TUCSON ELECTRIC POWER CO
Form 10-K
February 15, 2019

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K
(Mark One)
x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2018
OR
¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to .
Commission File Number 1-5924
TUCSON ELECTRIC POWER COMPANY
(Exact name of registrant as specified in its charter)

Arizona (State or other jurisdiction of incorporation or organization)	86-0062700 (I.R.S. Employer Identification No.)

88 East Broadway Boulevard, Tucson, AZ 85701
(Address of principal executive offices)(Zip Code)
Registrant's telephone number, including area code: (520) 571-4000
Securities registered pursuant to Section 12(b) of the Exchange Act: None
Securities registered pursuant to Section 12(g) of the Exchange Act: Common Stock, No Par Value (Title of Class)
Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes o No x
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes o No x
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No o
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes x No o
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of each registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filero	Accelerated Filero	Non-Accelerated Filerx	Smaller Reporting Companyo	Emerging Growth Companyo

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If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. o
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No x
State the aggregate market value of the voting and non-voting common equity held by non-affiliates: None
As of February 14, 2019, Tucson Electric Power Company had 32,139,434 shares of common stock, no par value, outstanding, all of which were held by UNS Energy Corporation, an indirect wholly owned subsidiary of Fortis Inc.
Documents incorporated by reference: None
Tucson Electric Power meets the conditions set forth in General Instruction I(1)(a) and (b) of Form 10-K and is, therefore, filing portions of this Form 10-K with the reduced disclosure format specified in General Instruction I(2) of Form 10-K.

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DEFINITIONS

The abbreviations and acronyms used in the 2018 Form 10-K are defined below:

2010 Reimbursement Agreement	Reimbursement Agreement, dated December 14, 2010, between TEP, as borrower, and a financial institution
2017 Rate Order	A rate order issued by the ACC resulting in a new rate structure for TEP, effective on February 27, 2017
ABR	Alternate Base Rate
ACC	Arizona Corporation Commission
ACC Refund Order	An order issued by the ACC approving TEP's proposal to return savings from the Company's federal corporate income tax rate under the TCJA to its customers through a combination of a customer bill credit and a regulatory liability that reflects the deferral of the return of a portion of the savings to be returned to customers in TEP's next rate case
AFUDC	Allowance for Funds Used During Construction
AMT	Alternative Minimum Tax
AOCI	Accumulated Other Comprehensive Income
APS	Arizona Public Service Company
ARO	Asset Retirement Obligation
BART	Best Available Retrofit Technology
BBtu	Billion British thermal unit(s)
DG	Distributed Generation
DSM	Demand Side Management
ECA	Environmental Compliance Adjustor
EDIT	Excess Deferred Income Taxes
EE Standards	Energy Efficiency Standards
EPA	Environmental Protection Agency
FASB	Financial Accounting Standards Board
FERC	Federal Energy Regulatory Commission
FERC Refund Order	An order issued by the FERC directing TEP to either: (i) submit proposed revisions to its stated transmission rates or stated transmission revenue requirements to reflect the change in the federal corporate income tax rate as a result of the TCJA; or (ii) show cause why it should not be required to do so
Fortis	Fortis Inc., a corporation incorporated under the Corporations Act of Newfoundland and Labrador, Canada, whose principal executive offices are located at Fortis Place, Suite 1100, 5 Springdale Street, St. John's, NL A1E 0E4
Four Corners	Four Corners Generating Station
GAAP	Generally Accepted Accounting Principles in the United States of America
Gila Acquisition	SRP entered into an agreement to acquire Gila River Units 1 and 2 from third-parties
Gila River	Gila River Generating Station
GWh	Gigawatt-hour(s)
IRS	Internal Revenue Service
kWh	Kilowatt-hour(s)
LFCR	Lost Fixed Cost Recovery
LIBOR	London Interbank Offered Rate

LOC	Letter(s) of Credit
Luna	Luna Generating Station
MMBtu	Million Metric British thermal units
MW	Megawatt(s)
MWh	Megawatt-hour(s)
Navajo	Navajo Generating Station

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NBV	Net Book Value
NOPR	Notice of Proposed Rulemaking
PBI	Performance-Based Incentive
PDEQ Application	In 2017, TEP submitted an Air Quality Permit Application to the Pima County Department of Environmental Quality related to a generation modernization project at Sundt
Phase 2	Second phase of TEP's rate case proceedings originally filed November 2015
Phase 2 Order	ACC order establishing, among other things, an export rate that replaced net metering for excess solar generation
PNM	Public Service Company of New Mexico
PPA	Power Purchase Agreement
PPFAC	Purchased Power and Fuel Adjustment Clause
PV	Photovoltaic
REC	Renewable Energy Credit
Regional Haze	Regional Haze Regulation promulgated by the EPA to improve visibility at national parks and wilderness areas
RES	Renewable Energy Standard
Retail Rates	Rates designed to allow a regulated utility recovery of its cost of providing services and an opportunity to earn a reasonable return on its investment
RICE	Reciprocating Internal Combustion Engine
San Juan	San Juan Generating Station
SEC	Securities and Exchange Commission
SERP	Supplemental Executive Retirement Plan
SES	Southwest Energy Solutions, Inc.
SJCC	San Juan Coal Company
Springerville	Springerville Generating Station
SRP	Salt River Project Agricultural Improvement and Power District
Sundt	H. Wilson Sundt Generating Station
TCJA	On December 22, 2017, the Tax Cuts and Jobs Act was signed into law enacting significant changes to the Internal Revenue Code including a reduction in the U.S. federal corporate income tax rate from 35% to 21% effective for tax years beginning after 2017
TEP	Tucson Electric Power Company, the principal subsidiary of UNS Energy Corporation
Third-Party Owners	Wilmington Trust Company and William J. Wade, as Owner Trustee and Co-trustee under a separate trust agreement with each of Alterna Springerville LLC (Alterna) and LDVF1 TEP LLC (LDVF1) (Alterna and LDVF1, together with the Owner Trustees and Co-trustees, the Third-Party Owners)
Tolling PPA	A 20-year tolling PPA that TEP entered into in 2017 with SRP to purchase and receive all 550 MW of capacity, power, and ancillary services from Gila River Unit 2, which includes a three-year option to purchase the unit
Tri-State	Tri-State Generation and Transmission Association, Inc.
TSA	Transmission Service Agreement
UNS Electric	UNS Electric, Inc., an indirect wholly-owned subsidiary of UNS Energy Corporation
UNS Energy	UNS Energy Corporation, the parent company of TEP, whose principal executive offices are located at 88 East Broadway Boulevard, Tucson, Arizona 85701

UNS Energy Affiliates	Affiliated subsidiaries of UNS Energy Corporation including UniSource Energy Services Inc., UNS Electric, Inc., UNS Gas, Inc., and Southwest Energy Solutions, Inc.
UNS Gas	UNS Gas, Inc., an indirect wholly-owned subsidiary of UNS Energy
VEBA	Voluntary Employee Beneficiary Association
VIE	Variable Interest Entity
WCC	Westmoreland Coal Company

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FORWARD-LOOKING INFORMATION

This Annual Report on Form 10-K contains forward-looking statements as defined by the Private Securities Litigation Reform Act of 1995. Tucson Electric Power Company (TEP or the Company) is including the following cautionary statements to make applicable and take advantage of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 for any forward-looking statements made by TEP in this Annual Report on Form 10-K. Forward-looking statements include statements concerning plans, objectives, goals, strategies, future events, future economic conditions, future operational or financial performance and underlying assumptions, and other statements that are not statements of historical facts. Forward-looking statements may be identified by the use of words such as anticipates, believes, estimates, expects, intends, may, plans, predicts, potential, projects, would, and similar expressions. From time to time, we may publish or otherwise make available forward-looking statements of this nature. All such forward-looking statements, whether written or oral, and whether made by or on behalf of TEP, are expressly qualified by these cautionary statements and any other cautionary statements which may accompany the forward-looking statements. In addition, TEP disclaims any obligation to update any forward-looking statements to reflect events or circumstances after the date of this report, except as may otherwise be required by the federal securities laws.

Forward-looking statements involve risks and uncertainties which could cause actual results or outcomes to differ materially from those expressed therein. We express our estimates, expectations, beliefs, and projections in good faith and believe them to have a reasonable basis. However, we make no assurances that management’s estimates, expectations, beliefs, or projections will be achieved or accomplished. We have identified the following important factors that could cause actual results to differ materially from those discussed in our forward-looking statements. These may be in addition to other factors and matters discussed in: Part I, Item 1A. Risk Factors; Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations; and other parts of this report. These factors include: voter initiatives and state and federal regulatory and legislative decisions and actions, including changes in tax and energy policies; changes in, and compliance with, environmental laws and regulatory decisions and policies that could increase operating and capital costs, reduce generation facility output or accelerate generation facility retirements; regional economic and market conditions which could affect customer growth and energy usage; changes in energy consumption by retail customers; weather variations affecting energy usage; our forecasts of peak demand and whether existing generation capacity and Power Purchase Agreements (PPA) are sufficient to meet the expected demand and reserve margin requirements; the cost of debt and equity capital and access to capital markets and bank markets; the performance of the stock market and a changing interest rate environment, which affect the value of our pension and other postretirement benefit plan assets and the related contribution requirements and expenses; the potential inability to make additions to our existing high voltage transmission system; unexpected increases in operations and maintenance expense; resolution of pending litigation matters; changes in accounting standards; changes in our critical accounting policies and estimates; the ongoing impact of mandated energy efficiency and distributed generation (DG) initiatives; changes to long-term contracts; the cost of fuel and power supplies; the ability to obtain coal from our suppliers; cyber-attacks, data breaches, or other challenges to our information security, including our operations and technology systems; the performance of TEP's generation facilities; and the impact of the Tax Cuts and Jobs Act (TCJA) on our financial condition and results of operations, including the assumptions we make relating thereto.

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PART I
ITEM 1. BUSINESS
OVERVIEW OF BUSINESS
General
TEP and its predecessor companies have served the greater Tucson metropolitan area for 126 years. TEP was incorporated in the State of Arizona in 1963. TEP is a regulated electric utility company serving approximately 425,000 retail customers. TEP’s service territory covers 1,155 square miles and includes a population of over one million people in Pima County, as well as parts of Cochise County. TEP's principal business operations include generating, transmitting, and distributing electricity to its retail customers. In addition to retail sales, TEP sells electricity, transmission, and ancillary services to other utilities, municipalities, and energy marketing companies on a wholesale basis. TEP is subject to comprehensive state and federal regulation. The regulated electric utility operation is TEP's only segment.
TEP is a wholly owned subsidiary of UNS Energy Corporation (UNS Energy), a utility services holding company. UNS Energy is an indirect wholly owned subsidiary of Fortis Inc. (Fortis) which is a leader in the North American electric and gas utility business.
Regulated Utility Operations
TEP delivers electricity to retail customers in southern Arizona. TEP owns or has contracts for coal, natural gas, wind, and solar generation resources to provide electricity. This electricity, together with electricity purchased on the wholesale market, is delivered over transmission lines which are part of the Western Interconnection, a regional grid in the United States. The electricity is then transformed to lower voltages and delivered to customers through TEP's distribution system.
TEP operates under a certificate of public convenience and necessity as regulated by the Arizona Corporation Commission (ACC), under which TEP is obligated to provide electricity service to customers within its service territory. The ACC establishes rates that are designed to allow a regulated utility recovery of its cost of providing services and an opportunity to earn a reasonable return on its investment (Retail Rates).
Customers
Electricity sold to retail and wholesale customers by class of customer and the average number of retail customers over the last three years were as follows:

(sales in GWh)	2018		2017		2016	
Electric Sales						
Residential	3,766	24 %	3,786	28 %	3,724	29 %
Commercial	2,136	14 %	2,192	17 %	2,139	17 %
Industrial, non-Mining	1,949	12 %	1,939	15 %	2,006	16 %
Industrial, Mining	1,033	7 %	991	8 %	997	8 %
Other	16	— %	18	— %	30	— %
Total Retail Sales by Customer Class	8,900	57 %	8,926	68 %	8,896	70 %
Wholesale Sales, Long-Term	424	3 %	587	4 %	463	4 %
Wholesale Sales, Short-Term	6,279	40 %	3,630	28 %	3,308	26 %
Total Electric Sales	15,603	100 %	13,143	100 %	12,667	100 %
Average Number of Retail Customers						
Residential	384,021	90 %	381,399	90 %	378,991	90 %
Commercial	38,642	9 %	38,564	9 %	38,403	9 %
Industrial, non-Mining	504	— %	520	— %	580	— %

Industrial, Mining	4	—	%	4	—	%	4	—	%
Other	1,873	1	%	1,879	1	%	1,866	1	%
Total Retail Customers	425,044	100	%	422,366	100	%	419,844	100	%

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Retail Customers

TEP provides electric utility service to a diverse group of residential, commercial, industrial, and public sector customers. Major industries served include copper mining, cement manufacturing, defense, healthcare, education, military bases, and governmental entities. TEP’s retail sales are influenced by several factors including economic conditions, seasonal weather patterns, Demand Side Management (DSM) initiatives and the increasing use of energy-efficient products, and customer-sited DG.

Local, regional, and national economic factors impact the growth in the number of customers in TEP’s service territory. In each of the past five years, TEP’s average number of retail customers increased by less than 1%. TEP expects the number of retail customers to increase at a rate of approximately 1% in 2019 based on the estimated population growth in its service territory.

TEP’s retail sales volume in 2018 was 8,900 gigawatt-hours (GWh), which is a decrease of 3% from 2014 levels. During the past five years, mining load reductions and state requirements to promote energy efficiency and DG have resulted in lower sales volumes.

TEP’s mining customers make up 7% of total retail sales. TEP’s GWh sales to mining customers depend on a variety of factors, including commodity prices, electricity prices, and the mines' development of self-generation resources. TEP’s GWh sales to mining customers have decreased by 9% from 2014 levels as a result of the decline in commodity prices causing the mines to curtail production starting in 2016. TEP cannot predict future commodity prices or the impact they will have on mining production and TEP’s sales to mining customers.

Wholesale Customers

TEP’s utility operations include the wholesale marketing of electricity to other utilities and power marketers. Wholesale sales transactions are made on both a firm and interruptible basis. A firm contract requires TEP to supply power on demand (except under limited emergency circumstances), while an interruptible contract allows TEP to stop supplying power under defined conditions.

Generally, TEP commits to future sales based on expected generation capability, forward prices, and generation costs using a diversified portfolio approach to provide a balance between long-term, mid-term, and spot power sales. TEP’s wholesale sales consist primarily of two types:

Long-Term Wholesale Sales

Contracts for long-term wholesale sales cover periods of one year or greater. TEP typically uses its own generation to serve the requirements of its long-term wholesale customers.

TEP's primary long-term wholesale sale contracts are presented in the table below:

Counterparty	Contracts Expire December 31,
Navajo Tribal Utility Authority	2022
TRICO Electric Cooperative	2024
Navopache Electric Cooperative	2041

Short-Term Wholesale Sales

Certain contracts for short-term wholesale sales cover periods of less than one year and obligate TEP to sell capacity or power at a fixed price. TEP also engages in short-term sales by selling power in the daily or hourly markets at fluctuating spot market prices and making other non-firm power sales. The majority of our revenues from short-term wholesale sales are passed through to TEP’s retail customers offsetting fuel and purchased power costs. TEP uses short-term wholesale sales as part of its hedging strategy to reduce customer exposure to fluctuating power prices. Short-term wholesale sales increased in 2018 due to the increase in generation capacity related to Gila River Generating Station (Gila River) Unit 2.

Competition

Retail Customers

TEP is the primary electric service provider to retail customers within its service territory and operates under a certificate of public convenience and necessity as regulated by the ACC. In August 2018, the ACC opened a docket to evaluate several energy policies including retail competition for generation services. A workshop was held related to retail competition in

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December 2018. TEP cannot predict what additional steps, if any, the ACC may take to further evaluate retail competition in this docket.

Wholesale Customers

The Federal Energy Regulatory Commission (FERC) regulates rates for wholesale power sales and transmission services. TEP engages in long-term wholesale sales to optimize its generation resources. As a result of its wholesale power activity, TEP competes with other utilities, power marketers, and independent power producers in the wholesale markets.

Generation Facilities

As of December 31, 2018, TEP had 3,076 megawatts (MW) of nominal generation capacity, as set forth in the following table. Nominal capacity is based on unit design net output and measured in alternating current (AC).

Generation Source	Unit No.	Location	Date In Service	Capacity (MW)	Operating Agent	TEP's Share %	(MW)
Coal							
Springerville	1	Springerville, AZ	1985	387	TEP	100	387
Springerville [1]	2	Springerville, AZ	1990	406	TEP	100	406
San Juan	1	Farmington, NM	1976	340	PNM	50.0	170
Navajo [2]	1	Page, AZ	1974	750	SRP	7.5	56
Navajo [2]	2	Page, AZ	1975	750	SRP	7.5	56
Navajo [2]	3	Page, AZ	1976	750	SRP	7.5	56
Four Corners	4	Farmington, NM	1969	785	APS	7.0	55
Four Corners	5	Farmington, NM	1970	785	APS	7.0	55
Natural Gas							
Gila River [3]	2	Gila Bend, AZ	2003	550	SRP	100	550
Gila River	3	Gila Bend, AZ	2003	550	SRP	75.0	413
Luna	1	Deming, NM	2006	555	PNM	33.3	185
Sundt [4]	1	Tucson, AZ	1958	81	TEP	100	81
Sundt [4]	2	Tucson, AZ	1960	81	TEP	100	81
Sundt	3	Tucson, AZ	1962	104	TEP	100	104
Sundt	4	Tucson, AZ	1967	156	TEP	100	156
Sundt Internal Combustion Turbines		Tucson, AZ	1972-1973	50	TEP	100	50
DeMoss Petrie		Tucson, AZ	2001	75	TEP	100	75
North Loop		Tucson, AZ	2001	94	TEP	100	94
Solar							
Utility-Scale Renewables		Various	2002-2017	46	TEP	100	46
Total Capacity							3,076

(1) Springerville Generating Station (Springerville) Unit 2 is owned by San Carlos Resources, Inc., a wholly-owned subsidiary of TEP.

(2) TEP, along with the other participants at the Navajo Generating Station (Navajo), plans to discontinue operations of Navajo by the end of 2019.

(3) In 2017, TEP entered into a 20-year tolling PPA with SRP to purchase and receive all 550 MW of capacity, power, and ancillary services from Gila River Unit 2, which includes a three-year option to purchase the unit (Tolling PPA).

(4) TEP plans to discontinue operations of H. Wilson Sundt Generating Station (Sundt) Units 1 & 2 by the end of 2020.

Springerville Units 3 and 4

Springerville Units 3 and 4 are each approximately 400 MW coal-fired generation facilities that are operated but not owned by TEP. These facilities are located at the same site as Springerville Units 1 and 2. Tri-State Generation and Transmission Association, Inc. (Tri-State), the lessee of Springerville Unit 3, compensates TEP for operating the facilities and pays an allocated portion of the fixed costs related to the Springerville Common Facilities and Springerville Coal Handling Facilities.

Salt River Project Agricultural Improvement and Power District (SRP), the owner of Springerville Unit 4, owns 17.05% of the Springerville Coal Handling Facilities and pays TEP for a portion of the fixed costs allocated for the common facilities.

Renewable Energy Resources

The ACC's Renewable Energy Standard (RES) requires Arizona regulated utilities to increase their use of renewable energy each year until it represents at least 15% of their total annual retail energy requirements by 2025, with DG accounting for 30% of the annual renewable energy requirement. Arizona utilities must file an annual RES implementation plan for review and approval by the ACC. TEP plans to meet these requirements through a combination of utility-owned resources, PPAs, and customer-sited DG.

In 2018, the percentage of retail kilowatt-hour (kWh) sales attributable to the RES was approximately 14%, exceeding the 2018 requirement of 8%. The ACC approved a waiver of the 2018 DG requirement.

See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K and Rates and Regulations below for additional information regarding RES.

