS) Style Scores: Value I D Growth I F Momentum I D VGM \$90.24 USD Zacks News Partner News -0.99 (-1.09%) Industry Rank: Bottom 24% (192 out of 252) Zacks Research Updated Sep 23, 2021 03:47 PM ET Industry: Utility - Electric Power * Snapshot Add To Portfolio Analyst Report View All Zacks #1 Ranked Stocks **企** Trades from Style Scores Detailed Estimates Comparison to Industry Zacks Experts View **Quote Overview** Enter Symbol More Research DX Silver Gold Bull Stock Activity Key Earnings Data * Broker Recommendations Open 91.43 Earnings ESP 🐠 -1.75% Full Company Report Day Low 90.52 Most Accurate Esti Earnings Dates and 0.75 **Ann**ouncements Day High 91.86 Current Qtr Est 0.76 Key Company Metrics 52 Wk Low 80.55 Current Yr Est 4.06 **Bro**ker Reports 52 Wk High 106.85 Exp Earnings Date 3 **•**вмо11/2/21 Insiders Avg. Volume 949,588 Prior Year EPS Earnings Transcripts 3.79 **Dividend History** Market Cap 28.78 B Exp EPS Growth (3-5yr) 6.26% Charts

Dividend 2.71 (2.97%) Forward PE 22.48 0.18 PEG Ratio 3.59 Utilities » Utility - Electric Power *BMO = Before Market Open *AMC = After Market Close Research Reports for WEC All Zacks' Analyst Reports » **News for WEC** Zacks News for WEC Other News for WEC WEC Energy (WEC) Up 0.1% Since Last Earning's Report; Can It Continue? 09/02/21-10:31AM EST Zacks ALLETE's (ALE) Q2 Earnings Miss Estimates, Revenues Beat 08/09/21-12:14PM EST Zacks

WEC: What are Zacks experts saying now? Zacks Private Portfolio Services

Alliant (LNT) Q2 Earnings Beat Estimates, Revenues Up Y/Y



Billion Dollar Secret

Interactive Chart I Fundamental Chart

Price, Consensus and EPS Surprise

Fundamental Charts

Interactive Charts

12 Month EPS

Recommendations

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Xcel	Energy	inc.	(XEL)	

(Real Time Quote from BATS)

\$62.98 usp

-0.21 (-0.33%)

Updated Sep 23, 2021 03:47 PM ET

Add To Portfolia

	Rank: 🗘	3-Hold
Style S	cores:	C Value I Growth I B Momentum I D VGM
ndusti	ry Rank: ⋬	Bottom 24% (192 out of 252)

Quote Overview Stock Activity	enterent out one or pass	Enter Symbol Key Earnings Data	Q 9800 - 1873
Open	63.03	Earnings ESP	0.00%
Day Low	62.85	Most Accurate Est	1.20
Day High	63.69	Current Otr Est	1.20
52 Wk Low	57.23	Current Yr Est	2.98
52 Wk High	76.44	Exp Earnings Date	11/4/21
Avg. Volume	2,682,517	Prior Year EPS	2.79
Market Cap	34.02 B	Exp EPS Growth (3-5yr)	6.13%
Dividend 1.	33 (2,90%)	Forward PE	21.18

0.29 PEG Ratio

Research Reports for XEL

Utilities » Utility - Electric Power

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News for XEL

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Zacks News for XEL Other News for XEL

Dominion (D) to Jointly Build Solar Project on Former Mines 09/15/21-10:08AM EST Zacks

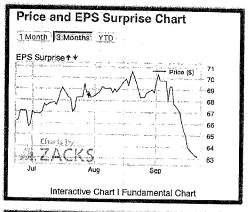
Alliant Energy's (LNT) Arm Prices \$300M Green Bonds Due 2031 09/14/21-11:58AM EST Zacks

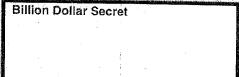
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2021 SBBI® Yearbook

