



# 2019 FIXED-INCOME INVESTOR CONFERENCE

## Berkshire Hathaway Energy



A Berkshire Hathaway Company

# Forward-Looking Statements

This presentation contains statements that do not directly or exclusively relate to historical facts. These statements are "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements can typically be identified by the use of forward-looking words, such as "will," "may," "could," "project," "believe," "anticipate," "expect," "estimate," "continue," "intend," "potential," "plan," "forecast" and similar terms. These statements are based upon Berkshire Hathaway Energy Company (BHE) and its subsidiaries, PacifiCorp and its subsidiaries, MidAmerican Funding, LLC and its subsidiaries, MidAmerican Energy Company, Nevada Power Company and its subsidiaries or Sierra Pacific Power Company and its subsidiaries (collectively, the Registrants), as applicable, current intentions, assumptions, expectations and beliefs and are subject to risks, uncertainties and other important factors. Many of these factors are outside the control of each Registrant and could cause actual results to differ materially from those expressed or implied by such forward-looking statements. These factors include, among others:

- general economic, political and business conditions, as well as changes in, and compliance with, laws and regulations, including income tax reform, initiatives regarding deregulation and restructuring of the utility industry, and reliability and safety standards, affecting the respective Registrant's operations or related industries;
- changes in, and compliance with, environmental laws, regulations, decisions and policies that could, among other items, increase operating and capital costs, reduce facility output, accelerate facility retirements or delay facility construction or acquisition;
- the outcome of regulatory rate reviews and other proceedings conducted by regulatory agencies or other governmental and legal bodies and the respective Registrant's ability to recover costs through rates in a timely manner;
- changes in economic, industry, competition or weather conditions, as well as demographic trends, new technologies and various conservation, energy efficiency and private generation measures and programs, that could affect customer growth and usage, electricity and natural gas supply or the respective Registrant's ability to obtain long-term contracts with customers and suppliers;
- performance, availability and ongoing operation of the respective Registrant's facilities, including facilities not operated by the Registrants, due to the impacts of market conditions, outages and repairs, transmission constraints, weather, including wind, solar and hydroelectric conditions, and operating conditions;
- the effects of catastrophic and other unforeseen events, which may be caused by factors beyond the control of each respective Registrant or by a breakdown or failure of the Registrants' operating assets, including severe storms, floods, fires, earthquakes, explosions, landslides, an electromagnetic pulse, mining incidents, litigation, wars, terrorism, embargoes, and cyber security attacks, data security breaches, disruptions, or other malicious acts;
- a high degree of variance between actual and forecasted load or generation that could impact a Registrant's hedging strategy and the cost of balancing its generation resources with its retail load obligations;
- changes in prices, availability and demand for wholesale electricity, coal, natural gas, other fuel sources and fuel transportation that could have a significant impact on generating capacity and energy costs;
- the financial condition and creditworthiness of the respective Registrant's significant customers and suppliers;
- changes in business strategy or development plans;
- availability, terms and deployment of capital, including reductions in demand for investment-grade commercial paper, debt securities and other sources of debt financing and volatility in interest rates;
- changes in the respective Registrant's credit ratings;
- risks relating to nuclear generation, including unique operational, closure and decommissioning risks;

# Forward-Looking Statements

- hydroelectric conditions and the cost, feasibility and eventual outcome of hydroelectric relicensing proceedings;
- the impact of certain contracts used to mitigate or manage volume, price and interest rate risk, including increased collateral requirements, and changes in commodity prices, interest rates and other conditions that affect the fair value of certain contracts;
- the impact of inflation on costs and the ability of the respective Registrants to recover such costs in regulated rates;
- fluctuations in foreign currency exchange rates, primarily the British pound and the Canadian dollar;
- increases in employee healthcare costs;
- the impact of investment performance and changes in interest rates, legislation, healthcare cost trends, mortality and morbidity on pension and other postretirement benefits expense and funding requirements;
- changes in the residential real estate brokerage, mortgage and franchising industries and regulations that could affect brokerage, mortgage and franchising transactions;
- the ability to successfully integrate future acquired operations into a Registrant's business;
- unanticipated construction delays, changes in costs, receipt of required permits and authorizations, ability to fund capital projects and other factors that could affect future facilities and infrastructure additions;
- the availability and price of natural gas in applicable geographic regions and demand for natural gas supply;
- the impact of new accounting guidance or changes in current accounting estimates and assumptions on the financial results of the respective Registrants; and
- other business or investment considerations that may be disclosed from time to time in the Registrants' filings with the United States Securities and Exchange Commission (SEC) or in other publicly disseminated written documents.

Further details of the potential risks and uncertainties affecting the Registrants are described in the Registrants' filings with the SEC. Each Registrant undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. The foregoing factors should not be construed as exclusive.

This presentation includes certain non-Generally Accepted Accounting Principles (GAAP) financial measures as defined by the SEC's Regulation G. Refer to the BHE Appendix in this presentation for a reconciliation of those non-GAAP financial measures to the most directly comparable GAAP measures.



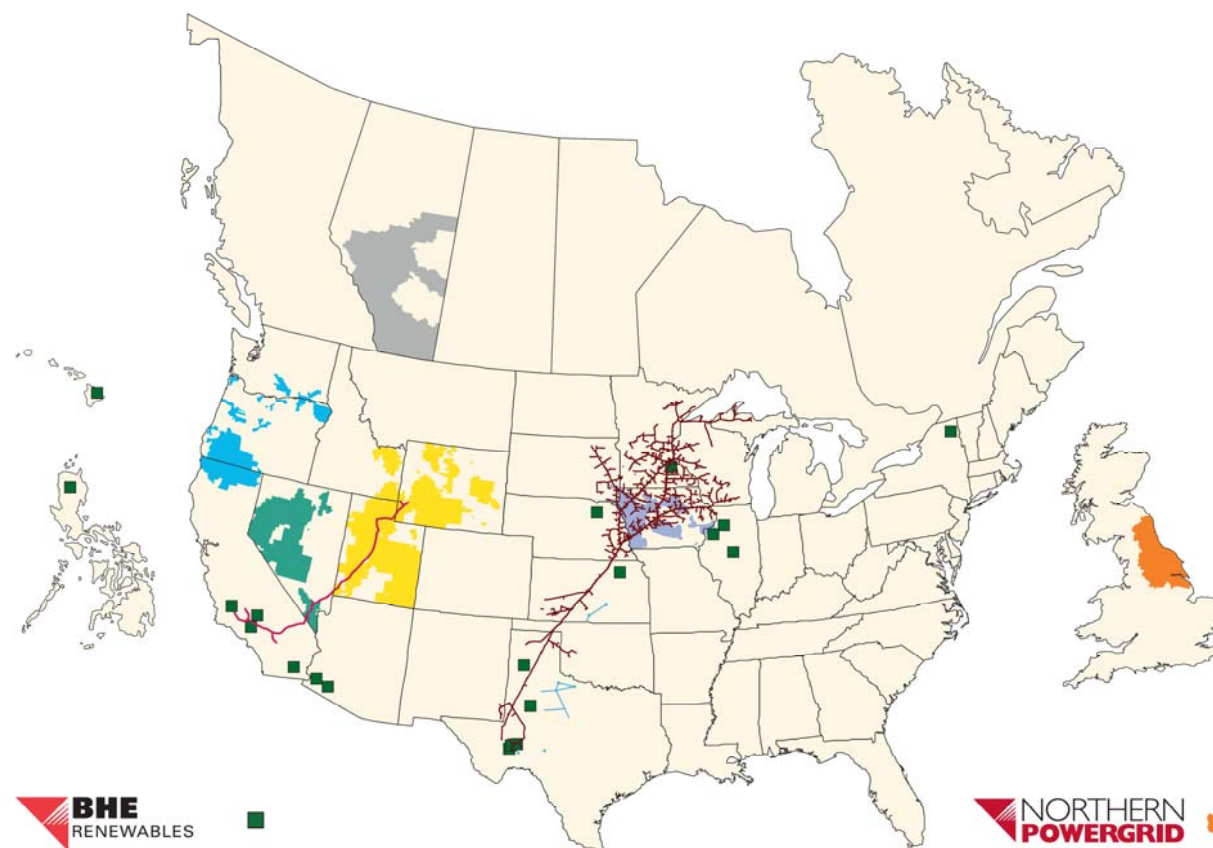
# 2019 **FIXED-INCOME INVESTOR CONFERENCE**

## **Calvin Haack**

Vice President and Treasurer  
Berkshire Hathaway Energy



# Energy Assets



<b>Assets</b>	\$92 billion
<b>Revenues</b>	\$19.8 billion
<b>Customers<sup>(1)</sup></b>	8.8 million
<b>Employees</b>	23,000
<b>Transmission Line Miles</b>	33,600
<b>Natural Gas Pipeline Miles</b>	16,400
<b>Power Capacity</b>	33,676 MW <sup>(2)</sup>
Renewables	40%
Natural Gas	32%
Coal	27%
Nuclear and Other	1%

(1) Includes both electric and natural gas customers and end-users worldwide. Additionally, AltaLink serves approximately 85% of Alberta, Canada's population

(2) Net MW owned in operation and under construction as of December 31, 2018



# Berkshire Hathaway Energy

## Vision

To be the **best** energy company in serving our customers, while delivering sustainable energy solutions

## Culture

Personal responsibility to our customers

## Strategy

### Reinvest in our businesses

- Continue to invest in our employees and operations, maintenance and capital programs for property, plant and equipment
- Position our regulated businesses to meet changing customer expectations and retain customers (reduce bypass risk) by providing excellent service and competitive rates
- Reduce the carbon footprint of our operations by participating in energy policy development, resulting in the transformation of our businesses and assets
- Advance grid resilience, cybersecurity and physical security programs

### Invest in internal growth

- Pursue the development of a value-enhancing energy grid and gas pipeline infrastructure
- Create customer solutions through innovative rate design and redesign
- Grow our portfolio of renewable energy
- Develop strong grid systems, including cybersecurity and physical resilience programs

### Acquire companies

- Additive to business model

## Competitive Advantage

Berkshire Hathaway ownership

# Competitive Advantage

- **Diversified portfolio of regulated assets**
  - Weather, customer, regulatory, generation, economic and catastrophic risk diversification
- **Berkshire Hathaway ownership**
  - Access to capital from Berkshire Hathaway allows us to take advantage of market opportunities
  - Berkshire Hathaway is a long-term owner of assets which promotes stability and helps make Berkshire Hathaway Energy the buyer of choice in many circumstances
  - Tax appetite of Berkshire Hathaway has allowed us to receive significant cash tax benefits from our parent of \$884 million and \$636 million in 2018 and 2017, respectively
- **No dividend requirement**
  - Cash flow is retained in the business and used to help fund growth and strengthen our balance sheet

# Diversity in Our Portfolio

**Berkshire Hathaway Energy's regulated energy businesses serve customers and end-users across 18 western and Midwestern states in the U.S. and in the U.K. and Canada**

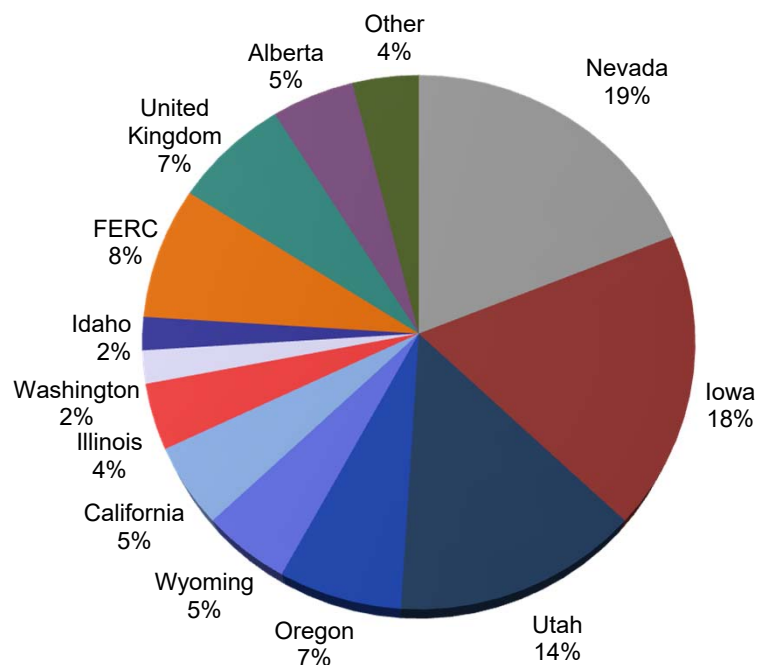
DISTRIBUTION	Our integrated utilities serve approximately 4.9 million customers; Northern Powergrid has 3.9 million end-users, making it the third-largest distribution company in Great Britain
TRANSMISSION	We own significant transmission infrastructure in 15 states and the province of Alberta; with our assets at PacifiCorp, NV Energy and AltaLink, we are the largest transmission owner in the Western Interconnection
PIPELINES	BHE Pipeline Group transported approximately 8% of the total natural gas consumed in the United States during 2018
GENERATION	We own 33,676 MW of power capacity in operation and under construction, with resource diversity ranging from natural gas and coal to renewable sources
RENEWABLES	As of December 31, 2018, we had invested \$25 billion in solar, wind, geothermal and biomass generation



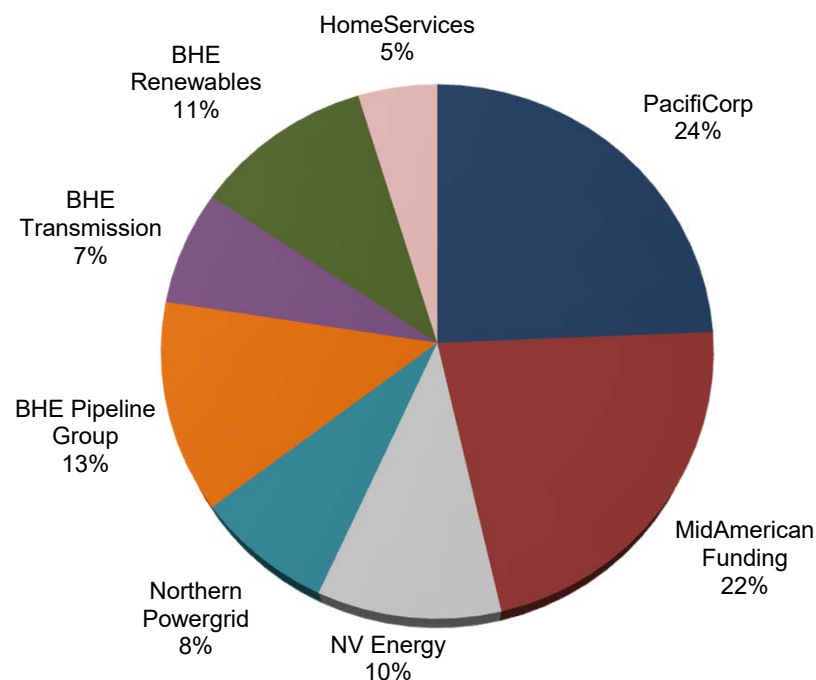
# Revenue and Net Income Diversification

- Diversified revenue sources reduce regulatory concentrations
- In 2018, approximately 84% of adjusted net income was from investment-grade regulated subsidiaries. A significant portion of the remaining non-regulated adjusted net income is from contracted generation assets at BHE Renewables

**2018 Energy Revenue<sup>(1)</sup>**  
**\$16 Billion**



**2018 Adjusted Net Income<sup>(2)</sup>**  
**\$2.8 Billion**



<sup>(1)</sup> Excludes HomeServices and equity income, which add further diversification

<sup>(2)</sup> Percentages exclude Corporate/other

# Building a Culture of Sustainability

- Address long-term issues, risks and opportunities through a comprehensive sustainability lens, aligned with our vision and core principles
- Align with the objectives of providing safe, reliable and affordable clean energy
- Committed and supportive leadership and owners
- Committed and engaged employees

## Environmental

- Renewables expansion
- Environmental Respect Index
- Species protection
- Carbon reduction efforts
- Methane reduction
- Green bonds

## Social

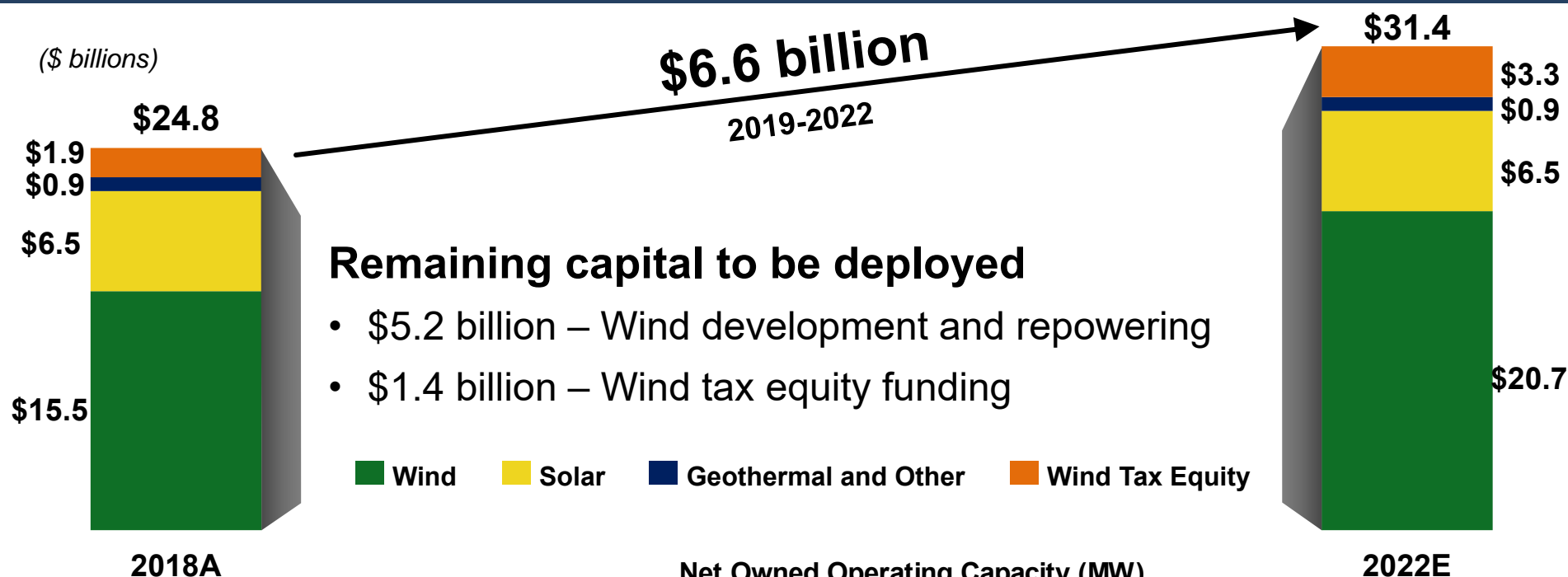
- BHE CARES – Global Giving and Volunteering
- Customer First
- Veterans Engagement and Retention Network
- Diversity and Inclusion Policy

## Governance

- Berkshire Hathaway Energy Code of Business Conduct
- Berkshire Hathaway Inc. Ethics and Compliance Policy
- Financial planning process
- Strategic repositioning

# Support a Cleaner Energy Future

## \$30 Billion Renewable Commitment



	Net Owned Operating Capacity (MW)			2022E		
	December 2018			December 2020		
	Wind	Solar	Other	Wind	Solar	Other
PacifiCorp	1,030	-	32	1,980	-	32
MidAmerican Energy	5,158	-	-	6,598	-	-
NV Energy	-	15	5	-	15	5
BHE Renewables	1,665	1,536	338	1,665	1,536	338
	<b>7,853</b>	<b>1,551</b>	<b>375</b>	<b>10,243</b>	<b>1,551</b>	<b>375</b>

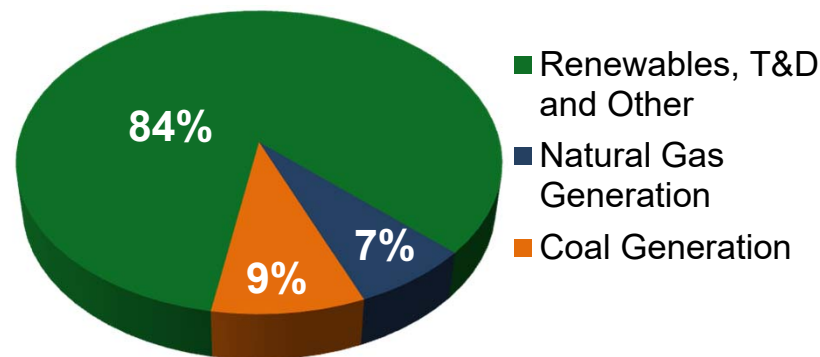
- In addition to owned renewable capacity, Berkshire Hathaway Energy's regulated utilities have renewable energy power purchase agreements for more than 4,100 MW. NV Energy plans to purchase approximately 1,400 MW of additional solar energy and PacifiCorp plans to purchase approximately 1,000 MW of additional wind and solar energy