Owned Utility-Scale Renewable Resources

As of December 31, 2018, TEP owned 46 MW of photovoltaic (PV) solar generation capacity, measured in AC. The following table presents TEP's owned utility-scale renewable generation resources:

Generation Source	Location	Date in Service	Capacity (MW)
Solar			
Fort Huachuca Phase I & II [1]	Sierra Vista, AZ	2014-2017	18
Springerville	Springerville, AZ	2004-2014	13
UASTP Phase I & II [2]	Tucson, AZ	2010-2011	5
Sundt Areva Solar Thermal	Tucson, AZ	2014	5
Solon Prairie Fire [2]	Tucson, AZ	2012	4
Small PV (<5MW)	Various	Various	1
Total Capacity			46

(1) TEP has a 30-year easement agreement to facilitate operations on behalf of the Department of the Army.

(2) The University of Arizona Science and Technology Park (UASTP) I & II and Solon Prairie Fire are located on properties held under land easements and leases.

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Renewable Power Purchase Agreements

As of December 31, 2018, TEP had renewable PPAs for 159 MW from solar resources, 80 MW from wind resources, and 4 MW associated with the purchase of landfill gas as presented in the table below. The solar PPAs contain options that allow TEP to purchase all or part of the related project at a future date. The following table's capacity is measured in AC.

Generation Source	Location	Date/Projected Date in Service	In Service Capacity (MW)	Under Development Capacity (MW)
Solar				
Red Horse	Willcox, AZ	2015	41	
Avalon I	Sahuarita, AZ	2014	28	
Avra Valley	Marana, AZ	2012	25	
Picture Rocks	Marana, AZ	2012	20	
Avalon II	Sahuarita, AZ	2016	17	
Valencia	Tucson, AZ	2013	10	
E.On Tech Park	Tucson, AZ	2012	5	
Gato Montes	Tucson, AZ	2012	5	
Small PPAs (<5MW)	Various	Various	8	
Wilmot Solar	Tucson, AZ	2021		100
Wind				
Macho Springs	Deming, NM	2011	50	
Red Horse Wind	Willcox, AZ	2015	30	
Borderlands Wind	Catron County, NM	2020		99
Biogas				
Sundt, Los Reales [1]	Tucson, AZ	1998	4	
Total Capacity			243	199

[1] Purchase of landfill gas for use at Sundt.

Purchased Power

TEP purchases power from other utilities and power marketers. TEP may enter into contracts to purchase: (i) power under long-term contracts to serve retail load and long-term wholesale contracts; (ii) capacity or power during periods of planned outages or for peak summer load conditions; and (iii) power for resale to certain wholesale customers under load and resource management agreements. See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K related to purchased power commitments.

TEP typically uses its generation, supplemented by purchased power, to meet the summer peak demands of its retail customers. TEP hedges a portion of its total energy price exposure with forward priced contracts. Certain of these contracts are at a fixed price per megawatt-hour (MWh) and others are indexed to natural gas prices. TEP also purchases power in the daily and hourly markets to meet higher than anticipated demands, to cover generation outages, or when doing so is more economical than generating its own power.

TEP is a member of a regional reserve-sharing organization and has reliability and power-sharing relationships with other utilities. These relationships allow TEP to call upon other utilities during emergencies, such as facility outages and system disturbances, and reduce the amount of reserves TEP is required to carry.

Peak Demand and Future Resources

Peak Demand

(in MW)	2018	2017	2016	2015	2014
Retail Customers	2,413	2,415	2,278	2,222	2,218

In 2018, TEP's generation and purchased resources were sufficient to meet total retail and long-term wholesale peak demand, while maintaining a reserve margin in compliance with reliability criteria set forth by the Western Electricity Coordinating Council, a regional council of North American Reliability Corporation (NERC).

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Peak demand occurs during the summer months due to the cooling requirements of retail customers in TEP’s service territory. Retail peak demand varies from year-to-year due to weather, energy conservation, DG, economic conditions, and other factors. Retail peak demand in 2018 was comparable to 2017 but significantly higher than peak demand in 2014 through 2016 primarily due to warmer than normal summer temperatures.

Forecasted retail peak demand for 2019 is 2,305 MW compared with actual peak demand of 2,413 MW in 2018. TEP’s 2019 estimated retail peak demand is based on weather patterns observed over a 10-year period and other factors, including estimates of customer usage. TEP believes that existing generation capacity and PPAs are sufficient to meet the expected demand and reserve margin requirements in 2019.

Future Resources

As of December 31, 2018, approximately 40% of TEP's generation capacity, including owned and leased resources, was from coal-fired generation. TEP is executing strategies and evaluating additional steps to reduce its dependency on coal-fired generation while still meeting its peak load requirements and maintaining affordable Retail Rates. TEP's five-year capital expenditure forecast includes investments related to natural gas Reciprocating Internal Combustion Engine (RICE) units to be placed in service at Sundt and the planned purchase of Gila River Unit 2. These anticipated investments will provide replacement capacity for the planned early retirements of coal-fired and other generation resources.

See Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Factors Affecting Results of Operations of this Form 10-K for additional information regarding TEP's generation resources planned retirements and additions.

Fuel Supply

A summary of Fuel and Purchased Power resource information is provided below:

	Average Cost (cents per kWh)			Percentage of Total kWh Resources		
	2018	2017	2016	2018	2017	2016
Coal	2.44	2.41	2.30	44 %	54 %	62 %
Natural Gas	2.54	3.06	2.84	42 %	23 %	25 %
Purchased Power, Non-Renewable	4.32	3.78	3.43	10 %	18 %	8 %
Purchased Power, Renewable	9.41	9.49	9.37	4 %	5 %	5 %
				100 %	100 %	100 %

Coal Supply

The coal used for generation is low-sulfur, bituminous or sub-bituminous coal from mines in Arizona and New Mexico. The table below provides information on the existing coal contracts that supply our generation stations. The average cost of coal per million metric British thermal unit (MMBtu), including transportation, was $2.33 in 2018, $2.29 in 2017, and $2.21 in 2016.

Station	Coal Supplier	2018 Coal Consumption (tons in 000s)	Contract Expiration Date	Average Sulfur Content	Coal Obtained From
Springerville	Peabody CoalSales	2,946	2020	1.0%	Lee Ranch Mine/El Segundo Mine
Four Corners	NTEC	299	2031	0.7%	Navajo Mine
San Juan	San Juan Coal Co.(1)	410	2022	0.8%	San Juan Mine
Navajo	Peabody CoalSales	386	2019	0.6%	Kayenta Mine

(1)

In October 2018, Westmoreland Coal Company (WCC), the owner of San Juan Coal Company (SJCC), filed voluntary petitions for relief under Chapter 11 of the Bankruptcy Code. TEP believes it has adequate resource capacity to meet its near-term load obligations in the event WCC’s operations at the San Juan Mine are curtailed. See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding WCC's bankruptcy.

Coal-Fired Generation Facilities Operated by TEP

The coal supplies for Springerville Units 1 and 2 are transported approximately 200 miles by railroad from northwestern New Mexico. TEP expects coal reserves to be sufficient to supply the estimated requirements for Springerville Units 1 and 2 for their remaining lives.

Coal-Fired Generation Facilities Operated by Others

TEP also participates in jointly-owned coal-fired generation facilities at Four Corners Generating Station (Four Corners), Navajo, and San Juan Generating Station (San Juan). Four Corners, which is operated by Arizona Public Service Company (APS), and San Juan, which is operated by Public Service Company of New Mexico (PNM), are mine-mouth generation facilities located adjacent to the coal reserves. Navajo, which is operated by SRP, obtains its coal supply from the nearby Kayenta coal mine and receives deliveries on a dedicated electric railroad delivery system. TEP expects coal reserves available to these three jointly-owned generation facilities to be sufficient for the remaining lives of the stations.

Natural Gas Supply

The table below provides information on the natural gas transportation agreements that deliver our natural gas to the generation stations. The average cost of natural gas per MMBtu, including transportation, was $2.92 in 2018, $3.58 in 2017, and $3.14 in 2016.

Station	Natural Gas Transportation Counterparty	Contract Expiration Date(s)
Gila	Transwestern Pipeline Co./El Paso Natural Gas Company, LLC	2019-2040
Luna	El Paso Natural Gas Company, LLC	2022
Sundt	El Paso Natural Gas Company, LLC	2023-2040
DeMoss Petrie	Southwest Gas Corporation	Retail Tariff
North Loop	Southwest Gas Corporation	Retail Tariff

Transmission and Distribution

Transmission facilities owned by TEP and third parties are located in Arizona and New Mexico and transmit the output from TEP’s electric generation facilities to the Tucson area. TEP's transmission system is part of the Western Interconnection, which includes the interconnected transmission systems of 14 western states, two Canadian provinces and parts of Mexico. TEP's transmission system, together with contractual rights on other transmission systems, enables TEP to integrate and access generation resources to meet its customer load requirements. TEP's transmission and distribution systems included approximately 2,189 miles of transmission lines and 7,680 miles of distribution lines as of December 31, 2018.

Rates and Regulations

The ACC and the FERC each regulate portions of utility accounting practices and rates of TEP. The ACC regulates rates charged to retail customers, the siting of generation and transmission facilities, the issuance of securities, transactions with affiliated parties, and other utility matters. The ACC also enacts other regulations and policies that can affect TEP's business decisions and accounting practices. The FERC regulates terms and prices of transmission services and wholesale electricity sales.

See Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations, Factors Affecting Results of Operations and Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information that relates to rates and regulation that affect TEP.

TEP Rate Case

The ACC issued orders in the rate case filed by TEP in November 2015, which was based on a test year ended June 30, 2015, in two phases. Provisions of the first phase authorized an annual increase in TEP's non-fuel revenue requirement of $81.5 million, effective February 27, 2017 (2017 Rate Order). The ACC deferred matters related to net metering and rate design for new DG customers to a second phase of TEP's rate case proceedings (Phase 2).

In 2018, the ACC issued an order establishing an export rate that replaced net metering for excess solar generation, effective October 1, 2018 (Phase 2 Order). Residential and small commercial customers who apply to interconnect their solar generation systems to TEP's distribution system after the date of the order will no longer qualify for net metering.

Purchased Power and Fuel Adjustment Clause

The Purchased Power and Fuel Adjustment Clause (PPFAC) allows TEP recovery of its fuel, transmission, purchased power, and other similar costs allowed by the ACC to serve its retail load. The rate is adjusted annually each April 1st for the subsequent 12-month period unless modified by the ACC. The PPFAC rate includes: (i) a forward component which is calculated by taking the difference between forecasted fuel and purchased power costs and the amount of those costs

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established in Retail Rates; and (ii) a true-up component that reconciles the difference between actual costs and those recovered in the preceding 12-month period.

As of December 31, 2018, TEP had an over-collected PPFAC balance of $17 million.

Renewable Energy Standard and Tariff

The ACC’s RES requires Arizona utilities to increase their use of renewable energy each year until it represents at least 15% of their total annual retail energy requirements in 2025, with DG accounting for 30% of the annual renewable energy requirement. Arizona utilities must file an annual RES implementation plan for review and approval by the ACC. The approved costs of carrying out this plan are recovered from retail customers through the RES surcharge. The associated lost revenues attributable to meeting DG targets are partially recovered through the Lost Fixed Cost Recovery (LFCR) mechanism.

Energy Efficiency Standards

Under the Energy Efficiency Standards (EE Standards), the ACC requires electric utilities to implement cost-effective programs to reduce customers' energy consumption. The EE Standards require increasing cumulative annual targeted retail kWh savings equal to 22% by 2020. The associated lost revenues attributable to meeting these targets are partially recovered through the LFCR mechanism. As of December 31, 2018, TEP’s cumulative annual energy savings was approximately 16%.

FERC Compliance

In 2016, the FERC issued orders relating to certain late-filed Transmission Service Agreements (TSA), which resulted in TEP recording a liability and paying time-value refunds to the counterparties under these TSAs. In May 2017, the FERC informed TEP that the related investigation was closed. See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related to FERC compliance associated with these transmission contracts.

ENVIRONMENTAL MATTERS

The Environmental Protection Agency (EPA) regulates the amount of sulfur dioxide (SO_2), nitrogen oxide (NO_x), carbon dioxide (CO_2), particulate matter, mercury, and other by-products produced by generation facilities. TEP may incur added costs to comply with future changes in federal and state environmental laws, regulations, and permit requirements at its generation facilities. Environmental laws and regulations are subject to a range of interpretations, which may ultimately be resolved by the courts. Because these laws and regulations continue to evolve, TEP is unable to predict the impact of the changing laws and regulations on its operations and consolidated financial results. TEP expects the recovery of the cost of environmental compliance through Retail Rates.

National Ambient Air Quality Standards

In October 2015, the EPA released the final rule for the 8-hour U.S. National Ambient Air Quality Standards (NAAQS) for ozone (O_3). The EPA lowered the standard from 75 parts per billion (ppb) to 70 ppb. If an area does not meet the standard, the area is designated as a “non-attainment” and needs to develop a plan to bring the air-shed into compliance. A “non-attainment” designation may slow economic growth in the region and impact TEP's ability to site new local generation. Arizona submitted recommendations for area designations (attainment, non-attainment, or unclassified) to the EPA in September 2016. The EPA completed all area designations as of July 2018. The majority of Arizona counties, including Pima, were designated as "attainment" or "unclassified" except for portions of Gila, Maricopa, Pinal, and Yuma counties.

In 2018, Pima County exceeded the 2015 NAAQS standard for O_3 at one monitoring location. If the county continues to exceed the standard, the state could recommend an O_3 non-attainment designation for Pima County during the next review period.

Effluent Limitation Guidelines

In 2015, as part of the Clean Water Act, the EPA published the final Effluent Limitation Guidelines (ELG) setting standards and limitations for steam electric generation facility wastewater discharges. The ELG rule establishes new or additional requirements for wastewater streams associated with fly ash, bottom ash, flue gas desulfurization, flue gas mercury control, and gasification of fuels such as coal and petroleum coke. In August 2017, in response to legal challenges, the EPA announced it began rulemaking proceedings to potentially revise the 2015 ELGs. In September 2017, the EPA postponed the earliest ELG compliance date for these waste streams from November 1, 2018 until November 1, 2020.

With the exception of Four Corners, none of TEP's owned steam electric generation facilities are subject to the ELG standards. With regard to Four Corners, until the EPA indicates how it intends to change the ELG for bottom ash transport water, it is unclear how the reconsideration will affect this waste stream, and what controls may be required.

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TEP believes it is in material compliance with applicable environmental laws and regulations. Refer to Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Liquidity and Capital Resources of this Form 10-K for additional information related to environmental laws and regulations as well as environmental compliance capital expenditures.

EMPLOYEES

As of December 31, 2018, TEP had 1,528 employees, of which approximately 634 are represented by the International Brotherhood of Electrical Workers Local No. 1116 (IBEW). The current collective bargaining agreements between the IBEW and TEP expire in July 2022 with wages in effect through December 2022.

EXECUTIVE OFFICERS OF THE REGISTRANT

Executive Officers, who are elected annually by TEP's Board of Directors, acting at the direction of the Board of Directors of UNS Energy, as of January 1, 2019, are as follows:

Name	Age	Position(s) Held	Executive Officer Since
David G. Hutchens (1)	52	President and Chief Executive Officer	2007
Frank P. Marino (1)	54	Senior Vice President and Chief Financial Officer	2013
Susan M. Gray	46	Senior Vice President and Chief Operating Officer	2015
Erik B. Bakken	46	Vice President, System Operations and Environmental	2018
Dallas J. Dukes	51	Vice President, Energy Programs and Pricing	2019
Todd C. Hixon (1)	52	Vice President, General Counsel and Chief Compliance Officer	2011
Mark C. Mansfield	63	Vice President, Energy Resources	2012
Catherine E. Ries	59	Vice President, Customer and Human Resources	2007
Mary Jo Smith	61	Vice President, Public Policy	2015
Morgan C. Stoll	48	Vice President and Chief Information Officer	2016
Martha B. Pritz	57	Treasurer	2017
Herlinda H. Kennedy	57	Corporate Secretary	2006

(1) Member of the TEP Board of Directors. The directors of TEP are elected annually by TEP's sole shareholder, UNS Energy, acting at the direction of the Board of Directors of UNS Energy.

SEC REPORTS AVAILABLE

TEP makes available its annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports as soon as reasonably practical after it electronically files or furnishes them to the Securities and Exchange Commission (SEC). The SEC maintains an internet site at http://www.sec.gov that contains reports, proxy and information statements and other information regarding issuers that file electronically. TEP's reports are also available free of charge through TEP's website address at www.tep.com/about/investors/.

TEP is providing the address of TEP's website solely for the information of investors and does not intend for the address to be an active link. The information contained on TEP's website is not a part of, or incorporated by reference into, any report or other filing filed with the SEC by TEP.

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ITEM 1A. RISK FACTORS

The business and financial results of TEP are subject to a number of risks and uncertainties, including those set forth below. These risks and uncertainties fall primarily into five major categories: revenues, regulatory, environmental, financial, and operational. Additional risks and uncertainties that are not currently known to TEP or that are not currently believed by TEP to be material may also negatively impact TEP’s business and financial results.

REVENUES

A significant decrease in the demand for electricity in TEP's service area would negatively impact retail sales and adversely affect results of operations, net income, and cash flows at TEP.

National and local economic conditions have a significant impact on customer growth and overall retail sales in TEP’s service area. TEP anticipates an annual customer growth rate of 1% for the next five years.

Research and development activities are ongoing for new technologies that produce power and reduce power consumption. These technologies include renewable energy, customer-sited DG, appliances, equipment, battery storage, and control systems. Continued development and use of these technologies and compliance with the ACC's EE Standards and RES continue to have a negative impact on TEP’s use per customer and overall retail sales. TEP's use per customer declined by an average of 1% per year from 2014 through 2018.

The revenues, results of operations, and cash flows of TEP are seasonal and are subject to weather conditions and customer usage patterns, which are beyond the Company’s control.

TEP typically earns the majority of its operating revenue and net income in the third quarter because retail customers increase their air conditioning usage during the summer. Conversely, first quarter net income is typically limited by relatively mild winter weather in TEP's retail service territory. Cool summers or warm winters may reduce customer usage, negatively affecting operating revenues, cash flows, and net income by reducing sales.

TEP is dependent on a small number of customers for a significant portion of future revenues. A reduction in the electricity sales to these customers would negatively affect results of operations, net income, and cash flows at TEP.

TEP’s ten largest customers represented 11% of total revenues in 2018. TEP sells electricity to mines, military installations, and other large commercial and industrial customers. Retail sales volumes and revenues from these customers could decline as a result of, among other things: global, national, and local economic conditions; curtailments of customer operations due to unfavorable market conditions; military base reorganization or closure decisions by the federal government; the effects of energy efficiency and distributed generation; or the decision by customers to self-generate all or a portion of their energy needs. A reduction in retail kWh sales by any one of TEP’s ten largest customers would negatively affect the Company's results of operations, net income, and cash flows.

REGULATORY

TEP's business is significantly impacted by government legislation, regulation and oversight. Changes made to legislation and regulation could negatively affect the Company’s results of operations, net income, and cash flows.

TEP's financial condition is influenced by how regulatory authorities, including the ACC and FERC, establish the rates TEP can charge customers and authorize rates of return, common equity levels, and the amount of costs that may be recovered from customers. The Company's ability to timely obtain rate adjustments that provide TEP with the opportunity to earn authorized rates of return depends upon timely regulatory action under applicable statutes and regulations, and cannot be guaranteed.

- ACC—The ACC is a constitutionally created body composed of five elected commissioners that has jurisdiction over rates for retail customers. Commissioners are elected state-wide for staggered four-year terms and are limited to serving two consecutive terms. As a result, the composition of the commission, and therefore its policies, are subject to change every two years.
- FERC—The FERC has jurisdiction over rates for electric transmission in interstate commerce and rates for wholesale sales of electric power, including terms and prices of transmission services and sales of electricity at wholesale.

Owners and operators of bulk power systems, including TEP, are subject to mandatory transmission standards developed and enforced by NERC and subject to the oversight of the FERC. Compliance with modified or new transmission standards may subject TEP to higher operating costs and increased capital costs. Failure to comply with the mandatory transmission standards could subject TEP to sanctions, including substantial monetary penalties.