Stocks, Bonds, Bills, and Inflation®

U.S. Capital Markets Performance by ——
Asset Class 1926–2020



Appendix A-1
Large-Capitalization Stocks: Total Return Frem 1926 to 2020

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Jan-Dec*
1926	0.0000	-0.0385	-0.0575	0.0253	0.0179	0.0457	0.0479	0.0248	0.0252	-0.0284	0.0347	0.0196	1926	0.1162
1927	-0.0193	0.0537	0.0087	0.0201	0.0607	-0.0067	0.0670	0.0515	0.0450	-0.0502	0.0721	0.0279	1927	0.3749
1928	~0.0040	-0.0125	0.1101	0.0345	0.0197	-0.0385	0.0141	0.0803	0.0259	0.0168	0.1292	0.0049	1928	0.4361
1929	0.0583	-0.0019	-0.0012	0.0176	-0.0362	0.1140	0.0471	0.1028	-0.0476	-0.1973	-0.1246	0.0282	1929	-0.0842
1930	0.0639	0.0259	0.0812	-0.0080	-0.0096	-0.1625	0.0386	0.0141	-0.1282	-0.0855	-0.0089	-0.0706	1930	
1931	0.0502	0.1193	-0.0675	-0.0935	-0.1279	0.1421	-0.0722	0.0182	-0.2973	0.0896	-0.0798	-0.1400	1930	-0.2490
1932	-0.0271	0.0570	-0.1158	-0.1997	-0.2196	-0.0022	0.3815	0.3869	-0.0346	-0.1349	-0.0417	0.0565	1932	-0.4334
1933	0.0087	-0.1772	0.0353	0.4256	0.1683	0.1338	-0.0862	0.1206	-0.1118	-0.0855	0.1127	0.0363	1932	-0.0819
1934	0.1069	-0.0322	0.0000	-0.0251	-0.0736	0.0229	-0.1132	0.0611	-0.0033	-0.0286	0.0942	-0.0010	1934	0.5399
1935	-0.0411	-0.0341	-0.0286	0.0980	0.0409	0.0699	0.0850	0.0280	0.0256	0.0200	0.0342	0.0394	1934	-0.0144
1936	0.0670	0.0224	0.0268	-0.0751	0.0545	0.0333	0.0701	0.0151	0.0031	0.0775	0.0134	-0.0029	1936	0.4767
1937	0.0390	0.0191	-0.0077	-0.0809	-0.0024	-0.0504	0.1045	-0.0483	-0.1403	-0.0981	-0.0866	-0.0023	1937	0.3392
1938	0.0152	-0.0674	-0.2487	0.1447	-0.0330	-0,2503	0.0744	-0.0226	0.0166	0.0776	-0.0273	0.0401		-0.3503
1939	-0.0674	0.0390	-0.1339-	-0.0027	-0.0733	-0:0612	0.1105	-0.0648	0.1673	-0.0123	-0.0398	0.0401	1939	0.0112
1940	-0.0336	0.0133	0.0124	-0.0024	-0.2289	0.0809	0.0341	0.0350	0.0123	0.0422	-0.0316	0.0009	1939	-0.0041
1941	-0.0463	-0.0060	0.0071	-0.0612	0.0183	0.0578	0.0579	0.0010	-0.0068	-0.0657	-0.0284	-0.0407	1940	-0.0978
1942	0.0161	-0.0159	-0.0652	-0.0400	0.0796	0.0221	0.0337	0.0164	0.0290	0.0678	-0.0021	0.0549	1942	-0.1159
1943	0.0737	0.0583	0.0545	0.0035	0.0552	0.0223	-0.0526	0.0171	0.0263	-0.0108	-0.0654	0.0545	1942	0.2034
1944	0.0171	0.0042	0.0195	-0.0100	0.0505	0.0543	-0.0193	0.0157	-0.0008	0.0023	0.0133	0.0374	1943	0.2590
1945	0.0158	0.0683	-0.0441	0.0902	0.0195	-0.0007	-0.0180	0.0641	0.0438	0.0322	0.0396	0.0374	1944	0.1975
1946	0.0714	-0.0641	0.0480	0.0393	0.0288	-0.0370	-0.0239	-0.0674	-0.0997	-0.0060	-0.0027	0.0457	1945 1946	0.3644
1947	0.0255	-0.0077	-0.0149	-0.0363	0.0014	0.0554	0.0381	-0.0203	-0.0111	0.0238	-0.0027	0.0437	1946	-0.0807
1948	-0.0379	-0.0388	0.0793	0.0292	0.0879	0.0054	-0.0508	0.0158	-0.0276	0.0230	-0.0961	0.0233 =		0.0571
1949	0.0039	-0.0296	0.0328	-0.0179	-0.0258	0.0014	0.0650	0.0219	0.0263	0.0340	0.0175	0.0346	1948	0.0550
1950	0.0197	0.0199	0.0070	0.0486	0.0509	-0.0548	0.0119	0.0443	0.0592	0.0093	0.0173	0.0488	1949	0.1879
1951	0.0637	0.0157	-0.0156	0.0509	-0.0299	-0.0228	0.0711	0.0478	0.0013	-0.0103	0.0096		1950	0.3171
1952	0.0181	-0.0282	0.0503	-0.0402	0.0343	0.0490	0.0196	-0.0071	-0.0176	0.0020	0.0090	0.0424	1951	0.2402
1953	-0.0049	-0,0106	-0.0212	-0.0237	0.0077	-0,0134	0.0273	-0.0501	0.0034	0.0540	0.0371	0.0382 0.0053	1952	0.1837
1954	0.0536	- 0.0111	0.0325	0.0516	0.0418	0.0031	0.0589	-0.0275	0.0851	-0.0340	0.0204		1953	-0.0099
1955	0.0197	0.0098	-0.0030	0.0396	0.0055	0.0841	0.0622	-0.0025	0.0031	-0.0284	0.0909	0.0534	1954	0.5262
1956	-0.0347	0.0413	0.0710	-0.0004	-0.0593	0.0409	0.0530	-0.0328	-0.0440	0.0066		0.0015	1955	0.3156
						0.5 105	0.0000	0.0020	-0.0440	0,0000	-0.0050	0,0370	1956	0.0656