# Asset Profile

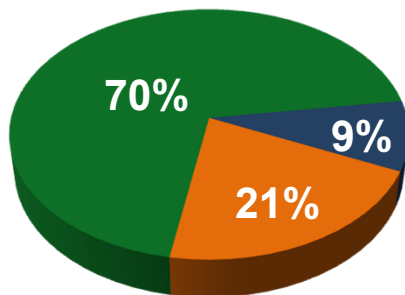
- Berkshire Hathaway Energy is growing its renewable energy portfolio and continues to de-risk its balance sheet as it relates to carbon-based generation assets. In 2018, only 9% of our overall net investment in property, plant and equipment was invested in coal generation assets, while 7% was invested in natural gas generation assets

## Net PP&E as of December 31, 2018

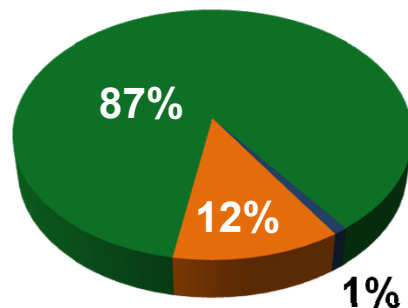
### Berkshire Hathaway Energy



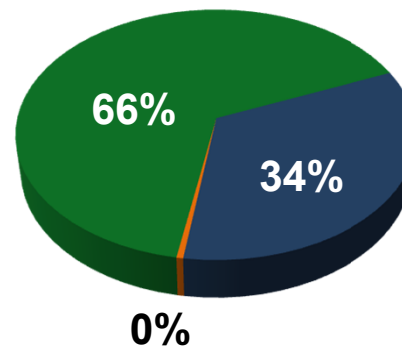
### PacifiCorp



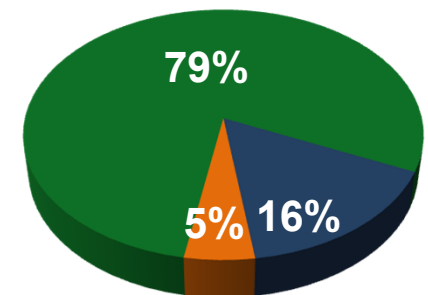
### MidAmerican Energy



### Nevada Power

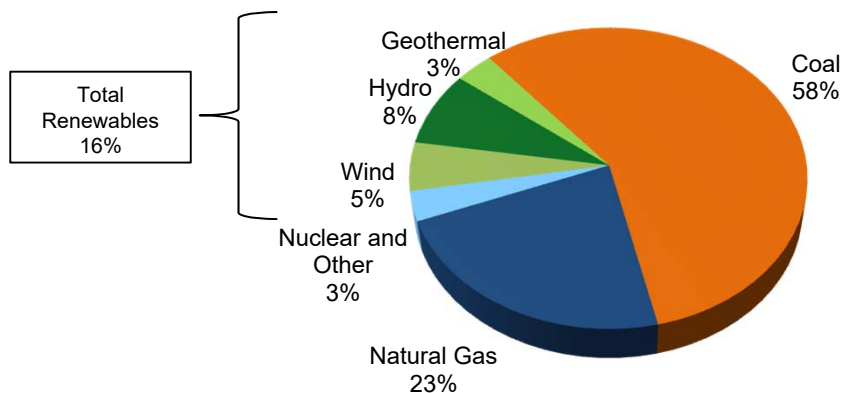


### Sierra Pacific

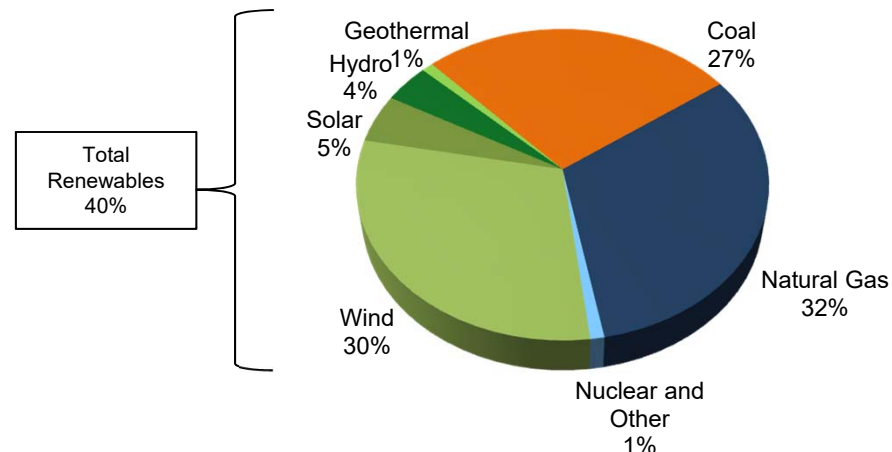


# Generation Diversification

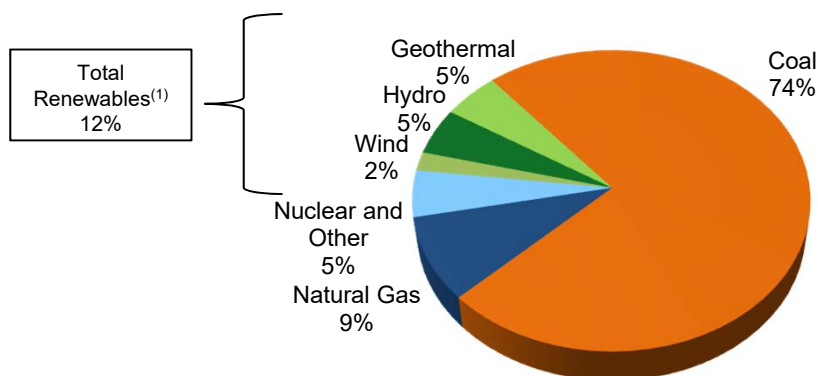
**2006 BHE Power Capacity – 16,386 MW**



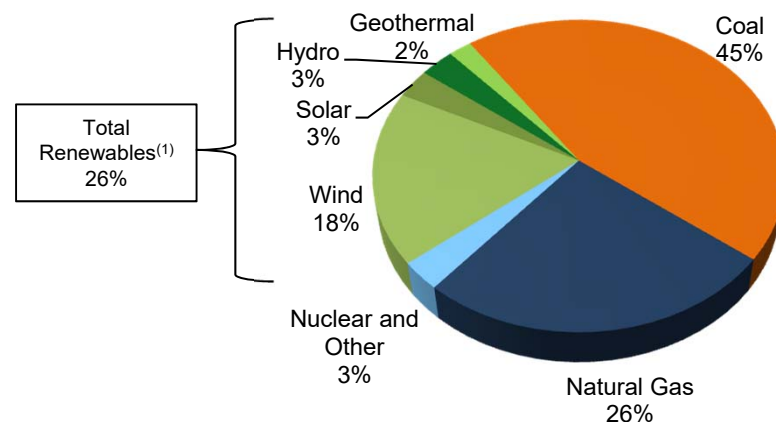
**2018 BHE Power Capacity – 33,676 MW**



**2006 BHE Power Generation – 83 TWh**



**2018 BHE Power Generation – 122 TWh**



- In 2006, Berkshire Hathaway Energy acquired PacifiCorp. Since this acquisition, we have significantly changed our generation mix by growing our renewable portfolio of assets

(1) All or some of the renewable energy attributes associated with generation from these generating facilities may be: (a) used in future years to comply with RPS or other regulatory requirements, or (b) sold to third parties in the form of RECs or other environmental commodities



# Berkshire Hathaway Ownership is Unique to the Utility Industry

- Our support is explicit from our Aa2/AA rated parent
  - We are not like any other utility holding company. Our balance sheet and credit strength are supported by a strong owner with over \$100 billion of cash liquidity, as of December 31, 2018
  - We do not pay dividends, which allows us to continue to grow the business and maintain credit quality
  - We retain more dollars of earnings than any other U.S. electric utility

As of December 31, 2018

(\$ in millions)	Net Income to Common <sup>(1)</sup>	Adjusted Earnings <sup>(1)</sup>	Common Dividend <sup>(1)</sup>	Adjusted Retained Earnings per day	Common Dividend as % of Adjusted Earnings	Market Cap <sup>(2)</sup>
<b>Berkshire Hathaway Energy:</b>						
2018 Actual	\$ 2,568	\$ 2,817	\$ -	\$7.7	0%	Privately Held
<b>Peer Group Comparison:</b>						
NextEra Energy	\$ 6,638	\$ 3,673	\$ 2,101	\$4.3	57%	\$ 83,086
Duke Energy	2,666	3,339	2,471	2.4	74%	62,740
Southern Company	2,226	3,128	2,425	1.9	78%	45,404
Exelon Corporation	2,010	3,026	1,332	4.6	44%	43,665
Dominion Energy	2,447	2,651	2,185	1.3	82%	48,664
American Electric Power	1,924	1,945	1,251	1.9	64%	36,865
Sempra Energy	924	1,503	877	1.7	58%	29,619
Public Service Enterprise	1,438	1,582	910	1.8	58%	26,233
Xcel Energy Inc.	1,261	1,261	730	1.5	58%	25,327
Consolidated Edison, Inc.	1,382	1,349	842	1.4	62%	24,544
Peer Median	1,967	2,298	1,292	1.9	60%	

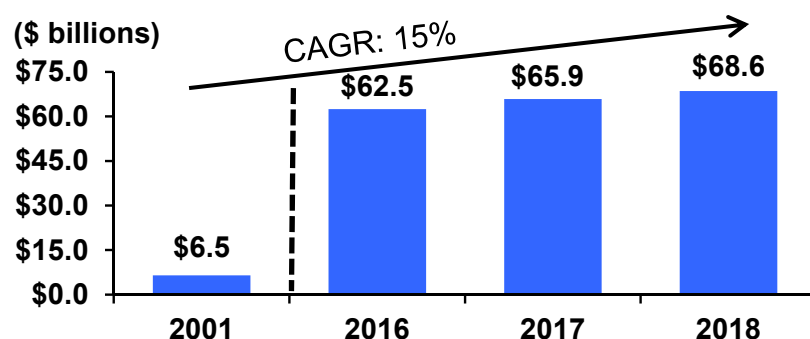
<sup>(1)</sup> As reported by company public filings

<sup>(2)</sup> Calculated using reported shares outstanding on each respective balance sheet for the period ending December 31, 2018, per S&P Capital IQ

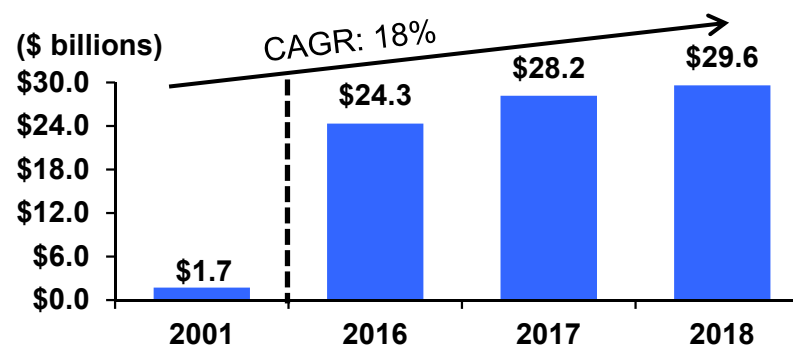
# Berkshire Hathaway Energy Financial Summary

- Since being acquired by Berkshire Hathaway in March 2000, Berkshire Hathaway Energy has realized significant growth in its assets, net income and cash flows

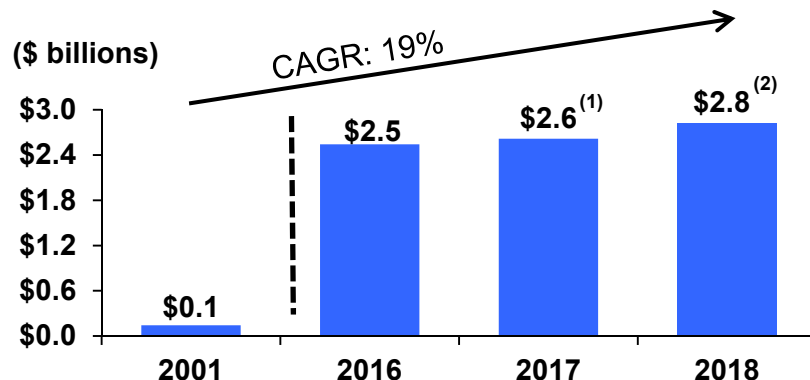
## Property, Plant and Equipment (Net)



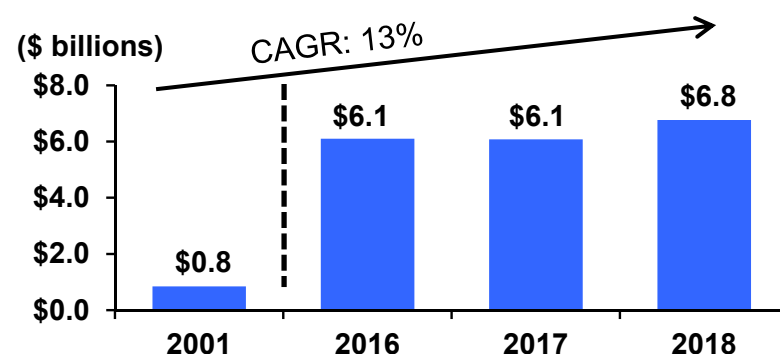
## BHE Shareholders' Equity



## Net Income Attributable to BHE



## Cash Flows From Operations

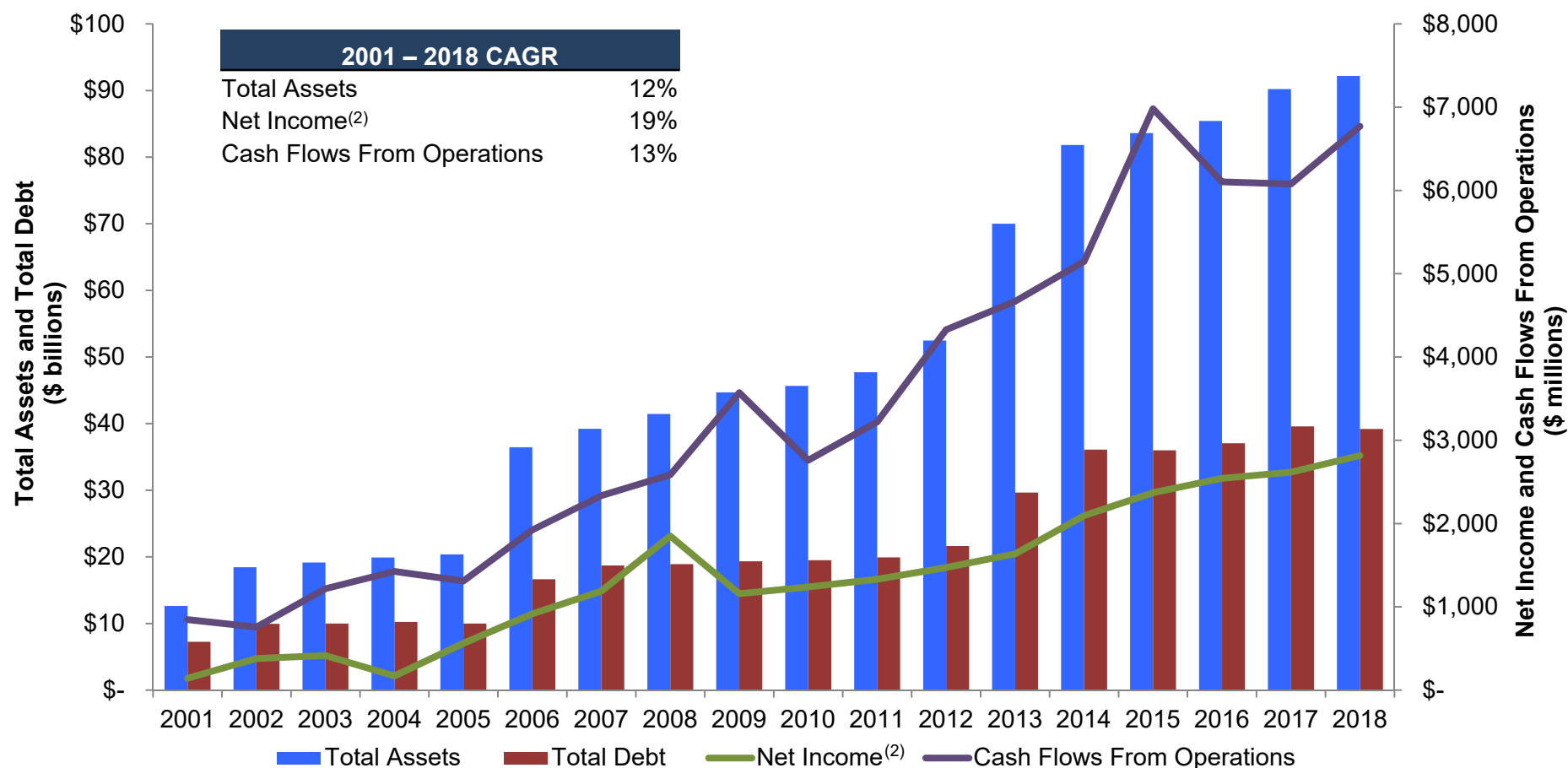


- (1) Adjusted net income in 2017 of \$2.6 billion excludes a \$516 million benefit as a result of 2017 Tax Reform, and a charge of \$263 million from tender offers for certain long-term debt completed in December 2017. Including the impact of these adjustments, 2017 reported net income was \$2.9 billion
- (2) Adjusted net income in 2018 of \$2.8 billion excludes a \$134 million benefit as a result of 2017 Tax Reform, and an after-tax unrealized loss of \$383 million related to our investment in BYD. Including the impact of these adjustments, 2018 reported net income was \$2.6 billion

# Berkshire Hathaway Energy

## Growing the Business

- We have significantly grown our assets while de-risking the business since being acquired by Berkshire Hathaway in 2000, reducing total debt<sup>(1)</sup> / total assets from 58% to 43% and improving our credit ratings



<sup>(1)</sup> Total Debt excludes Junior Subordinated Debentures and Berkshire Hathaway Energy trust preferred securities. As of December 31, 2018, \$100 million of junior subordinated debentures remained outstanding

<sup>(2)</sup> Starting in 2017, net income reflects adjusted net income

# 2018 Net Income

(\$ millions)

Net Income Attributable to BHE	Years Ended December 31		
	2018	2017	2016
PacifiCorp	\$ 739	\$ 763	\$ 764
MidAmerican Funding	669	601	532
NV Energy	317	365	359
Northern Powergrid	239	251	342
BHE Pipeline Group	387	270	249
BHE Transmission	210	224	214
BHE Renewables	329	236	179
HomeServices	145	118	127
BHE and Other	(218)	(211)	(224)
Adjusted Net income attributable to BHE <sup>(1)</sup>	2,817	2,617	2,542
Unrealized Loss on BYD, net of Income Taxes	(383)	-	-
Debt Tender Offer Premium	-	(263)	-
2017 Tax Reform	134	516	-
Net income attributable to BHE	<u>\$ 2,568</u>	<u>\$ 2,870</u>	<u>\$ 2,542</u>

(1) See appendix for a detailed reconciliation of 2017 and 2018 net income adjustments

# U.S. Regulatory Overview

## Adjustment Mechanisms

	Fuel Recovery Mechanism	Capital Recovery Mechanism	Renewable Rider (REC/PTC)	Transmission Rider	Energy Efficiency Rider	Decoupling	Forward Test Year
<b>PacifiCorp</b>							
Utah	✓	✓	✓		✓		✓ <sup>(1)</sup>
Wyoming	✓		✓		✓		✓ <sup>(1)</sup>
Idaho	✓		✓		✓		
Oregon	✓	✓	✓		✓		✓
Washington	✓	✓	✓		✓	✓	
California	✓	✓	✓		✓		✓
<b>MidAmerican Energy</b>							
Iowa – Electric	✓		✓	✓	✓		✓
Illinois – Electric	✓			✓	✓		✓
South Dakota – Electric	✓		✓	✓	✓		
Iowa – Gas	✓	✓			✓		✓
Illinois – Gas	✓				✓		✓
South Dakota - Gas	✓				✓		
<b>NV Energy</b>							
Nevada Power	✓		✓		✓		
Sierra Pacific Power – Electric	✓		✓		✓		
Sierra Pacific Power – Gas	✓		✓				

(1) PacifiCorp has relied on both historical test periods with known and measurable adjustments, as well as forecast test periods



# Return on Equity

Entity	Net Income Divided by Average Equity <sup>(1)</sup>		Allowed ROE
	2018	2017	
<b>PacifiCorp</b>	9.7%	10.3%	9.8%
<b>MidAmerican Energy</b>	11.2%	11.0%	10.5% <sup>(2)</sup>
<b>Nevada Power</b>	8.1%	9.0%	9.4% <sup>(3)</sup>
<b>Sierra Pacific</b>	7.5%	9.5%	9.6%
<b>Northern Natural Gas</b>	13.4%	11.3%	12.0%
<b>Kern River</b>	17.7%	10.6%	11.55%

(1) Based on 13-point average equity, including as reported net income and equity

(2) Effective January 1, 2018, revenue sharing will be triggered each year by MidAmerican Energy's actual returns above a threshold calculated annually. Effective January 1, 2019, the threshold is capped at 11% with customer sharing set at 90%