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In addition, TEP incurs costs to comply with legislative and regulatory requirements and initiatives, such as those relating to clean energy requirements, the deployment of distributed energy resources, and implementation of demand response and customer energy efficiency programs. New initiatives or changes to existing requirements could arise in the future through legislative, regulatory, or other initiatives (including ballot initiatives) on either a federal or state level. Any such initiatives or changes could accelerate the Company's long-term resource diversification strategy and significantly increase capital expenditures and operating expenses. TEP would seek to recover the costs associated with any such requirements through rates. TEP's ability to recover costs, including its investments, associated with these and other legislative and regulatory initiatives will, in large part, depend on the final form of legislative or regulatory requirements, and whether the associated ratemaking mechanisms can be adjusted in a timely manner. Further, increases to rates could negatively affect the affordability of the rates charged to customers, which may negatively affect TEP’s results of operations, net income, and cash flows.

Changes in tax regulation may negatively affect the results of operations, net income, and cash flows of TEP.

The Company is subject to taxation by the various taxing authorities at the federal, state and local levels where it does business. Legislation or regulation could be enacted by any of these governmental authorities which could affect the Company’s tax positions.

ENVIRONMENTAL

TEP is subject to numerous environmental laws and regulations that may increase its cost of operations or expose it to environmental-related litigation and liabilities. Many of these regulations could have a significant impact on TEP due to its coal generation.

Numerous federal, state, and local environmental laws and regulations affect present and future operations. Those laws and regulations include rules regarding air emissions, water use, wastewater discharges, solid waste, hazardous waste, and management of coal combustion residuals.

These laws and regulations can contribute to higher capital, operating, and other costs, particularly with regard to enforcement efforts focused on existing generation facilities and compliance standards related to new and existing generation facilities. These laws and regulations generally require TEP to obtain and comply with a wide variety of environmental licenses, permits, authorizations, and other approvals. Both public officials and private individuals may seek to enforce applicable environmental laws and regulations. Failure to comply with applicable laws and regulations may result in litigation, the imposition of fines, penalties, and a requirement by regulatory authorities for costly equipment upgrades.

Existing environmental laws and regulations may be revised and new environmental laws and regulations may be adopted or become applicable to the Company's facilities. Increased compliance costs or additional operating restrictions from revised or additional regulation could have a negative effect on TEP's results of operations, particularly if those costs are not fully recoverable from TEP customers. TEP’s obligation to comply with the EPA’s Regional Haze Regulations (Regional Haze) requirements as a participant or owner in the Springerville, San Juan, Four Corners, and Navajo, coupled with the financial impact of future climate change legislation, other environmental regulations, and other business considerations, could jeopardize the economic viability of these generation facilities. Additionally, these regulations may jeopardize continued generation facility operations or the ability of individual participants to meet their obligations and willingness to continue their participation in these facilities potentially resulting in an increased operational cost for the remaining participants.

TEP also is contractually obligated to pay a portion of the environmental reclamation costs incurred at generation facilities in which it has a minority interest and is obligated to pay similar costs at the mines that supply these generation facilities. While TEP has recorded the portion of its costs that can be determined at this time, the total costs for final reclamation at these sites are unknown and could be substantial.

Regulations limiting greenhouse gas emissions may be enacted, which would require an accelerated shift from fossil fuel-based generation to renewable generation that could increase TEP's cost of operations.

In 2015, the EPA issued the Clean Power Plan (CPP) limiting CO_2 emissions from existing and new fossil fuel-based generation facilities. In its current form, the CPP requires a shift in generation that could lead to the early retirement of coal-fired generation in Arizona and New Mexico. In 2017, the EPA issued a proposal to repeal the CPP and in 2018 published the proposed Affordable Clean Energy rule that is meant to replace the CPP. The EPA anticipates finalizing the rule in early 2019. Under the proposed rule, the EPA would set emission guidelines for Greenhouse Gas (GHG) emissions. The states would then use these emission guidelines to establish standards of performance within their jurisdictions considering source specific factors such as the remaining useful life of an individual unit. TEP will continue to work with other Arizona and New Mexico utilities, as well as the appropriate regulatory agencies, to develop compliance strategies. TEP is unable to determine the impact the final rule will have on its facilities until all legal challenges have been resolved and the required state compliance plans are

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developed and approved by the EPA. The proposed rule and any other regulations that result in costs associated with an accelerated shift from fossil fuel-based generation towards renewable generation could increase the Company's costs of operations.

FINANCIAL

Early closure of TEP's coal-fired generation facilities could result in TEP recognizing regulatory impairments or increased cost of operations if recovery of TEP's remaining investments in such facilities and the costs associated with early closures are not permitted through rates charged to customers.

Some of TEP's coal-fired generation facilities will be closed before the end of their useful lives in response to economic conditions and/or recent or future changes in environmental regulation, including potential regulation relating to greenhouse gas emissions. If any of the coal-fired generation facilities from which TEP obtains power are closed prior to the end of their useful life, TEP may need to seek recovery of the remaining net book value (NBV) and could incur added expenses relating to accelerated depreciation and amortization, decommissioning, reclamation and cancellation of long-term coal contracts of such generation facilities. As of December 31, 2018, TEP's regulatory assets balance related to its planned early generation retirement costs was $72 million.

Volatility or disruptions in the financial markets, rising interest rates, or unanticipated financing needs, could increase TEP's financing costs, limit access to the credit or bank markets, affect the Company's ability to comply with financial covenants in debt agreements, and increase TEP's pension funding obligations. Such outcomes may negatively affect liquidity and TEP's ability to carry out the Company's financial strategy.

We rely on access to bank markets and capital markets as a significant source of liquidity and for capital requirements not satisfied by the cash flows from TEP's operations. Market disruptions such as those experienced in 2008 and 2009 in the United States and abroad may increase the Company's cost of borrowing or negatively affect TEP's ability to access sources of liquidity needed to finance the Company's operations and satisfy its obligations as they become due. These disruptions may include turmoil in the financial services industry, including substantial uncertainty surrounding particular lending institutions and counterparties we do business with, unprecedented volatility in the markets, and general economic downturns in TEP's utility service territories. If TEP is unable to access credit at reasonable rates, or if the Company's borrowing costs dramatically increase, TEP's ability to finance its operations, meet debt obligations, and execute its financial strategy could be negatively affected.

Increases in short-term interest rates would increase the cost of borrowings under TEP's credit facility. In addition, changing market conditions could negatively affect the market value of assets held in its pension and other postretirement defined benefit plans and may increase the amount and accelerate the timing of required future funding contributions.

Generation facility closings or changes in power flows into TEP's service territory could require us to redeem or defease some or all of the tax-exempt bonds issued for the Company's benefit, which could result in increased financing costs.

TEP has financed a substantial portion of utility plant assets with the proceeds of pollution control revenue bonds and industrial development revenue bonds issued by governmental authorities. Interest on these bonds is, subject to certain exceptions, excluded from gross income for federal tax purposes. This tax-exempt status is based, in part, on continued use of the assets for pollution control purposes or the local furnishing of power within TEP’s two-county retail service area.

As of December 31, 2018, there were outstanding approximately $272 million aggregate principal amount of tax-exempt bonds that financed pollution control expenditures at TEP’s generation facilities. Should certain of TEP’s generation facilities be retired and dismantled prior to the stated maturity dates of the related tax-exempt bonds, it is possible that some or all of the bonds financing such pollution control expenditures would be subject to early redemption by TEP. The bonds have early redemption dates or final maturities ranging from 2019 to 2022.

In addition, as of December 31, 2018, there were outstanding approximately $207 million aggregate principal amount of tax-exempt bonds that financed local furnishing facilities. Depending on changes that may occur to the regional generation mix in the desert southwest, to the regional bulk transmission network, or to the demand for retail power in TEP’s local service area, it is possible that TEP would no longer qualify as a local furnisher of power within the meaning of the Internal Revenue Code. If TEP could no longer qualify as a local furnisher of power, all of TEP’s tax-exempt local furnishing bonds could be subject to mandatory early redemption by TEP or defeasance to the earliest possible redemption date, and TEP could be required to pay additional amounts if interest on such bonds were no longer tax-exempt. The bonds have early redemption dates ranging from 2020 to 2023.

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OPERATIONAL

The operation of electric generation facilities and transmission and distribution systems involves risks and uncertainties that could result in reduced generation capability or unplanned outages that could negatively affect TEP’s results of operations, net income, and cash flows.

The operation of electric generation facilities and transmission and distribution systems involves certain risks and uncertainties, including equipment breakdown or failures, fires, weather, and other hazards, interruption of fuel supply, and lower than expected levels of efficiency or operational performance. Unplanned outages, including extensions of planned outages due to equipment failures or other complications, occur from time to time. They are an inherent risk of the Company's business and can cause damage to its reputation. If TEP’s generation facilities or transmission and distribution systems operate below expectations, TEP’s operating results could be negatively affected or TEP's capital spending could be increased.

TEP receives power from certain generation facilities that are jointly-owned with, or operated by, third parties. Therefore, TEP may not have the ability to affect the management or operations at such facilities which could negatively affect TEP’s results of operations, net income, and cash flows.

Certain of the generation facilities from which TEP receives power are jointly-owned with, or operated by, third parties. TEP does not have the sole discretion to affect the management or operations at such facilities. As a result of this reliance on other operators, TEP may not be able to ensure the proper management of the operations and maintenance of such generation facilities. Further, TEP may have limited ability to determine how best to manage the changing economic conditions or environmental requirements that may affect such facilities. A divergence in the interests of TEP and the co-owners or operators, as applicable, of such facilities could negatively impact the business and operations of TEP.

The effects of climate change may create operational and financial risks for TEP that, if realized, could negatively affect TEP's results of operations, net income, and cash flows.

Climate change may impact regional and global weather conditions and result in extreme weather events, including high temperatures, severe thunderstorms, drought, and wildfires. Changes in weather conditions or extreme weather events in TEP’s service territory or affecting TEP's remote generation facilities or transmission system may lead to service outages and business interruptions, which could result in an increase in capital expenditures and operating expenses. Any increases in severity and frequency of weather-related system outages could affect TEP's operations and system reliability. Although physical utility assets have been constructed and are operated and maintained to withstand severe weather, there can be no assurance that they will successfully do so in all circumstances. In addition, changes in weather conditions or extreme weather events outside of TEP's service territory could result in higher wholesale energy prices, insurance premiums, and other costs, which could negatively impact TEP's business and operations. Any of these situations could have a negative impact on TEP's results of operations, net income, and cash flows.

TEP is subject to physical attacks which could have a negative impact on the Company's business and results of operations.

As operators of critical energy infrastructure, TEP is facing a heightened risk of physical attacks on the Company's electric systems. The Company's electric generation, transmission, and distribution assets and systems are geographically dispersed and are often in rural or unpopulated areas which makes it especially difficult to adequately detect, defend from, and respond to such attacks.

If, despite TEP's security measures, a significant physical attack occurred, the Company could have: (i) operations disrupted and/or property damaged; (ii) experience loss of revenues, response costs, and other financial loss; and (iii) be subject to increased regulation, litigation, and damage to the Company's reputation. Any of these outcomes could have a negative impact on TEP's business and results of operations.

TEP is subject to cyber-attacks which could have a negative impact on the Company's business and results of operations.

TEP is facing a heightened risk of cyber-attacks. The Company's information and operations technology systems may be vulnerable to unauthorized access due to hacking, viruses, acts of war or terrorism, and other causes. TEP's operations technology systems have direct control over certain aspects of the electric system, and the Company's utility business requires access to sensitive customer data, including personal and credit information, in the ordinary course of business.

If, despite TEP's security measures, a significant cyber or data breach occurred, the Company could have: (i) operations disrupted, property damaged, and customer information stolen; (ii) experience loss of revenues, response costs, and other

financial loss; and (iii) be subject to increased regulation, litigation, and damage to the Company's reputation. Any of these outcomes could have a negative impact on TEP's business and results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

The principal owned and leased generation, distribution, and transmission facilities of TEP are described in Part I, Item 1. Business, Overview of Business and such descriptions are incorporated herein by reference.

TEP's generation facilities (except as noted below), administrative headquarters, warehouses and service centers are located on land owned by TEP. TEP owned distribution and transmission facilities are located: (i) on property owned by TEP; (ii) under or over streets, alleys, highways, and other places in the public domain, as well as in national forests and state lands, under franchises, land easements, or other rights-of-way, which generally are subject to termination; (iii) under or over private property as a result of land easements obtained primarily from the record holder of title; or (iv) over tribal lands under the grant of easement by the Secretary of the Interior or leased from Indian Nations.

TEP has land easements for transmission facilities related to San Juan, Four Corners, and Navajo located on tribal lands of the Zuni, Navajo, and Tohono O'odham Nations. Four Corners and Navajo are located on properties held under land easements from the United States and under leases from the Navajo Nation. TEP, individually and in conjunction with PNM, acquired land rights, land easements, and leases for San Juan's generation facilities, transmission lines, and water diversion facility located on land owned by the Navajo Nation. TEP, in conjunction with PNM and Samchully Power & Utilities 1 LLC, holds an undivided ownership interest in the property on which Luna Generating Station (Luna) is located.

TEP's rights under various land easements and leases may be subject to defects such as:

- possible conflicting grants or encumbrances due to the absence of, or inadequacies in, the recording laws or record systems of the Bureau of Indian Affairs and the Indian Nations;
- possible inability of TEP to legally enforce its rights against adverse claims and the Indian Nations without Congressional consent; or
- failure or inability of the Indian Nations to protect TEP's interests in the land easements and leases from disruption by the U.S. Congress, Secretary of the Interior, or other adverse claims.

These possible defects have not interfered, and are not expected to materially interfere, with TEP's interest in and operation of its facilities.

ITEM 3. LEGAL PROCEEDINGS

TEP is party to a variety of legal actions arising out of the normal course of business. Plaintiffs occasionally seek punitive or exemplary damages. The Company believes such normal and routine litigation will not have a material impact on its operations or financial results. TEP is also involved in other kinds of legal actions, some of which assert or may assert claims or seek to impose fines, penalties, and other costs in substantial amounts on TEP.

See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

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PART II

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS, AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

TEP’s common stock is wholly-owned by UNS Energy and is not listed for trading on any stock exchange.

ITEM 6. SELECTED FINANCIAL DATA

The following table provides selected financial data for the years 2014 through 2018:

(in thousands)	2018	2017	2016	2015	2014
Income Statement Data					
Operating Revenues	$1,432,618	$1,340,935	$1,234,995	$1,306,544	$1,269,901
Net Income	188,323	176,668	124,438	127,794	102,338
Balance Sheet Data					
Total Utility Plant, Net	$4,160,640	$3,768,702	$3,782,806	$3,558,229	$3,425,190
Total Assets	5,159,207	4,590,249	4,449,989	4,249,478	4,119,830
Long-Term Debt, Net	1,615,252	1,354,423	1,453,072	1,451,720	1,361,828
Non-Current Capital Lease Obligations	19,773	28,519	39,267	55,324	69,438

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ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Management's Discussion and Analysis explains the results of operations, the financial condition, and the outlook for TEP. It includes the following:

- outlook and strategies;
- results of operations for 2018 compared with 2017, and 2017 compared with 2016;
- factors affecting our results of operations and outlook;
- liquidity and capital resources including capital expenditures, contractual obligations, and environmental matters;
- critical accounting policies and estimates; and
- new accounting standards issued and not yet adopted.

Management's Discussion and Analysis includes financial information prepared in accordance with Generally Accepted Accounting Principles (GAAP) in the United States of America.

Management's Discussion and Analysis should be read in conjunction with Part II, Item 6. Selected Financial Data and the Consolidated Financial Statements and Notes in Part II, Item 8 of this Form 10-K. For information on factors that may cause our actual future results to differ from those we currently seek or anticipate, see Forward-Looking Information at the front of this report and Part I, Item 1A. Risk Factors for additional information.

References in this discussion and analysis to "we" and "our" are to TEP.

OUTLOOK AND STRATEGIES

TEP's financial prospects and outlook are affected by many factors, including: (i) global, national, regional, and local economic conditions; (ii) volatility in the financial markets; (iii) environmental laws and regulations; and (iv) other regulatory and legislative actions. Our plans and strategies include the following:

- Achieving constructive outcomes in our regulatory proceedings that will provide us: (i) recovery of our full cost of service and an opportunity to earn an appropriate return on our rate base investments; (ii) updated rates that provide more accurate price signals and a more equitable allocation of costs to our customers; and (iii) the ability to continue providing safe and reliable service.
- Continuing to focus on our long-term resource diversification strategy, including transitioning from carbon intensive sources to a more sustainable energy portfolio, while providing rate stability for our customers, mitigating environmental impacts, complying with regulatory requirements, leveraging and improving our existing utility infrastructure, and maintaining financial strength. This long-term strategy includes a target of meeting 30% of our customers' energy needs with non-carbon emitting resources by 2030. This resource strategy may be impacted by various energy policy proposals currently under consideration in Arizona.
- Focusing on our core utility business through operational excellence, promoting economic development in our service territory, investing in infrastructure to ensure reliable service, and maintaining a strong community presence.

Operational and Financial Highlights

For 2018, Management's Discussion and Analysis includes the following notable items:

- The ACC Refund Order, reflecting the lower federal income tax rate, was approved and resulted in a total customer refund of $33 million in 2018. The refund was returned to customers through a bill credit effective May 1, 2018. TEP will continue to return savings to customers through a combination of a bill credit and a regulatory liability in 2019 and through the completion of our next rate case, which is expected to be filed in April 2019.
- We responded to the FERC Refund Order with a proposed overall transmission rate reduction, reflecting the lower federal income tax rate. The FERC approved our proposal effective March 21, 2018. As a result, TEP recognized a reduction in Operating Revenues on the Consolidated Statements of Income of $1 million in 2018.
- As a result of SRP completing the Gila Acquisition, TEP had $164 million recorded in Capital Lease Obligations and Utility Plant Under Capital Leases on the Consolidated Balance Sheets as of December 31, 2018, related to the 20-

year Tolling PPA. The amount represents the fair value of the unit, which was determined based on SRP's purchase price. The additional 550 MW of capacity, power, and ancillary services will allow us to continue to move toward our long-term goal of resource diversification.

- The ACC issued the Phase 2 Order. The order established, among other things, an initial export rate that replaced net metering for excess solar generation for customers who applied for interconnection to TEP's distribution system after the date of the order. The new rate went into effect October 1, 2018.
- TEP issued and sold $300 million aggregate principal amount of senior unsecured notes and redeemed $137 million of variable rate tax-exempt bonds. As of December 31, 2018, all of TEP's debt was unsecured.

RESULTS OF OPERATIONS

Weather and other factors cause seasonal fluctuations in the sales of power. TEP's summer peaking load occurs during the third quarter of the year when cooling demand is higher, which results in higher revenue during such period. By contrast, lower sales of power occur during the first quarter of the year, due to mild winter weather in our retail service territory. Seasonal fluctuations affect the comparability of our results of operations across quarters.

The following provides a discussion of the significant items that affected TEP's results of operations in years ended December 31, 2018, 2017, and 2016, presented on an after-tax basis.

2018 compared with 2017

TEP reported net income of $188 million in 2018 compared with $177 million in 2017. The increase of $11 million, or 6%, was primarily due to:

- $41 million in lower income tax expense due to the reduction of the federal effective income tax rate primarily related to the enactment of the TCJA. See Note 13 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related to impacts of the TCJA;
- $12 million in higher retail revenue primarily due to an increase in rates as approved in the 2017 Rate Order that took effect February 27, 2017; and
- $3 million in higher Allowance for Funds Used During Construction (AFUDC) related to the increase in construction projects.

The increase was partially offset by:

- $27 million in lower retail revenue associated with the ACC Refund Order to return savings related to the TCJA to customers. The order was effective May 1, 2018. See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related to the ACC Refund Order;
- $8 million in lower income from a settlement agreement and reversal of accrued refunds related with late-filed TSAs in 2017. See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related to late-filed TSAs;
- $8 million in higher depreciation and amortization expenses; and
- $7 million in higher operations and maintenance expense resulting primarily from an increase in maintenance expense related to planned generation outages in 2018 and an increase in employee wages and benefits expense.