*Compound annual return



Appendix A-1 Large-Capitalization Stocks: Total Return From 1926 to 2020

Year	Jan	Feb	Маг	Apr	May	Jun	Jul	Aug	Sep	Oct	N	_		
1957	-0.0401	-0.0264	0.0215	0.0388	0.0437	0.0004	0.0131	-0.0505	-0.0602	-0.0302	0.0231	-0.0395	Year	Jan-Dec*
1958	0.0445	-0.0141	0.0328	0.0337	0.0212	0.0279	0.0449	0.0176	0.0501	0.0270	0.0284		1957	-0.1078
1 9 59	0.0053	0.0049	0.0020	0.0402	0.0240	-0.0022	0.0363	-0.0102	-0.0443	0.0270		0,0535	1958	0.4336
1960	-0.0700	0.0147	-0.0123	-0.0161	0.0326	0.0211	-0.0234	0.0317	-0.0590	-0.0007	0.0186	0.0292	1959	0.1196
1961	0.0645	0.0319	0.0270	0.0051	0.0239	-0.0275	0.0342	0.0243	-0.0390		0.0465	0.0479	1960	0.0047
1962	-0.0366	0.0209	-0.0046	-0.0607	-0.0811	-0.0803	0.0652	0.0243	-0.0184 	0.0298	0.0447	0.0046	1961	0.2689
1963	0.0506	-0.0239	0.0370	0.0500	0.0193	-0.0188	~0.0032	0.0535	-0.0097	0.0064	0.1086	0.0153	1962	-0.0873
1964	0.0283	0.0147	0.0165	0.0075	0.0162	0.0178	0.0022	-0.0118		0.0339	-0.0046	0.0262	1963	0.2280
1965	0.0345	0.0031	-0.0133	0.0356	-0.0030	-0.0473	0.0133	0.0178	0.0301	0.0096	0.0005	0.0056	1964	0.1648
1966	0.0062	-0.0131	-0.0205	0.0220	-0.0492	-0.0146	-0.0120	-0.0725	0.0334	0.0289	-0.0031	0.0106	1965	0.1245
1967	0.0798	0.0072	0.0409	0:0437	-0.0477	0.0190	0.0468	-0.0070	-0.0053 0.0342	0.0494	0.0095	0.0002	1966	-0.1006
1968	-0.0425	-0.0261	0.0110	0.0834	0.0161	0.0105	-0.0172	0.0164	0.0342	-0.0276	0.0065	0.0278	1967	0.2398
1969	-0.0068	-0.0426	0.0359	0.0229	0.0026	-0.0542	-0.0587	0.0454		0.0087	0.0531	-0.0402	1968	0.1106
1970	-0.0743	0.0558	0.0044	-0.0875	-0.0578	-0.0466	0.0769	0.0454	-0.0236 0.0362	0.0459	-0.0297	-0.0177	1969	-0.0850
1971	0.0432	0.0117	0.0394	0.0389	-0.0391	0.0033	-0.0387	0.0478	-0.0044	-0.0083	0.0506	0.0597	1970	0.0386
- 1972	0.9206	0.0277	0.0083	0.0068	0.0197	-0.0194	0.0048	0.0369	-0.0044	-0.0392	0.0002	0.0888	1971	0.1430
1973	-0.0149	-0.0352	0.0008	-0.0383	-0.0163	-0.0040	0.0407	-0.0341		0.00178	0.0481	0.0142	1972	0.1900
1974	-0.0072	-0.0007	-0.0205	-0.0359	-0.0302	-0.0113	-0.0742	-0.0341	0.0427 -0.1152	0.0017	-0.1109	0.0198	1973	-0.1469
1975	0.1272	0.0638	0.0254	0.0510	0.0477	0.0477	-0.0644	-0.0004	-0.1152	0.1681	-0.0488	-0.0156	1974	-0.2647
1976	0.1217	-0.0084	0.0337	-0.0078	-0.0111	0.0443	-0.0048	-0.0078	0.0312	0.0653 -0.0186	0.0282	-0.0081	1975	0.3723
1977	-0.0473	-0.0182	-0.0105	0.0042	-0.0196	0.0494	-0.0124	-0.0172	0.0236		-0.0041	0.0567	1976	0.2393
1978	-0.0574	-0.0203	0.0294	0.0902	0.0092	-0.0138	0.0583	0.0301	-0.0032	-0.0390	0.0316	0.0075	1977	-0.0716
1979	0.0443	-0.0321	0.0596	0.0063	-0.0217	0.0435	0.0333	0.0577	0.0032	-0.0872	0.0215	0.0196	1978	0.0657
1980	0.0622	-0.0001	-0.0972	0.0462	0.0515	0.0316	0.0696	0.0377	0.0043	-0.0640	0.0475	0.0214	1979	0.1861
1981	-0.0418	0.0174	0.0400	-0.0193	0.0026	-0.0063	0.0021	-0.0577	-0.0493	0.0202	0.1065	-0.0302	1980	0.3250
1982	-0.0131	-0.0559	-0.0052	0.0452	-0.0341	-0.0150	-0.0178	0.1214		0,0540	0.0413	-0.0256	1981	-0.0492
1983	0.0372	0.0229	0.0369	0.0788	-0.0087	0.0389	-0.0178	0.1214	0.0125	0.1151	0.0404	0.0193	1982	0.2155
1984	-0.0056	-0.0352	0.0173	0.0095	-0.0554	0.0303	-0.0295	0.1104	0.0138	-0.0116	0.0211	-0.0052	1983	0.2256
1985	0,0779	0.0122	0.0007	-0.0009	0.0578	0.0157	-0.0124 -0.0015	-0.0085	0.0002	0.0039	-0.0112	0.0263	1984	0.0627
1986	0.0056	0.0747	0.0558	-0.0113	0.0532	0.0169	-0.0015		-0.0313	0.0462	0.0686	0.0484	1985	0.3173
1987	0.1347	0.0395	0.0289	-0.0089	0.0002	0.0505	0.0507	0.0742 0.0373	-0.0827	0.0577	0.0243	-0.0255	1986	0.1867
				3,0003	3,0004	0.0000	0.0007	U. U3 /3	-0.0219	-0.2154	-0.0824	0.0761	1987	0.0525