(3) Nevada Power is permitted to earn up to 9.7% before 50% revenue sharing commences

# Low Cost Competitive Rates

Company	Weighted Average Retail Rate (\$/kWh)	
<b>U.S. National Average<sup>(1)</sup></b>	<b>\$0.1089</b>	
<b>Pacific Power</b>	<b>\$0.0956</b>	12% lower than the U.S. National Average
<b>Rocky Mountain Power</b>	<b>\$0.0781</b>	28% lower than the U.S. National Average
<b>MidAmerican Energy</b>	<b>\$0.0731</b>	33% lower than the U.S. National Average
<b>Nevada Power</b>	<b>\$0.1018</b>	7% lower than the U.S. National Average
<b>Sierra Pacific</b>	<b>\$0.0814</b>	25% lower than the U.S. National Average
<b>BHE Pipeline Group</b>	Mastio #1 for the 14 <sup>th</sup> consecutive year	

**Highest Average Rates (\$/kWh) by State<sup>(1)</sup>:** Hawaii – \$0.2719; Massachusetts – \$0.1992; Connecticut – \$0.1851; New Hampshire – \$0.1787; Rhode Island – \$0.1766

<sup>(1)</sup> Source: Edison Electric Institute (Summer 2018)

# Credit Ratios Support Our Credit Ratings

		Unadjusted Credit Metrics										
		FFO Interest Coverage				FFO / Debt				Debt / Total Capitalization		
	Credit Ratings <sup>(1)</sup>	Average	2018	2017	2016	Average	2018	2017	2016	2018	2017	2016
Berkshire Hathaway Energy <sup>(2)</sup>	A3 / A-	4.4x	4.5x	4.4x	4.3x	16.0%	16.3%	15.8%	16.0%	57%	58%	59%
<b>Regulated U.S. Utilities</b>												
PacifiCorp <sup>(2) (3)</sup>	A1 / A+	5.4x	5.1x	5.3x	5.7x	23.2%	22.3%	23.1%	24.1%	47%	48%	50%
MidAmerican Energy <sup>(2) (3)</sup>	Aa2 / A+	7.4x	6.8x	7.6x	7.8x	27.3%	23.4%	28.1%	30.4%	47%	47%	46%
Nevada Power <sup>(2) (3)</sup>	A2 / A+	4.8x	4.8x	4.9x	4.6x	22.5%	23.0%	22.8%	21.6%	49%	53%	51%
Sierra Pacific <sup>(2) (3)</sup>	A2 / A+	6.1x	6.8x	6.1x	5.4x	20.6%	22.0%	19.1%	20.7%	48%	50%	51%
<b>Regulated Pipelines and Electric Distribution</b>												
Northern Natural Gas	A2 / A	9.1x	8.6x	9.2x	9.5x	38.1%	31.5%	41.1%	41.8%	37%	34%	36%
AltaLink, L.P. <sup>(3)</sup>	- / A / A	3.1x	2.9x	3.1x	3.2x	11.8%	11.3%	12.2%	11.8%	60%	60%	62%
Northern Powergrid Holdings	Baa1 / A-	4.7x	4.4x	4.5x	5.1x	18.8%	17.2%	17.7%	21.7%	42%	43%	43%
Northern Powergrid (Northeast)	A3 / A											
Northern Powergrid (Yorkshire)	A3 / A											

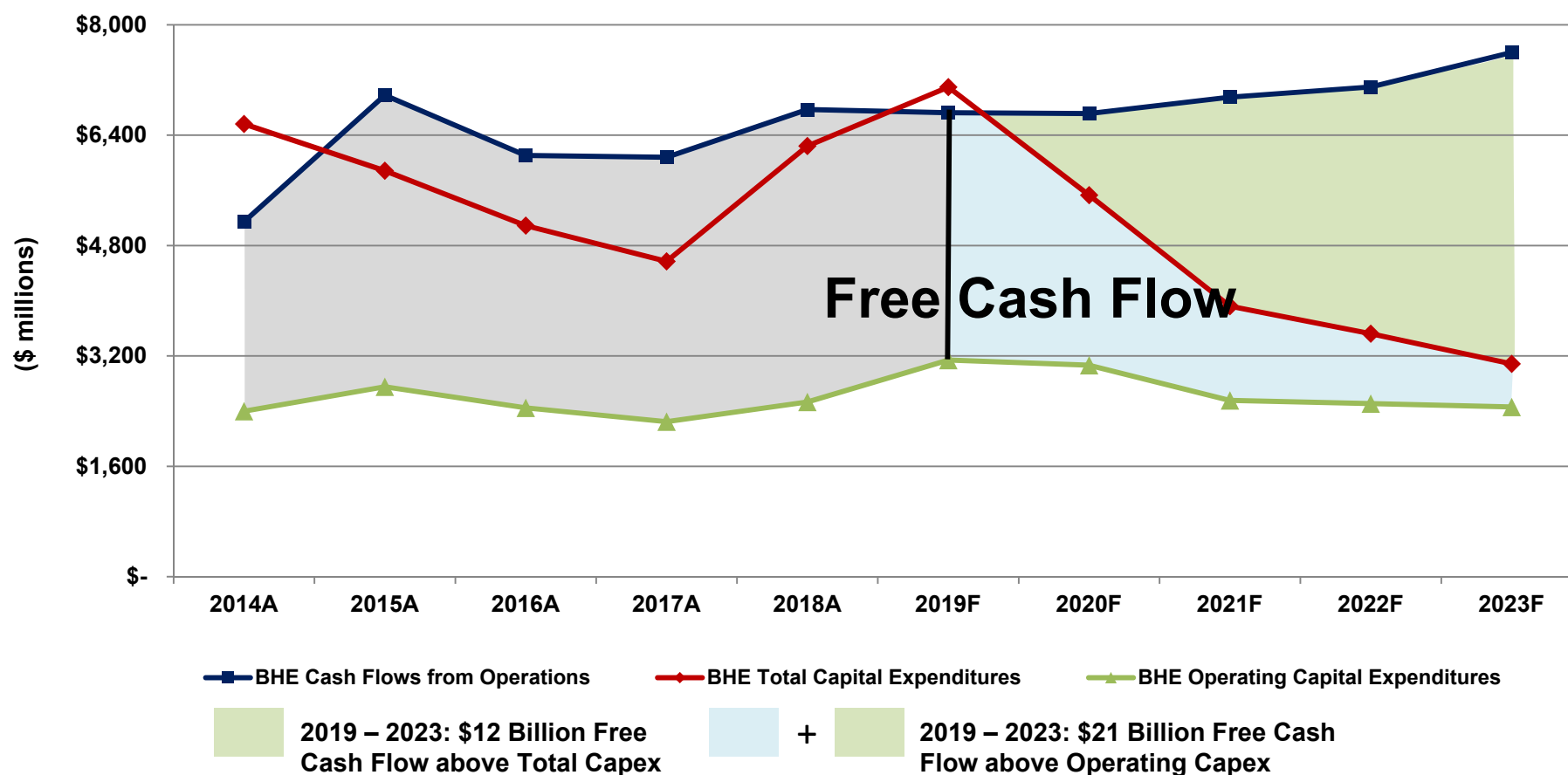
(1) Moody's / S&P / DBRS. Ratings are issuer or senior unsecured ratings unless otherwise noted

(2) Refer to the Appendix for the calculations of key ratios

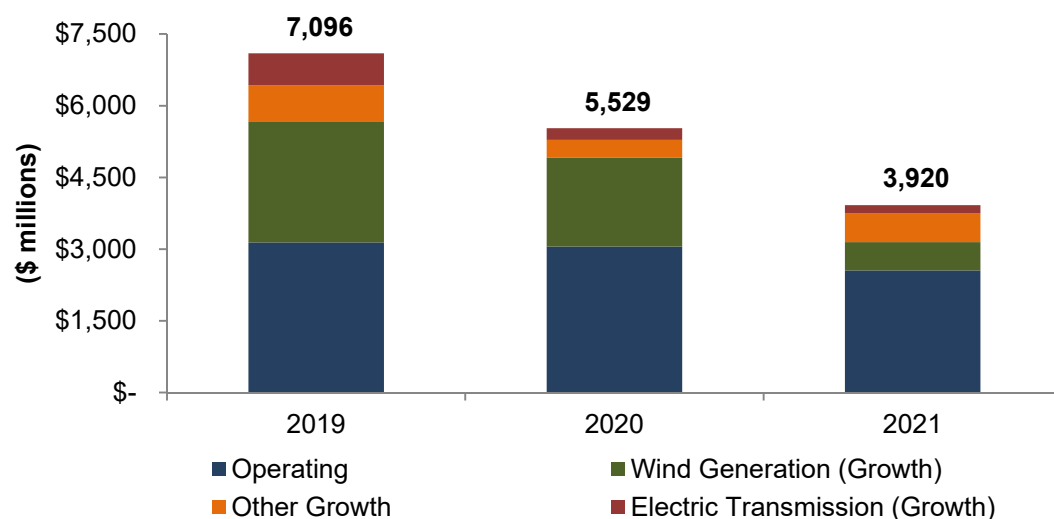
(3) Ratings are senior secured ratings

# Capital Expenditures and Cash Flows

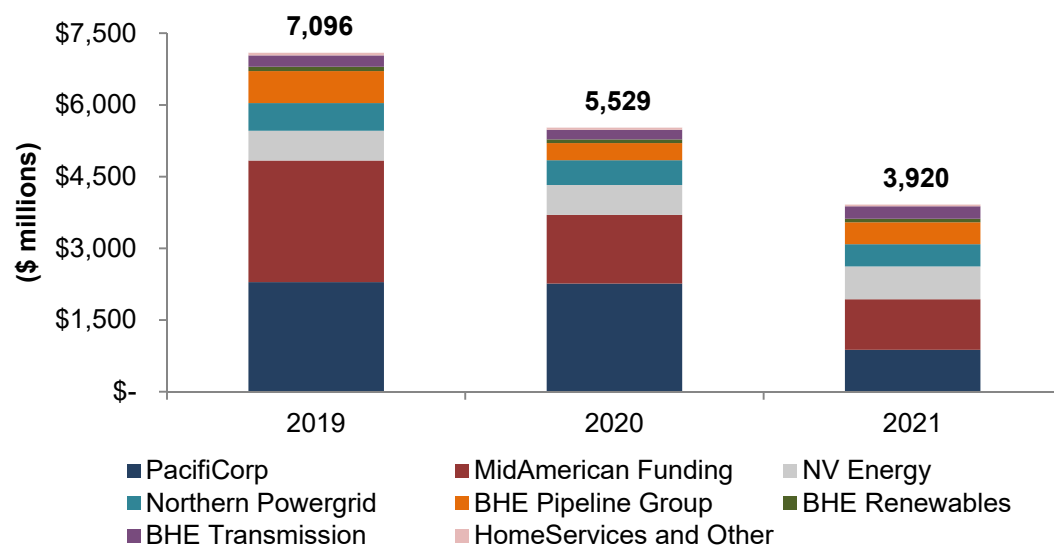
- Berkshire Hathaway Energy and its subsidiaries will spend approximately \$16.5 billion from 2019 – 2021 for growth and operating capital expenditures, which primarily consist of new wind generation project expansions, repowering of existing wind facilities and transmission and distribution capital expenditures



# Capital Investment Plan



Capex by Type	Current Plan 2019-2021	Prior Plan 2019-2021	Variance
Operating	\$ 8,746	\$ 8,795	\$ (49)
Wind Generation (Growth)	4,990	3,739	1,251
Other Growth	1,727	1,442	285
Electric Transmission (Growth)	1,082	1,047	35
<b>Total</b>	<b>\$ 16,545</b>	<b>\$ 15,023</b>	<b>\$ 1,522</b>



Capex by Business	Current Plan 2019-2021	Prior Plan 2019-2021	Variance
PacifiCorp	\$ 5,431	\$ 4,746	\$ 685
MidAmerican Energy	5,039	4,587	452
NV Energy	1,935	1,678	257
Northern Powergrid	1,564	1,564	-
BHE Pipeline Group	1,481	1,351	130
BHE Renewables	245	245	-
BHE Transmission	701	701	-
HomeServices and Other	149	151	(2)
<b>Total</b>	<b>\$ 16,545</b>	<b>\$ 15,023</b>	<b>\$ 1,522</b>



# PG&E Bankruptcy Update

- PG&E's bankruptcy filing in January 2019 had no impact to our regulated subsidiaries. We have two solar projects, Topaz and Agua Caliente, that have PPAs with PG&E and both projects issued debt which is non-recourse to Berkshire Hathaway Energy
- Since the bankruptcy petition, PG&E has paid in full the invoices for both Topaz and Agua Caliente. PG&E has stated in its public filings it will pay suppliers in full under normal terms for post-petition goods and services received

(\$ millions)	Topaz	Agua Caliente
<b>BHE Ownership</b>	100%	49%
<b>Project</b>	550 MW	142 MW <sup>(1)</sup>
<b>PPA Maturity</b>	October 2039 (25 Years)	June 2039 (25 Years)
<b>Debt (as of 12/31/2018)</b>	\$924.8	\$385.0 <sup>(1)</sup>

- We are participating with a coalition of renewable developers, operators and investors to deliver a clear and concise message to the bankruptcy court, the CPUC, the FERC, Governor Newsom and legislators supporting preservation of existing contracts

*(1) Reflects Berkshire Hathaway Energy's 49% interest. Total project size is 290 MW, and total debt for the project as of December 31, 2018, was \$785.7 million*

# 2019 Financing Plan

## **Completed Debt Offerings and Refinancings**

- MidAmerican Energy
  - In January 2019, issued \$1.5 billion of First Mortgage, green bonds comprised of two tranches: \$600 million 10-year offering at 3.65% coupon, and \$900 million 30-year offering at 4.25% coupon
  - In February 2019, redeemed \$500 million 2.4% First Mortgage bonds
- Nevada Power
  - In January 2019, issued a \$500 million of 10-year First Mortgage bonds at 3.70% coupon
  - On March 15, 2019, redeemed \$497.7 million 7.125% First Mortgage bonds
- PacifiCorp
  - In February 2019, issued \$1.0 billion of First Mortgage bonds comprised of two tranches: \$400 million 10-year offering at 3.50% coupon, and \$600 million 30-year offering at 4.15% coupon
  - On January 15, 2019, redeemed \$350 million 5.5% First Mortgage bonds

## **Anticipated Debt Offerings**

- Sierra Pacific Power
  - Anticipate up to \$130 million tax-exempt debt offering in the 2<sup>nd</sup> quarter 2019
- Northern Powergrid – Northeast
  - Anticipate up to £150 million debt financing in 2<sup>nd</sup> quarter 2019
- A Berkshire Hathaway Energy debt offering is possible and is dependent on capital markets and investment opportunities



# Questions

# **Berkshire Hathaway Energy Appendix**

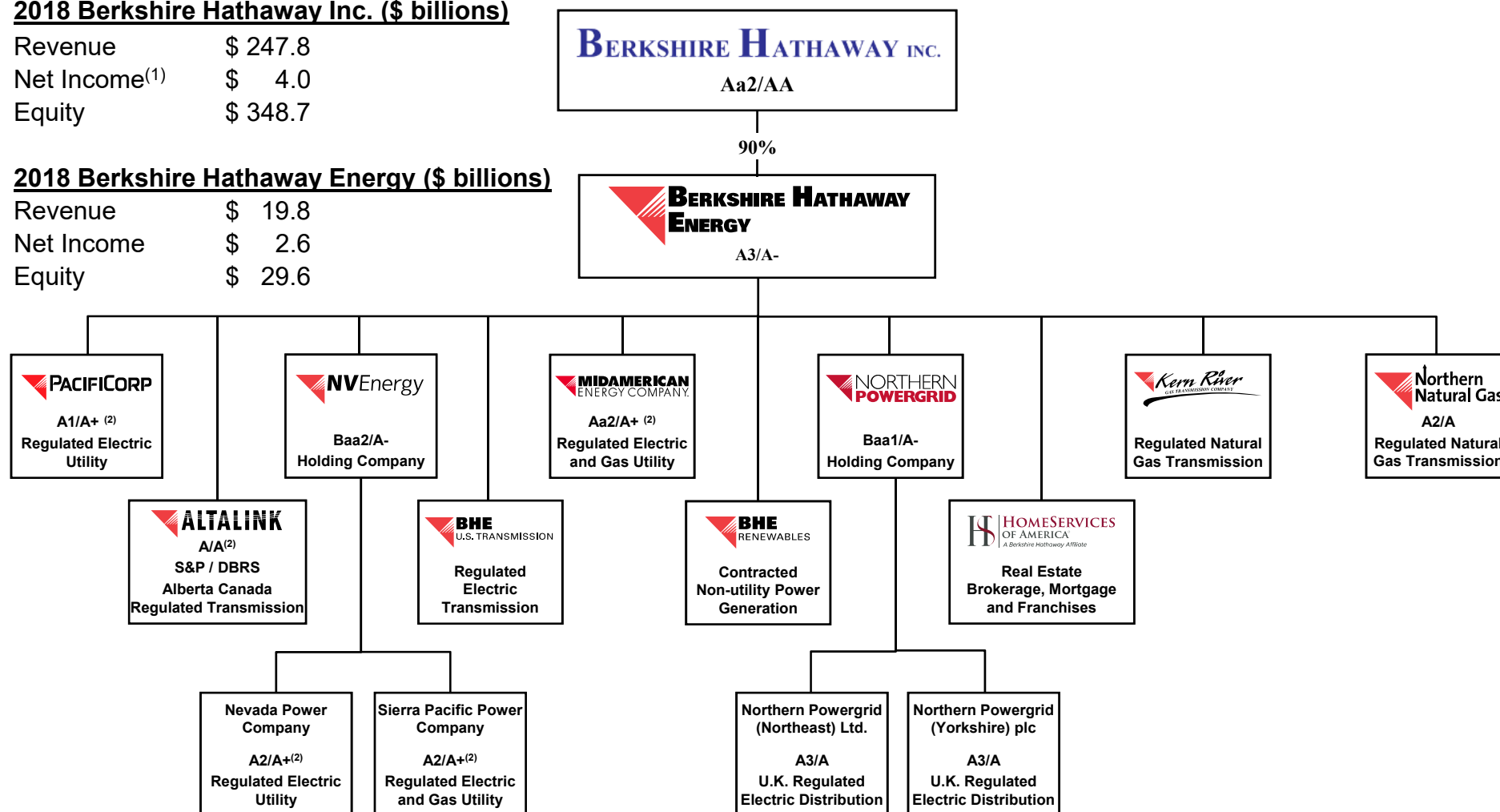
# Organizational Structure

## 2018 Berkshire Hathaway Inc. (\$ billions)

Revenue	\$ 247.8
Net Income <sup>(1)</sup>	\$ 4.0
Equity	\$ 348.7

## 2018 Berkshire Hathaway Energy (\$ billions)

Revenue	\$ 19.8
Net Income	\$ 2.6
Equity	\$ 29.6



(1) Warren Buffett's 2018 Berkshire Hathaway Shareholder Letter states – "The components of that figure are \$24.8 billion in operating earnings, a \$3.0 billion non-cash loss from an impairment of intangible assets (arising almost entirely from our equity interest in Kraft Heinz), \$2.8 billion in realized capital gains from the sale of investment securities and a \$20.6 billion loss from a reduction in the amount of unrealized capital gains"

(2) Ratings for PacifiCorp, MidAmerican Energy Company, Nevada Power Company, Sierra Pacific Power Company and AltaLink L.P. are senior secured ratings



# Reportable Segment Information

(\$ millions)

## Operating Income:

	Years Ended December 31		
	2018	2017	2016
PacifiCorp	\$ 1,051	\$ 1,440	\$ 1,429
MidAmerican Funding	550	531	551
NV Energy	607	766	774
Northern Powergrid	486	488	500
BHE Pipeline Group	525	473	455
BHE Transmission	313	322	92
BHE Renewables	325	316	256
HomeServices	214	214	212
BHE and Other	1	(41)	(22)
Total operating income	<b>4,072</b>	<b>4,509</b>	<b>4,247</b>
Interest expense - senior & subsidiary	(1,833)	(1,822)	(1,789)
Interest expense - junior subordinated debentures	(5)	(19)	(65)
Capitalized interest and other, net	269	265	457
Income before income tax expense and equity income (loss)	<b>2,503</b>	<b>2,933</b>	<b>2,850</b>
Income tax expense (benefit)	(294)	353	403
Equity income (loss)	43	77	123
Net income	<b>2,840</b>	<b>2,657</b>	<b>2,570</b>
Net income attributable to noncontrolling interests	23	40	28
Adjusted Net income attributable to BHE	<b>2,817</b>	<b>2,617</b>	<b>2,542</b>
Unrealized Loss on BYD, net of Income Taxes	(383)	-	-
Debt Tender Offer Premium	-	(263)	-
2017 Tax Reform	134	516	-
Net income attributable to BHE	<b>\$ 2,568</b>	<b>\$ 2,870</b>	<b>\$ 2,542</b>