2017 compared with 2016

TEP reported net income of $177 million in 2017 compared with $124 million in 2016. The increase of $53 million, or 43%, was primarily due to:

- $52 million in higher retail revenue primarily due to an increase in rates as approved in the 2017 Rate Order that took effect February 27, 2017, and favorable weather;
- $21 million in higher net income due to time-value FERC ordered refunds incurred in 2016 and the reversal of accrued refunds in 2017 related to late-filed TSAs. See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related to late-filed TSAs; and

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- $6 million in higher wholesale revenue primarily due to favorable pricing on wholesale contracts in 2017.

The increase was partially offset by:

- $8 million in lower revenues related to the Springerville Unit 1 settlement in 2016. See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related to the settlement;
- $7 million in higher income tax expense primarily due to the enactment of the TCJA in 2017 as well as changes to our valuation allowance for deferred tax assets in 2016. See Note 13 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related to impacts of the TCJA on our financial results;
- $6 million in higher depreciation and amortization expenses; and
- $4 million in higher operations and maintenance expense resulting primarily from an increase in maintenance expense due to planned generation outages in 2017 and employee wages and benefits.

Retail Revenues and Key Statistics

The following table provides key statistics impacting operating revenues:

	Years Ended December 31,		Increase (Decrease)	Year Ended December 31,	Increase (Decrease)
($ and kWh in millions)	2018	2017	Percent	2016	Percent
Operating Revenues	$1,433	$1,341	6.9 %	$ 1,235	8.6 %
Electric Sales (kWh)					
Residential	3,766	3,786	(0.5)%	3,724	1.7 %
Commercial	2,136	2,192	(2.6)%	2,139	2.5 %
Industrial	1,949	1,939	0.5 %	2,006	(3.3)%
Mining	1,033	991	4.2 %	997	(0.6)%
Public Authorities	16	18	(11.1)%	30	(40.0)%
Total Retail Sales	8,900	8,926	(0.3)%	8,896	0.3 %
Wholesale Sales, Long-Term	424	587	(27.8)%	463	26.8 %
Wholesale Sales, Short-Term	6,279	3,630	73.0 %	3,308	9.7 %
Total Electric Sales	15,603	13,143	18.7 %	12,667	3.8 %
Average Revenue per kWh (Cents/kWh)					
Retail	11.48	11.39	0.8 %	10.92	4.3 %
Wholesale	3.46	3.21	7.8 %	2.80	14.6 %
Total Retail Customers	425,044	422,366	0.6 %	419,844	0.6 %

Operating Revenues increased in 2018 compared with 2017 primarily due to: (i) an increase in short-term wholesale sales resulting from an increase in available system capacity related to Gila River Unit 2; (ii) an increase in revenue from fuel and purchased power recoveries as a result of higher PPFAC rates; and (iii) higher retail revenues related to an increase in rates as approved in the 2017 Rate Order that took effect February 27, 2017. The increase was partially offset by: (i) the return of savings related to the TCJA to customers; (ii) a 2017 reversal of an accrual related to the FERC ordered refunds for late-filed TSAs; and (iii) a decrease in billings to third-party participants in Springerville Units 3 and 4 primarily related to planned generation outages of Unit 4 in 2017.

Operating Revenues increased in 2017 compared with 2016 primarily due to: (i) higher retail revenues related to an increase in rates as approved in the 2017 Rate Order and an increase in usage due to favorable weather in 2017; (ii) time-value FERC ordered refunds incurred in 2016 and the reversal of accrued refunds in 2017 related to late-filed TSAs; (iii) an increase in short-term wholesale sales resulting from favorable commodity pricing on the wholesale market; and (iv) a new long-term wholesale contract that commenced in 2017. The increase was partially offset by a decrease in revenue from fuel and purchased power recoveries as a result of lower PPFAC rates.

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Short-term wholesale revenues are primarily related to the ACC jurisdictional generation assets and are returned to retail customers by offsetting revenues against fuel and purchased power costs eligible for recovery through the PPFAC. Revenues related to Springerville Units 3 and 4 are primarily reimbursements by Tri-State, the lessee of Springerville Unit 3, and SRP, the owner of Springerville Unit 4, with the corresponding expense recorded in Operating Expenses on the Consolidated Statements of Income.

See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information on the PPFAC mechanism.

Operating Expenses

Fuel and Purchased Power Expense

Fuel and Purchased Power Expense, which includes the PPFAC recovery treatment, increased by $118 million, or 28%, in 2018 compared with 2017 primarily due to an increase in: (i) generation output; (ii) recovery of PPFAC costs as a result of changes in the PPFAC rate; and (iii) the average cost of Purchased Power, Non-Renewables. The increase was partially offset by a decrease in: (i) Purchased Power, Non-Renewable volumes; and (ii) the average cost of Natural Gas.

Fuel and Purchased Power Expense, which includes the PPFAC recovery treatment, increased by $5 million, or 1%, in 2017 compared with 2016 primarily due to an increase in: (i) Purchased Power, Non-Renewables volumes that replaced lower Coal-Fired Generation output; and (ii) average fuel cost per kWh. The increase was partially offset by reduced recovery of the PPFAC costs as a result of changes in the PPFAC rate.

See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information on the PPFAC mechanism.

The following table presents TEP's sources of energy and average cost of power by type:

	Years Ended December 31,		Increase (Decrease)	Year Ended December 31,	Increase (Decrease)
(kWh in millions)	2018	2017	Percent	2016	Percent
Sources of Energy					
Coal-Fired Generation	7,208	7,530	(4.3)%	8,310	(9.4)%
Gas-Fired Generation	6,738	3,237	108.2%	3,283	(1.4)%
Utility-Owned Renewable Generation	82	83	(1.2)%	68	22.1%
Total Generation	14,028	10,850	29.3%	11,661	(7.0)%
Purchased Power, Non-Renewable	1,624	2,471	(34.3)%	1,126	119.4%
Purchased Power, Renewable	652	646	0.9%	666	(3.0)%
Total Generation and Purchased Power	16,304	13,967	16.7%	13,453	3.8%
(cents per kWh)					
Average Fuel Cost of Generated Power					
Coal	2.44	2.41	1.2%	2.30	4.8%
Natural Gas	2.54	3.06	(17.0)%	2.84	7.7%
Average Cost of Purchased Power					
Purchased Power, Non-Renewable	4.32	3.78	14.3%	3.43	10.2%
Purchased Power, Renewable	9.41	9.49	(0.8)%	9.37	1.3%

Operations and Maintenance Expense

Operations and Maintenance Expense increased by $2 million, or less than 1%, in 2018 compared with 2017 primarily due to: (i) an increase in maintenance expense related to planned generation outages; (ii) an increase in employee

wages and benefits expense; and (iii) a sales tax refund that occurred in 2017. The increase was partially offset by a decrease in: (i) maintenance expense at Springerville Units 3 and 4; (ii) RES and DSM program expenses; and (iii) other general expenses.

Operations and Maintenance Expense increased by $6 million, or 2%, in 2017 compared with 2016 primarily due to an increase in: (i) maintenance expense related to planned generation outages; and (ii) employee wages and benefits expense. The increase was partially offset by a decrease in RES and DSM program expenses.

Operations and Maintenance Expenses related to Springerville Units 3 and 4 are reimbursed by Tri-State, the lessee of Springerville Unit 3, and SRP, the owner of Springerville Unit 4, with corresponding amounts recorded in Operating Revenues on the Consolidated Statements of Income. Expenses related to RES and DSM programs are collected from customers with corresponding amounts recorded in Operating Revenues on the Consolidated Statements of Income. See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information on RES and DSM.

Depreciation and Amortization Expense

Depreciation and Amortization Expense increased by $9 million, or 5%, in 2018 compared with 2017 primarily due to an increase in asset base.

Depreciation and Amortization Expense increased by $7 million, or 4%, in 2017 compared with 2016 primarily due to an increase in capital expenditures and other impacts as a result of the 2017 Rate Order.

Other Income (Expense)

Other Income (Expense) decreased by $8 million, or 16%, in 2018 compared with 2017 primarily due to proceeds received from a settlement agreement related to late-filed TSAs in 2017.

Other Income (Expense) increased by $10 million, or 18%, in 2017 compared with 2016 primarily due to proceeds received from a settlement agreement related to late-filed TSAs in 2017.

See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related to late-filed TSAs.

Income Tax Expense

Income Tax Expense decreased by $58 million, or 57%, in 2018 compared with 2017 primarily due to: (i) the reduction of the federal corporate income tax rate related to the enactment of the TCJA; and (ii) a decrease in earnings before tax expense.

Income Tax Expense increased by $41 million, or 70%, in 2017 compared with 2016 primarily due to: (i) the increase in earnings before tax expense; (ii) the enactment of the TCJA in December 2017; and (iii) a reduction in the valuation allowance for deferred tax assets in 2016.

See Note 13 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related to impacts of the TCJA on our financial results.

FACTORS AFFECTING RESULTS OF OPERATIONS

Regulatory Matters

TEP is subject to comprehensive regulation. The discussion below contains material developments to those matters.

TEP Rate Case

Provisions of the 2017 Rate Order, which were effective February 27, 2017, include, but are not limited to:

- a non-fuel base rate increase of $81.5 million, a cost of equity component of 9.75%, and a cost of debt component of 4.32%; and
- adoption of TEP's proposed depreciation and amortization rates, which include a reduction in the depreciable life for San Juan Unit 1.

The ACC deferred matters related to net metering and rate design for new DG customers to Phase 2.

Phase 2 Order

On September 20, 2018, the ACC issued an order related to the Phase 2 proceedings. The Phase 2 Order established, among other things, an export rate that replaced net metering for excess solar generation. Residential and small commercial customers who applied to interconnect their solar generating systems to TEP's distribution system after the date of the order no longer qualify for net metering. Customers who applied before the date of the order, and complete interconnection within a specified

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time frame, were grandfathered under previous net metering rules for a period of 20 years from the date of interconnection of their solar generation systems. Provisions of the Phase 2 Order for new DG customers include:

- an option to select from existing Time-of-Use rate schedules;
- a monthly bill credit for customer solar generation exported to TEP's grid calculated using an export rate approved by the ACC; and
- an annual update to the export rate based on TEP's actual solar PPA and generation facilities costs, which are expected to decline. The export rate at the time of customers' applications to interconnect will be locked for 10 years. The initial export rate was set at 9.64 cents per kWh.

The new DG customers will receive bill credits for their solar generation exported into our grid. These bill credits will be calculated using the export rate approved by the ACC and will be recorded in Purchased Power on the Consolidated Statements of Income. We expect to recover these costs through the PPFAC up to an amount equal to market prices with any remaining cost being recovered through the RES surcharge. In addition, TEP's power sales to the new DG customers will be calculated based on the respective Time-of-Use rate and will be recorded in Operating Revenues on the Consolidated Statements of Income. DG customers grandfathered under the net metering rules will continue to have their solar generation netted against the kWhs they consume. The net sales are recorded in Operating Revenues on the Consolidated Statements of Income.

TEP does not expect the change resulting from the replacement of net metering to have a material impact on the Company's results of operations in the near term. See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding the Phase 2 Order.

Federal Income Tax Legislation

Arizona Corporation Commission

In December 2017, the ACC opened a docket requesting that all regulated utilities submit proposals to address passing the benefits of the TCJA through to customers. In 2018, the ACC approved the ACC Refund Order effective May 1, 2018. The refund represents the reduction in the federal corporate income tax rate and an estimate of Excess Deferred Income Taxes (EDIT) amortization trued up annually for actuals. For 2018, the refund amount, after the EDIT amortization true-up, totaled $33 million. The 2018 bill credit was designed to return the refund amount to customers based on forecasted kWh sales. Any over or under collected amounts are deferred to a regulatory asset or liability and will be used to adjust the 2019 bill credit amounts.

Customer bill credits are trued-up annually to reflect actuals for kWh sales and EDIT amortization. TEP filed an application with the ACC to establish the 2019 customer refund of $34 million. The refund will be returned to customers through a combination of a customer bill credit and a regulatory liability in 2019. TEP is allowed to defer 25% of the 2019 refund into a regulatory liability and 50% of any additional refunds in future years until the refunds are incorporated into its next rate case. TEP plans to file its next rate case in April 2019.

See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 and Liquidity and Capital Resources, Income Tax Position of this Form 10-K for additional information regarding the ACC Refund Order.

Federal Energy Regulatory Commission

In 2018, the FERC issued orders directing TEP to either: (i) submit proposed revisions to its stated transmission rates or stated transmission revenue requirements to reflect the change in the federal corporate income tax rate as a result of the TCJA; or (ii) show cause why it should not be required to do so (FERC Refund Order). In May 2018, TEP responded to the order and the FERC approved TEP's proposal of an overall transmission rate reduction of approximately 5.3%, reflecting the lower federal tax rate, to be effective March 21, 2018. As a result, TEP recognized a reduction in Operating Revenues on the Consolidated Statements of Income of $1 million in 2018.

Also in 2018, the FERC issued a Notice of Proposed Rulemaking (NOPR) regarding the effect of the TCJA and related EDIT amortization. TEP cannot predict the final outcome of the NOPR or the impact on TEP's financial

statements.

See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K, for additional information regarding the FERC Refund Order and the NOPR.

Generation Resources

TEP’s long-term strategy is to shift to a more diverse, sustainable energy portfolio including expanding renewable energy and natural gas-fired resources while reducing reliance on coal-fired generation resources. TEP's existing coal-fired generation fleet faces a number of uncertainties impacting the viability of continued operations, including changing state and federal law and energy policies, competition from other resources, fuel supply and land lease contract extensions, environmental regulations, and, for jointly owned facilities, the willingness of other owners to continue their participation. Given this uncertainty, TEP may consider options that include changes in generation facility ownership shares, unit shutdowns, or the sale of generation assets to third-parties. TEP will seek regulatory recovery for amounts that would not otherwise be recovered, if any, as a result of these actions.

As of December 31, 2018, approximately 40% of our generation capacity, including owned and leased resources, was from coal-fired generation.

See Part I, Item 1. Business, Overview of Business and Liquidity and Capital Resources, Environmental Matters of this Form 10-K for additional information regarding generation facility operations.

Arizona Energy Policy

In August 2018, the ACC opened a rulemaking docket to evaluate several energy policies. The docket will review possible modifications to existing renewable energy, energy efficiency requirements, and retail competition for generation services. The adoption of new policies would be subject to rulemaking proceedings at the ACC. We would seek the ACC's approval to recover any costs related to any new energy policies or requirements. TEP cannot predict the outcome of this matter or the impact on the Company's financial position or results of operations.

Navajo Generating Station

In 2017, the Navajo Nation approved a land lease extension which allows TEP and the co-owners of Navajo to continue operations through December 2019 and begin decommissioning activities thereafter. We are currently recovering Navajo capital and operating costs in base rates using a useful life through 2030. We plan to seek recovery of all unrecovered costs in our next ACC rate case, which is expected to be filed in April 2019.

See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K, for additional information regarding the planned early retirement of Navajo.

Sundt Generating Station

In 2017, TEP submitted an Air Quality Permit Application to the Pima County Department of Environmental Quality related to a generation modernization project at Sundt (PDEQ Application). Under the project, TEP will place in service 10 natural gas RICE units with a total nominal generation capacity of 190 MW. The final permit was issued in December 2018. Construction is underway with the RICE units scheduled for commercial operation by the end of the first quarter of 2020.

The RICE units will balance the variability of intermittent renewable energy resources and will replace 162 MW of nominal net generation capacity from Sundt Units 1 and 2, which are less efficient and lack the quick start, fast ramp capabilities of the RICE units. TEP will discontinue operation of Sundt Units 1 and 2 prior to start-up of the first RICE unit. We plan to seek recovery of all unrecovered costs for Sundt Units 1 and 2 in our next ACC rate case.

See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K, for additional information regarding the planned early retirement of Sundt Units 1 and 2.

Gila River Generating Station

In 2017, TEP entered into the Tolling PPA, which includes a three-year option to purchase Gila River Unit 2. TEP’s obligations under the agreement were contingent upon SRP's completion of acquisition of Gila River Units 1 and 2 from third-parties (Gila Acquisition). SRP completed the Gila Acquisition in May 2018. As a result, TEP had $164 million recorded in both Capital Lease Obligations and Utility Plant Under Capital Leases on the Consolidated Balance Sheets as of December 31, 2018. The amount reflects the fair value of the unit, which was determined based

on SRP's purchase price. TEP anticipates exercising its option to purchase Gila River Unit 2 in December 2019 for approximately $164 million. Over the expected 20-month lease term, TEP will pay a monthly demand charge consisting of: (i) a fixed capacity charge of approximately $1 million, and (ii) an operating fee to compensate SRP for the non-fuel costs of operating Gila River Unit 2. TEP recovers the monthly capacity charge and operating fee through the PPFAC.

The additional 550 MW of capacity, power, and ancillary services from the Tolling PPA will allow us to continue to move toward our long-term goal of resource diversification as it will replace coal-fired generation scheduled for early retirement. TEP sells the capacity from the Tolling PPA into the wholesale market on a short-term basis with the associated revenues credited to the PPFAC.

See Note 7 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K, for additional information regarding the Tolling PPA.

Interest Rates

See Part II, Item 7A. Quantitative and Qualitative Disclosures about Market Risk of this Form 10-K for information regarding interest rate risks and its impact on earnings.

LIQUIDITY AND CAPITAL RESOURCES

Liquidity

Cash flows may vary during the year with cash flows from operations being typically the lowest in the first quarter of the year and highest in the third quarter due to TEP’s summer peaking load. We use our revolving credit facility as needed to assist in funding our business activities. We believe that we have sufficient liquidity under our revolving credit facility to meet short-term working capital needs and to provide credit enhancement as necessary under energy procurement and hedging agreements. The availability and terms under which we have access to external financing depends on a variety of factors, including our credit ratings and conditions in the overall capital markets.

Available Liquidity

(in millions)	December 31, 2018
Cash and Cash Equivalents	$ 138
Amount Available under Revolving Credit Facility [(1)]	250
Total Liquidity	$ 388

(1) TEP's revolving credit facility provides for $250 million of revolving credit commitments with a Letter of Credit (LOC) sublimit of $50 million and a maturity date of October 2022.

Future Liquidity Requirements

We expect to meet all of our financial obligations and other anticipated cash outflows for the foreseeable future. These obligations and anticipated cash outflows include, but are not limited to: (i) dividend payments; (ii) debt maturities; and (iii) obligations included in the Contractual Obligations and forecasted Capital Expenditures tables below.

See Part II, Item 7A. Quantitative and Qualitative Disclosures about Market Risk for additional information regarding TEP's market risks and Note 7 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding TEP's financing arrangements.

Summary of Cash Flows

The table below presents net cash provided by (used for) operating, investing and financing activities:

	Years Ended		Increase (Decrease)	Year Ended	Increase (Decrease)
(in millions)	2018	2017	Percent	2016	Percent
Operating Activities	$457	$448	2.0 %	$425	5.4 %
Investing Activities	(433)	(392)	10.5 %	(373)	5.1 %
Financing Activities	79	(50)	258.0 %	(69)	(27.5)%
Net Increase (Decrease)	103	6	*	(17)	*
Beginning of Period	50	43	16.3 %	60	(28.3)%
End of Period [(1)]	$153	$49	212.2 %	$43	14.0 %

* Not meaningful

(1) Calculated on rounded data and may not correspond exactly to amounts on the Consolidated Statements of Cash Flows.

Operating Activities

2018 compared with 2017

Net cash flows provided by operating activities increased by $9 million compared with 2017 primarily due to: (i) higher retail revenues related to an increase in rates as approved in the 2017 Rate Order that took effect February 27, 2017; (ii) an increase in cost recovery as a result of higher PPFAC rates; and (iii) changes in working capital related to the timing of billing collections and payments. The increase was partially offset by: (i) the return of savings related to the TCJA to customers; and (ii) $8 million in cash proceeds received from a settlement agreement associated with late-filed TSAs in January 2017.