^{*}Compound annual return



Appendix A-1
Large-Capitalization Stocks: Total Return
From 1926 to 2020

										į.				
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D		
1988	0.0421	0.0466	-0.0309	0.0111	0.0086	0.0459	-0.0038	-0.0339	0.0426	0.0278	-0.0143	0.0174	Year	Jan-Dec*
1989	0.0732	-0.0249	0.0233	0.0519	0.0405	-0.0057	0.0903	0.0195	-0.0041	-0.0232	0.0204	0.0240	1988	0.1661
 1990	-0.0671	0.0129	0.0265	-0.0249	0.0975	-0.0067	-0.0032	-0.0904	-0.0487	-0.0043	0.0204		1989	0.3169
1991	0.0436	0.0715	0.0242	0.0024	0.0431	-0.0458	0.0466	0.0237	-0.0167	0.0134	-0.0403	0.0279	1990	-0.0310
1992	-0.0186	0.0130	-0.0194	0.0294	0.0049	-0.0149	0.0409	-0.0205	0.0118	0.0035	0.0341	0.1144	1991	0.3047
1993	0.0084	0.0136	0.0211	-0.0242	0.0268	0.0029	-0.0040	0.0379	-0.0077	0.0207	-0.0095	0.0123	1992	0.0762
1994	0.0340	-0.0271	-0.0436	0.0128	0.0164	-0.0245	0.0328	0.0410	-0.0245	0.0225	-0.0364	0.0121	1993	0.1008
1995	0.0259	0.0390	0.0295	0.0294	0.0400	0.0232	0.0332	0.0025	0.0422	-0.0036	0.0439	0.0148	1994	0.0132
1996	0.0340	0.0093	0.0096	0.0147	0.0258	0.0038	-0.0442	0.0211	0.0563	0.0276	0.0439	0.0193	1995	0.3758
1997	0.0625	0.0078	-0,0411	0.0597	0.0609	0.0448	0.0796	-0.0560	0.0548	-0.0334	0.0756	-0.0198	1996	0.2296
1998	0.0111	0.0721	0.0512	0.0101	-0.0172	0.0406	-0.0106	-0.1446	0.0641	0.0334	0.0463	0.0172	1997	0.3336
 1999	0.0418	-0.0311	0.0400	0.0387	-0.0236	0.0555	-0.0312	-0.0049	-0.0274	0.0633	0.0203	0.0576	1998	0.2858
2000	-0.0502	-0.0189	0.0978	-0.0301	-0.0205	0.0247	-0.0156	0.0621	-0.0528	-0.0042	-0.0788	0.0589	1999	_0.2104
2001	0.0355	-0.0912	-0.0634	0. 0 777	0.0067	-0.0243	-0.0098	-0.0626	-0.0808	0.0191	0.0767	0.0049 0.0088	2000	-0.0910
2002	-0.0146	-0.0193	0.0376	-0.0606	-0.0074	-0.0712	-0.0780	0.0066	-0.1087	0.0880	0.0589		2001	-0.1189
2003	-0.0262	-0.0150	0.0097	0.0824	0.0527	0.0128	0.0176	0.0195	-0.0106	0.0566	0.0088	-0.0587	2002	-0.2210