# Tax Reform

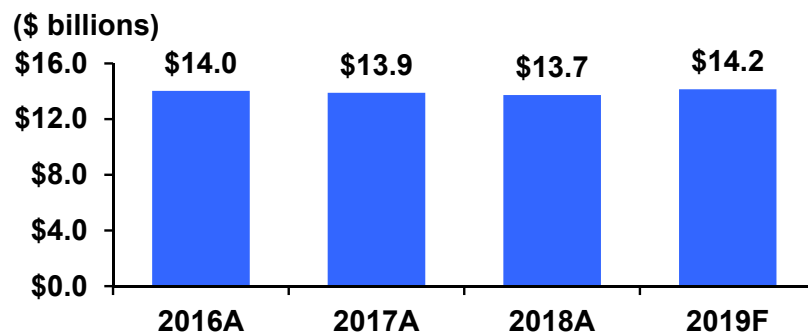
	Treatment of Lower Tax Rate	Treatment of Deferred Income Taxes
<b><u>PacifiCorp</u></b>		
Utah	In April 2018, the UPSC ordered a rate reduction of \$61 million, or 3.1%, effective May 1, 2018, which will remain in effect until the next general rate case	In November 2018, the UPSC approved an all-party settlement that continues the current rate reduction of \$61 million, with other benefits provided to customers through a combination of accelerated depreciation of certain thermal steam plant units and deferral to offset costs in the next general rate case
Wyoming	In April 2018, PacifiCorp filed a partial settlement related to the impact of 2017 Tax Reform with the WPSC that provides a rate reduction of \$23 million, or 3.3%, effective July 1, 2018, through June 30, 2019, with the remaining tax savings to be deferred with offsets to other costs	In June 2018, the WPSC approved the rate reduction on an interim basis. In June 2018, PacifiCorp filed reports with the WPSC with the calculation of the full impact of the tax law change on revenue requirement. These reports initiated the next phase of the proceedings including a hearing held in January 2019. In March 2019, the WPSC approved the stipulation in part and retained the \$23 million reduction in rates, with other savings to be deferred with offsets to other costs
Idaho	In May 2018, the IPUC approved an all-party settlement to implement a rate reduction of \$6 million, or 2.2%, effective June 1, 2018, through May 31, 2019	PacifiCorp's proposal to defer additional benefits to offset other costs is pending with the IPUC
Oregon	In January 2019, the OPUC approved amortization of the current income tax expense benefits, which results in a rate reduction of \$48.2 million, or 3.7%, effective February 1, 2019	In January 2019, the OPUC approved continued deferral of excess deferred income tax balances until PacifiCorp's next general rate case
Washington	In December 2018, the WUTC approved amortization of the current income tax expense benefits, which results in a rate reduction of \$8.3 million, or 2.3%, effective January 1, 2019	In December 2018, the WUTC approved continued deferral of excess deferred income tax balances until PacifiCorp's next general rate case
California	In May 2018, the CPUC approved PacifiCorp's application requesting authorization to establish a tax reform deferral account to record the 2018 tax impacts due to tax reform. PacifiCorp has requested a decision in its 2019 general rate case authorizing the company to file an advice letter in 2019 to return the savings to customers	

# Tax Reform

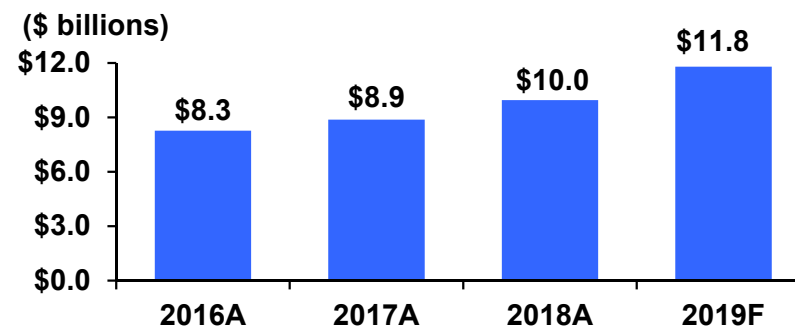
	Treatment of Lower Tax Rate	Treatment of Deferred Income Taxes
<b><u>MidAmerican Energy</u></b>		
Iowa	The IUB approved a rate reduction tariff through a rider (retroactive to January 1, 2018), based on an annual calculation of the benefit of the rate reduction. The revenue reduction for electric and gas operations totaled \$82 million for 2018, or 3.9% of sales revenue	Electric excess accumulated deferred income taxes (EADIT) amortization is deferred as a regulatory liability, which reduces rate base, until the next regulatory rate review, at which time its disposition will be determined. Gas EADIT amortization is deferred as a regulatory liability (subject to a carrying charge) until 2021, at which time and thereafter it must be refunded to customers
Illinois	Effective April 1, 2018, the ICC ordered a rate reduction through a rider, based on the impact of the rate reduction on the respective test years supporting current rates. The revenue reduction for electric and gas operations totaled \$7 million for 2018, or 3.9% of sales revenue	The rider returns the annual amortization of excess accumulated deferred income taxes to customers via the rider
<b><u>NV Energy</u></b>		
Nevada Power	PUCN procedural order granted a \$59 million rate reduction, or 3.0% refund, effective April 1, 2018	PUCN issued an order in October 2018 and NVE has filed a petition for reconsideration. The order requires amortization of EADIT on protected assets to a new regulatory liability as of January 1, 2018. Unprotected balances were capitalized as a regulatory liability. Revenue requirement treatment for both protected and unprotected balances will be addressed in subsequent general rate cases
Sierra Pacific	PUCN procedural order granted a \$25 million rate reduction, including \$22 million for electric and \$3 million for gas, or 3.4% and 2.6%, respectively, effective April 1, 2018	
<b><u>BHE Pipeline Group (FERC - Regulated)</u></b>		
Northern Natural Gas	Northern filed its FERC 501-G form with the FERC on October 11, 2018, along with written commentary explaining why no rate change is appropriate. Comments were filed both in support of and against Northern's position. On January 16, 2019, the FERC initiated an investigation, pursuant to Section 5 of the Natural Gas Act, to determine whether the rates currently charged by Northern are just and reasonable. Northern is required to file a full cost and revenue study by April 1, 2019. Northern expects to file a general Section 4 rate case, as soon as July 1, 2019, which would supersede a Section 5 rate action to address its significant investment. Northern believes a rate increase will result from the Section 4 rate case and higher rates would be implemented subject to refund in early 2020	
Kern River	Kern River filed and received approval of its proposal to provide an 11% credit for tax reform to customers, effective November 15, 2018. Kern River was the first to implement a rate reduction through the FERC 501-G process. Kern River's 501-G docket was closed February 27, 2019	

# Rate Base

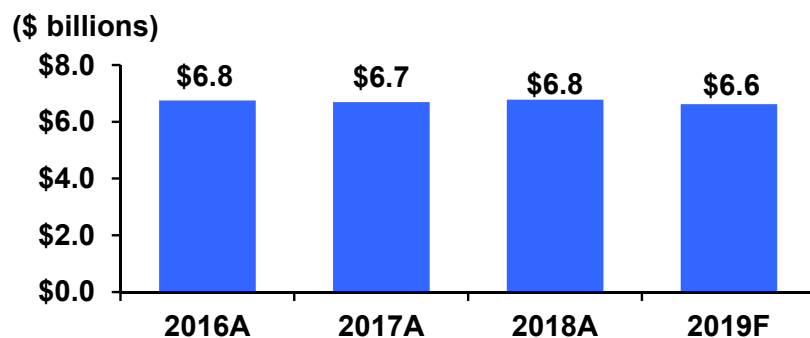
## PacifiCorp



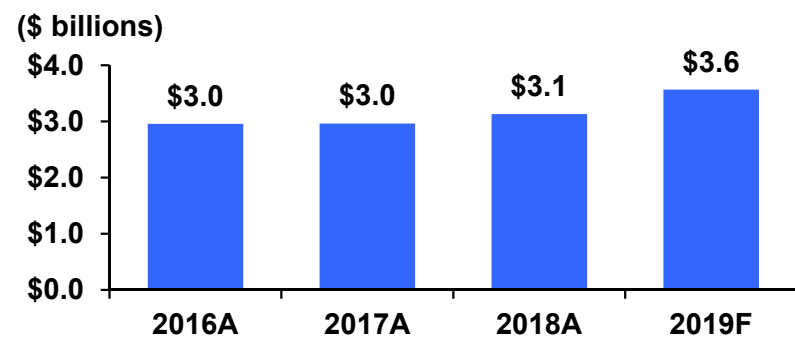
## MidAmerican Energy



## NV Energy



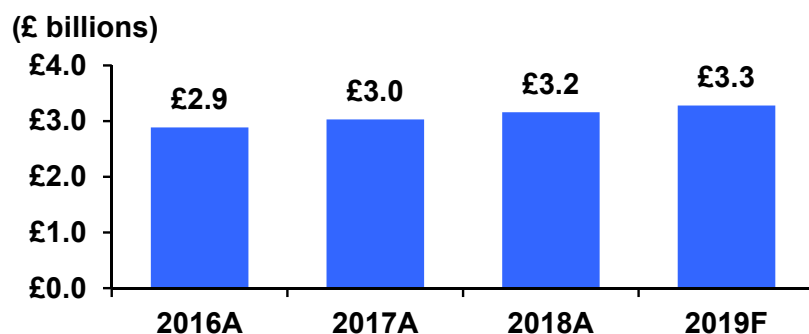
## BHE Pipeline Group



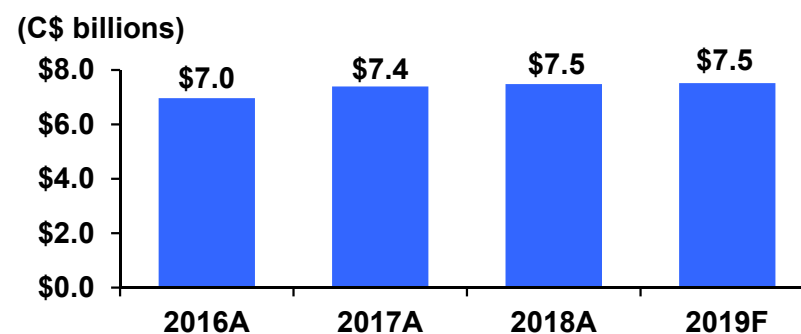
*Note: Rate base represents mid-year averages*

# Rate Base

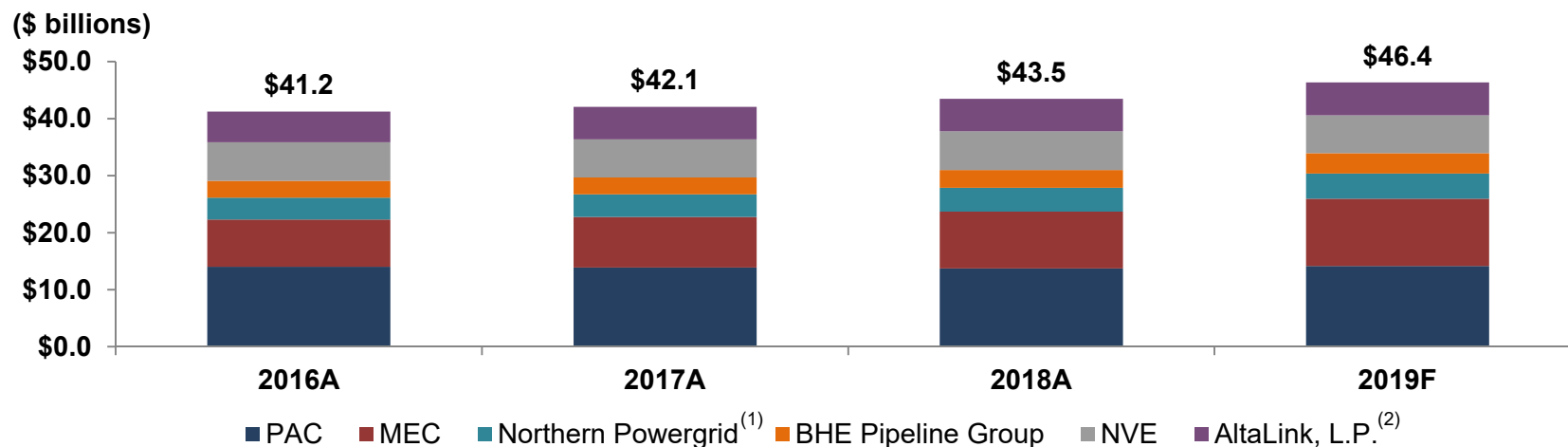
## Northern Powergrid



## AltaLink, L.P.



## Berkshire Hathaway Energy



Note: Rate base represents mid-year averages

(1) Northern Powergrid rate base converted into USD at the June 30 USD/GBP FX rate each year including 1.33 (2016), 1.30 (2017), 1.32 (2018) and 1.35 (2019 estimate)

(2) AltaLink, L.P. rate base converted into USD at the June 30 CAD/USD FX rate each year including 1.29 (2016), 1.30 (2017), 1.31 (2018) and 1.30 (2019 estimate)

# Long-Term Debt Summary as of December 31, 2018

## Consolidated Berkshire Hathaway Energy

	\$ (millions)	Wt. Avg. Coupon	Wt. Avg. Life (Years) <sup>(1)</sup>
Berkshire Hathaway Energy - Parent	8,577	4.62%	17.3
PacifiCorp	7,036	5.04%	13.5
MidAmerican Funding	5,599	4.17%	17.5
NV Energy	4,318	4.92%	10.2
Northern Powergrid <sup>(2)</sup>	2,626	5.16%	7.6
Northern Natural Gas	1,042	4.46%	21.6
BHE Canada <sup>(3)</sup>	3,842	3.87%	16.9
BHE Renewables	3,401	4.78%	8.6
HomeServices	233	4.00%	3.0
<b>Total Berkshire Hathaway Energy Long-Term Debt</b>	<b>36,674</b>	<b>4.63%</b>	<b>14.3</b>
Berkshire Hathaway Energy - Parent Junior Subordinated Debentures	100	5.00%	38.5
Northern Electric Preferred Stock - Perpetual	56	8.06%	30.0
PacifiCorp Preferred Stock - Perpetual	2	6.75%	30.0
<b>Total Berkshire Hathaway Energy Preferred Stock and Jr. Sub. Debentures</b>	<b>158</b>	<b>6.11%</b>	<b>35.3</b>
<b>Total Berkshire Hathaway Energy Long-Term Securities</b>	<b>36,832</b>	<b>4.63%</b>	<b>14.4</b>

<sup>(1)</sup> Weighted average life assumes perpetual preferred stock has an average life of 30 years

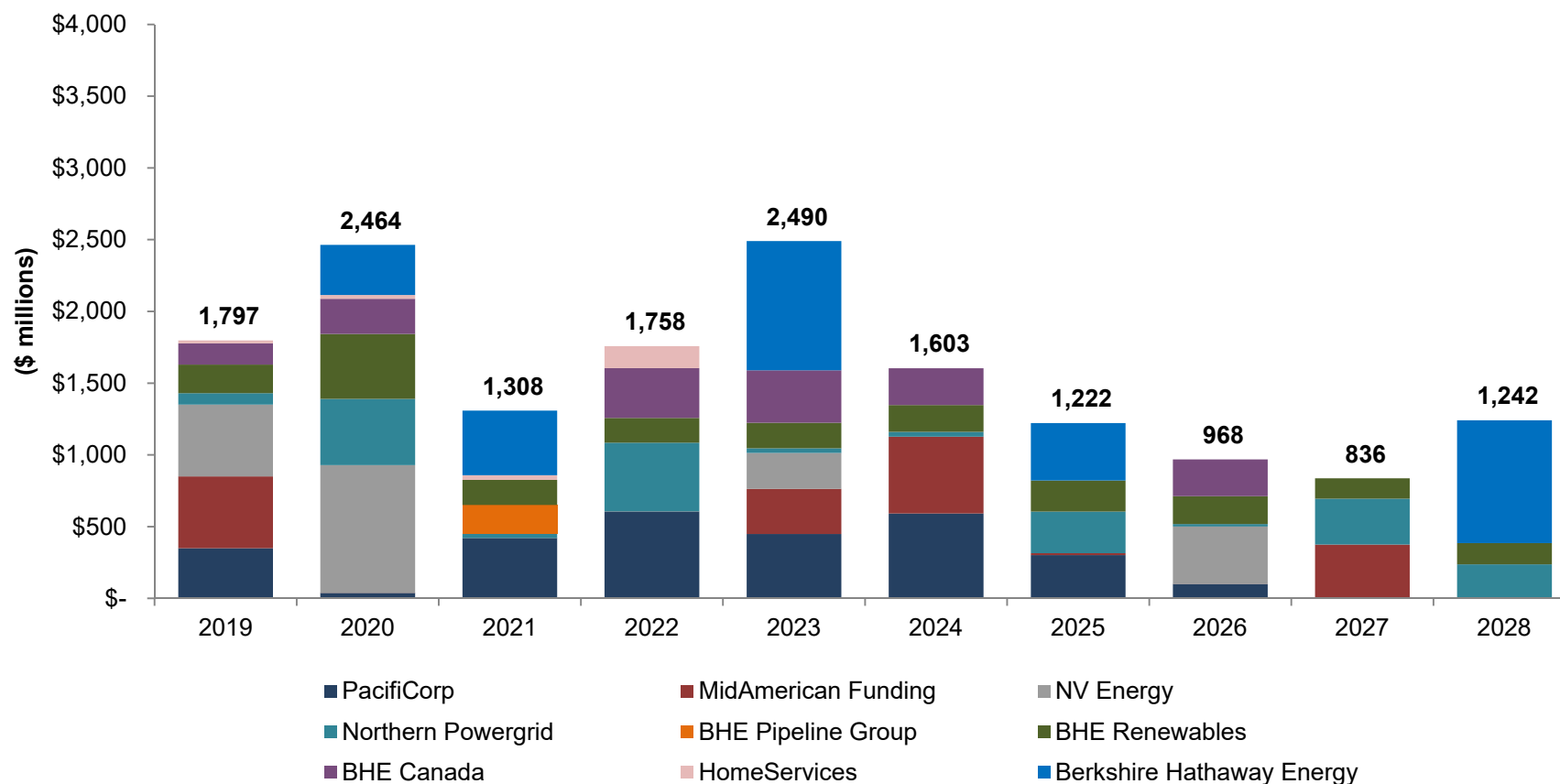
<sup>(2)</sup> USD to GBP exchange rate at \$1.2757/pound

<sup>(3)</sup> CAD to USD exchange rate at \$1.365/USD

- In January 2019, MidAmerican Energy issued \$1.5 billion First Mortgage, green bonds. Proceeds were used to finance development of the 2,000 MW Wind XI project and repowering of some of the company's existing wind facilities
- In January 2019, Nevada Power issued \$500 million First Mortgage bonds to repay maturing debt
- In February 2019, PacifiCorp issued \$1.0 billion First Mortgage bonds to finance development of its Energy Vision 2020 projects and to repay maturing debt

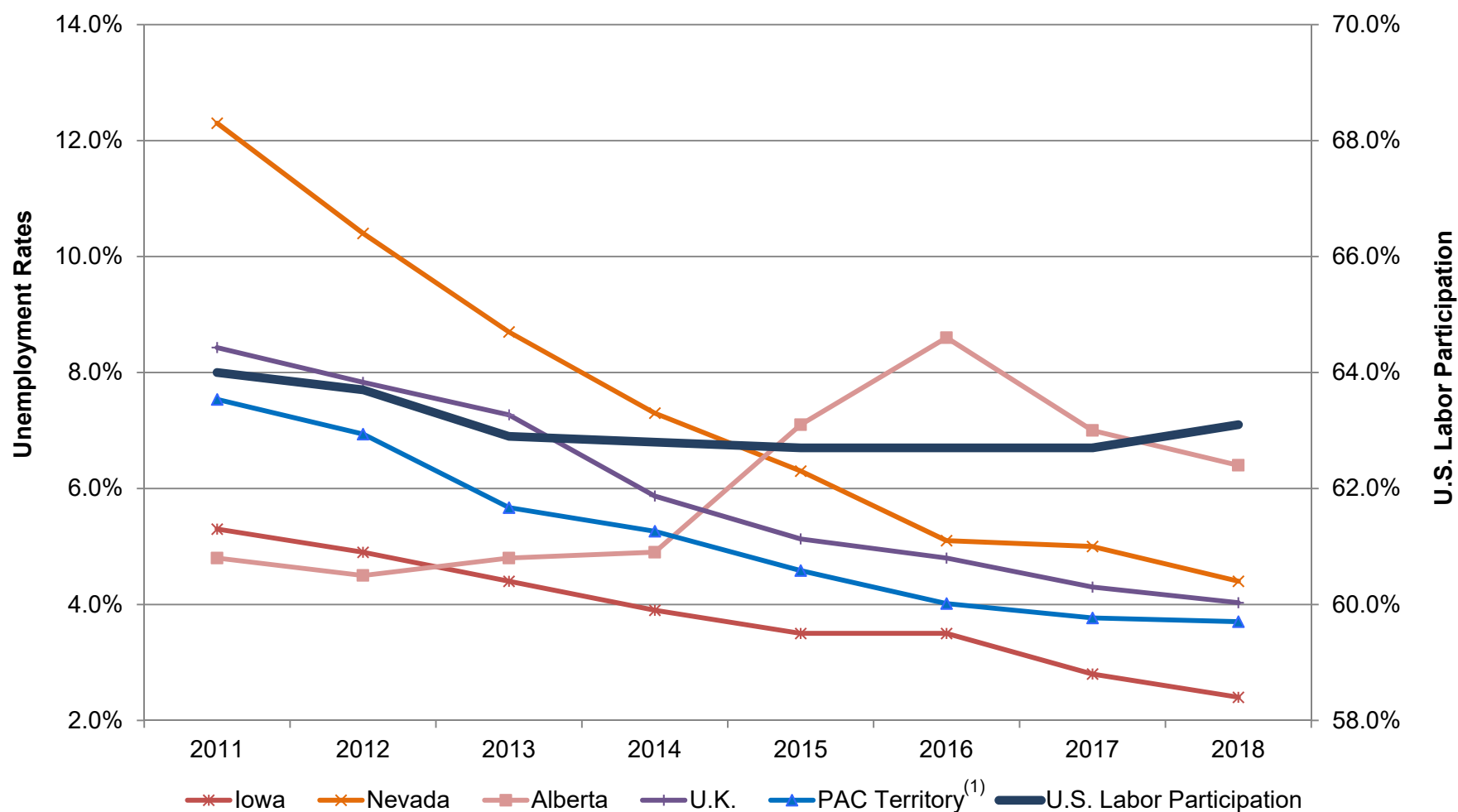
# Debt Maturities as of December 31, 2018