2017 compared with 2016

Net cash flows provided by operating activities increased by $23 million compared with 2016 primarily due to: (i) higher retail revenue related to an increase in rates as approved in the 2017 Rate Order that took effect February 27, 2017, and favorable weather; and (ii) $8 million in cash proceeds received from a settlement agreement associated with late-filed TSAs in January 2017. The increase was partially offset by: (i) an ACC approved PPFAC credit that began returning an over-collected PPFAC balance to customers in February 2017; (ii) $12.5 million received in September 2016 related to a settlement for operating costs of Springerville Unit 1; and (iii) changes in working capital related to the timing of billing collections and payments.

See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K, for additional information regarding the 2017 Rate Order, the ACC Refund Order, and cost recovery mechanisms and Note 8, for additional information regarding Springerville Unit 1 and late-filed TSAs.

Investing Activities

2018 compared with 2017

Net cash flows used for investing activities increased by $41 million compared with 2017 primarily due to an increase in cash paid for capital expenditures.

2017 compared with 2016

Net cash flows used for investing activities increased by $19 million compared with 2016 primarily due to an increase in cash paid for: (i) capital expenditures; and (ii) the purchase of RECs.

Financing Activities

2018 compared with 2017

Net cash flows from financing activities increased by $129 million compared with 2017 primarily due to an increase in: (i) proceeds received from the issuance of long-term debt net of repayments; and (ii) equity contributions from UNS Energy. The increase was partially offset by an increase in: (i) repayments, net of proceeds borrowed, under our revolving credit facility; and (ii) dividends paid to UNS Energy.

2017 compared with 2016

Net cash flows from financing activities decreased by $19 million compared with 2016 primarily due to an increase in proceeds borrowed, net of repayments, under our revolving credit facility. The decrease was partially offset by an increase in dividends paid to UNS Energy.

See Note 7 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K, Debt Issuance and Redemption for additional information.

Sources of Liquidity

Short-Term Investments

Our short-term investment policy governs the investment of excess cash balances. We periodically review and update this policy in response to market conditions. As of December 31, 2018, TEP's short-term investments included highly-rated and liquid money market funds, certificates of deposit, and insured cash sweep accounts.

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Access to Revolving Credit Facility

We have access to working capital through a revolving credit agreement with lenders. TEP expects that amounts borrowed under the credit facility will be used for working capital and other general corporate purposes and that LOCs will be issued from time to time to support energy procurement and hedging transactions. As of December 31, 2018, there was $250 million available under the revolving credit commitments and the LOC facility.

See Note 7 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding TEP's credit facility.

Debt Financing

We use debt financing to meet a portion of our capital needs and lower our overall cost of capital. We are exposed to adverse changes in interest rates to the extent that we rely on variable rate financing. Our cost of capital is also affected by our credit ratings.

In 2016, the ACC issued an order granting TEP financing authority. The order extends and expands the previous financing authority by: (i) extending authority from December 2016 to December 2020; (ii) increasing the outstanding long-term debt limitation from $1.7 billion to $2.2 billion; (iii) allowing parent equity contributions of up to $400 million; and (iv) continuing the interest rate hedging authority.

In November 2018, we issued and sold $300 million aggregate principal amount of senior unsecured notes to repay: (i) borrowings under our revolving credit facility which had provided funds for the redemption, in November 2018, of $100 million of tax-exempt local furnishing bonds maturing in 2032; (ii) $37 million of tax-exempt pollution control bonds maturing in 2032, which were backed by a LOC expiring in February 2019; and (iii) other amounts outstanding under our revolving credit facility, with any remaining balance to be used for general corporate purposes.

In connection with the December 2018 redemption of $37 million of tax-exempt pollution control bonds, the related LOC and 2010 Reimbursement Agreement were terminated.

TEP has, from time to time, refinanced or repurchased portions of its outstanding debt before scheduled maturity. Depending on market conditions, we may refinance other debt issuances or make additional debt repurchases in the future.

Credit Ratings

Credit ratings affect our access to capital markets and supplemental bank financing. As of December 31, 2018, credit ratings from S&P Global Ratings and Moody’s Investors Service for our senior unsecured debt were A- and A3, respectively.

Our credit ratings are dependent on a number of factors, both quantitative and qualitative, and are subject to change at any time. The disclosure of these credit ratings is not a recommendation to buy, sell, or hold TEP securities. Each rating should be evaluated independently of any other ratings.

Certain of TEP's debt agreements contain pricing based on our credit ratings. A change in TEP’s credit ratings can cause an increase or decrease in the amount of interest we pay on our borrowings, and the amount of fees we pay for LOCs and unused commitments.

Debt Covenants

Under certain agreements, should TEP fail to maintain compliance with covenants, lenders could accelerate the maturity of all amounts outstanding. As of December 31, 2018, TEP was in compliance with these covenants.

We do not have any provisions in any of our debt or lease agreements that would cause an event of default or cause amounts to become due and payable in the event of a credit rating downgrade.

Contribution from Parent

UNS Energy made an equity contribution to TEP of $50 million in 2018. The proceeds provided additional liquidity to TEP. We received no equity contributions in 2017 or 2016.

Dividends Paid to Parent

TEP declared and paid $85 million in dividends to UNS Energy in 2018, $70 million in 2017, and $50 million in 2016.

Master Trading Agreements

TEP conducts its wholesale marketing and risk management activities under certain master trading agreements. Under these agreements, TEP may be required to post credit enhancements in the form of cash or LOCs due to exposures exceeding unsecured credit limits provided to TEP, changes in contract values, changes in TEP's credit ratings, or material changes in TEP's creditworthiness. As of December 31, 2018, TEP had posted no cash or LOCs as credit enhancements with its counterparties.

Capital Expenditures

Our routine capital expenditures include funds used for customer growth, system reinforcement, replacements and betterments, and costs to comply with environmental rules and regulations. In 2018, total capital expenditures of $393 million, included investments in generation assets and an enhanced metering and distribution network. In 2017, total capital expenditures of $346 million included the purchase of an additional 17.8% undivided interest in Springerville Common Facilities. In 2016, total capital expenditures of $335 million included the purchase of the remaining ownership interest in Springerville Unit 1.

Our forecasted capital expenditures presented below for years ended December 31 exclude amounts for AFUDC and other non-cash items:

(in millions)	2019	2020	2021	2022	2023
Generation Facilities:					
Renewable Energy[1]	$62	$309	$9	$—	$11
Other Generation Facilities [2]	262	76	122	56	54
Total Generation Facilities	324	385	131	56	65
Transmission and Distribution [3]	343	321	194	176	170
General and Other [4]	87	61	53	64	82
Total Capital Expenditures	$754	$767	$378	$296	$317

(1) Includes investments in renewable energy that will allow us to continue to move toward our long-term strategy of shifting to a more diverse, sustainable energy portfolio.

(2) TEP anticipates exercising its option to purchase Gila River Unit 2 in December 2019.

(3) Includes investments in transmission capacity and system reinforcements.

(4) Includes cost for information technology, fleet, facilities, and communication equipment.

These estimates are subject to continuing review and adjustment. Actual capital expenditures may differ from these estimates due to fluctuations in business and market conditions, construction schedules, possible early plant closures, changes in generation resources, environmental requirements, state or federal regulations, new or changing commitments, and other factors. We expect to pay for forecasted capital expenditures with internally generated funds and external financings, which may include issuances of long-term debt, other borrowings, or equity contributions.

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Contractual Obligations

The following table summarizes our material contractual obligations as of December 31, 2018:

		Payments Due by Period			
(in millions)	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Long-Term Debt					
Principal [1]	$1,629	$—	$ 330	$ 150	$1,149
Interest [2]	1,026	72	140	108	706
Capital Lease Obligations [3]	207	187	20	—	—
Operating Leases [4]	10	1	2	2	5
Land Easements and Rights-of-Way [5]	86	1	3	2	80
Purchase Obligations:					
Fuel, Including Transportation [6]	424	85	119	45	175
Purchased Power	20	20	—	—	—
Transmission	48	19	14	6	9
Renewable Power Purchase Agreements [7]	921	64	126	126	605
RES Performance-Based Incentives [8]	76	8	15	14	39
Acquisition of Springerville Common Facilities [9]	68	—	68	—	—
Other Long-Term Liabilities: [10] [11]					
Restricted and Performance-Based Stock Units	9	3	6	—	—
Pension and Other Postretirement Benefits [12]	75	17	12	13	33
Total Contractual Obligations	$4,599	$477	$ 855	$ 466	$2,801

(1) Total long-term debt is not reduced by $11 million of related unamortized debt issuance costs or $3 million of unamortized original issue discount.

(2) Excludes interest on revolving credit facilities.

(3) Effective with commercial operation of Springerville Unit 3 in July 2006 and Unit 4 in December 2009, Tri-State and SRP began reimbursing TEP for various operating costs related to the common facilities on an ongoing basis. The common facilities include assets leased by TEP at Springerville. TEP was reimbursed for $6 million of operating costs in 2018 by SRP and Tri-State and does not expect any material changes to the reimbursement amount in 2019. Capital Lease Obligations does not reflect any reduction associated with this reimbursement. The balance of Capital Lease Obligations declines over time as scheduled capital lease payments are made. See Note 7 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding Capital Lease Obligations.

(4) Primarily represents leases for land, rail cars, and communication towers with varying terms, provisions, and expiration dates through 2041.

(5) Have varying terms and provisions and reflect expiration dates through 2054. See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding Land Easements and Rights-of-Way.

(6) Excludes TEP's liability for final mine reclamation costs related to coal mines that supply generation facilities in which TEP has an ownership interest but does not operate as the timing of payments has not been determined. See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding TEP's share of reclamation costs.

(7) TEP enters into long-term renewable PPAs which require TEP to purchase 100% of certain renewable energy generation facilities' output once commercial operation status is achieved. While TEP is not required to make payments under these contracts if power is not delivered, the table above includes estimated future payments based on expected power deliveries. See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding PPAs.

(8) TEP has entered into REC agreements to purchase the environmental attributes from retail customers with solar installations. Payments for the RECs are termed Performance-Based Incentives (PBI) and are paid in contractually agreed upon intervals (usually quarterly) based on metered renewable energy production. See Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding PBIs.

(9) Springerville Common Facilities Leases consist of two leases with initial terms ending January 2021, subject to optional renewal periods of two or more years. TEP may renew the two leases or exercise its remaining fixed-price purchase options. See Note 7 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding Springerville Common Facilities Leases.

(10) Excludes Asset Retirement Obligations (ARO) of $72 million expected to occur through 2048.

(11) Excludes unrecognized tax benefits of $16 million. At this time, we are unable to make a reasonably reliable estimate of the timing of payments in individual years in connection with these tax liabilities.

(12) Represents TEP’s expected contributions to pension plans in 2019, expected benefit payments for its unfunded Supplemental Executive Retirement Plan (SERP), and expected other postretirement benefit costs to cover medical and life insurance claims as determined by the plans’ actuaries. Due to the significant impact that returns on plan assets and changes in discount rates might have on payment obligation amounts, other contributions beyond 2019 are excluded.

Off-Balance Sheet Arrangements

Other than the unrecorded contractual obligations in the table above, we do not have any arrangements or relationships with entities that are not consolidated into the financial statements.

Income Tax Position

Tax legislation previously in effect included provisions that made qualified property placed in service before 2018 eligible for bonus depreciation for tax purposes. In addition, the Internal Revenue Service (IRS) had issued guidance related to the treatment of expenditures to maintain, replace, or improve property. These provisions were an acceleration of tax benefits we otherwise would have received over 20 years and created net operating loss carryforwards that are used to offset future taxable income. As a result, we did not pay any federal or state income taxes in 2018. We offset net operating loss carryforwards against taxable income and do not expect to make federal or state income tax payments for the next several years.

Under the TCJA, Alternative Minimum Tax (AMT) credit carryforwards will be refunded if not used to offset federal income tax liabilities. TEP expects to receive refunds of approximately $14 million in 2019, $7 million in 2020, and $3 million in 2021 and 2022.

In 2018, the ACC Refund Order was approved effective May 1, 2018. The refund amount, after the EDIT amortization true-up, totaled $33 million, which was passed back to customers through a bill credit in 2018. Customer bill credits are trued-up annually to reflect actual kWh sales and EDIT amortization. We filed an application with the ACC to establish the 2019 customer refund of $34 million. We will continue to return savings to customers through a combination of a bill credit and a regulatory liability. The customer bill credit will account for 75% of the returned savings in 2019, and 50% of the returned savings in 2020 and through the completion of our next rate case. The portion of savings not returned through a bill credit will be deferred as a regulatory liability and returned to customers through our next rate case, which is expected to be filed in April 2019.

See Note 13 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding the TCJA.

Environmental Matters

The EPA regulates the amount of SO_2, NO_x, CO_2, particulate matter, mercury, and other by-products produced by generation facilities. We may incur additional costs to comply with future changes in federal and state environmental laws, regulations, and permit requirements at our generation facilities. Environmental laws and regulations are subject to a range of interpretations, which may ultimately be resolved by the courts. Because these laws and regulations continue to evolve, we are unable to predict the impact they may have on our operations and consolidated financial results. Complying with these changes may reduce operating efficiency and increase capital and operating costs.

We capitalized $9 million in 2018, $33 million in 2017, and $40 million in 2016 in costs incurred to comply with environmental rules and regulations. In addition, we recorded environmental compliance related operations and maintenance expenses of $6 million in 2018, $5 million in 2017 and $6 million in 2016. We expect environmental compliance related capital expenditures of $2 million in 2019 and 2020 and do not expect material environmental compliance related capital expenditures in years 2021 through 2023. TEP will request recovery from its customers of the costs of environmental compliance through cost recovery mechanisms and Retail Rates.

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Regional Haze Regulations

The EPA's Regional Haze require emission controls known as Best Available Retrofit Technology (BART) for certain industrial facilities emitting air pollutants that reduce visibility in national parks and wilderness areas. The rule calls for all states to establish goals and emission reduction strategies for improving visibility. States must submit these goals and strategies to the EPA for approval. Because Navajo and Four Corners are located on land leased from the Navajo Nation, they are not subject to state oversight; the EPA oversees regional haze planning for these generation facilities.

In the western United States, Regional Haze BART determinations have focused on controls for NO_x, often resulting in a requirement to install Selective Catalytic Reduction (SCR). The BART provisions do not apply to Springerville Units 1 and 2 since they were constructed in the 1980s, after the time frame as designated by the rules. Other provisions of Regional Haze requiring further emission reductions are not likely to impact Springerville operations until after 2021. In December 2016, the EPA signed a final rule, entitled "Protection of Visibility: Amendments to Requirements for State Plans." Among other things, the rule changes the date for submittal of the next Regional Haze implementation plan from 2018 to 2021. Based on recent Regional Haze requirement time frames, TEP anticipates that impacts, if any, to Springerville will likely occur three to five years after the 2021 plan submittal date. TEP cannot predict the ultimate outcome of these matters.

Four Corners Generating Station

In December 2013, APS, on behalf of the co-owners of Four Corners, notified the EPA that they have chosen an alternative BART compliance strategy. As a result, APS closed Units 1, 2, and 3 in December 2013 and agreed to install SCR on Units 4 and 5. TEP owns 7% of Four Corners Units 4 and 5. APS completed the installation of SCR in July 2018. TEP's share of installation costs was approximately $47 million in capital expenditures and $2 million in annual operations and maintenance expenses.

Navajo Generating Station

In August 2014, the EPA published a final Federal Implementation Plan (FIP) which provides that: (i) one unit at Navajo will be shut down by 2020; (ii) SCR, or the equivalent, will be installed on the remaining two units by 2030; and (iii) conventional coal-fired generation will cease by December 2044. The final BART rule includes options that accommodate potential ownership changes at the facility. The facility had until December 2019 to notify the EPA of how it will comply with the FIP. As a result of the planned early retirement of Navajo, TEP and the co-owners will no longer be responsible for implementing the FIP. See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related to the early retirement of Navajo.

Greenhouse Gas Regulation

In August 2015, the EPA issued the CPP limiting CO_2 emissions from existing and new fossil fuel-based generation facilities. The CPP establishes state-level CO_2 emission rates and mass-based goals that apply to fossil fuel-based generation. The plan targets CO_2 emissions reductions for existing facilities by 2030 and establishes interim goals that begin in 2022.

In October 2017, the EPA issued a proposal to repeal the CPP and in December 2017, the EPA issued an Advance Notice of Proposed Rulemaking soliciting information about the intent to replace the CPP with a rule establishing new emissions guidelines.

In August 2018, the EPA published the proposed Affordable Clean Energy (ACE) rule. The proposed rule is meant to replace the CPP and proposes to rebalance the roles between the states and the EPA. Under the proposed rule, the EPA would set emission guidelines based on the Best System of Emission Reduction (BSER) for GHG emissions. The states would then use these emission guidelines to establish standards of performance consistent with the BSER within their jurisdictions considering source specific factors such as the remaining useful life of an individual unit. The proposed ACE rule also includes New Source Review (NSR) reform to incentivize heat-rate improvements that

could reduce GHG emissions without triggering costly NSR permit requirements. Only projects that increase a generation facility's hourly rate of pollutant emissions would be required to undergo a full NSR analysis.

Upon publication of the final rule, the states will have three years to submit plans establishing standards of performance. The EPA has 12 months to act on a complete state submittal. If a state plan is not approved, or a state fails to submit a plan within the allotted three years, the EPA would have two years to issue a federal plan. The public comment period closed October 31, 2018. The EPA anticipates finalizing the rule in early 2019.

TEP will continue to work with other Arizona and New Mexico utilities, as well as the appropriate regulatory agencies, to develop compliance strategies as needed. TEP is unable to determine the impact to its facilities until all legal challenges have been resolved and any new regulations have been promulgated.

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Coal Combustion Residuals Regulation

In April 2015, the EPA issued a final rule requiring disposal of coal ash and other coal combustion residuals (CCR) to be managed as a solid waste under Subtitle D of the Resource Conservation and Recovery Act (RCRA Subtitle D) for disposal in landfills and/or surface impoundments. Our share of costs to comply with the rule at Springerville was $2 million. The majority was spent through 2016 on capital expenditures associated with site preparation and installation of the groundwater monitoring well system. We continue to incur additional operating costs for on-going groundwater monitoring and eventual site closure activities. Similarly, we currently estimate our share of costs to be $3 million at Four Corners and $3 million at Navajo. San Juan does not operate any landfills or surface impoundments. San Juan currently disposes of CCR in the surface mine pits of San Juan Mine, adjacent to the plant.

In December 2016, Congress approved the Water Infrastructure Improvements for the Nation (WIIN) Act which authorizes the States to establish permit programs under RCRA for implementing regulation for CCR. In response to the WIIN Act and RCRA rulemaking petitions, the EPA has indicated that it intends to conduct two phases of CCR rule revisions. In July 2018, the EPA signed a Phase 1, Part 1 final rule which: (i) revised groundwater protection standards for rule-specific constituents without maximum containment levels; (ii) incorporated risk-based changes under an EPA-approved state permit program or an EPA permit program; and (iii) extended certain closure deadlines. TEP does not anticipate a material impact on operations or financial results from the first phase, part 1 final rule. The EPA anticipates finalizing the first phase, part 2 in 2019. The second phase is also anticipated to be finalized in 2019. TEP is currently working with other affected utilities and the Arizona Department of Environmental Quality to explore the possibility of developing a State administered program to enforce CCR regulation.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of financial statements in accordance with GAAP requires management to apply accounting policies and to make estimates and assumptions that affect results of operations and the amounts of assets and liabilities reported in the financial statements and related notes. Management believes that the areas described below require significant judgment in the application of accounting policy or in making estimates and assumptions that are inherently uncertain and that may change in subsequent periods. Additional information on TEP's other significant accounting policies can be found in Note 1 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K.