2004	0.0184	0.0139	-0.0151	-0.0157	0.0137	0.0194	-0.0331	0.0040	0.0108	0.0353	0.0405	0.0524 0.0340	2003	0.2868
2005	-0.0244	0.0210	-0.0177	-0.0190	0.0318	0.0014	0.0372	-0.0091	0.0081	-0.0167	0.0403	0.0003	2004	0.1088
2006	0.0265	0.0027	0.0124	0.0134	-0.0288	0.0014	0.0062	0.0238	0.0258	0.0326	0.0378		2005	0.0491
2007	0.0151	-0.0196	0.0112	0.0443	0.0349	-0.0166	-0.0310	0.0150	0.0374	0.0159	-0.0418	0.0140	2006	0.1579
2008	-0.0600 -	-0.0325	-0.0043	0.0487	0.0130	-0.0843	-0.0084	0.0145	-0.0891	-0.1679	-0.0718	-0.0069	2007	0.0549
2009	-0.0843	-0.1065	0.0876	0.0957	0.0559	0.0020	0.0756	0.0361	0.0373	-0.0186	0.0600	0.0106	2008	-0.3700
2010	-0.0360	0.0310	0.0603	0.0158	-0.0799	-0.0523	0.0701	-0.0451	0.0892	0.0380	0.0000	0.0193	2009	0.2646
2011	0.0237	0.0343	0.0004	0.0296	-0.0113	-0.0167	-0.0203	-0.0543	-0.0703	0.1093	-0.0022	0.0668	2010	0.1506
2012	0.0448	0.0432	0.0329	-0.0063	-0.0601	0.0412	0.0139	0.0225	0.0258	-0.0185	0.0058	0.0102	2011	0.0211
2013	0.0518	0.0136	0.0375	0.0193	0.0234	-0.0134	0.0509	-0.0290	0.0314	0.0460	0.0058	0.0091	2012	0.1600
2014	-0.0346	0.0457	0.0084	0.0074	0.0235	0.0207	-0.0138	0.0400	-0.0140	0.0244	0.0305	0.0253	2013	0,3239
2015	-0.0300	0.0575	-0.0158	0.0096	0.0129	-0.0194	0.0210	-0.0603	-0.0247	0.0844	0.0030	-0.0025 -0.0158	2014	0.1369
2016	-0.0496	-0.0013	0.0678	0.0039	0.0180	0.0026	0.0369	0.0014	0.0002	-0.0182	0.0370	0.0198	2015	0.0138
2017	0.0190	0.0397	0.0012	0.0103	0.0141	0.0062	0.0206	0.0031	0.0206	0.0233	0.0307	0.0198	2016	0.1196
2018	0.0573	-0.0369	-0.0254	0.0038	0.0241	0.0062	0.0372	0.0326	0.0057	-0.0684	0.0307	-0.0903	2017	0.2183
2019	0.0801	0.0321	0.0194	0.0405	-0.0635	0.0705	0.0144	-0.0158	0.0187	0.0217	0.0363		2018	-0.0438
2020	-0.0004	-0.0823	-0.1235	0.1282	0.0476	0.0199	0.0564	0.0719	-0.0380	-0.0266	0.0303		2019	0.3149
*Compound annua	l return									0200	0.1050	0.0304	2020	0.1840

