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 %	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.

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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.

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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.

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 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