Accounting for Regulated Operations

We account for our regulated electric operations in accordance with accounting standards that allow the actions of our regulators, the ACC and the FERC, to be reflected in our financial statements. Regulator actions may cause us to capitalize certain costs that would be included as an expense, or in Accumulated Other Comprehensive Income (AOCI), in the current period by unregulated companies. Regulatory assets represent incurred costs that have been deferred because they are probable of future recovery in Retail Rates or in rates charged to wholesale customers through transmission tariffs. Regulatory liabilities generally represent expected future costs that have already been collected from customers or amounts that are expected to be returned to customers through billing reductions in future periods. We evaluate regulatory assets and liabilities each period and believe future recovery or settlement is probable. Our assessment includes consideration of recent rate orders, historical regulatory treatment of similar costs, and changes in the regulatory and political environment. If management's assessment is ultimately different than actual regulatory outcomes, the impact on our results of operations, financial position, and future cash flows could be material.

As of December 31, 2018, regulatory liabilities net of regulatory assets on the balance sheet totaled $208 million. There are no current or expected proposals or changes in the regulatory environment that impact our ability to apply accounting guidance for regulated operations. If we conclude, in a future period, that our operations no longer meet the criteria in this guidance, we would reflect our pension and other postretirement plan regulatory assets or liabilities

in AOCI and recognize the impact of other regulatory assets and liabilities in the income statement, both of which would be material to our financial statements. See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding regulatory matters.

Revenue Recognition

TEP's retail revenues, which are recognized in the period that electricity is delivered and consumed by customers, include unbilled revenue based on an estimate of kWh delivered at the end of each period. Unbilled revenues are dependent upon a number of factors that require management's judgment, including estimates of retail sales and customer usage patterns. The unbilled revenue is estimated by comparing the estimated kWh delivered to the kWh billed to our retail customers. The excess of estimated kWh delivered over kWh billed is allocated to the retail customer classes based on estimated usage by each

customer class. We then record revenue for each customer class based on the various Retail Rates for each customer class. Due to the seasonal fluctuations of TEP's actual load, unbilled revenues increase during the spring and summer and decrease during the fall and winter. A provision for uncollectible accounts, associated with retail revenues, is recorded as a component of operations and maintenance expense.

Income Taxes

Due to the differences between GAAP and income tax laws, many transactions are treated differently for income tax purposes than they are in the financial statements. We account for this difference by recording deferred income tax assets and liabilities using the effective income tax rate as of our balance sheet date. TEP records income tax liabilities based on TEP's taxable income as reported in the consolidated tax return of FortisUS, Inc., a Fortis intermediate holding company (FortisUS).

A valuation allowance is established against deferred tax assets for which management believes it is more likely than not that the deferred asset will not be realized. In making this judgment, management evaluates all available evidence and gives more weight to objective verifiable evidence. TEP recorded no valuation allowance as of December 31, 2018. See Note 13 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding income taxes.

Plant Asset Depreciable Lives

TEP has significant investments in electric generation assets and electric transmission and distribution assets. We calculate depreciation expense based on our estimate of the useful lives of our plant assets and expected net removal costs. The useful lives of plant assets are further detailed in Note 3 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K. Changes to depreciation estimates resulting from a change of estimated service life or removal costs could have a significant impact on the amount of depreciation expense recorded in the income statement. The ACC approves depreciation rates for all generation and distribution assets. Depreciation rates for such assets cannot be changed without the ACC's approval. TEP's transmission assets are subject to the jurisdiction of the FERC. See Note 1 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding depreciation rates.

Accounting for Asset Retirement Obligations

GAAP requires us to record the fair value of a liability for a legal obligation to retire a long-lived tangible asset in the period in which the liability is incurred. This includes obligations resulting from conditional future events. We incur legal obligations as a result of environmental regulations imposed by State and Federal regulators, contractual agreements, and other factors. To estimate the liability, management must use judgment and assumptions in: (i) determining whether a legal obligation exists to remove assets; (ii) estimating the probability of a future event for a conditional obligation; (iii) estimating the fair value of the cost of removal; estimating when final removal will occur; and (iv) estimating the credit-adjusted risk-free interest rates to be used to discount the future liabilities. Changes that may arise over time with regard to these assumptions and determinations will change amounts recorded in the future as expense for AROs. TEP primarily defers costs associated with its legal AROs as regulatory assets because these costs are included in depreciation rates approved for recovery by the ACC. Deferred costs are amortized over the life of the underlying asset.

TEP identified legal obligations to retire generation facilities specified in land leases for its jointly-owned Navajo and Four Corners facilities. These stations reside on land leased from the Navajo Nation. The provisions of the leases require the lessees to remove the facilities upon request of the Navajo Nation at expiration of the leases. TEP also has certain environmental obligations at Gila River, Luna, San Juan, Sundt and Springerville. TEP estimates that its share of the AROs to remove the Navajo and Four Corners facilities and settle the Luna, San Juan, Sundt, Gila River, and Springerville environmental and contractual obligations will be approximately $343 million at the retirement dates. Additionally, TEP entered into land lease agreements or land easement agreements with certain land owners for the

installation of PV assets. The provisions of the PV land leases or land easements require TEP to remove the PV facilities upon expiration of the agreements. In addition, TEP is required to dispose or recycle the PV assets under the Resource Conservation and Recovery Act. TEP's ARO related to the PV assets is estimated to be approximately $19 million at the retirement dates. No other legal obligations to retire generation plant assets have been identified.
TEP has various transmission and distribution lines that operate under land easements and rights-of-way that contain end dates and may contain site restoration clauses. TEP operates transmission and distribution lines as if they will be operated in perpetuity and will continue to be used or sold without land remediation. As such, there are no AROs for these assets.
The total net present value of TEP's ARO liability was $72 million as of December 31, 2018. ARO liabilities are reported in Regulatory and Other Liabilities—Other on the Consolidated Balance Sheets. See Note 3 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding AROs.

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Additionally, the authorized depreciation rates for TEP include a component designed to accrue the future costs of retiring assets for which no legal obligations exist. The accumulated balances as of December 31, 2018, represent non-legal ARO accruals, less actual removal costs incurred, net of salvage proceeds realized, and are recorded as a regulatory liability on the balance sheet. See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information regarding future cost of removal.

Pension and Other Postretirement Benefit Plan Assumptions

TEP records the underfunded amount for its pension and other postretirement obligations as a liability. Amounts not yet recognized in the income statement are recorded as a regulatory asset or liability to reflect expected recovery or refund of pension and other postretirement obligations through rates charged to retail customers. As the funded status, discount rates, and actuarial facts change, the liability may vary significantly in future years. Key assumptions used include:

- discount rates used to determine obligations;
- expected returns on plan assets;
- compensation increases;
- mortality assumptions; and
- healthcare cost trend rates.

Discount Rates

As of December 31, 2018, TEP discounted its future pension plan obligations at 4.5% and its other postretirement plan obligations at a rate of 4.3%. The discount rate for future pension plan and other postretirement plan obligations is determined annually based on the rates currently available on high-quality, non-callable, long-term bonds. The discount rate is based on a corporate yield curve using an average yield between the 60th and 90th percentile of AA-graded U.S. corporate bonds with future cash flows that match the timing and amount of expected future benefit payments.

Expected Returns on Plan Assets

To establish the expected return on assets assumption, TEP reviews the asset allocation and develops return assumptions for each asset class based on advice from an investment consultant and the pension’s actuary that includes both historical performance analysis and forward-looking views of the financial markets. As of December 31, 2018, TEP assumed that its pension plans’ assets would generate a long-term rate of return of 7%.

Compensation Increases

As of December 31, 2018, TEP used a rate of compensation increase of 2.8% to measure pension obligations.

Mortality

The RP-2014 mortality table projected with improvement scale MP-2018 with 15-year convergence and a 0.75% long-term rate was utilized to measure the December 31, 2018 pension obligations, whereas improvement scales MP-2017 was utilized for the December 31, 2017 measurement.

Healthcare Cost Trend Rates

TEP used a current year healthcare cost trend rate range between 6.5% and 7.8% in valuing its other postretirement benefit obligation as of December 31, 2018. This rate reflects both market conditions and historical experience.

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Sensitivity Analysis

The table below shows the effect on TEP's 2018 expense and obligation of a 100 basis point change to its assumptions:

	Effect on Expense		Effect on Obligation	
	Increase	Decrease	Increase	Decrease
(in millions)	December 31, 2018			
Change to Pension				
Discount Rate	$(7)	$ 8	$(56)	$ 71
Long-Term Rate of Return on Plan Assets	(4)	4	N/A	N/A
Change to Other Postretirement Benefits				
Discount Rate	—	1	(7)	9
Long-Term Rate of Return on Plan Assets	—	—	N/A	N/A
Healthcare Cost Trend Rate	1	(1)	7	(6)

In 2019, TEP will incur pension costs of approximately $13 million and other postretirement benefit costs of approximately $5 million. TEP expects to charge approximately $14 million of these costs to operations and maintenance expense, $3 million to capital, and $1 million to other expense. TEP expects to make pension plan contributions of $11 million in 2019. In 2019, TEP expects to make benefit payments to retirees under the retiree benefit plan of approximately $5 million and contributions to the Voluntary Employee Beneficiary Association (VEBA) trust of approximately $1 million, net of distributions.

See Note 9 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for further details regarding TEP's pension plan and other postretirement benefit plan expenses and obligations.

Accounting for Derivative Instruments and Hedging Activities

Commodity Derivative Contracts

TEP enters into forward contracts to purchase or sell capacity or energy at contract prices over a given period of time, typically for one month, three months, or one year, within established limits to meet forecasted load requirements or to take advantage of favorable market opportunities. In general, TEP enters into forward purchase contracts when market conditions provide the opportunity to purchase energy for its load at prices that are below the marginal cost of its supply resources or to supplement its own resources (e.g., during plant outages and summer peaking periods). TEP enters into forward sales contracts when it forecasts that it will have excess supply and the market price of energy exceeds its marginal cost. TEP enters into forward gas commodity price swap agreements to lock in fixed prices on a portion of forecasted gas purchases and to hedge the price risk associated with forward PPAs that are indexed to natural gas prices.

For all commodity derivative instruments that do not meet the normal purchase or normal sale scope exception, we recognize derivative instruments as either assets or liabilities on the balance sheet and measure those instruments at fair value. Unrealized gains and losses on commodity derivative contracts entered into for retail customer load are recorded as either a regulatory asset or liability on the balance sheet based on our ability to recover the costs of hedging activities entered into to mitigate energy price risk for retail customers. There are no current or expected proposals or changes in the regulatory environment that impact the probability of future recovery of these assets through the PPFAC mechanism.

The market prices used to determine fair values for TEP’s derivative instruments as of December 31, 2018, are estimated based on various factors including broker quotes, exchange prices, over the counter prices, and time value. TEP manages the risk of counterparty default by performing financial credit reviews, setting limits, monitoring exposures, requiring collateral when needed, and using a standardized agreement, which allows for the netting of

current period exposures to and from a single counterparty.

Interest Rate Swaps

TEP hedges the cash flow risk associated with unfavorable changes in the variable interest rates tied to the London Interbank Offered Rate (LIBOR) on the Springerville Common Facilities lease. As of December 31, 2018, approximately $12 million of variable rate lease debt for the Springerville Common Facilities lease had been hedged through an amortizing interest rate swap expiring in January 2020.

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NEW ACCOUNTING STANDARDS ISSUED AND NOT YET ADOPTED

For a discussion of new accounting pronouncements affecting TEP, see Note 1 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

TEP's financial statements are exposed to certain market risks that can affect asset and liability fair value, results of operations, and cash flows. TEP's significant market risks are primarily associated with interest rates, commodity and coal prices, and extension of credit to counterparties. TEP may enter into interest rate swaps and financing transactions to manage changes in interest rates. TEP has a Risk Management Committee responsible for the oversight of commodity price risk and credit risk related to wholesale energy marketing and power procurement activities. To limit TEP's exposure to commodity price risk, the Risk Management Committee sets trading and hedging policies and limits, which are reviewed frequently to respond to constantly changing market conditions. To limit TEP's exposure to credit risk, the Risk Management Committee reviews counterparty credit exposure as well as credit policies and limits on a regular basis.

Interest Rate Risk

Long-Term Debt

TEP is exposed to interest rate risk resulting from changes in interest rates on certain variable rate debt obligations. TEP has $14 million of variable rate debt outstanding related to the Springerville Common Facilities capital lease obligation as of December 31, 2018. TEP has a fixed-for-floating interest rate swap in place to hedge the floating interest rate risk associated with a portion of the capital lease obligation. The notional amount of the swap was $12 million as of December 31, 2018.

Interest Rate Swap

To adjust the value of TEP's interest rate swap, classified as a cash flow hedge, to fair value in other comprehensive income (loss), TEP recorded the following net unrealized gains:

(in millions)	2018	2017	2016
Net Unrealized Gains	$ —	$ 1	$ 1

Credit Facilities

TEP is subject to interest rate risk resulting from changes in interest rates on borrowings under its credit agreement. The interest rate paid on borrowings is variable. Revolving credit borrowings are made on either the basis of a spread over LIBOR or an Alternate Base Rate (ABR). As a result, TEP may experience significant volatility in the rates paid on LIBOR borrowings under its revolving credit facilities.

Commodity and Coal Price Risk

TEP is exposed to market fluctuations in electricity, natural gas and coal prices as a result of its obligation to serve retail customer load in its regulated service territory and long-term wholesale contracts. TEP's load and generating facilities represent substantial underlying commodity positions. Exposure to commodity prices consist primarily of variations in the price of fuel required to generate electricity that is purchased and sold in the retail and wholesale markets. Commodity and coal prices may be subject to significant price changes as supply and demand are impacted by, among other unpredictable factors, weather, market liquidity, generating facility availability, customer usage, storage, and transmission and transportation constraints. Under the guidance of the Risk Management Committee, TEP mitigates a portion of its commodity price risk through the use of commodity contracts, which include forwards, options, swaps and other agreements, to effectively secure future supply, fix fluctuating commodity prices, or sell future production generally at fixed prices. TEP's exposure to commodity and coal price risk is limited by its ability to include these costs in regulated rates through its PPFAC mechanism, which is subject to review by the ACC. See Note 2 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information related

to the PPFAC mechanism.

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Certain commodity contracts qualify as derivatives and are recorded at fair value. The changes in fair value of such contracts have a high correlation to price changes in the hedged commodities. The following table shows the changes in fair value of our derivative positions:

(in millions)	2018	2017	2016
Unrealized Net Gain (Loss) Recorded to Regulatory (Assets) Liabilities	$ (9)	$ (18)	$ 12

TEP's derivative contracts mature on various dates through 2029. The table below displays the valuation methodologies and maturities of derivative contracts by source of fair value:

	Unrealized Gain (Loss) of TEP’s Hedging Activities			
	Maturity 0 – 6 months	Maturity 6 – 12 months	Maturity over 1 yr.	Total Unrealized Gain (Loss)
(in millions)	December 31, 2018			
Prices Actively Quoted	$ (6)	$ (8)	$ (11)	$ (25)

Sensitivity Analysis of Derivatives

TEP uses sensitivity analysis to measure the potential impact of favorable and unfavorable changes in market prices on the fair value of its derivative contracts. TEP records unrealized gains and losses as either a regulatory asset or liability. As contracts settle, the unrealized gains and losses are reversed and realized gains or losses are recorded to the PPFAC. For TEP's derivatives related to the purchase and sale of electricity, a 10% change in the market price of purchased power would affect unrealized positions reported as a regulatory asset or liability by approximately $1 million; for derivatives related to the natural gas price hedges, a 10% change in the market price of energy would affect unrealized positions reported as a regulatory asset or liability by approximately $33 million.

Coal Supply Agreements

TEP is subject to fuel price risk from changes in the price of coal used to fuel its coal-fired generation facilities. This risk is mitigated through the use of long-term coal supply agreements with limited price movement. Coal agreements expire from 2019 through 2031. TEP expects coal reserves from the supplying mines to be sufficient to fulfill the estimated requirements for each coal-fired generation facility's estimated remaining life. See Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations, Liquidity and Capital Resources and Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K for additional information.

Credit Risk

TEP is exposed to credit risk in its energy-related marketing activities related to potential non-performance by counterparties. TEP manages the risk of counterparty default by performing financial credit reviews, setting limits, monitoring exposures, requiring collateral when needed, and using standard agreements which allow for the netting of current period exposures to and from a single counterparty. Counterparty credit exposure is calculated by adding any outstanding receivable (net of amounts payable if a netting agreement exists) to the mark-to-market value of any forward contracts. If exposure exceeds credit limits or contractual collateral thresholds, we may request that a counterparty provide credit enhancement in the form of cash collateral or an LOC.

TEP has entered into short-term and long-term transactions related to its wholesale marketing and gas hedging activities with various counterparties. As of December 31, 2018, TEP’s total credit exposure was approximately $23 million. TEP had approximately $3 million of exposure to non-investment grade counterparties.

As of December 31, 2018, TEP had posted no cash collateral nor LOCs as credit enhancements with its counterparties, and held approximately $7 million in collateral from its wholesale counterparties.

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ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Registered Public Accounting Firm
To the Stockholder and the Board of Directors of
Tucson Electric Power Company
Tucson, Arizona

Opinion on the Financial Statements
We have audited the accompanying consolidated balance sheets of Tucson Electric Power Company and subsidiaries (the "Company") as of December 31, 2018 and 2017, and the related consolidated statements of income, comprehensive income, changes in stockholder's equity, and cash flows, for each of the two years in the period ended December 31, 2018, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.
Basis for Opinion
These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.
We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte & Touche LLP
Deloitte & Touche LLP
Phoenix, Arizona
February 14, 2019
We have served as the Company's auditor since 2017.

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholder of Tucson Electric Power Company:

We have audited the accompanying consolidated statements of income, comprehensive income, changes in stockholder’s equity and cash flows of Tucson Electric Power Company for the year ended December 31, 2016. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company’s internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audit provided a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated results of operations and cash flows of Tucson Electric Power Company for the year ended December 31, 2016, in conformity with U.S. generally accepted accounting principles.

/s/ Ernst & Young LLP
Ernst & Young LLP
Calgary, Canada
February 16, 2017

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TUCSON ELECTRIC POWER COMPANY
CONSOLIDATED STATEMENTS OF INCOME
(Amounts in thousands)

	Years Ended December 31,		
	2018	2017	2016
Operating Revenues	$1,432,618	$1,340,935	$1,234,995
Operating Expenses			
Fuel	351,749	285,551	289,862
Purchased Power	134,914	136,425	85,354
Transmission and Other PPFAC Recoverable Costs	46,595	36,239	23,781
Increase (Decrease) to Reflect PPFAC Recovery Treatment	9,885	(32,660)	21,064
Total Fuel and Purchased Power	543,143	425,555	420,061
Operations and Maintenance	361,963	360,302	353,905
Depreciation	158,310	152,874	146,097
Amortization	26,052	22,255	22,498
Taxes Other Than Income Taxes	55,006	53,623	49,303
Total Operating Expenses	1,144,474	1,014,609	991,864
Operating Income	288,144	326,326	243,131
Other Income (Expense)			
Interest Expense	(67,620)	(65,290)	(65,902)
Allowance For Borrowed Funds	3,151	2,078	1,710
Allowance For Equity Funds	8,117	5,322	4,522
Other, Net	(487)	8,995	353
Total Other Income (Expense)	(56,839)	(48,895)	(59,317)
Income Before Income Tax Expense	231,305	277,431	183,814
Income Tax Expense	42,982	100,763	59,376
Net Income	$188,323	$176,668	$124,438

The accompanying notes are an integral part of these financial statements.

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TUCSON ELECTRIC POWER COMPANY
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Amounts in thousands)

	Years Ended December 31,		
	2018	2017	2016
Comprehensive Income			
Net Income	$188,323	$176,668	$124,438
Other Comprehensive Income (Loss)			
Net Changes in Fair Value of Cash Flow Hedges:			
Net of Income Tax (Expense) Benefit of $(121), $(305), and $(420)	364	485	652
Supplemental Executive Retirement Plan Adjustments:			
Net of Income Tax (Expense) Benefit of $(747), $637, and $399	2,026	(2,156)	(643)
Total Other Comprehensive Income (Loss), Net of Tax	2,390	(1,671)	9
Total Comprehensive Income	$190,713	$174,997	$124,447

The accompanying notes are an integral part of these financial statements.