*Compound annual return

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Stocks, Bonds, Bills, and Inflation®

U.S. Capital Markets Performance by ——
Asset Class 1926–2020



Appendix A-7

Long-term Government Bonds: Income Returns From 1926 to 2020

	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	V	
1	1926	0.0031	0.0028	0.0032	0.0030	0.0028	0.0033	0.0031	0.0031	0.0030	0.0030	0.0031	0.0030	Year 1926	Jan-Dec'
	1927	0.0030	0.0027	0.0029	0.0027	0.0028	0.0027	0.0027	0.0029	0.0027	0.0028_	0.0027	0.0030	1926	0.0373
1	928	0.0027	0.0025	0.0027	0.0026	0.0027	0.0027	0.0027	0.0029	0.0027	0.0030	0.0027	0.0027	1927	0.0341
	929	0.0029	- 0.0027	0.0028	0.0034	0.0030	0.0029	0.0032	0.0030	0.0032	0.0031	0.0026	0.0029	1928	0.0322
1	1930	0.0029	0.0026	0.0029	0.0027	0.0027	0.0029	0.0028	0.0026	0.0029	0.0027	0.0026	0.0028		0.0347
	931	0.0028	0.0026	0.0029	0.0027	0.0026	0.0028	0.0027	0.0027	0.0027	0.0029	0.0020	0.0032	1930	0.0332
1	932	0.0032	0.0032	0.0031	0.0030	0.0028	0.0028	0.0028	0.0028	0.0026	0.0027	0.0026	0.0032	1931	0.0333
1	933	0.0027	0.0023	0.0027	0.0025	0.0028	0.0025	0.0026	0.0026	0.0025	0.0026	0.0025	0.0027	1932	0.0369
7	934	0.0029	0.0024	0.0027	0.0025	0.0025	0.0024	0.0024	0.0024	0.0023	0.0020	0.0025	0.0028	1933	0.0312
1	935	0.0025	0.0021	0.0022	0.0023	0.0023	0.0022	0.0024	0.0023	0.0023	0.0027	0.0023	0.0025	1934	0.0318
	936	0.0024	0.0023	0.0024	0.0022	0.0022	0.0024	0.0023	0.0023	0.0021	0.0023	0.0024	0.0024	1935	0.0287
· -	937	0.0021	0.0020	0.0022	0.0023	0.0022	0.0025	0.0024	0.0023	0.0023	0.0023	0.0022	0.0022	1936 1937	0.0277
-	938	0.0023	0.0021	0.0023	0.0022	-0.0022	0.0021	0.0021	0.0022	0.0021	0.0022	0.0024	0.0023	1937	0.0266
	939	0.0021	0.0019	0.0021	0.0019	0.0020	0.0018	0.0019	0.0018	0.0019	0.0023	0.0021	0.0022	1939	0.0264
	940	0.0020	0.0018	0.0019	0.0018	0.0019	0.0019	0.0020	0.0019	0.0018	0.0018	0.0020	0.0013	1939	0.0240
	941	0.0016	0.0016	0.0018	0.0017	0.0017	0.0016	0.0016	0.0016	0.0016	0.0016	0.0014	0.0017	1940 1941	0.0223
	942	0.0021	0.0019	0.0021	0.0020	0.0019	0.0021	0.0021	0.0021	0.0020	0.0021	0.0020	0.0021	1942	0.0194
	943	0.0020	0.0019	0.0021	0.0020	0.0019	0.0021	0.0021	0.0021	0.0020	0.0020	0.0020	0.0021	1943	0.0246
	944	0.0021	0.0020	0.0021	0.0020	0.0022	0.0020	0.0021	0.0021	0.0020	0.0021	0.0020	0.0021	1944	0.0244
	945	0.0021	0.0018	0.0020	0.0019	0.0019	0.0019	0.0018	0.0019	0.0018	0.0019	0.0028	0.0018	1945	0.0246
	946	0.0017	0.0015 -	0.0016	0.0017	0.0018	0.0016	0.0019	0.0017	0.0018	0.0019	0.0018	0.0019	1945	0.0234
	947	0.0018	0.0016	0.0018	0.0017	0.0017	0.0019	0.0018	0.0017	0.0018	0.0018	0.0017	0.0021	1947	0.0204
	948	0.0020	0.0019	0.0022	0:0020	0.0018	0.0021	0.0019	0.0021	0.0020	0.0019	0.0021	0.0021	1948	0.0213
	949	0.0020	0.0018	0.0019	0.0018	0.0020	0.0019	0.0017	0.0019	0.0017	0.0018	0.0017	0.0020	1949	0.0240
	950	0.0018	0.0016	0.0018	0.0016	0.0019	0.0017	0.0018	0.0018	0.0017	0.0019	0.0018	0.0011	1950	0.0225
	951	0.0020	0.0017	0.0019	0.0020	0.0021	0.0020	0.0023	0.0021	0.0019	0.0023	0.0021	0.0018	1950	0.0212
	952	0.0023	0.0021	0.0023	0.0022	0.0020	0.0022	0.0022	0.0021	- 0.0023	0.0023	0.0021	0.0024	1952	0.0238
	953	0.0023	0.0021	0.0025	0.0024	0.0024	0.0027	0.0025	0.0025	0.0025	0.0023	0.0024	0.0024	1953	0.0266
	954	0.0023	0.0022	0.0025	0.0022	0.0020	0.0025	0.0022	0.0023	0.0022	0.0021	0.0023	0.0024	1954	0.0284 0.0279
	955	0.0022	0.0022	0.0024	0.0022	0.0025	0.0023	0.0023	0.0027	0.0024	0.0025	0.0024	0.0023	1955	0.0279
19	956	0.0025	0.0023	0.0023	0.0026	0.0026	0.0023	0.0026	0.0026	0.0025	0.0029	0.0027	0.0024	1956	0.0275
												-10021	5.0020	1 300	0.0299