## Long-Term Debt Maturities<sup>(1)</sup>



<sup>(1)</sup> Excludes capital leases

# Jurisdictional Strength – Unemployment Rates



Source: Bloomberg, Bureau of Labor and Statistics

(1) Weighted average of Oregon, Utah and Wyoming



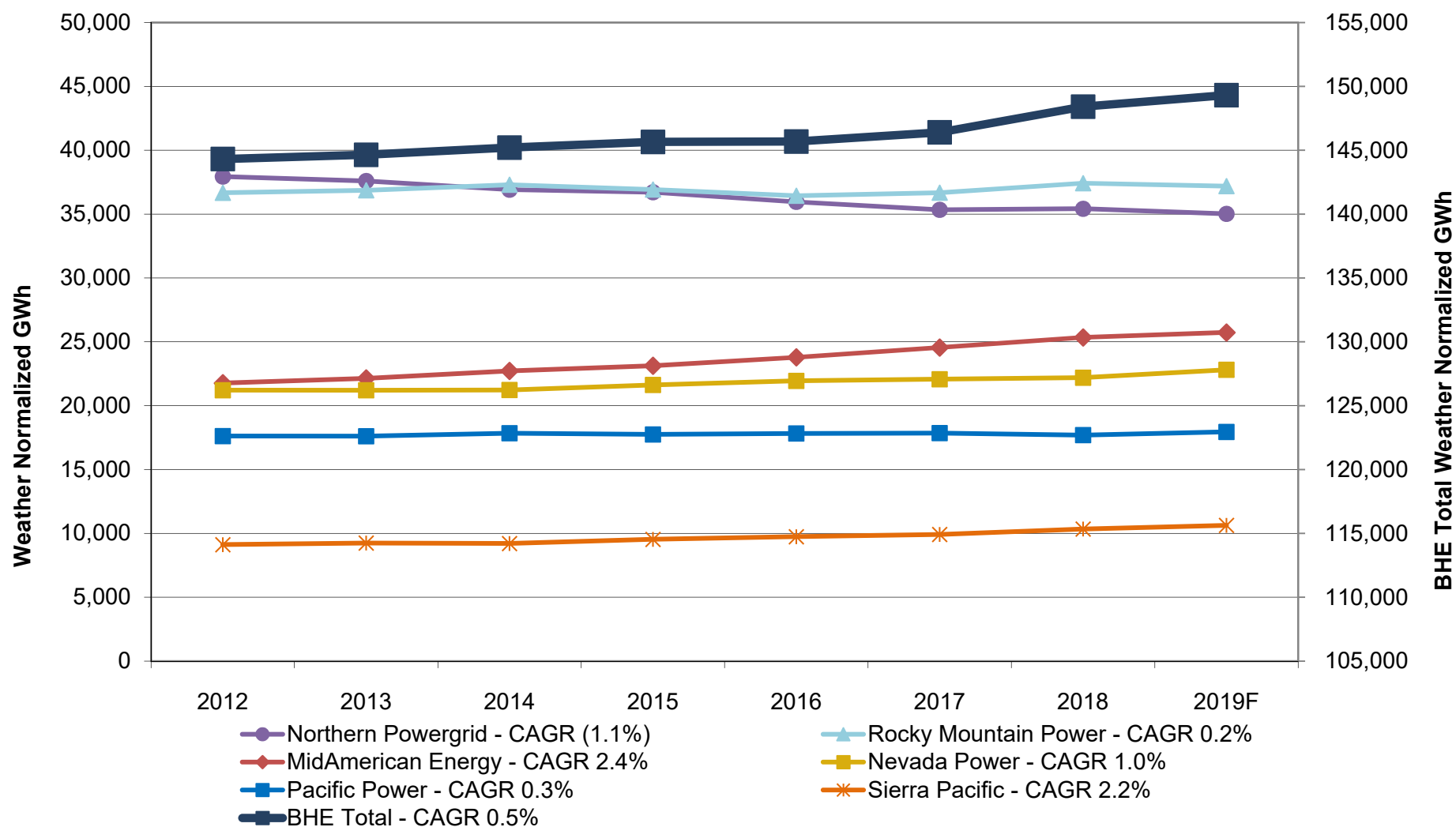
# Retail Electric Sales – Weather Normalized

(GWh)	December 31		Variance	
	2018	2017	Actual	Percent
<b>PacifiCorp</b>				
Residential	16,312	16,130	182	1.1%
Commercial	18,023	17,508	515	2.9%
Industrial and Other	20,776	20,885	(109)	-0.5%
Total	55,111	54,523	588	1.1%
<b>MidAmerican Energy</b>				
Residential	6,359	6,235	124	2.0%
Commercial	3,797	3,797	-	0.0%
Industrial and Other	15,191	14,523	668	4.6%
Total	25,347	24,555	792	3.2%
<b>Nevada Power</b>				
Residential	9,373	9,331	42	0.5%
Commercial	4,689	4,603	86	1.9%
Industrial and Other	5,651	6,343	(692)	-10.9%
Distribution Only Service	2,479	1,795	684	38.1%
Total	22,192	22,072	120	0.5%
<b>Sierra Pacific</b>				
Residential	2,437	2,403	34	1.4%
Commercial	2,993	2,940	53	1.8%
Industrial and Other	3,397	3,179	218	6.9%
Distribution Only Service	1,515	1,395	120	8.6%
Total	10,342	9,917	425	4.3%
<b>Northern Powergrid</b>				
Residential	12,642	12,657	(15)	-0.1%
Commercial	4,237	4,374	(137)	-3.1%
Industrial and Other	18,540	18,304	236	1.3%
Total	35,419	35,335	84	0.2%

# Retail Electric Sales – Actual

(GWh)	December 31		Variance	
	2018	2017	Actual	Percent
<b>PacifiCorp</b>				
Residential	16,227	16,625	(398)	-2.4%
Commercial	18,078	17,726	352	2.0%
Industrial and Other	20,810	20,899	(89)	-0.4%
Total	55,115	55,250	(135)	-0.2%
<b>MidAmerican Energy</b>				
Residential	6,763	6,207	556	9.0%
Commercial	3,897	3,761	136	3.6%
Industrial and Other	15,191	14,524	667	4.6%
Total	25,851	24,492	1,359	5.5%
<b>Nevada Power</b>				
Residential	9,970	9,501	469	4.9%
Commercial	4,778	4,656	122	2.6%
Industrial and Other	5,748	6,413	(665)	-10.4%
Distribution Only Service	2,521	1,830	691	37.8%
Total	23,017	22,400	617	2.8%
<b>Sierra Pacific</b>				
Residential	2,483	2,492	(9)	-0.4%
Commercial	2,998	2,954	44	1.5%
Industrial and Other	3,403	3,192	211	6.6%
Distribution Only Service	1,516	1,394	122	8.8%
Total	10,400	10,032	368	3.7%
<b>Northern Powergrid</b>				
Residential	12,538	12,634	(96)	-0.8%
Commercial	4,258	4,340	(82)	-1.9%
Industrial and Other	18,618	18,316	302	1.6%
Total	35,414	35,290	124	0.4%

# Retail Electric Sales – Weather Normalized



# Private Generation Penetration Rate

## Berkshire Hathaway Energy – Impact of Private Generation

	Private Generation Customers as of December 2018	Total Electric Customers as of December 2018	Private Generation Portion of Total Customers
<b>MidAmerican Energy Company</b>			
Iowa	751	693,304	0.11%
Illinois	39	85,389	0.05%
South Dakota	0	5,107	0.00%
<b>PacifiCorp</b>			
Utah	33,794	925,431	3.65%
Oregon	6,859	591,239	1.16%
Wyoming	314	141,361	0.22%
Washington	1,167	131,788	0.89%
Idaho	691	80,483	0.86%
California	451	45,204	1.00%
<b>NV Energy</b>			
Nevada	35,903	1,292,014	2.78%
<b>Total Customers</b>	<b>79,969</b>	<b>3,991,320</b>	<b>2.00%</b>

# Affordable Clean Energy Rule

- Limited to on-site, heat rate improvements at coal-fueled facilities as best system of emissions reduction
- Redefines and rebalances relative roles of federal government and states' responsibilities with the EPA defining the legal standard of best system of emission reduction with "candidate measures" and states determining what the "actual measures" need to be to improve efficiency
- States would be required to evaluate heat rate improvement candidate technologies and measures to establish unit-specific standards of performance, measured in terms of pounds of carbon dioxide per megawatt hour
- States will have three years from finalization of the rule to submit plans to the EPA, which would have one year to determine approvability. If a state does not submit a plan or a submitted plan is not approved, the EPA would have two years to develop a federal plan
- Does not repeal the EPA's greenhouse gas endangerment finding, although the EPA continues to evaluate the same
- Comments were due October 31, 2018. Final rule was delayed by government shutdown and is now expected by the end of second quarter 2019
- Full impacts will not be known until the rule is finalized and state plans are approved
- Material impacts are not anticipated, as affected companies have historically pursued cost-effective plant efficiency improvement projects
- **Berkshire Hathaway Energy will continue to work with state regulators and key stakeholders to provide safe, reliable and affordable clean energy to our customers and reduce our carbon footprint**

# Wind Investments

<i>(\$ billions)</i>	<b>Invested as of 12/31/18</b>	<b>Total Expected Investment</b>	<b>Power Capacity (MW)</b>	<b>Estimated Completion</b>
<b>MidAmerican Energy</b>				
Wind XI	\$2.2	\$3.4	2,000	2019
Wind XII	\$0.1	\$0.9	591	2020
Wind Repowering	\$1.0	\$2.4	2,251	2022
<b>PacifiCorp</b>				
New Wind	\$0.1	\$1.2	950	2020
Wind Repowering	\$0.4	\$1.1	1,030	2020
<b>BHE Renewables</b>				
Wind Tax Equity (Not Funded to-date)	\$0.0	\$1.4		2019, 2020
<b>Total Investment</b>	<b>\$3.8</b>	<b>\$10.4</b>		

# Reducing Carbon Footprint

- Through fuel switching and retirements, our utilities expect to eliminate 4,542 MW of coal generation through 2032 (a 43% reduction in coal capacity since 2013 when our plans were initiated)

Coal MW as of Dec. 31, 2013 <sup>(1)</sup>	Year Retired	10,509 MW
Riverside 3	2014	(4) MW
Reid Gardner 1-3	2014	(300) MW
Carbon 1 and 2	2015	(172) MW
Riverside 5 – conversion to natural gas	2015	(124) MW
Walter Scott 1 and 2	2015	(124) MW
Neal 1 and 2	2016	(390) MW
Reid Gardner 4	2017	(257) MW
Naughton 3 – natural gas conversion or retirement <sup>(2)</sup>	2019	(280) MW
Navajo – interest to be divested	2019	(255) MW
Cholla 4 – assumed retirement	2020	(395) MW
North Valmy 1 – planned retirement	2021	(127) MW
Craig 1 – natural gas conversion or retirement	2025	(82) MW
North Valmy 2 – planned retirement	2025	(134) MW
Dave Johnston 1-4 – assumed retirement	2027	(751) MW
Jim Bridger 1 – assumed retirement	2028	(354) MW
Naughton 1 and 2 – assumed retirement	2029	(357) MW
Hayden 1 and 2 – assumed retirement	2030	(77) MW
Jim Bridger 2 – assumed retirement	2032	(359) MW
<b>Coal MW as of Dec. 31, 2032</b>		<b>5,967 MW</b>

(1) Adjusted for re-rating of coal plants between December 31, 2013, and December 31, 2018, including plants still in operation and retired

(2) PacifiCorp removed the unit from coal-fueled service on January 30, 2019, and is evaluating converting it to a natural gas-fueled generation resource

# Berkshire Hathaway Energy

## 2018 Adjusted Net Income Reconciliation

(\$ millions)

	Net Income adjusted	Tax Reform	Unrealized Loss on BYD	Net Income as reported
PacifiCorp	\$ 739	\$ -	\$ -	\$ 739
MidAmerican Funding	669	-	-	669
NV Energy	317	-	-	317
Northern Powergrid	239	-	-	239
BHE Pipeline Group	387	-	-	387
BHE Transmission	210	-	-	210
BHE Renewables	329	-	-	329
HomeServices	145	-	-	145
BHE and Other	(218)	134	(383)	(467)
<b>Net Income</b>	<b>2,817</b>	<b>134</b>	<b>(383)</b>	<b>2,568</b>
Operating Revenue	19,787	-	-	19,787
Total Operating Costs and Expenses	15,715	-	-	15,715
Operating Income	<b>4,072</b>	-	-	<b>4,072</b>
Interest Expense - Senior & Subsidiary	(1,833)	-	-	(1,833)
Interest Expense - Junior Subordinated Debentures	(5)	-	-	(5)
Capitalized interest and other, net	269	-	(538)	(269)
Income Tax (Benefit) Expense	(294)	(134)	(155)	(583)
Equity (Loss) Income	43	-	-	43
Net Income Attributable to Noncontrolling Interests	23	-	-	23
<b>Net Income</b>	<b>\$ 2,817</b>	<b>\$ 134</b>	<b>\$ (383)</b>	<b>\$ 2,568</b>



# Berkshire Hathaway Energy

## 2017 Adjusted Net Income Reconciliation

(\$ millions)

	Net Income adjusted	Tax Reform	Debt Tender Offer Premium	Net Income as reported
PacifiCorp	\$ 763	\$ 6	\$ -	\$ 769
MidAmerican Funding	601	(10)	(17)	574
NV Energy	365	(19)	-	346
Northern Powergrid	251	-	-	251
BHE Pipeline Group	270	7	-	277
BHE Transmission	224	-	-	224
BHE Renewables	236	628	-	864
HomeServices	118	31	-	149
BHE and Other	(211)	(127)	(246)	(584)
<b>Net Income</b>	<b>2,617</b>	<b>516</b>	<b>(263)</b>	<b>2,870</b>
Operating Revenue	18,614	-	-	18,614
Total Operating Costs and Expenses	14,105	(13)	-	14,092
Operating Income	<b>4,509</b>	<b>13</b>	-	<b>4,522</b>
Interest Expense - Senior & Subsidiary	(1,822)	-	-	(1,822)
Interest Expense - Junior Subordinated Debentures	(19)	-	-	(19)
Capitalized interest and other, net	265	-	(439)	(174)
Income Tax (Benefit) Expense	353	(731)	(176)	(554)
Equity (Loss) Income	77	(228)	-	(151)
Net Income Attributable to Noncontrolling Interests	40	-	-	40
<b>Net Income</b>	<b>\$ 2,617</b>	<b>\$ 516</b>	<b>\$ (263)</b>	<b>\$ 2,870</b>

# Berkshire Hathaway Energy

## Non-GAAP Financial Measures

(\$ millions)

<b>FFO</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>
Net cash flows from operating activities	\$ 6,770	\$ 6,078	\$ 6,104
+/- Changes in other operating assets and liabilities	(389)	165	(192)
<b>FFO</b>	<b>\$ 6,381</b>	<b>\$ 6,243</b>	<b>\$ 5,912</b>
<b>Adjusted Interest</b>			
Interest expense	\$ 1,838	\$ 1,841	\$ 1,854
Interest expense on subordinated debt	(5)	(19)	(65)
<b>Adjusted Interest</b>	<b>\$ 1,833</b>	<b>\$ 1,822</b>	<b>\$ 1,789</b>
<b>FFO Interest Coverage<sup>(1)</sup></b>	<b>4.5x</b>	<b>4.4x</b>	<b>4.3x</b>
<b>Adjusted Debt</b>			
Debt <sup>(2)</sup>	\$ 39,290	\$ 39,681	\$ 37,985
Subordinated debt	(100)	(100)	(944)
<b>Adjusted Debt</b>	<b>\$ 39,190</b>	<b>\$ 39,581</b>	<b>\$ 37,041</b>
<b>FFO to Adjusted Debt<sup>(3)</sup></b>	<b>16.3%</b>	<b>15.8%</b>	<b>16.0%</b>
<b>Capitalization</b>			
Berkshire Hathaway Energy shareholders' equity	\$ 29,593	\$ 28,176	\$ 24,327
Adjusted debt	39,190	39,581	37,041
Subordinated debt	100	100	944
Noncontrolling interests	130	132	136
<b>Capitalization</b>	<b>\$ 69,013</b>	<b>\$ 67,989</b>	<b>\$ 62,448</b>
<b>Adjusted Debt to Total Capitalization<sup>(4)</sup></b>	<b>56.8%</b>	<b>58.2%</b>	<b>59.3%</b>

<sup>(1)</sup> FFO Interest Coverage equals the sum of FFO and Adjusted Interest divided by Adjusted Interest

<sup>(2)</sup> Debt includes short-term debt, Berkshire Hathaway Energy senior debt, Berkshire Hathaway Energy subordinated debt and subsidiary debt (including current maturities)

<sup>(3)</sup> FFO to Adjusted Debt equals FFO divided by Adjusted Debt

<sup>(4)</sup> Adjusted Debt to Total Capitalization equals Adjusted Debt divided by Capitalization

# PacifiCorp

## Non-GAAP Financial Measures

(\$ millions)

<b>FFO</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>
Net cash flows from operating activities	\$ 1,811	\$ 1,602	\$ 1,594
+/- Changes in other operating assets and liabilities	(236)	39	177
<b>FFO</b>	<b>\$ 1,575</b>	<b>\$ 1,641</b>	<b>\$ 1,771</b>
<b>Interest expense</b>	<b>\$ 384</b>	<b>\$ 381</b>	<b>\$ 380</b>
<b>FFO Interest Coverage<sup>(1)</sup></b>	<b>5.1x</b>	<b>5.3x</b>	<b>5.7x</b>
<b>Debt<sup>(2)</sup></b>	<b>\$ 7,066</b>	<b>\$ 7,105</b>	<b>\$ 7,349</b>
<b>FFO to Debt<sup>(3)</sup></b>	<b>22.3%</b>	<b>23.1%</b>	<b>24.1%</b>
<b>Capitalization</b>			
PacifiCorp shareholders' equity	\$ 7,845	\$ 7,555	\$ 7,390
Debt	7,066	7,105	7,349
<b>Capitalization</b>	<b>\$ 14,911</b>	<b>\$ 14,660</b>	<b>\$ 14,739</b>
<b>Debt to Total Capitalization<sup>(4)</sup></b>	<b>47.4%</b>	<b>48.5%</b>	<b>49.9%</b>

<sup>(1)</sup> FFO Interest Coverage equals the sum of FFO and Interest divided by Interest

<sup>(2)</sup> Debt includes short-term debt and current maturities

<sup>(3)</sup> FFO to Debt equals FFO divided by Debt

<sup>(4)</sup> Debt to Total Capitalization equals Debt divided by Capitalization

# MidAmerican Energy

## Non-GAAP Financial Measures

(\$ millions)

<b>FFO</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>
Net cash flows from operating activities	\$ 1,508	\$ 1,396	\$ 1,403
+/- Changes in other operating assets and liabilities	(190)	19	(65)
<b>FFO</b>	<b>\$ 1,318</b>	<b>\$ 1,415</b>	<b>\$ 1,338</b>
<b>Interest expense</b>	<b>\$ 227</b>	<b>\$ 214</b>	<b>\$ 196</b>
<b>FFO Interest Coverage<sup>(1)</sup></b>	<b>6.8x</b>	<b>7.6x</b>	<b>7.8x</b>
<b>Debt<sup>(2)</sup></b>	<b>\$ 5,621</b>	<b>\$ 5,042</b>	<b>\$ 4,400</b>
<b>FFO to Debt<sup>(3)</sup></b>	<b>23.4%</b>	<b>28.1%</b>	<b>30.4%</b>
<b>Capitalization</b>			
MidAmerican Energy shareholder's equity	\$ 6,446	\$ 5,764	\$ 5,160
Debt	5,621	5,042	4,400
<b>Capitalization</b>	<b>\$ 12,067</b>	<b>\$ 10,806</b>	<b>\$ 9,560</b>
<b>Debt to Total Capitalization<sup>(4)</sup></b>	<b>46.6%</b>	<b>46.7%</b>	<b>46.0%</b>