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TUCSON ELECTRIC POWER COMPANY
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands)

	Years Ended December 31,		
	2018	2017	2016
Cash Flows from Operating Activities			
Net Income	$188,323	$176,668	$124,438
Adjustments to Reconcile Net Income To Net Cash Flows from Operating Activities:			
Depreciation Expense	158,310	152,874	146,097
Amortization Expense	26,052	22,255	22,498
Amortization of Debt Issuance Costs	2,339	2,349	2,853
Use of Renewable Energy Credits for Compliance	32,350	25,453	17,618
Deferred Income Taxes	56,066	100,762	59,367
Pension and Other Postretirement Benefits Expense	15,303	16,039	15,338
Pension and Other Postretirement Benefits Funding	(26,673)	(14,430)	(13,459)
Allowance for Equity Funds Used During Construction	(8,117)	(5,322)	(4,522)
FERC Transmission Refund Payable	—	(4,878)	4,878
Changes in Current Assets and Current Liabilities:			
Accounts Receivable	(26,729)	(13,219)	7,809
Materials, Supplies, and Fuel Inventory	(2,357)	175	7,627
Regulatory Assets	(4,080)	(3,942)	(12,147)
Accounts Payable and Accrued Charges	33,536	9,790	14,284
Income Taxes Receivable	(13,004)	—	—
Regulatory Liabilities	14,028	(20,227)	18,012
Other, Net	11,879	3,977	14,777
Net Cash Flows—Operating Activities	457,226	448,324	425,468
Cash Flows from Investing Activities			
Capital Expenditures	(392,522)	(345,617)	(250,360)
Purchase, Springerville Unit 1 Assets	—	—	(85,000)
Purchase Intangibles, Renewable Energy Credits	(51,327)	(51,179)	(40,949)
Contributions in Aid of Construction	10,817	4,983	3,432
Net Cash Flows—Investing Activities	(433,032)	(391,813)	(372,877)
Cash Flows from Financing Activities			
Proceeds from Borrowings, Revolving Credit Facility	171,000	70,000	—
Repayments of Borrowings, Revolving Credit Facility	(206,000)	(35,000)	—
Proceeds from Issuance, Long-Term Debt—Net of Discount	298,869	—	—
Repayments, Long-Term Debt	(136,700)	—	—
Dividends Paid to Parent	(85,000)	(70,000)	(50,000)
Payments of Capital Lease Obligations	(10,930)	(15,571)	(14,079)
Payment of Debt Issuance Costs	(3,265)	(245)	(183)
Contribution from Parent	50,000	—	—
Other, Net	1,078	481	(4,871)
Net Cash Flows—Financing Activities	79,052	(50,335)	(69,133)

Net Increase (Decrease) in Cash, Cash Equivalents, and Restricted Cash	103,246	6,176	(16,542)
Cash, Cash Equivalents, and Restricted Cash, Beginning of Period	49,501	43,325	59,867
Cash, Cash Equivalents, and Restricted Cash, End of Period	$152,747	$49,501	$43,325

The accompanying notes are an integral part of these financial statements.

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TUCSON ELECTRIC POWER COMPANY
CONSOLIDATED BALANCE SHEETS
(Amounts in thousands, except share data)

	December 31, 2018	2017
ASSETS		
Utility Plant		
Plant in Service	$6,020,469	$5,780,805
Utility Plant Under Capital Leases	248,635	84,870
Construction Work in Progress	258,965	160,288
Total Utility Plant	6,528,069	6,025,963
Accumulated Depreciation and Amortization	(2,293,783)	(2,193,656)
Accumulated Amortization of Capital Lease Assets	(73,646)	(63,605)
Total Utility Plant, Net	4,160,640	3,768,702
Investments and Other Property	50,952	51,260
Current Assets		
Cash and Cash Equivalents	138,114	37,701
Accounts Receivable, Net	172,367	137,932
Fuel Inventory	22,783	25,059
Materials and Supplies	107,990	103,981
Regulatory Assets	106,725	93,960
Derivative Instruments	3,929	3,187
Other	25,571	10,777
Total Current Assets	577,479	412,597
Regulatory and Other Assets		
Regulatory Assets	293,078	293,551
Derivative Instruments	8,402	8,826
Other	68,656	55,313
Total Regulatory and Other Assets	370,136	357,690
Total Assets	$5,159,207	$4,590,249

The accompanying notes are an integral part of these financial statements.

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TUCSON ELECTRIC POWER COMPANY
CONSOLIDATED BALANCE SHEETS
(Amounts in thousands, except share data)

	December 31,	
	2018	2017
CAPITALIZATION AND OTHER LIABILITIES		
Capitalization		
Common Stock Equity:		
Common Stock (No Par Value, 75,000,000 Shares Authorized, 32,139,434 Shares Outstanding as of December 31, 2018 and 2017)	$1,346,539	$1,296,539
Capital Stock Expense	(6,357)	(6,357)
Retained Earnings	484,277	380,076
Accumulated Other Comprehensive Loss	(4,714)	(6,226)
Total Common Stock Equity	1,819,745	1,664,032
Preferred Stock (No Par Value, 1,000,000 Shares Authorized, None Outstanding as of December 31, 2018 and 2017)	—	—
Capital Lease Obligations	19,773	28,519
Long-Term Debt, Net	1,615,252	1,354,423
Total Capitalization	3,454,770	3,046,974
Current Liabilities		
Current Maturities of Long-Term Debt	—	100,000
Borrowings Under Revolving Credit Facility	—	35,000
Capital Lease Obligations	172,510	10,749
Accounts Payable	133,012	97,367
Accrued Taxes Other than Income Taxes	41,686	40,706
Accrued Employee Expenses	34,339	30,929
Accrued Interest	17,927	14,750
Regulatory Liabilities	95,094	89,024
Customer Deposits	27,650	24,865
Derivative Instruments	18,137	10,667
Other	21,555	18,119
Total Current Liabilities	561,910	472,176
Regulatory and Other Liabilities		
Deferred Income Taxes, Net	369,705	300,258
Regulatory Liabilities	512,425	516,438
Pension and Other Postretirement Benefits	117,472	133,799
Derivative Instruments	19,361	17,907
Other	123,564	102,697
Total Regulatory and Other Liabilities	1,142,527	1,071,099
Commitments and Contingencies		
Total Capitalization and Other Liabilities	$5,159,207	$4,590,249

The accompanying notes are an integral part of these financial statements.

(Concluded)

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TUCSON ELECTRIC POWER COMPANY
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDER'S EQUITY
(Amounts in thousands)

	Common Stock	Capital Stock Expense	Retained Earnings	Accumulated Other Comprehensive Loss	Total Stockholder's Equity
Balances as of December 31, 2015	$1,296,539	$(6,357)	$189,317	$ (4,564)	$1,474,935
Net Income			124,438		124,438
Other Comprehensive Income, Net of Tax				9	9
Dividends Declared to Parent			(50,000)		(50,000)
Adoption of ASU, Cumulative Effect Adjustment			9,653		9,653
Balances as of December 31, 2016	1,296,539	(6,357)	273,408	(4,555)	1,559,035
Net Income			176,668		176,668
Other Comprehensive Loss, Net of Tax				(1,671)	(1,671)
Dividends Declared to Parent			(70,000)		(70,000)
Balances as of December 31, 2017	1,296,539	(6,357)	380,076	(6,226)	1,664,032
Net Income			188,323		188,323
Other Comprehensive Income, Net of Tax				2,390	2,390
Dividends Declared to Parent			(85,000)		(85,000)
Contribution from Parent	50,000				50,000
Adoption of ASU, Cumulative Effect Adjustment			878	(878)	—
Balances as of December 31, 2018	$1,346,539	$(6,357)	$484,277	$ (4,714)	$1,819,745

The accompanying notes are an integral part of these financial statements.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1. NATURE OF OPERATIONS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES
TEP is a regulated utility that generates, transmits, and distributes electricity to approximately 425,000 retail customers in a 1,155 square mile area in southeastern Arizona. TEP also sells electricity to other utilities and power marketing entities, located primarily in the western United States. TEP is a wholly owned subsidiary of UNS Energy, a utility services holding company. UNS Energy is an indirect wholly owned subsidiary of Fortis.
BASIS OF PRESENTATION
TEP's consolidated financial statements and disclosures are presented in accordance with GAAP, including specific accounting guidance for regulated operations. The consolidated financial statements include the accounts of TEP and its subsidiaries. In the consolidation process, accounts of the parent and subsidiaries are combined and intercompany balances and transactions are eliminated. TEP jointly owns several generation and transmission facilities with both affiliated and non-affiliated entities. TEP's proportionate share of jointly-owned facilities is recorded in Utility Plant on the Consolidated Balance Sheets, and its proportionate share of the operating costs associated with these facilities is included in the Consolidated Statements of Income. See Note 3 for additional information regarding utility plant.
Certain amounts from prior periods have been reclassified to conform to the current year presentation. Most notably, TEP combined captions on the Consolidated Statements of Income by reclassifying similar line items into a single line item as follows:

(in thousands)	As Filed	Amount Reclassified	As Reclassified	As Filed	Amount Reclassified	As Reclassified
	Year Ended December 31, 2017			Year Ended December 31, 2016		
Other Income (Deductions)						
Interest Income	$742	$ (742)	$ —	$111	$ (111)	$ —
Other Income	14,128	(14,128)	—	5,636	(5,636)	—
Other Expense	(3,344)	3,344	—	(3,019)	3,019	—
Appreciation in Value of Investments	2,791	(2,791)	—	2,147	(2,147)	—
Allowance For Equity Funds	—	5,322	5,322	—	4,522	4,522
Other, Net	—	8,995	8,995	—	353	353
Interest Expense						
Long-Term Debt	62,018	(62,018)	—	62,015	(62,015)	—
Capital Leases	2,554	(2,554)	—	3,356	(3,356)	—
Other Interest Expense	718	(718)	—	531	(531)	—
Interest Capitalized	(2,078)	2,078	—	(1,710)	1,710	—
Allowance For Borrowed Funds	—	(2,078)	(2,078)	—	(1,710)	(1,710)
Interest Expense	—	65,290	65,290	—	65,902	65,902

Accounting for Regulated Operations
TEP applies accounting standards that recognize the economic effects of rate regulation. As a result, TEP capitalizes certain costs that would be recorded as expense or in AOCI by unregulated companies. Regulatory assets represent incurred costs that have been deferred because they are probable of future recovery in Retail Rates or in rates charged to wholesale customers through transmission tariffs. Regulatory liabilities generally represent expected future costs that have already been collected from customers or amounts that are expected to be returned to customers through billing reductions in future periods.
Estimates of recovering deferred costs and returning deferred credits are based on specific ratemaking decisions or precedent for each item. Regulatory assets and liabilities are amortized consistent with the treatment in the rate setting process. TEP evaluates regulatory assets and liabilities each period and believes future recovery or settlement is probable. If future recovery of costs ceases to be probable, the assets would be written off as a charge to current period earnings or AOCI. See Note 2 for additional information regarding regulatory matters.

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TEP applies regulatory accounting as the following conditions exist:

- An independent regulator sets rates;
- The regulator sets the rates to recover the specific enterprise’s costs of providing service; and
- Rates are set at levels that will recover the entity’s costs and can be charged to and collected from ratepayers.

Variable Interest Entities

TEP regularly reviews contracts to determine if it has a variable interest in an entity, if that entity is a Variable Interest Entity (VIE), and if it is the primary beneficiary of the VIE. The primary beneficiary is required to consolidate the VIE when the variable interest holder has: (i) the power to direct activities that most significantly impact the economic performance of the VIE; and (ii) the obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE.

TEP routinely enters into long-term renewable PPAs with various entities. Some of these entities are VIEs due to the long-term fixed price component in the agreements. These PPAs effectively transfer commodity price risk to TEP, the buyer of the power, creating a variable interest. TEP has determined it is not a primary beneficiary of the VIEs as it lacks the power to direct the activities that most significantly impact the economic performance of the VIEs. TEP reconsiders whether it is a primary beneficiary of the VIEs on a quarterly basis.

As of December 31, 2018, the carrying amount of assets and liabilities in the balance sheet that relates to variable interests under long-term PPAs is predominantly related to working capital accounts and generally represents the amounts owed by TEP for the deliveries associated with the current billing cycle. TEP's maximum exposure to loss is limited to the cost of replacing the power if the providers do not meet the production guarantee. However, the exposure to loss is mitigated as the Company would likely recover these costs through cost recovery mechanisms. See Note 2 for additional information related to cost recovery mechanisms.

NEW ACCOUNTING STANDARDS ISSUED AND ADOPTED

The following new authoritative accounting guidance issued by the Financial Accounting Standards Board (FASB) has been adopted as of January 1, 2018. Unless otherwise indicated, adoption of the new guidance in each instance had an insignificant impact on TEP’s financial position, results of operations, cash flows, and disclosures.

Revenue from Contracts with Customers

TEP adopted accounting guidance that requires recognition of revenue when a customer obtains control of promised goods or services in an amount that reflects the consideration to which the company expects to be entitled. The Company continues to recognize revenue for tariff-based sales to retail and wholesale customers, which represent TEP’s primary source of revenue, as power is delivered. TEP adopted the new guidance using the modified retrospective approach. There was no adjustment identified or recorded to the opening balance of retained earnings on adoption. The Company applied the new revenue guidance to contracts with customers that were not completed at the date of initial application, January 1, 2018. The new guidance requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. See Note 4 for additional disclosure related to TEP's operating revenues.

Compensation—Retirement Benefits

TEP adopted accounting guidance that requires an employer to disaggregate the service cost component from the other components of net periodic benefit cost. TEP no longer capitalizes the non-service cost components of net periodic benefit cost as part of inventory or plant in service and presents non-service costs in Other, Net on the Consolidated Statements of Income.

Derivatives and Hedging

TEP early adopted accounting guidance that simplifies the application of hedge accounting through changes to both the designation and measurement guidance and is intended to enable the Company to better portray the economics of its risk management activities in its financial statements.

Reclassification of Certain Tax Effects

TEP early adopted accounting guidance that permits reclassification of certain tax effects resulting from the TCJA from AOCI to retained earnings. TEP applied the guidance as of the beginning of the period of adoption. On adoption, TEP recorded a one-time reclassification of $1 million from Accumulated Other Comprehensive Loss to Retained Earnings on the Consolidated

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Balance Sheets as a result of income tax effects due to the reduction in the U.S. federal statutory tax rate. See Note 13 for additional disclosure related to the TCJA.

NEW ACCOUNTING STANDARDS ISSUED AND NOT YET ADOPTED

The following new authoritative accounting guidance issued by the FASB has not yet been adopted and reflected in TEP's financial statements as of December 31, 2018. Unless otherwise indicated, TEP is currently assessing the impacts such guidance may have (which could be material) on TEP's financial position, results of operations, cash flows, and disclosures, as well as the potential to early adopt where applicable. Updates not listed below were assessed and either determined to not be applicable or are expected to have an insignificant impact on TEP's financial position, results of operations, cash flows, and disclosures.

Leases

In February 2016, the FASB issued an ASU that requires lessees to recognize a lease liability, initially measured at the present value of future lease payments, and a right-of-use asset for all leases with a lease term greater than 12 months. The new lease standard also requires additional quantitative and qualitative disclosures for both lessees and lessors. The standard was effective for periods beginning January 1, 2019, and may be applied retrospectively to each prior period presented or retrospectively with the cumulative effect recognized as an adjustment to retained earnings as of the date of initial application. TEP adopted this ASU on January 1, 2019, applied the transition provisions of the new standard as of the adoption date, and will not retrospectively adjust prior periods.

TEP elected a package of practical expedients that allowed it to not reassess: (i) whether existing contracts are or contain a lease; (ii) the lease classification of existing leases; or (iii) the initial direct costs for existing leases. In addition, TEP elected a practical expedient that permitted entities to not evaluate existing land easements that were not previously accounted for as leases. The new lease guidance will be applied on a prospective basis to all new or modified land easements after January 1, 2019. Finally, TEP utilized the hindsight practical expedient in transition to determine the lease term.

TEP's leasing activities accounted for as operating leases primarily relate to rail cars, land, and communication towers. Adoption of the ASU resulted in recognition of additional right-of-use assets and lease liabilities of approximately $8 million. The Company does not expect the new ASU to affect its results of operations or cash flows.

During the implementation process, TEP planned modifications to its processes and control activities related to gathering contracts and contract review requirements associated with accounting for leases.

Internal-Use Software

In August 2018, the FASB issued an ASU that clarifies accounting for implementation costs incurred in a cloud computing arrangement that is a service contract. Under the new guidance, customers apply the same criteria for capitalizing implementation costs as they would for an arrangement that has a software license. The ASU also provides specific requirements for the classification and presentation of the capitalized implementation costs and the related amortization of those costs. The standard is effective for periods beginning January 1, 2020, and should be applied either retrospectively or prospectively after the date of adoption. TEP early adopted this ASU prospectively effective January 1, 2019.

USE OF ACCOUNTING ESTIMATES

Management uses estimates and assumptions when preparing financial statements according to GAAP. These estimates and assumptions affect:

- assets and liabilities in the balance sheet at the dates of the financial statements;
- disclosures about contingent assets and liabilities at the dates of the financial statements; and
- revenues and expenses in the income statement during the periods presented.

Because these estimates involve judgments based upon management's evaluation of relevant facts and circumstances, actual results may differ from these estimates.

Asset Retirement Obligations

TEP has identified legal AROs related to the retirement of certain generation assets as a result of environmental regulations, decommissioning agreements, and land leases or land easement agreements. Liabilities are recorded for legal AROs in the period in which they are incurred if it can be reasonably estimated. When a new obligation is recorded, the cost of the liability

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is capitalized by increasing the carrying amount of the related long-lived asset. The increase in the liability due to the passage of time is recorded by recognizing accretion expense in Operations and Maintenance Expense on the Consolidated Statements of Income. Capitalized cost is depreciated over the useful life of the related asset or, when applicable, the term of the lease. TEP primarily defers the accretion and depreciation expense associated with its legal AROs into a regulatory asset or liability account based on the ACC approval of these costs in its depreciation rates. Depreciation rates also include a component for estimated future removal costs that have not been identified as legal obligations. TEP recovers estimated future removal costs in Retail Rates and records an obligation for estimated costs of removal as regulatory liabilities.

Contingencies

Reserves for specific legal proceedings are established when the likelihood of an unfavorable outcome is probable and the amount of loss can be reasonably estimated. Significant judgment is required in predicting the outcome of these suits and claims, many of which take years to complete. TEP identifies certain other legal matters where the Company believes an unfavorable outcome is reasonably possible or no estimate of possible losses can be made. All contingencies are regularly reviewed to determine whether the likelihood of loss has changed and to assess whether a reasonable estimate of the loss or range of loss can be made.

CASH AND CASH EQUIVALENTS

TEP considers all highly liquid investments with a remaining maturity of three months or less at acquisition to be cash equivalents.

RESTRICTED CASH

Restricted cash includes cash balances restricted regarding withdrawal or usage based on contractual or regulatory considerations. The following table presents the line items and amounts of cash, cash equivalents, and restricted cash reported on the balance sheet and reconciles their sum to the cash flow statement:

	Years Ended December 31,		
(in millions)	2018	2017	2016
Cash and Cash Equivalents	$138	$38	$36
Restricted Cash included in:			
Investments and Other Property	14	11	7
Current Assets, Other	1	1	—
Total Cash, Cash Equivalents, and Restricted Cash	$153	$50	$43

Restricted cash included in Investments and Other Property on the Consolidated Balance Sheets represents cash contractually required to be set aside to pay TEP's share of mine reclamation costs at San Juan. Restricted cash included in Current Assets—Other represents the current portion of TEP's share of San Juan's mine reclamation costs.