^{*}Compound annual return



Appendix A-7
Long-term Government Bonds: Income Returns
From 1926 to 2020

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	.		
1957	0.0029	0.0025	0.0026	0.0029	0.0029	0.0025	0.0033	0.0030	0.0031	0.0031	0.0029	Dec	Year	Jan-Dec*
1958	0.0027	0.0025	0.0027	0.0026	0.0024	0.0027	0.0027	0.0027	0.0032	0.0032	0.0023	0.0029	1957	0.0344
1959	0.0031	0.0031	0.0035	0.0033	0.0033	0.0036	0.0035	0.0035	0.0034	0.0032		0.0033	1958	0.0327
1960	0.0035	0.0037	0.0036	0.0032	0.0037	0.0034	0.0032	0.0034	0.0034	0.0033	0.0035	0.0036	1959	0.0401
1961	0.0033	0.0030	0.0031	0.0031	0.0034	0.0032	0.0033	0.0033	0.0032	0.0033	0.0032	0.0033	1960	0.0426
 1962	0.0037	0.0032	0.0033	0.0033	0.0032	0.0030	0.0034	0.0034	0.0032	0.0034	0.0032 0.0031	0.0031	1961	0.0383
1963	0.0032	0.0029	0.0031	0.0034	0.0033	0.0030	0.0036	0.0033	0.0034	0.0033	0.0031	0.0032	1962	0.0400
1964	0.0035	0.0032	0.0037	0.0035	0.0032	0.0038	0.0035	0.0035	0.0034	0.0034	0.0035	0.0036	1963	0.0389
1965	0.0033	0.0032	0.0038	0.0033	0.0033	0.0038	0.0034	0.0037	0.0035	0.0034	0.0035	0.0035	1964	0.0415
 1966	0.0038	0.0034	0.0040	0.0036	0.0041	0.0039	0.0038	0.0043	0.0033	0.0034	0.0037	0.0037	1965	0.0419
1967	0.0040	0.0034	0.0039	0.0035	0.0043	0,0039	0.0043	0.0042	0.0040	0.0045	0.0038	0.0039	1966	0.0449
1968	0.0050	0.0042	0.0043	0.0049	0.0046	0.0042	0.0048	0.0042	0.0044	0.0045	0.0043	0.0044 0.0049	1967	0.0459
1969	0.0050	0.0046	0.0047	0.0055	0.0047	0.0055	0.0052	0.0048	0.0055	0.0057	0.0043	0.0049	1968	0.0550
1970	0.0056	0.0052	0.0056	0.0054	0.0055	0.0064	0.0059	0.0057	0.0056	0.0055	0.0058	0.0053	1969	0.0595
1971	0.0051	0.0046	0.0056	0.0048	0.0047	0.0056	0.0052	0.0055	0.0050	0.0047	0.0058	0.0053	197 0 1971	0.0674
1972	0.0050	0.0047	0.0049	0.0048	0.0055	0.0049	0.0051	0.0049	0.0047	0.0052	0.0031	0.0030	1972	0.0632
1973	0.0054	0.0051	0.0056	0.0057	0.0058	0.0055	0.0061	0.0062	0.0055	0.0063	0.0056	0.0060	1973	0.0587
1974	0.0061	0.0055	0.0059	0.0068	0.0068	0.0061	0.0072	0.0065	0.0071	0.0070	0.0062	0.0067	1973	0.0651
1975	0.0068	0.0060	0.0066	0.0067	0.0067	0.0070	0.0068	0.0065	0.0073	0.0072	0.0061	0.0007	1975	0.0727
1976	0.0065	0.0061	0.0071	0.0064	0.0059	0.0073	0.0065	0.0069	0.0064	0.0061	0.0066	0.0063	1976	0.0799
1977	0.0059	0.0057	0.0065	0.0061	0.0067	0.0062	0.0059	0.0067	0.0061	0.0063	0.0063	0.0062	1977	0.0789
1978	0.0069	0.0060	0.0069	0.0063	0,0075	0.0069	0.0073	0.0070	0.0065	0.0073	0.0071	0.0068	1978	0.0714 0.0790
1979	0.0079	0.0065	0.0074	0.0076	0.0077	0.0071	0.0076	0.0073	0.0068	0.0082	0.0083	0.0083	1979	0.0790
 1980	0.0083	0.0084	0.0099	. 0,0100	0.0087	0.0086	0.0084	0.0081	0.0097	0.0097	0.0091	0.0108	1980 -	0.0886
1981	0.0094	0.0088	0.0111	0.0101	0.0104	0.0109	0.0109	0.0110	0.0114	0.0117	0.0113	0.0100	1981	
1982	0.0108	0.0103	0.0124	0.0112	0.01,01	0.0120	0.0114	0.0112	0.0100	0.0091	0.0095	0.0093	1982	0.1156
1983	0.0087	0.0081	0.0089	0,0085	0.00 [§] 1	0.0090	0.0088	0.0103	0.0096	0.0095	0.0094	0.0094	1983	0.1350
1984	0.0103	0.0092	0.0098	0.0104	0.0103	0.0106	0.0116	0.0106	0.0094	0.0108	0.0091	0.0098	1984	0.1038 0.1174
1985	0.0096	0.0082	0.0094	0.0102	0.0097	0.0080	0.0094	0.0085	0.0088	0.0089	0.0081	0.0086	1985	0.1174
 1986	0.0079	0.0073	0.0071	0.0063	0.0062	0.0070	0.0066	0.0063	0.0065	0.0069	0.0059	0.0070	1986	0.1125
1987	0.0064	0.0059	0.0066	0.0065	0.0066	0.0075	0.0073	0.0075	0.0075	0.0079	0.0075	0.0078	1987	0.0898
													, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.0192