<sup>(1)</sup> FFO Interest Coverage equals the sum of FFO and Interest divided by Interest

<sup>(2)</sup> Debt includes short-term debt and current maturities

<sup>(3)</sup> FFO to Debt equals FFO divided by Debt

<sup>(4)</sup> Debt to Total Capitalization equals Debt divided by Capitalization

# Nevada Power

## Non-GAAP Financial Measures

(\$ millions)

<b>FFO</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>
Net cash flows from operating activities	\$ 619	\$ 665	\$ 771
+/- Changes in other operating assets and liabilities	30	37	(109)
<b>FFO</b>	<b>\$ 649</b>	<b>\$ 702</b>	<b>\$ 662</b>
<b>Interest expense</b>	<b>\$ 170</b>	<b>\$ 179</b>	<b>\$ 185</b>
<b>FFO Interest Coverage<sup>(1)</sup></b>	<b>4.8x</b>	<b>4.9x</b>	<b>4.6x</b>
<b>Debt<sup>(2)</sup></b>	<b>\$ 2,816</b>	<b>\$ 3,075</b>	<b>\$ 3,066</b>
<b>FFO to Debt<sup>(3)</sup></b>	<b>23.0%</b>	<b>22.8%</b>	<b>21.6%</b>
<b>Capitalization</b>			
Nevada Power shareholder's equity	\$ 2,904	\$ 2,678	\$ 2,972
Debt	2,816	3,075	3,066
<b>Capitalization</b>	<b>\$ 5,720</b>	<b>\$ 5,753</b>	<b>\$ 6,038</b>
<b>Debt to Total Capitalization<sup>(4)</sup></b>	<b>49.2%</b>	<b>53.5%</b>	<b>50.8%</b>

<sup>(1)</sup> FFO Interest Coverage equals the sum of FFO and Interest divided by Interest

<sup>(2)</sup> Debt includes short-term debt and current maturities

<sup>(3)</sup> FFO to Debt equals FFO divided by Debt

<sup>(4)</sup> Debt to Total Capitalization equals Debt divided by Capitalization

# Sierra Pacific

## Non-GAAP Financial Measures

(\$ millions)

<b>FFO</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>
Net cash flows from operating activities	\$ 275	\$ 181	\$ 243
+/- Changes in other operating assets and liabilities	(20)	39	(4)
<b>FFO</b>	<b>\$ 255</b>	<b>\$ 220</b>	<b>\$ 239</b>
<b>Interest expense</b>	<b>\$ 44</b>	<b>\$ 43</b>	<b>\$ 54</b>
<b>FFO Interest Coverage<sup>(1)</sup></b>	<b>6.8x</b>	<b>6.1x</b>	<b>5.4x</b>
<b>Debt<sup>(2)</sup></b>	<b>\$ 1,158</b>	<b>\$ 1,154</b>	<b>\$ 1,153</b>
<b>FFO to Debt<sup>(3)</sup></b>	<b>22.0%</b>	<b>19.1%</b>	<b>20.7%</b>
<b>Capitalization</b>			
Sierra Pacific Power shareholder's equity	\$ 1,264	\$ 1,172	\$ 1,108
Debt	1,158	1,154	1,153
<b>Capitalization</b>	<b>\$ 2,422</b>	<b>\$ 2,326</b>	<b>\$ 2,261</b>
<b>Debt to Total Capitalization<sup>(4)</sup></b>	<b>47.8%</b>	<b>49.6%</b>	<b>51.0%</b>

<sup>(1)</sup> FFO Interest Coverage equals the sum of FFO and Interest divided by Interest

<sup>(2)</sup> Debt includes short-term debt and current maturities

<sup>(3)</sup> FFO to Debt equals FFO divided by Debt

<sup>(4)</sup> Debt to Total Capitalization equals Debt divided by Capitalization



# 2019 FIXED-INCOME INVESTOR CONFERENCE

## **Stefan Bird**

President and CEO  
Pacific Power

## **Gary Hoogeveen**

President and CEO  
Rocky Mountain Power

# PacifiCorp Retail Sales

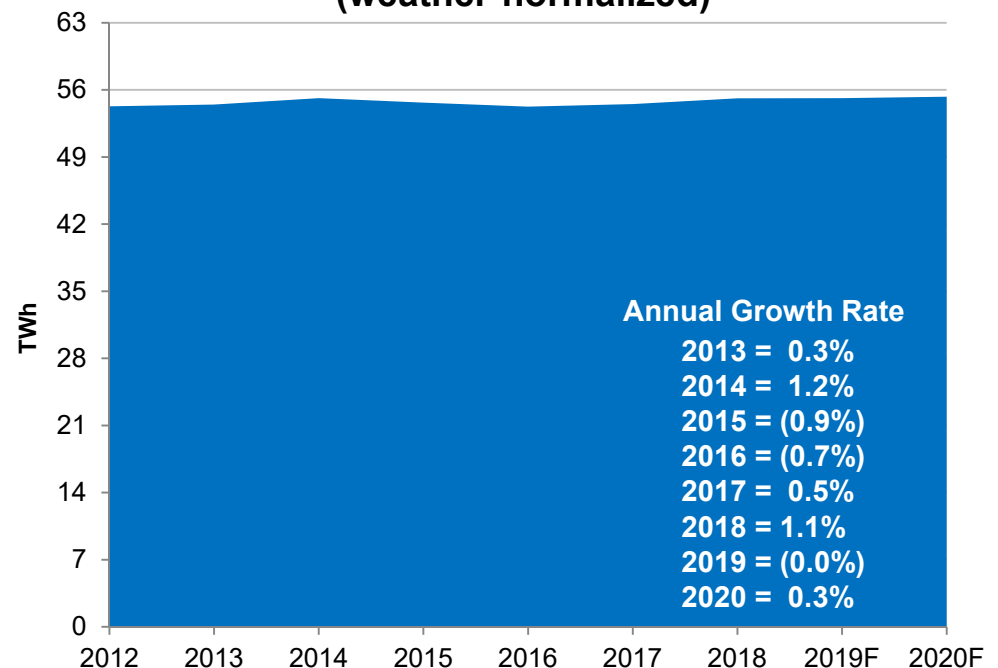
## 2018 compared to 2017 up 1.1%

- Commercial sales up 2.9%
- Residential sales up 1.1%
- Industrial sales down 0.8%

## 2019 forecast vs. 2018 is flat

- Industrial sales – lower due to changes in large customer operating projections
- Commercial sales – higher due to expansion of data centers, partially offset by energy efficiencies
- Residential sales – flat due to decline in use-per-customer, offset by new customer growth

## PacifiCorp Retail Sales (weather-normalized)





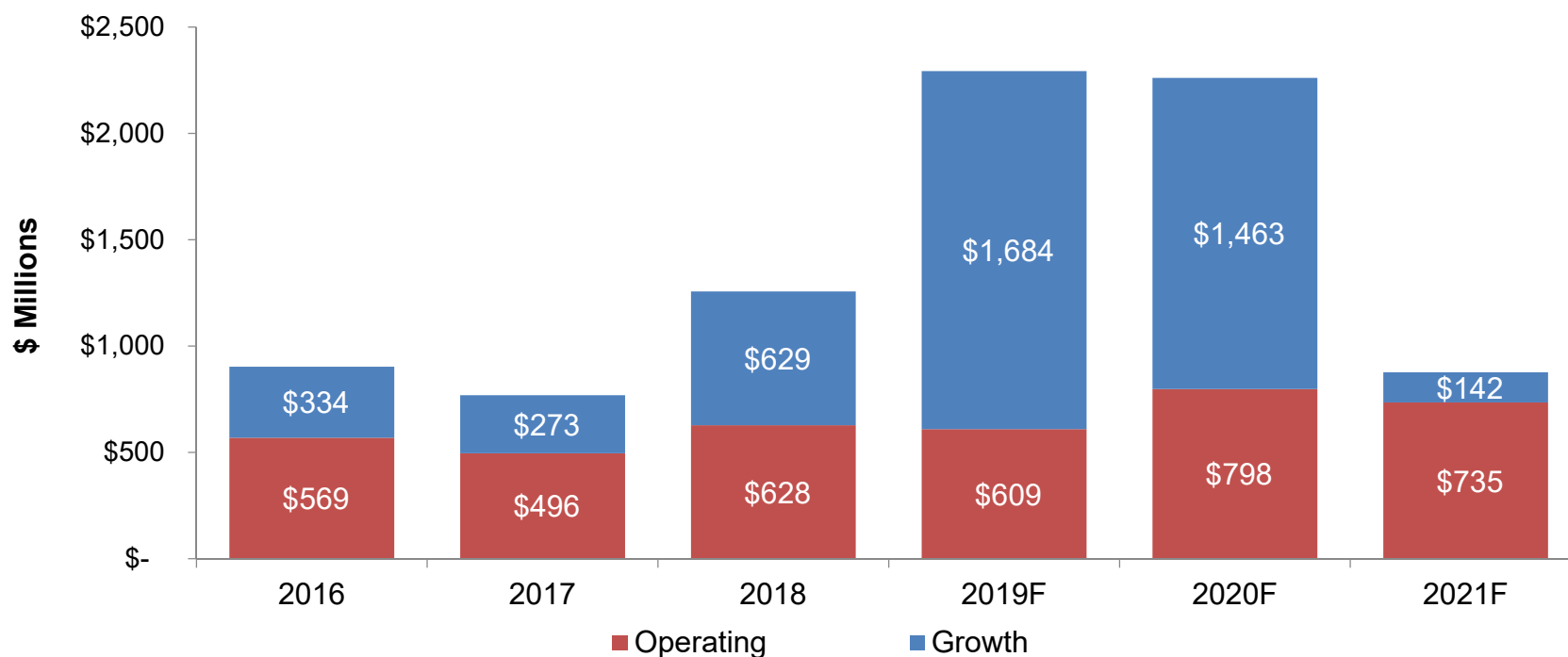
# PacifiCorp

## Capital Investment Plan

### 2019-2021 forecast vs. prior plan up \$685 million

- Growth projects are \$682 million higher from prior year primarily driven by additional growth expenditures including wind investments to deliver cost-effective wind fleet repowering and greenfield wind opportunities to be placed in-service in 2019-2021, as well as a new transmission line. The growth projects are forecast to yield net savings to customers

(\$ millions) 2019-2021	Current Plan	Prior Plan
Growth	\$ 3,289	\$ 2,607
Operating	2,142	2,139
Total	\$ 5,431	\$ 4,746



# Energy Vision 2020 Overview

- Approximately \$3 billion to expand the amount of wind power serving customers
- 1,030 MW of repowered existing wind facilities
- 1,150 MW of new wind facilities (950 MW owned and 200 MW contracted)
- 140-mile segment of 500kV transmission
- Provides approximately \$447 million of present-value benefits for customers (2017 - 2050)

## Key Milestones

## Date

Obtain regulatory pre-approvals for new wind and transmission resources (Idaho, Utah and Wyoming)	Complete
Obtain regulatory pre-approvals for repowering (Idaho, Utah and Wyoming)	Complete
Issue EPC limited notice-to-proceed for new wind and transmission line contracts	Complete
Complete acquisition of all required rights-of-way and easements for transmission line	March 31, 2019
Issue EPC full notice-to-proceed for new wind and transmission line contracts	April 1, 2019
Complete 2019 repowering projects	March to December 2019
Complete 2020 repowering projects	June to December 2020
Begin delivery of wind turbine generators (new wind projects)	May 5, 2020
New wind and transmission in-service	December 31, 2020



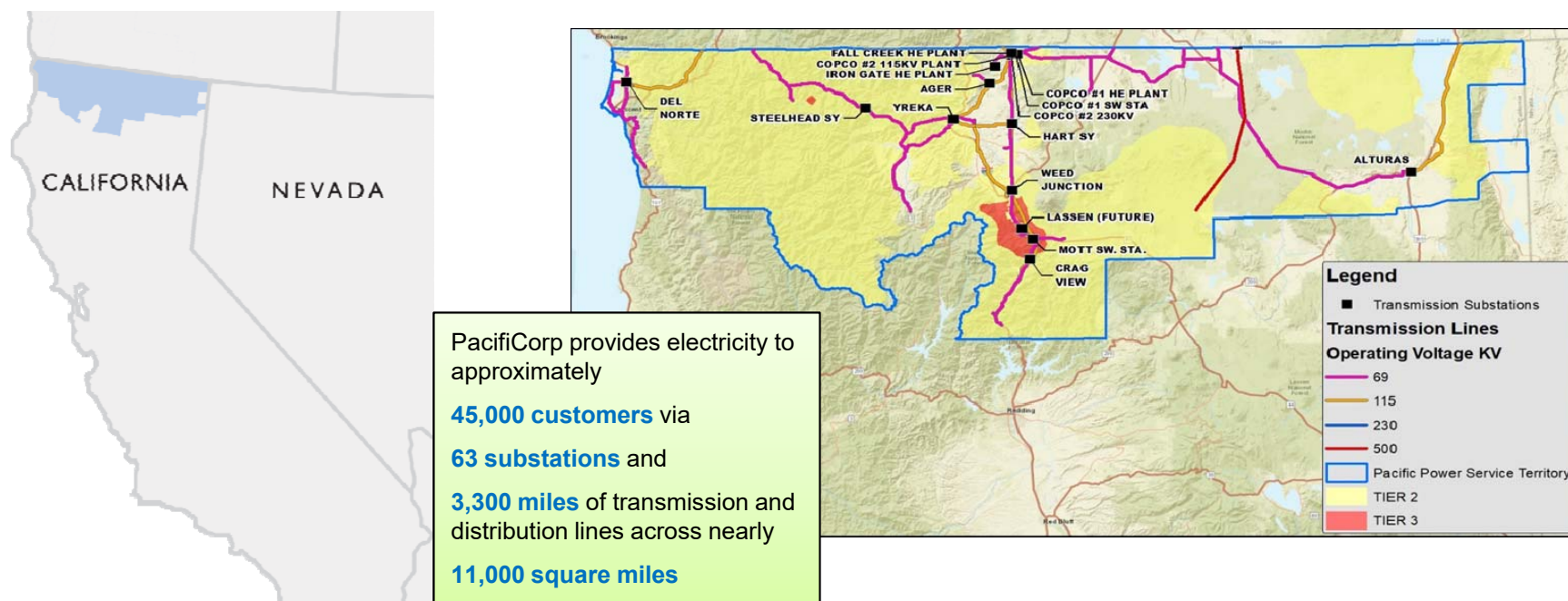
# Wildfires

- The Western Governors Association and key legislators are becoming more focused on the need for comprehensive plans to mitigate wildfire impacts to the residents of the western states. They are collaborating with jurisdictional federal administrators and the Department of Interior and are evaluating methods to better withstand the impacts of wildfires which have been increasing in frequency and scope
- In California, Senate Bill 901 outlined a series of requirements for the state. California is the only state in PacifiCorp's service territory that has inverse condemnation, which allows for strict liability if a fire is caused by an electrical facility owned by a utility, regardless of whether the utility was negligent in maintaining the facility
- PacifiCorp analyzed fire history with ignition sources as available from CALFIRE data sources<sup>(1)</sup>.
  - Utility power lines contributed to 0% in PacifiCorp's California service territory, compared to 2.84% of all ignitions in all of northern California
  - To put that in perspective, lightning was a contributing factor to 63% of about 240 records in PacifiCorp's California service territory, compared to nearly 54% of about 1,200 records in all of northern California
- In Oregon, Gov. Kate Brown formed a blue ribbon panel, on which Stefan Bird will be a member
- In Washington, public utilities commission staff members are beginning to look at the impacts of wildfires on electric reliability
- In Utah, House Bill 135 seeks to establish a grant program for wildland fire prevention

<sup>(1)</sup> The records used do not include grass fires of less than 100 acres or timber fires of less than 5 acres

# California Service Territory and Wildfire Plan Objectives

**California Senate Bill 901** requires electric utilities to develop annual wildfire mitigation plans to prevent, combat and respond to wildfires within their service territories



## Regulatory Steps

Wildfire mitigation plans filed  
 Workshop on plans held  
 Focused issue-specific workshops held  
 Intervenor testimony on plans served  
 Evidentiary hearings on plans held  
 Concurrent opening & reply briefs/comments  
 California Public Utilities Commission approves wildfire mitigation plans

## Date

February 6, 2019  
 February 13, 2019  
 Week of February 25, 2019  
 March 4, 2019  
 March 11, 2019  
 March 22 and March 27, 2019  
 May 6, 2019

# Wildfire Mitigation Plans

Berkshire Hathaway Energy has developed Wildfire Mitigation Plans (WMPs) across its Western Utilities

## **WMP 2019 Overview:**

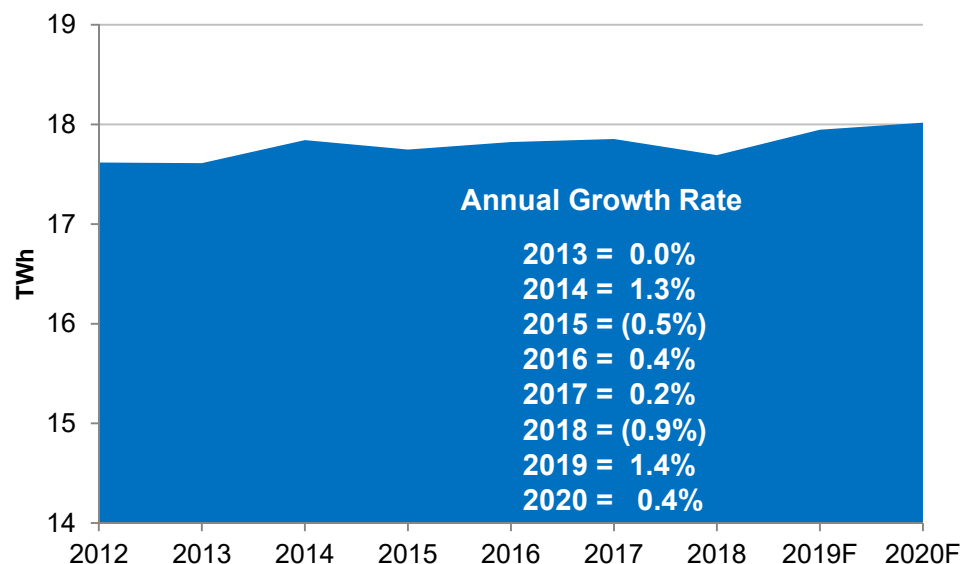
- Risk-based approach to identify FIRE High Consequence Area (FHCA)
- FHCAs are determined by population and structure density, fuel loading, accessibility and climatology
- Mitigation plans developed to minimize risk from electrical assets

## **Key Components:**

- Enhanced situational awareness through active monitoring of Red Flag warnings, public weather data and installation of local weather stations
- Yearly asset inspection frequency with accelerated correction time
- Implementing increased vegetation clearance standards on distribution circuits of at least a 12-foot pruning cycle, with an objective of maintaining a 4 foot clearance in FHCA
- Asset Hardening
  - Insulated conductor
  - Strategic pole replacement to increase loading capabilities and fire resiliency
  - Installation of additional Supervisory Control & Data Acquisition (SCADA) controls
  - Improved construction standards for new and retrofit applications to reduce potential ignition sources
- Enhanced Operational Practices
  - Modified reclosing procedures during fire season
  - Proactive de-energization in FHCA
  - Line inspections before re-energization
  - De-energization for all areas – real time potential damage or fire risk is assessed by emergency response or emergency action center
- Improved response through community outreach and coordination

# Pacific Power Retail Sales

## Pacific Power Retail Sales Weather Normalized

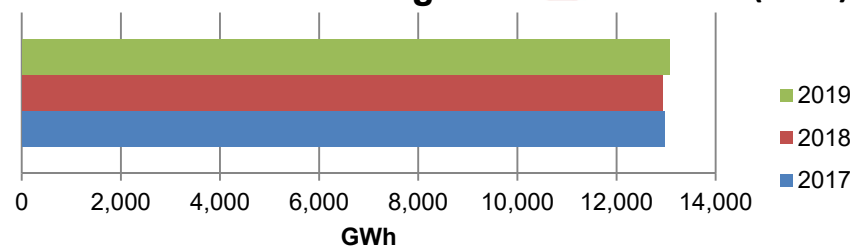


### 2019 forecast sales compared to 2018 up 1.4%

- Industrial sales – higher due to improved economic conditions in Oregon and Washington
- Commercial sales – higher due to economic growth and expansion of data centers
- Residential sales – flat due to customer growth offset by energy efficiencies

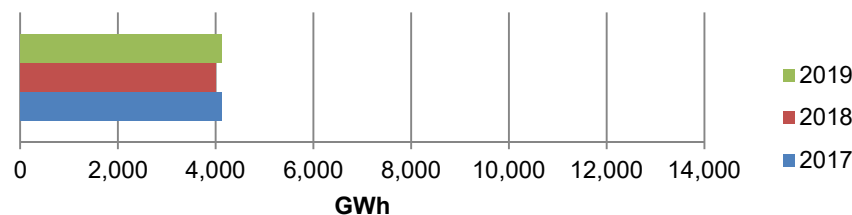
### Oregon

↑ 141 GWh (1.1%)