ALLOWANCE FOR DOUBTFUL ACCOUNTS

TEP records an allowance for doubtful accounts to reduce accounts receivable for amounts estimated to be uncollectible. The allowance is determined based on historical bad debt patterns, retail sales, and economic conditions. Accounts receivable are charged-off in the period in which the receivable is deemed uncollectible. The change in the balance of the Allowance for Doubtful Accounts included in Accounts Receivable, Net on the Consolidated Balance Sheets is summarized as follows:

	Years Ended December 31,		
(in millions)	2018	2017	2016
Beginning of Period	$5	$5	$27
Additions Charged to Cost and Expense	3	3	4
Write-offs	(3)	(3)	(3)
Provision for Springerville Unit 1, Third-Party Owners	—	—	(23)

End of Period	$5	$ 5	$5

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The allowance for doubtful accounts decreased in 2016 due to the settlement and release of asserted claims between TEP and the Third-Party Owners related to Springerville Unit 1. See Note 8 for additional information regarding the settlement of the Third-Party Owners' claims.

INVENTORY

TEP values materials, supplies, and fuel inventory at the lower of weighted average cost and net realizable value. Materials and supplies consist of generation, transmission, and distribution construction and repair materials. The majority of TEP's inventory will be recovered in rates charged to ratepayers. Handling and procurement costs (such as labor, overhead costs, and transportation costs) are capitalized as part of the cost of the inventory.

UTILITY PLANT

Utility plant includes the business property and equipment that supports electric service, consisting primarily of generation, transmission, and distribution facilities. Utility plant is reported at original cost. Original cost includes materials and labor, contractor services, construction overhead (when applicable), and AFUDC, less contributions in aid of construction.

The cost of repairs and maintenance, including planned generation overhauls, are expensed to Operations and Maintenance Expense on the Consolidated Statements of Income as costs are incurred.

When TEP retires a unit of regulated property, accumulated depreciation is reduced by the original cost plus removal costs less any salvage value. There is no impact to the income statement.

AFUDC and Capitalized Interest

AFUDC reflects the cost of debt and equity funds used to finance construction and is capitalized as part of the cost of regulated utility plant. AFUDC amounts are capitalized and amortized through depreciation expense as a recoverable cost in Retail Rates. The capitalized interest that relates to debt is recorded in Allowance For Borrowed Funds on the Consolidated Statements of Income. The capitalized cost for equity funds is recorded in Allowance For Equity Funds on the Consolidated Statements of Income.

The average AFUDC rates on regulated construction expenditures are included in the table below:

	2018	2017	2016
Average AFUDC Rates	7.12%	7.31%	7.47%

Depreciation

Depreciation is recorded for owned utility plant on a group method straight-line basis at depreciation rates based on the economic lives of the assets. See Note 3 for additional information regarding utility plant. The ACC approves depreciation rates for all generation and distribution assets. Transmission assets are subject to the jurisdiction of the FERC. Depreciation rates are based on average useful lives and include estimates for salvage value and removal costs. Below are the summarized average annual depreciation rates for all utility plant:

	2018	2017	2016
Average Annual Depreciation Rates	3.13%	2.97%	2.85%

Utility Plant Under Capital Leases

TEP finances a portion of the Springerville Common Facilities with capital leases. In addition, TEP has a Tolling PPA related to Gila River Unit 2 that is accounted for as a capital lease. Capital lease expense related to Gila River Unit 2 is recorded in Purchased Energy on the Consolidated Statements of Income. Capital lease expense related to Springerville Common Facilities is recorded in Amortization Expense and Interest Expense on the Consolidated Statements of Income. See Note 3 for additional information regarding utility plant and Note 7 for additional information related to the terms of these transactions.

Computer Software and Cloud Computing Costs

Costs incurred to purchase and develop internal use computer software and cloud computing arrangements that include a software license are capitalized and amortized over the estimated economic life of the product. If the associated software is no longer useful or impaired, the carrying value is reduced and recorded as an expense on the income statement.

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EVALUATION OF ASSETS FOR IMPAIRMENT

Long-lived assets and investments are evaluated for impairment whenever events or changes in circumstances indicate that an asset's carrying amount may not be recoverable. If estimated future undiscounted cash flows are less than the carrying amount, the Company estimates the fair value and records an impairment for the amount by which the carrying value exceeds the fair value. For these estimates, TEP may consider data from multiple valuation methods, including data from market participants. The Company exercises judgment to: (i) estimate the future cash flows and the useful lives of long-lived assets; and (ii) determine the Company's intent to use the assets. TEP's intent to use or dispose of assets is subject to re-evaluation and can change over time.

DEFERRED FINANCING COSTS

Costs to issue debt are deferred and amortized to interest expense on a straight-line basis over the life of the debt. Deferred debt issuance costs are presented in the balance sheet as a direct deduction from the carrying value of the associated debt liability. These costs include underwriters' commissions, discounts or premiums, and other costs such as legal, accounting, regulatory fees, and printing costs.

TEP accounts for debt issuance costs related to credit facility arrangements as an asset.

The gains and losses on reacquired debt associated with regulated operations are deferred and amortized to interest expense over the remaining life of the original debt.

OPERATING REVENUES

TEP earns the majority of its revenues from the sale of power to retail and wholesale customers based on regulator-approved tariff rates. Most of the Company's contracts have a single performance obligation, the delivery of power. TEP satisfies the performance obligation over time as power is delivered and control is transferred to the customer. The Company bills for power sales based on the reading of electric meters on a systematic basis throughout the month. In general, TEP's contracts have payment terms of 10 to 20 days from the date the bill is rendered. TEP considers any payment not received by the due date delinquent and charges the customer a late payment fee. No component of the transaction price is allocated to unsatisfied performance obligations.

TEP has certain contracts with variable transaction pricing that require it to estimate the resulting variable consideration. TEP's variable consideration includes revenues that are subject to refund. TEP estimates variable consideration at the most likely amount to which the Company expects to be entitled and recognizes a refund liability until TEP is certain that the Company will be entitled to the consideration. The Company includes estimated amounts of variable consideration in the transaction price to the extent it is probable that changes in its estimate will not result in significant reversals of revenue in subsequent periods. See Note 4 for the disaggregation of TEP's Operating Revenues.

PURCHASED POWER AND FUEL ADJUSTMENT CLAUSE

TEP recovers the actual fuel, purchased power, and transmission costs to provide electric service to retail customers through base fuel rates and through a PPFAC mechanism. The ACC periodically adjusts the PPFAC rate at which TEP recovers these costs. The difference between costs recovered through rates and actual fuel, purchased power, transmission, and other approved costs to provide retail electric service is deferred. Cost over-recoveries are deferred as regulatory liabilities and cost under-recoveries are deferred as regulatory assets. See Note 2 for additional information regarding regulatory matters.

RENEWABLE ENERGY AND ENERGY EFFICIENCY PROGRAMS

The ACC's RES requires Arizona regulated utilities to increase their use of renewable energy each year until it represents at least 15% of their total annual retail energy requirements by 2025, with DG accounting for 30% of the annual renewable energy requirement. Arizona utilities must file an annual RES implementation plan for review and approval by the ACC. The approved costs of carrying out this plan are recovered from retail customers through the RES surcharge. The associated lost revenues attributable to meeting DG targets are partially recovered through the LFCR mechanism.

TEP is required to implement cost-effective DSM programs to comply with the ACC's EE Standards. The EE Standards provide regulated utilities a DSM surcharge to recover from retail customers the costs to implement DSM programs. The EE Standards require increasing annual targeted retail kWh savings equal to 22% by 2020. The associated lost revenues attributable to meeting these targets are partially recovered through the LFCR mechanism.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Any RES or DSM surcharges collected above or below the costs incurred to implement the plans are deferred and reflected in the balance sheet as a regulatory liability or asset. TEP recognizes RES and DSM surcharge revenue in Operating Revenues on the Consolidated Statements of Income in amounts necessary to offset recognized qualifying expenditures.

RENEWABLE ENERGY CREDITS

The ACC measures compliance with the RES requirements through RECs. A REC represents one kWh generated from renewable resources. When TEP purchases renewable energy, the premium paid above the market cost of conventional power equals the REC cost recoverable through the RES surcharge. As described above, the market cost of conventional power is recoverable through the PPFAC mechanism.

When RECs are purchased, TEP records the cost of the RECs (an indefinite-lived intangible asset) as other assets and a corresponding regulatory liability to reflect the obligation to use the RECs for future RES compliance. When RECs are reported to the ACC for compliance with RES requirements, TEP recognizes purchased power expense and other revenues in an equal amount. See Note 2 for additional information regarding regulatory matters. The table below does not include PBI activity and summarizes the balance of TEP's RECs which are included in Regulatory and Other Assets—Other on the Consolidated Balance Sheets:

	December 31,	
(in millions)	2018	2017
Beginning of Period	$42	$24
Purchased	45	43
Used for Compliance	(32)	(25)
End of Period	$55	$42

TAXES OTHER THAN INCOME TAXES

TEP acts as a conduit or collection agent for sales taxes, utility taxes, franchise fees, and regulatory assessments. Trade receivables are recorded as the Company bills customers for these taxes and assessments. Simultaneously, liabilities payable to governmental agencies are recorded in the balance sheet for these taxes and assessments. These amounts are not reflected in the income statement.

INCOME TAXES

Due to the difference between GAAP and income tax laws, many transactions are treated differently for income tax purposes than for financial statement presentation purposes. Temporary differences are accounted for by recording deferred income tax assets and liabilities on the balance sheet. These assets and liabilities are recorded using enacted income tax rates expected to be in effect when the deferred tax assets and liabilities are realized or settled. TEP reduces deferred tax assets by a valuation allowance when, in the opinion of management, it is more likely than not that some portion, or the entire deferred income tax asset, will not be realized.

Tax benefits are recognized when it is more likely than not that a tax position will be sustained upon examination by the tax authorities based on the technical merits of the position. The tax benefit recorded is the largest amount that is more than 50% likely to be realized upon ultimate settlement with the tax authority, assuming full knowledge of the position and all relevant facts. Interest expense accruals relating to income tax obligations are recorded in Interest Expense on the Consolidated Statements of Income.

TEP accounts for federal energy credits generated prior to 2012 using the grant accounting model. The credit is treated as deferred revenue, which is recognized over the depreciable life of the underlying asset. The deferred tax benefit of the credit is treated as a reduction to income tax expense in the year the credit arises. Federal energy credits generated since 2012 are deferred as regulatory liabilities and amortized as a reduction in income tax expense over the tax life of the underlying asset. Income tax expense attributable to the reduction in tax basis is accounted for in the year the federal energy credit is generated and is deferred as a regulatory asset. TEP had $6 million and $7 million in federal energy credits as of December 31, 2018 and 2017, respectively. All other federal and state income tax credits are

treated as a reduction to income tax expense in the year the credit arises.
TEP records income tax liabilities based on TEP's taxable income as reported in the consolidated tax return of FortisUS.

PENSION AND OTHER POSTRETIREMENT BENEFITS

TEP sponsors noncontributory, defined benefit pension plans for substantially all employees and certain affiliate employees. Benefits are based on years of service and average compensation. The Company also provides limited healthcare and life insurance benefits for retirees.

The Company recognizes the underfunded status of defined benefit pension plans as a liability in the balance sheet. The underfunded status is measured as the difference between the fair value of the pension plans' assets and the projected benefit obligation for the pension plans. TEP recognizes a regulatory asset to the extent these future costs are probable of recovery in the rates charged to retail customers. The Company expects recovery of these costs over the estimated service lives of employees.

Additionally, TEP maintains a SERP for senior management. Changes in SERP benefit obligations are recognized as a component of AOCI.

Pension and other postretirement benefit expenses are determined by actuarial valuations based on assumptions that the Company evaluates annually. See Note 9 for additional information regarding the employee benefit plans.

FAIR VALUE

As defined under GAAP, fair value is the price that would be received to sell an asset or paid to transfer a liability between market participants in the principal market or in the most advantageous market when no principal market exists. Adjustments to transaction prices or quoted market prices may be required in illiquid or disorderly markets in order to estimate fair value. Different valuation techniques may be appropriate under the circumstances to determine the value that would be received to sell an asset or paid to transfer a liability in an orderly transaction. Market participants are assumed to be independent, knowledgeable, able and willing to transact an exchange, and not under duress. Nonperformance or credit risk is considered in determining fair value. Considerable judgment may be required in interpreting market data used to develop the estimates of fair value. Accordingly, estimates of fair value presented herein are not necessarily indicative of the amounts that could be realized in a current or future market exchange. See Note 12 for additional information regarding fair value.

DERIVATIVE INSTRUMENTS

The Company uses various physical and financial derivative instruments, including forward contracts, financial swaps, and call and put options, to: (i) meet forecasted load and reserve requirements; (ii) reduce exposure to energy commodity price volatility; and (iii) hedge interest rate risk exposure. Derivative instruments that do not meet the normal purchase or normal sale scope exception are recognized as either assets or liabilities on the balance sheet and are measured at fair value. The accounting for changes in the fair value of a derivative depends on the intended use of the derivative and the resulting designation.

Commodity derivatives used in normal business operations that are settled by physical delivery, among other criteria, are eligible for, and may be designated as, normal purchases or normal sales. Normal purchases or normal sales contracts are not recorded at fair value and settled amounts are recognized as cost of fuel, energy, and capacity on the income statement.

For derivatives designated as hedging contracts, TEP formally assesses, at inception, whether the hedging contract is highly effective in offsetting changes in the hedged item. Also, TEP formally documents hedging activity by transaction type and risk management strategy.

For derivatives not designated as hedging contracts, the settled amount is generally included in regulated rates. Accordingly, the net unrealized gains and losses associated with interim price movements on contracts that are accounted for as derivatives and probable of inclusion in regulated rates are recorded as regulatory assets and liabilities. See Note 12 for additional information regarding derivative instruments.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

NOTE 2. REGULATORY MATTERS

The ACC and the FERC each regulate portions of utility accounting practices and rates of TEP. The ACC regulates rates charged to retail customers, the siting of generation and transmission facilities, the issuance of securities, transactions with affiliated parties, and other utility matters. The ACC also enacts other regulations and policies that can affect the Company's business decisions and accounting practices. The FERC regulates terms and prices of transmission services and wholesale electricity sales.

TEP RATE CASE

Provisions of the 2017 Rate Order, which were effective February 27, 2017, included, but are not limited to:

- a non-fuel base rate increase of $81.5 million; and
- adoption of TEP's proposed depreciation and amortization rates, which included a reduction in the depreciable life for San Juan Unit 1.

The ACC deferred matters related to net metering and rate design for new DG customers to a second phase of TEP's rate case (Phase 2).

Phase 2 Order

On September 20, 2018, the ACC issued an order related to Phase 2 proceedings. The Phase 2 Order established, among other things, an export rate that replaced net metering. Residential and small commercial customers who apply to interconnect their solar generation systems to TEP's distribution system after the date of the order will no longer qualify for net metering. Customers who applied before the date of the order, and complete interconnection within a specified time frame, were grandfathered under previous net metering rules for a period of 20 years from the date of interconnection of their solar generation system.

Provisions of the Phase 2 Order for new DG customers include:

- an option to select from existing Time-of-Use rate schedules;
- a monthly bill credit for customer excess solar generation exported to TEP's grid calculated using an export rate approved by the ACC; and
- an annual update to the export rate based on TEP's actual solar PPA and generation facilities costs, which are expected to decline. The export rate at the time of customers' applications to interconnect will be locked for 10 years. The initial export rate was set at 9.64 cents per kWh.

FEDERAL TAX LEGISLATION

Arizona Corporation Commission

In December 2017, the ACC opened a docket requesting that all regulated utilities submit proposals to address passing the benefits of the TCJA through to customers. In 2018, the ACC approved the ACC Refund Order effective May 1, 2018. The refund represents the reduction in the federal corporate income tax rate and an estimate of EDIT amortization trued up annually for actuals. The refund amount, after the EDIT amortization true-up, totaled $33 million. The 2018 bill credit was designed to return the refund amount to customers based on forecasted kWh sales for the calendar year 2018. Any over or under collected amounts are deferred to a regulatory liability or asset and will be used to adjust the 2019 bill credit amounts.

The table below summarizes the regulatory asset (liability) balance related to the ACC Refund Order:

(in millions)	Year Ended December 31, 2018
Beginning of Period	$ —
ACC Approved Refund (Reduction in Operating Revenues)	(33)
Amount Returned to Customers Through Bill Credits	37
End of Period	$ 4

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Customer bill credits are trued-up annually to reflect actuals for kWh sales and EDIT amortization. TEP filed an application with the ACC to establish the 2019 customer refund of $34 million. The refund will be returned to customers through a combination of a customer bill credit and a regulatory liability in 2019.
See Note 13 for additional information regarding the TCJA.

Federal Energy Regulatory Commission

In 2018, the FERC issued the FERC Refund Order. TEP submitted a proposal for an overall transmission rate reduction of approximately 5.3%, reflecting the lower federal tax rate, effective March 21, 2018 which was approved by the FERC. As a result, TEP recognized a reduction in Operating Revenues on the Consolidated Statements of Income of $1 million in 2018.

In addition, the FERC issued a NOPR regarding the effect of the TCJA and related EDIT amortization. TEP cannot predict the final outcome of the NOPR or the impact on TEP's financial statements.
See Note 13 for additional information regarding the TCJA.

COST RECOVERY MECHANISMS

TEP has received regulatory decisions that allow for more timely recovery of certain costs through the recovery mechanisms described below.

Purchased Power and Fuel Adjustment Clause

TEP's PPFAC rate is adjusted annually each April 1st for the subsequent 12-month period unless modified by the ACC. The PPFAC rate includes: (i) a forward component which is calculated by taking the difference between forecasted fuel and purchased power costs and the amount of those costs established in Retail Rates; and (ii) a true-up component that reconciles the difference between actual costs and those recovered in the preceding 12-month period.
The table below summarizes the PPFAC regulatory asset (liability) balance:

	Years Ended December 31,	
(in millions)	2018	2017
Beginning of Period	$(9)	$(38)
Deferred Fuel and Purchased Power Costs	2	14
PPFAC Refunds (Recoveries) [1]	(10)	15
End of Period	$(17)	$(9)

(1) The ACC approved a PPFAC credit to begin returning the over-collected PPFAC balance to customers for the period of March 2017 through April 2018.

Environmental Compliance Adjustor

The Environmental Compliance Adjustor (ECA) allows for the recovery of capital carrying costs and incremental operations and maintenance costs related to environmental investments, provided that they are not already recovered in base rates or recovered through another commission-approved mechanism.

The eligible costs for the ECA are subject to a cap equal to 0.5% of total annual retail revenue. The Company recognized $3 million in 2018 and $1 million in both 2017 and 2016 related to the return on company-owned environmental investments included in Operating Revenues on the Consolidated Statements of Income.

Renewable Energy Standard

The ACC’s RES requires Arizona regulated utilities to increase their use of renewable energy each year until it represents at least 15% of their total annual retail energy requirements by 2025, with DG accounting for 30% of the annual renewable energy requirement. Arizona utilities are required to file an annual RES implementation plan for review and approval by the ACC.

In January 2018, the ACC approved TEP's 2018 RES implementation plan with a budget amount of $54 million. The recovery funds the following: (i) the above market cost of renewable power purchases; (ii) previously awarded incentives for customer-installed DG; and (iii) various other program costs. In 2018, TEP recognized $1 million of

revenue as a return on company-owned solar projects. The return on company-owned solar projects is included in Operating Revenues on the Consolidated Statements of Income. TEP is no longer requesting recovery on company-owned solar projects through the RES mechanism

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and plans to request recovery of these types of costs through its rate case process. As part of the Phase 2 Order, the ACC approved a separate residential community solar program for TEP.

In July 2018, TEP submitted its application for approval of the 2019 RES implementation plan with a budget amount of $55 million. The Company cannot predict when the ACC will consider its 2019 RES implementation plan.

In 2018, the percentage of TEP's retail kWh sales attributable to the RES was approximately 14%, exceeding the overall 2018 RES requirement of 8%. The ACC approved a waiver of the 2018 DG requirement.

Energy Efficiency Standards

Under the EE Standards, the ACC requires electric utilities to implement cost-effective programs to reduce customers' energy consumption. The EE Standards require increasing cumulative annual targeted retail kWh savings equal to 22%