^{*}Compound annual return



Appendix A-7
Long-term Government Bonds: Income Returns From 1926 to 2020

											ţ					
	Year .	Jan	Feb	<u>Mar</u>	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Jan-Dec*	
	1988	0.0072	0.0071	0.0072	0.0070	0.0078	0.0076	0.0071	0.0083	0.0076	0.0076	0.0070	0.0075	1988	0.0897	
	1989	0.0080	0.0069	0.0079	0.0070	0.0080	0.0070	0.0068	0.0066	0.0065	0.0072	0.0064	0.0064	1989	0.0881	
****	1990	0.0073	0.0066	0.0071	0.0075_	0.0075	0.0068	0.0074	0.0071	-0.0069	0.0081	0.0071	0.0072	1990	0.0819	_
	1991	0.0071	0.0064	0.0064	0.0076	0.0068	0.0063	0.0076	0.0068	0.0068	0.0065	0.0060	0.0068	1991	0.0822	
	1992	0.0061	0.0059	0.0067	0.0065	0.0061	0.0067	0.0063	0.0060	0.0058	0.0057	0.0061	0.0063	1992	0.0726	
	1993	0.0059	0.0055	0.0063	0.0057	0.0052	0.0062	0.0054	0.0056	0.0050	0.0049	0.0053	0.0055	1993	0.0717	
	1994	0.0055	0.0049	0.0058	0.0057	0.0063	0.0061	0.0060	0.0066	0.0061	0.0066	0.0064	0.0066	1994	0.0659	
	1995	0.0070	0.0059	0.0064	0.0058	0.0065	0.0054	0.0056	0.0057	0.0052	0.0057	0.0051	0.0049	1995	0.0760	
	1996	0.0054	0.0048	0.0052	0.0059	0.0058	0.0054	0.0062	0.0057	0.0060	0.0058	0.0052	0.0056	1996	0.0618	
	1997	0.0056	0.0051	0.0059	0.0059	0.0058	0.0059	0.0058	0.0049	0.0058	0.0054	0.0047	0.0054	1997	0.0664	
	1998	0.0048	0.0044	0.0052	0.0049	0.0048	0.0052	0.0049	0.0048	0.0044	0.0042	0.0045	0.0045	1998	0.0583	
	1999	0.0042	0.0040	0.0053	0.0048	0.0045	0.0055	0.0051	0.0054	0.0052	0.0050	0.0056	0.0055	1999	0.0557	
–	2000	0.0057	0.0051	-0.0054	0.0047	0.0056	-0.0052	0.0052	0.0050	0.0046	0.0053	0.0048	0.0045	2000	0.0650	
	2001	0.0049	0.0042	0.0045	-0.0047	0.0050	0.0047	0.0052	0.0046	0.0041	0.0048	0.0041	0.0046	2001	0.0553	_
	2002	0.0048	0.0043	0.0043	0.0054	0.0049	0.0044	0.0051	0.0044	0.0042	0.0040	0.0040	0.0045	2002	0.0559	
	2003	0.0041	0.0038	0.0040	0.0040	0.0039	0.0036	0.0038	0.0042	0.0046	0.0041	0.0039	0.0047	2003	0.0480	
	2004	0.0042	0.0038	0.0043	0.0039	0.0040	0.0048	0.0043	0.0045	0.0040	0.0038	0.0041	0.0043	2004	0.0502	
	2005	0.0041	0.0035	0.0041	0.0039	0.0040	0.0036	0.0034	0.0040	0.0035	0.0039	0.0039	0.0039	2005	0.0469	
	2006	0.0040	0.0036	0.0039	0.0039	0.0048	0.0044	0.0045	0.0043	0.0039	0.0042	0.0039	0.0036	2006	0.0468	
	2007	0.0043	0.0038	0.0039	0.0042	0.0041	0.0040	0.0046	0.0042	0.0037	0.0043	0.0039	0.0037	2007	0.0485	
	2008	0.0040	0.0034	0.0037	0.0035	0.0037	0.0040	0.0039	0.0036	0.0039	0.0037	0.0036	0.0033	2008	0.0445	
	2009	0.0024	0.0030	0.0035	0.0029	0.0033	0.0038	0.0036	0.0036	0.0034	0.0033	0.0035	0.0034	2009	0.0347	
	2010	0.0036	0.0033	0.0040	0.0038	0.0034	0.0037	0.0031	0.0032	0.0026	0.0027	0.0032	0.0032	2010	0.0425	
	2011	0.0035	0.0032	0.0036	0.0034	0.0036	0.0032	0.0032	0.0034	0.0026	0.0022	0.0024	0.0022	2011	0.0382	
	2012	0.0021	0.0020	0.0022	0.0025	0.0023	0.0018	0.0020	0.0018	0.0017	0.0021	0.0019	0.0019	2012	0.0246	
	2013	0.0022	0.0022	0.0021	0.0026	0.0023	0.0024	0.0030	0.0028	0.0029	0.0029	0.0027	0.0031	2013	0.0288	
-	2014	0.0032	0.0026	0.0029	0.0028	0.0028	0.0025	0.0027	0.0026	0.0023	0.0025	0.0023	0.0022	2014	0.0341	
	2015	0.0020	0.0015	0.0021	0.0019	0.0020	0.0023	0.0024	0.0022	0.0021	0.0021	0.0022	0.0022	2015	0.0247	
	2016	0.0021	0.0020	0.0018	0.0017	0.0020	0.0018	0.0014	0.0016	0.0015	0.0016	0.0018	0.0022	2016	0.0230	
	2017	0.0024	0.0021	0.0023	0.0021	0.0024	0.0021	0.0022	0.0022	0.0019	0.0022	0.0021	0.0020	2017	0.0267	
	2018	0.0024	0.0022	0.0024	0.0025	0.0025	0.0023	0.0025	0.0025	0.0022	0.0030	0.0028	0.0027	2018	0.0282	
	2019	0.0025	0.0022	0.0023	0.0023	0.0023	0.0018	0.0021	0.0019	0.0015	0.0016	0.0016	0.0018	2019	0.0255	
	2020	0.0020	0.0015	0.0013	0.0009	0.0009	0.0009	0.0010	0.0008	0.0000	0.0009	0.0011	0.0011	2020	0.0142	
Con	npound annual	return													0.0172	