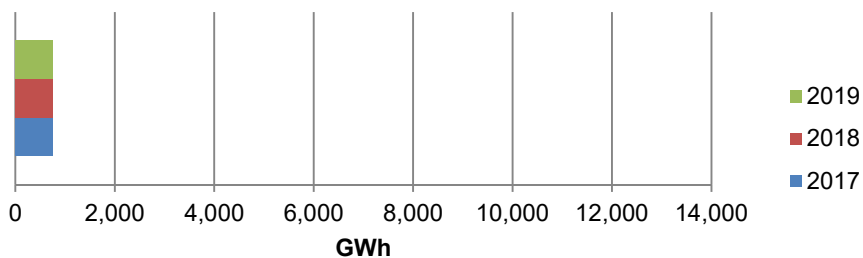
### Washington

↑ 119 GWh (3.0%)



### California

↓ -5 GWh (-0.7%)





# Pacific Power Regulatory Update

## **PacifiCorp**

- In September 2018, PacifiCorp filed applications in Oregon, Idaho, Utah, Washington and Wyoming for depreciation rate changes that would increase depreciation expense by approximately \$300 million, effective January 1, 2021. The study will be evaluated by the states for approval in 2019 or early 2020

### **Oregon (authorized ROE 9.8%)**

- Pacific Power customer pledge to not increase base rates prior to 2021; the last general rate case was filed in 2013
- Transition Adjustment Mechanism rate decrease of \$0.66 million, or 0.1%, for changes in forecast net power costs and production tax credits, effective January 1, 2019
- The Public Utility Commission of Oregon approved amortization of the current income tax expense benefits, which results in a rate reduction of \$48.2 million, or 3.7%, effective February 1, 2019; in January 2019, the OPUC approved continued deferral of excess deferred income tax balances until PacifiCorp's next general rate case

### **Washington (authorized ROE 9.5%)**

- No general rate case in the near future; the last rate case with a two-year rate plan was filed in 2015
- Washington's decoupling mechanism measures company annualized earnings and provides for rate adjustments based on an earnings test. The 2018 result showed the company over earned and will surcredit approximately \$3.2 million, or 1.0%, to customers
- Power Cost Adjustment Clause rate decrease of \$17.9 million, or 5.1%, effective November 1, 2018, expiring October 31, 2019
- The Washington Utilities and Transportation Commission approved amortization of the current income tax expense benefits, which results in a rate reduction of \$8.3 million, or 2.3%, effective January 1, 2019, and approved continued deferral of excess deferred income tax balances until PacifiCorp's next general rate case

### **California (authorized ROE 10.6%)**

- A general rate case was filed April 2018 using a 2019 test period and an order is pending; the last general rate case was filed in 2009
- Energy Cost Adjustment Clause and Greenhouse Gas Allowance Costs and Revenues Application rate increase of \$2.4 million, or 2.1%, for changes in forecast net power costs and greenhouse gas costs effective January 1, 2019
- In May 2018, the California Public Utilities Commission approved PacifiCorp's application requesting authorization to establish a tax reform deferral account to record the 2018 tax impacts due to tax reform. PacifiCorp has requested a decision in its 2019 general rate case authorizing the company to file an advice letter in 2019 to return savings to customers

# Oregon Clean Electricity and Coal Transition Plan Update

- Senate Bill 1547 was signed into law March 8, 2016
  - Increases renewable portfolio standard to 27% by 2025, 35% by 2030, 45% by 2035, 50% by 2040
    - With Energy Vision 2020 resources, Pacific Power's compliance position is sufficient through 2036
  - Removes coal from Oregon rates by January 1, 2030
  - Incorporates production tax credits in annual power cost mechanism
  - Establishes community solar program
    - Community solar rule making completed in 2017, implementation underway; program administrator selected in September 2018 with contract negotiations in process - final contract expected to be executed by the state of Oregon in 2019
  - Authorizes utilities to invest in electric vehicle charging
    - Electric utility transportation electrification proposals were approved in early March 2018 with pilot programs underway; a progress update to be made on March 31, 2019
  - Maintains level playing field for service territory acquisitions by requiring acquirer to meet renewable portfolio standard requirements and pay for any stranded costs



# Pacific Power

## State Carbon Policy Proposals

- **Washington Senate Bill 5116 and House Bill 1211 – Clean Energy Transformation Act**

Status: Senate Bill 5116 will be voted out of the House Finance Committee late March 2019. Its companion bill, HB 1211 is no longer under consideration

Key provisions:

- Coal out of rates by 2025
- 80% renewable by 2030 with compliance options for remaining 20%
- 2% cost cap
- Compliance penalty = \$100/MWh
- Sets mandate of 100% carbon free electricity sector by 2045 (no penalty)
- Includes two amendments that PacifiCorp requested on excluding voluntary green customers for compliance, and addressing market purchases

- **Oregon House Bill 2020 – Oregon Cap & Trade**

Status: Provided invited testimony February 8, 2019; four “road shows” were held February 22, 2019 through March 2, 2019, throughout the state. Informational meetings were held throughout March. The first round of “co-chair amendments” are expected to be released late March 2019

Key provisions:

- Establishes new greenhouse gas goals: 45% below 1990 emissions levels by 2035; 80% below 1990 emissions levels by 2050
- Allocates allowances directly to investor-owned utilities through 2030: customers are not responsible for paying for emissions reductions already covered by Renewable Portfolio Standard or Senate Bill 1547
- From 2031-2050, investor-owned utility allocations decline at same rate as cap
- If emit more than forecast, must acquire additional allowances in the market
- Electricity Price Containment Reserve can be used for unforeseen emissions

# Pacific Power

## 100% Renewable Customer Solutions

- Facebook data center, Prineville, OR
  - Partnership results in 437 MW of new solar developments
  - Pacific Power is currently implementing two 100 MW projects in Prineville
- New renewable energy offering: Blue Sky Select
  - Allows customers to procure renewable energy credits from specified facilities
  - Agreements signed with Portland Trailblazers, Oregon Convention Center
- Community renewable energy
  - City of Bend: Joint MOU with commitments including 100% renewable energy for city operations by 2030; 100% renewable energy community-wide by 2050
  - City of Portland: 100% renewable energy by 2035



# Pacific Power Electric Vehicle and Storage Pilot Programs

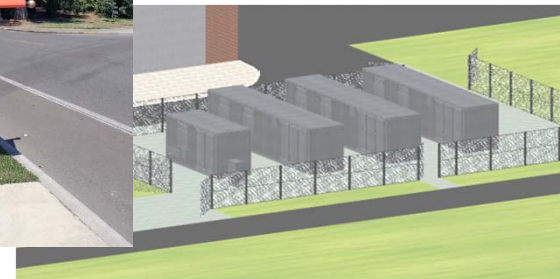


## Electric Transportation Pilot Programs

- Pacific Power is currently implementing pilot programs to increase awareness about electric transportation and to stimulate development of new charging stations in areas underserved by current charging infrastructure
- The three programs focus on:
  1. Education and outreach to customers
  2. Public fast-charging stations (currently Oregon only)
  3. Grants to business customers to install charging infrastructure
- \$6.7 million budgeted for electric transportation pilots across three states

## Energy Storage Pilot

- Pacific Power will construct, own and operate 2 MW / 6 MWh battery storage in Corvallis, Oregon
- Proposed site next to existing generation facility
- Partnership with Oregon State University for micro-grid research
- Planned in-service third quarter 2020



# Advanced Metering Infrastructure Projects

## Scope

Pacific Power: \$126 million capital investment

- Oregon
  - 590,000 smart meters – Installs are 67% complete
  - Build field area network – 100% complete
  - In-service January 2018 – December 2019
- California
  - 47,000 smart meters – Mass installs completed
  - Build field area network – 100% complete
  - In-service December 2018 – 100% complete

Rocky Mountain Power: \$103 million capital investment

- Idaho
  - 80,000 smart meters
  - In-service December 2021
- Utah
  - Implement a hybrid AMI/AMR system in Utah
  - Install 156,000 smart meters
  - Leverage 764,000 existing AMR meters to capture interval energy usage
  - In-service October 2021
  - Utah AMR to AMI full conversion is planned within the 10-year horizon

## Benefits

- Provides customers financial benefits over the life of the projects against a status quo alternative
- Customers gain access to near real-time consumption data and information to proactively manage their monthly usage
- Improved outage detection and response
- Enables remote connect/disconnect service
- Improved system monitoring for real-time operations and distribution system planning
- Provides a platform that can be leveraged for future grid modernization
  - Pilot Project, July 2019: Devil's Lake feeder automation for auto isolating and circuit reconfiguration
- Enables collection of interval and outage management data leveraging existing Automated Meter Reading (AMR) Meters in Utah





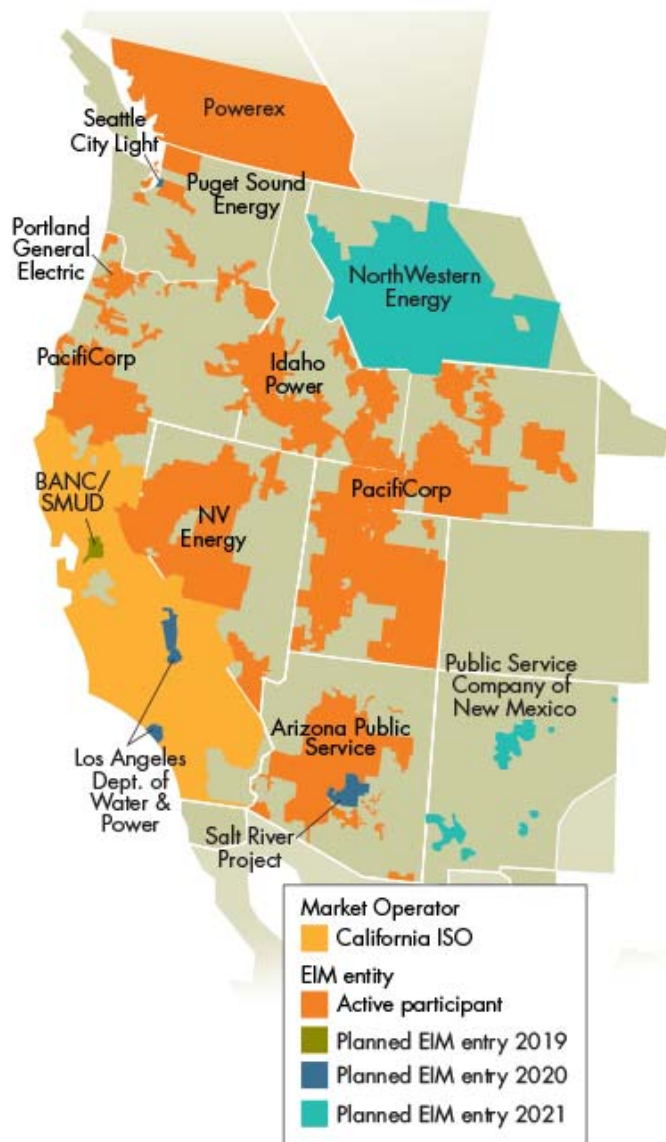
# Delivering Reliable and Affordable Energy

## Energy Imbalance Market

- The energy imbalance market is in its fifth year, with cumulative benefits totaling \$565 million through December 2018
- PacifiCorp and California ISO launched the EIM in November 2014. NV Energy joined in December 2015. Berkshire Hathaway Energy customer benefits total \$242 million

### November 2014 – December 2018 Combined Benefits

Balancing Area Authority	Total (\$ millions)
CAISO	\$147.2
PacifiCorp	\$175.5
NV Energy	\$66.2
Arizona Public Service	\$85.8
Puget Sound Energy	\$25.1
Portland General Electric	\$30.4
Idaho Power	\$26.9
Powerex	\$7.8
<b>Total</b>	<b>\$564.9</b>





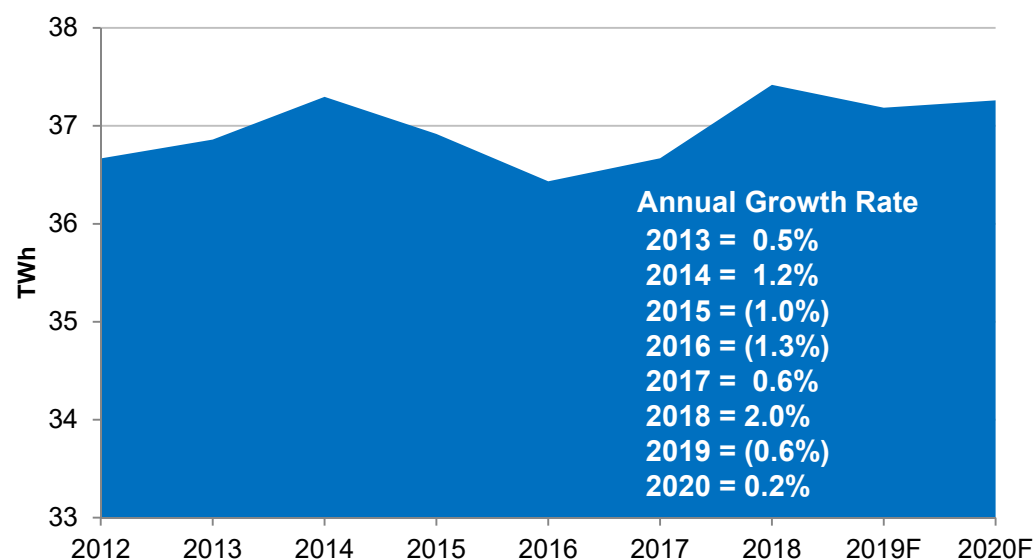
# 2019 FIXED-INCOME INVESTOR CONFERENCE

**Gary Hoogeveen**

President and CEO  
Rocky Mountain Power

# Rocky Mountain Power Retail Sales

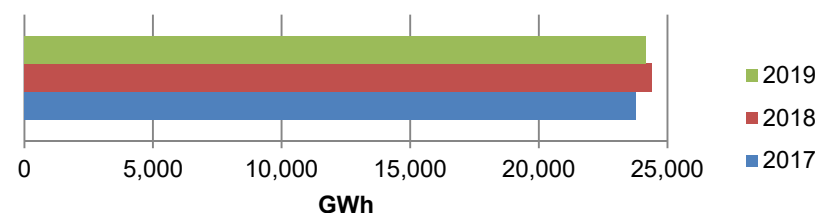
## Rocky Mountain Power Retail Sales Weather Normalized



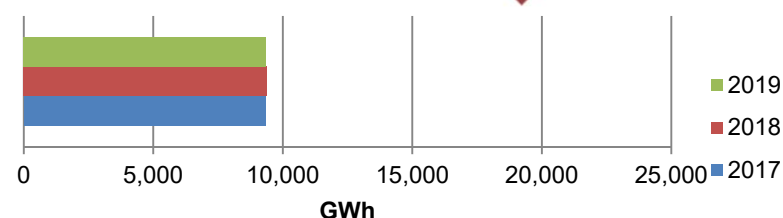
### 2019 forecast sales compared to 2018 down 0.6%

- Industrial sales – lower due to changes in large customer operating projections
- Commercial sales – flat due to expansion of data centers, partially offset by energy efficiencies
- Residential sales – flat due to decline in use-per-customer, offset by new customer growth

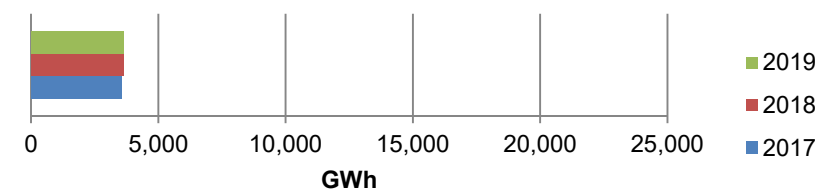
Utah ↓ -210 GWh (-0.9%)



Wyoming ↓ -36 GWh (-0.4%)



Idaho ↑ 13 GWh (0.3%)



# Rocky Mountain Power Regulatory Update

## **Utah (authorized ROE 9.8%)**

- Last general rate case filed in 2014; Rocky Mountain Power made a customer pledge to not increase base rates prior to 2021
- Energy Balancing Account filing to recover \$2.8 million in excess deferred net power costs from 2017 went into effect on an interim basis May 1, 2018. A hearing was held by the UPSC in February 2019 and a decision is expected by April 2019 for final approval
- In May and June 2018, the UPSC approved applications to repower existing wind facilities and build or acquire 1,150 MW of new wind and transmission facilities, totaling approximately \$3 billion in new investment
- In April 2018, the UPSC ordered a rate reduction of \$61 million, or 3.1%, effective May 1, 2018, related to the impact of 2017 Tax Reform, which will remain in effect until the next general rate case; other benefits provided through acceleration of depreciation and deferral to offset costs in the next general rate case

## **Wyoming (authorized ROE 9.5%)**

- Last general rate case filed in 2015; Rocky Mountain Power made a customer pledge to not increase base rates prior to 2021
- Energy Cost Adjustment Mechanism filing to refund \$3.4 million in excess deferred net power costs effective July 1, 2018, on an interim basis, and made final by the WPSC in December 2018
- In April 2018, the WPSC granted conditional certificates of public convenience and necessity for repowering existing wind facilities and building or acquiring 1,150 MW of new wind and transmission facilities, totaling approximately \$3 billion in new investment
- In April 2018, PacifiCorp filed a partial settlement with the WPSC related to the impact of 2017 Tax Reform that provided a rate reduction of \$23 million, or 3.3%, effective July 1, 2018, through June 30, 2019. In March 2019, the WPSC approved the stipulation in part and retained the \$23 million reduction in rates, with other savings to be deferred with offsets to other costs

## **Idaho (authorized ROE 9.9%)**

- Last general rate case filed in 2011
- Energy Cost Adjustment Mechanism filing to recover \$8 million in deferred net power costs, changes in production tax credits and other interim capital costs, reduced rates 0.8%, effective June 1, 2018
- In December 2017, the Idaho Public Utilities Commission (IPUC) approved an application to repower existing wind facilities. In July 2018, the IPUC approved the application to build or acquire 1,150 MW of new wind and transmission facilities. Together, the project totals approximately \$3 billion in new investment
- In May 2018, the IPUC approved an all-party settlement to implement a rate reduction of \$6 million, or 2.2%, effective June 1, 2018, through May 31, 2019



# Rocky Mountain Power

## Customer Renewable Solutions

### Renewable Energy Tariffs

- Renewable Energy Purchases for Qualified Customers  $\geq 5$  MW
  - Current Customers: University of Utah – will be purchasing output from 20 MW geothermal resource expected to be online September 2019
  - Current Customers: Facebook – will be purchasing output from 122 MW solar resource expected to be online June 2020
  - Customer Near Term Potential Growth: 160-200 MW solar/wind on behalf of existing and potential new customers
    - Company Owned Resources – Rocky Mountain Power sponsored legislation in Utah to enable company owned solar resources while capturing the investment tax credit (ITC); the law went into effect in 2018
- Renewable Energy Rider – Optional; Bulk Purchase Option
  - Renewable Energy Credit (REC) purchases as directed by participating customers
- Subscriber Solar Program
  - 20 MW solar resource went into operation in 2017, and is fully subscribed by customers in 200 kW blocks; both residential and commercial
- 100% Renewables with Cities
  - Working cooperatively with Utah cities on state legislation, *Community Renewable Act*, enabling cities to achieve their community goals to be 100% renewable by 2032

# Rocky Mountain Power Utah Private Generation Update

- Net metering was closed to new applications November 15, 2017, and a new Transition Program was initiated December 1, 2017, for a limited number of installations
- Net metering interconnections grew in 2018 as interconnections were completed for applications received prior to program cut-off. Since the Transition Program was initiated, approximately 35 MW of a total eligible 240 MW of new customer private generation has either interconnected or is currently in the application process

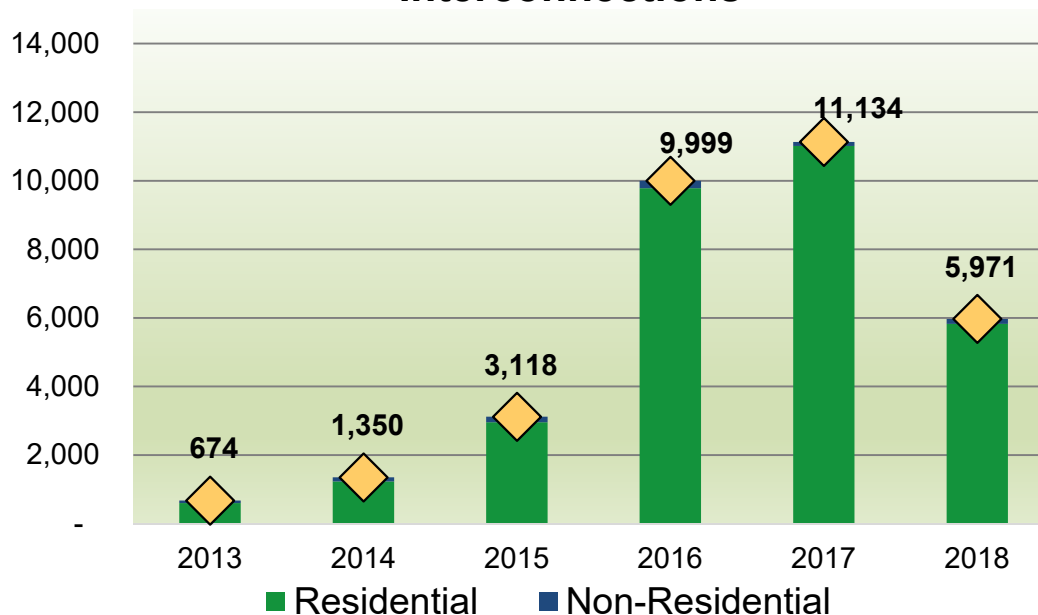
Customer Class (as of March 1, 2019)	Transition Cap	Cumulative Applied for (Pending)	Cumulative Interconnected (Completed)
<b>Residential and Small Business</b>	170 MW	10.6 MW	23.5 MW
<b>Large Customers</b>	70 MW	0.0 MW	0.8 MW

- Transition program applications are significantly down compared to prior year net metering applications

Applications Received	Totals
<b>2017 (Net Metering)</b>	14,622
<b>2018 (Transition Program)</b>	4,344

- New load research study underway to support post-transition program export credit. Export credit proceeding to be concluded prior to 2021

**Utah Net Metering  
Interconnections**



# Rocky Mountain Power Electric Vehicles and Storage

## Political and consumer factors influencing the requirement for charging stations

- Utah governor's budget calls for a \$100 million investment to clean up Utah's air
- Salt Lake City will be the U.S. 2030 Winter Olympic bid. The Olympic Committee is calling for a zero-emitting transportation system

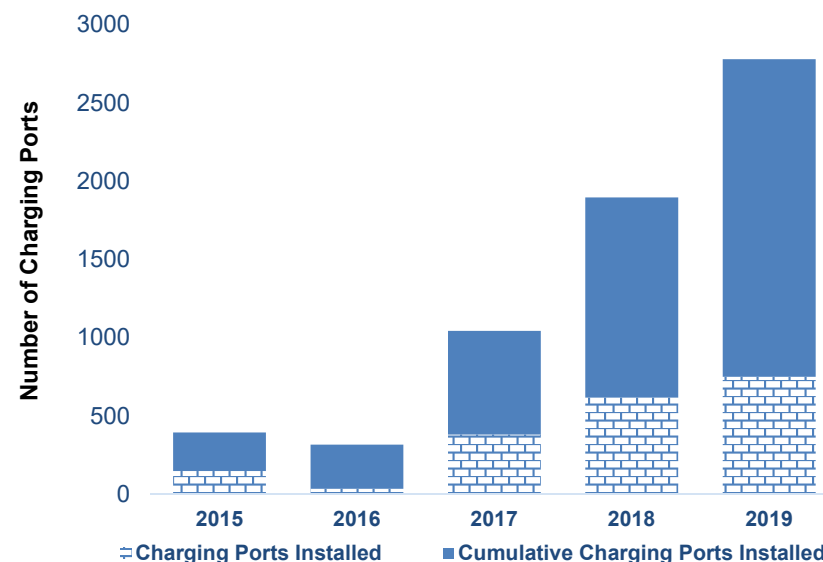
## Partnering

- Live Electric is a collaboration with Rocky Mountain Power, U.S. Department of Energy, Utah Clean Air Partnership, Utah Clean Cities and other state and local organizations to create an electric corridor and work place charging by installing an additional 700 charging stations by 2021
- Park City is installing charging infrastructure for 16 electric buses by year-end 2019 and 100% of its fleet by 2025
- Utah Transit Authority (UTA) is adding 27 electric buses and installing advanced charging infrastructure
- Zions National Park is installing charging infrastructure for two electric buses and creating a transition plan for an electric fleet
- LYFT is a partner in supporting ridesharing and electric vehicles

## Storage

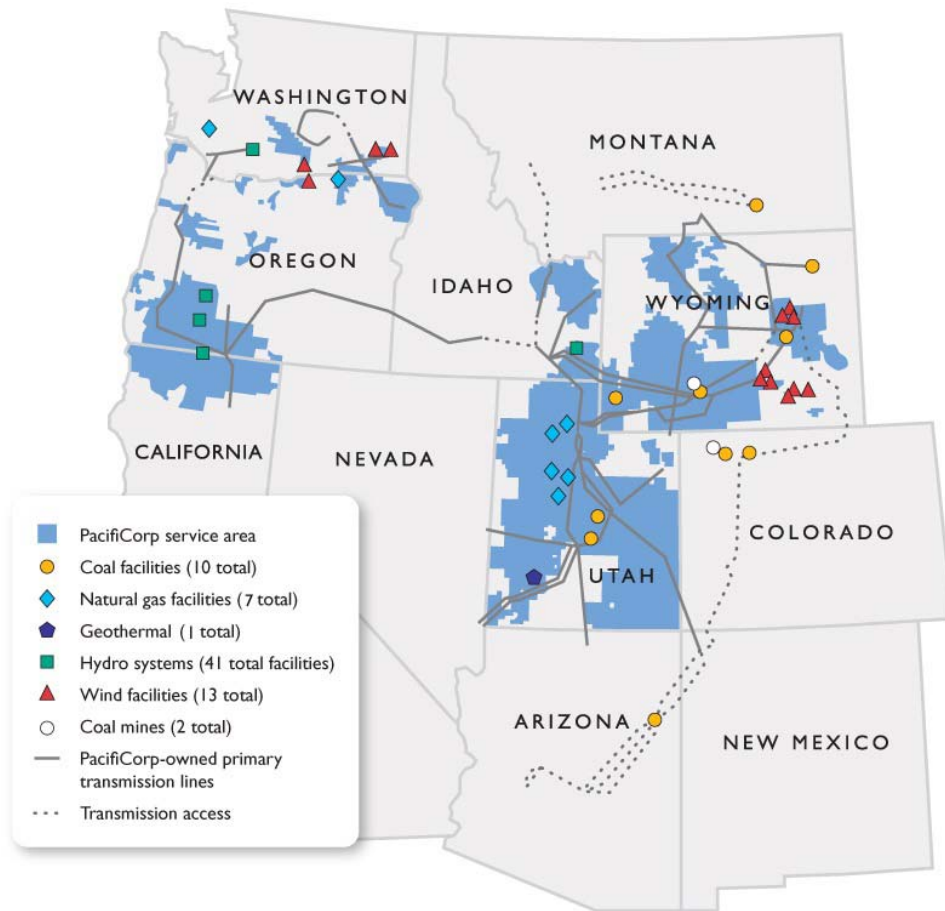
- Partnering with Utah State University and Hill Airforce Base to assist in planning for installation of an energy storage device for a microgrid facility at Hill Airforce Base
- Deploying a smart grid solution in rural Utah, a 650 kW solar array coupled with a 5 MWh battery to provide voltage support and service during peak loading in the area. This is funded through the Utah Sustainable Transportation and Energy Plan (STEP) legislation for innovative technology deployment

**Electric Vehicle Charging Ports  
in Utah**



# **PacifiCorp Appendix**

# PacifiCorp



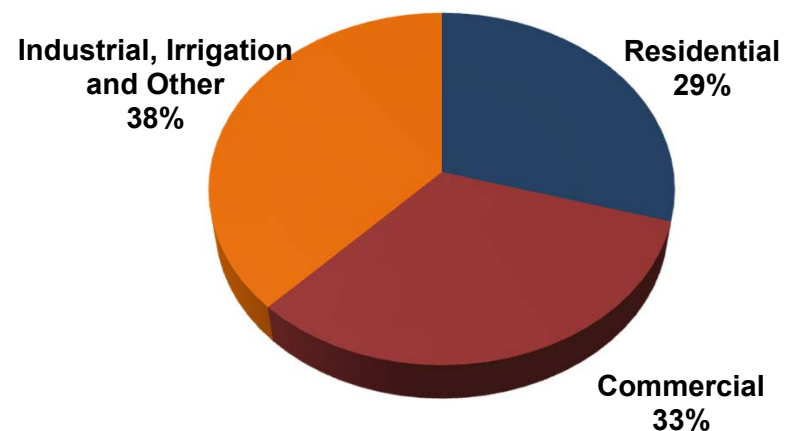
- Six-state service territory
  - Utah
  - Oregon
  - Idaho
  - Washington
  - Wyoming
  - California
- 5,400 employees
- 1.9 million electricity customers
- 141,400 square miles of service territory
- 16,500 transmission line miles
- 11,830 MW<sup>(1)</sup> owned power capacity

(1) Net MW owned in operation and under construction as of December 31, 2018

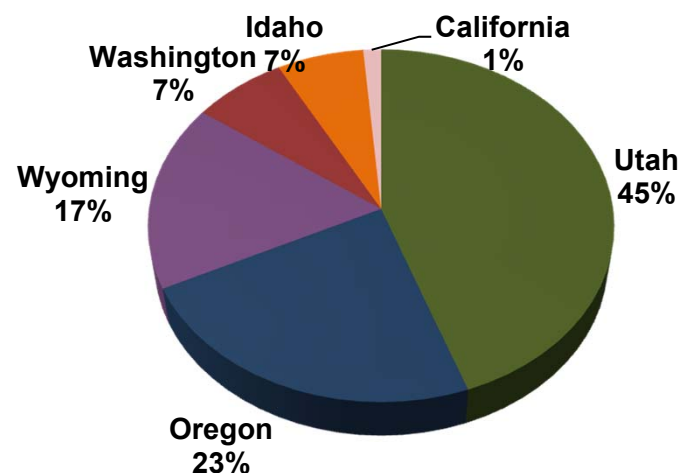
# PacifiCorp

## 2018 Retail Electric Sales

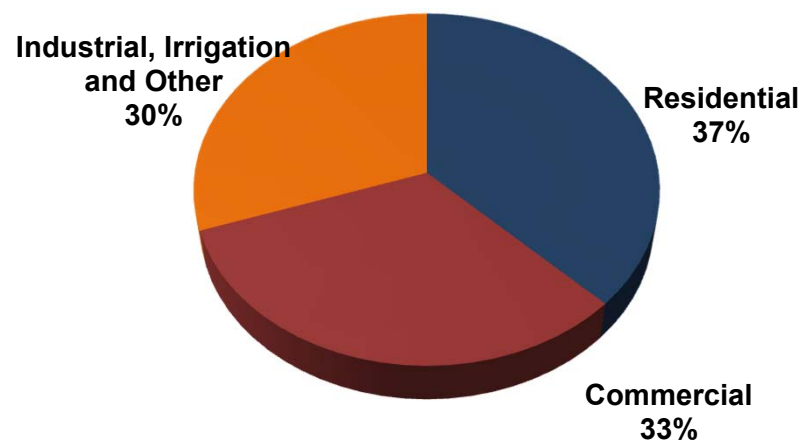
2018 Retail Electric Sales by Class – 55,115 GWh



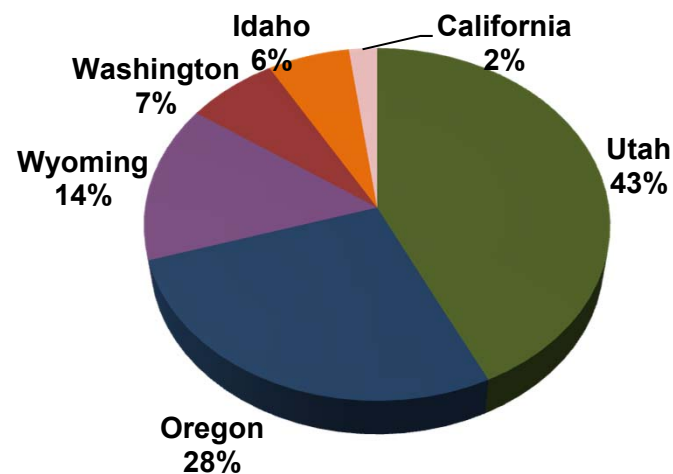
2018 Retail Electric Sales by State – 55,155 GWh



2018 Retail Electric Revenue by Class – \$4.7 billion



2018 Retail Electric Revenue by State \$4.7 billion



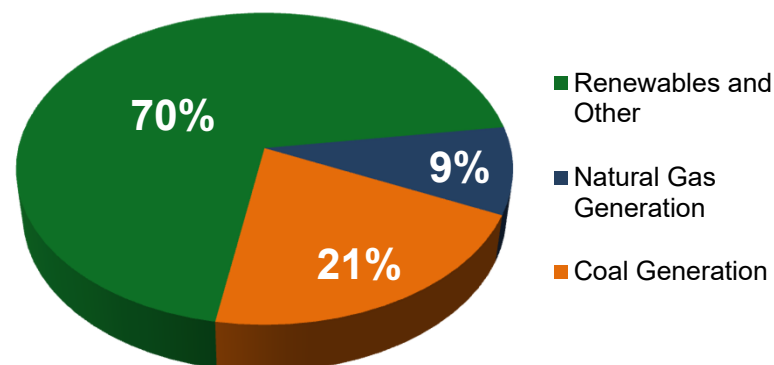
# PacifiCorp

## Environmental Position

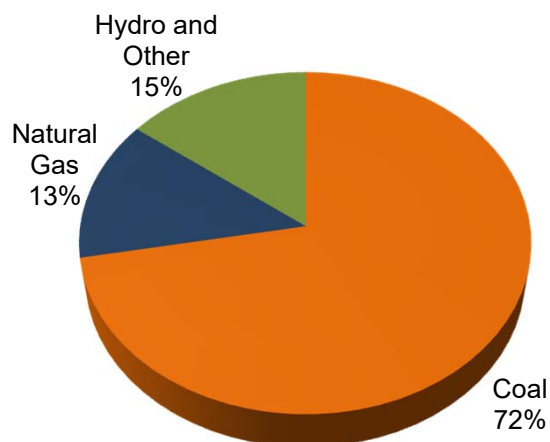
- Power generating fleet increase primarily attributed to:
  - 1,654 MW Natural Gas – Lake Side 1 & 2 and Chehalis
  - 998 MW Wind – 594 MW Eastside and 404 MW Westside
  - (172) MW Coal – retired Carbon plant
  - 950 MW Wind – Energy Vision 2020 projects under construction
- Projected environmental capital spend<sup>(2)</sup>
  - \$51 million from 2019-2021

### Asset Profile

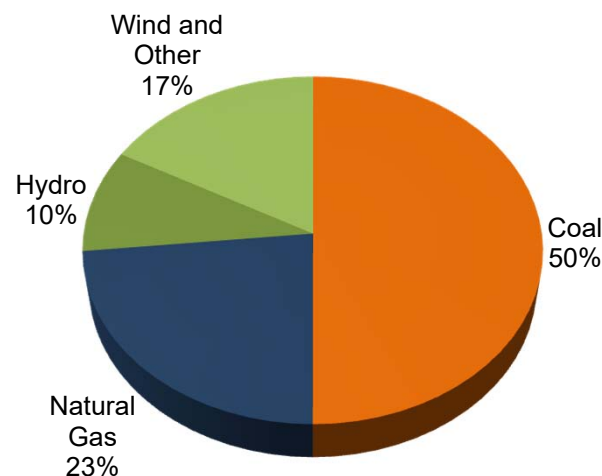
Net Property, Plant and Equipment as of December 31, 2018



### March 31, 2006 Power Capacity – 8,470 MW <sup>(1)</sup>



### December 31, 2018 Power Capacity – 11,830 MW <sup>(1)</sup>



(1) Net MW owned in operation and under construction

(2) Environmental expenditures forecast includes PacifiCorp's share of minority-owned Craig, Cholla, Colstrip and Hayden plants. Amounts include debt AFUDC and escalation but exclude non-cash equity AFUDC

# PacifiCorp Major Transmission Projects

**Over \$6 billion total investment planned; \$1.6 billion placed in-service**

- Gateway West - 2024
  - BLM record of decision on Segments 1-7 & 10 November 2013
  - BLM record of decision on Segments 8 & 9 April 2018
- Aeolus-to-Jim Bridger/Anticline
  - Segment D2 of Gateway West
  - Planned in-service 2020
- Gateway South - 2024
  - BLM record of decision December 2016
- Boardman-to-Hemingway - 2025
  - BLM record of decision December 2017
  - Oregon Energy Facility Siting Council permit target date August 2020
- Segments In-Service
  - Populus-to-Terminal November 2010
  - Mona-to-Oquirrh May 2013
  - Sigurd-to-Red Butte May 2015
  - Wallula-to-McNary January 2019



This map is for general reference only and reflects current plans.  
It may not reflect the final routes, construction sequence or exact line configuration.





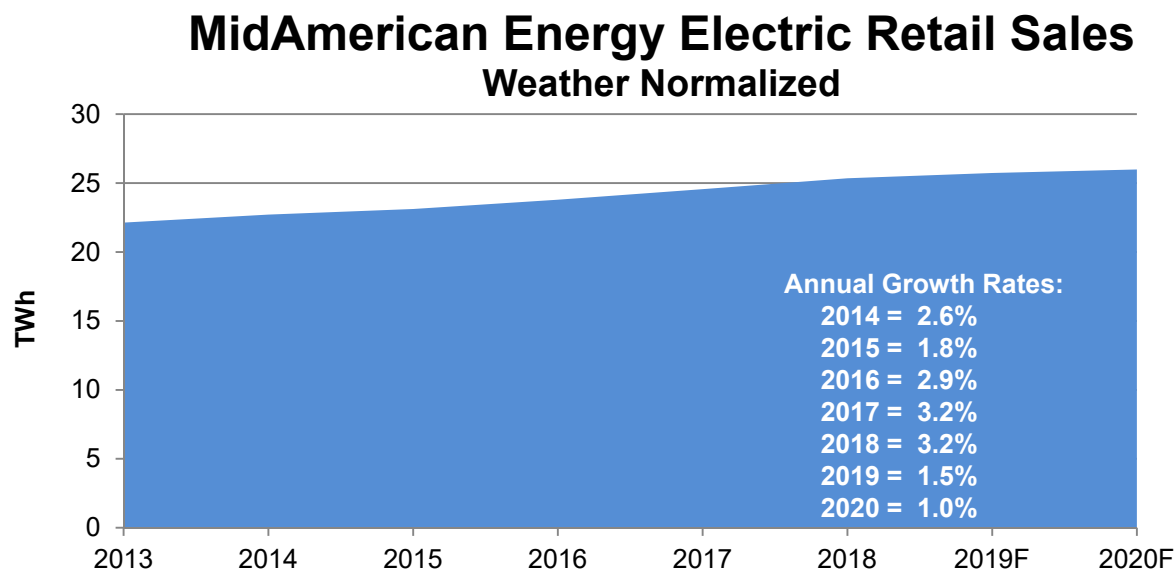
# 2019 FIXED-INCOME INVESTOR CONFERENCE

**Adam Wright**

President and CEO  
MidAmerican Energy

# MidAmerican Energy Electric Retail Sales

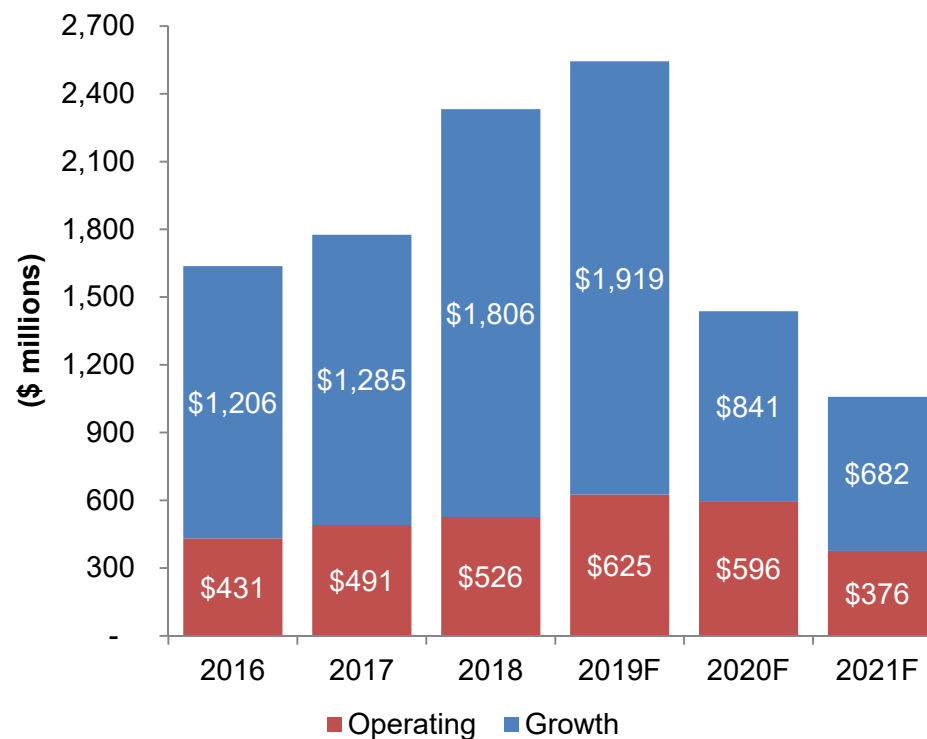
- Economic and Load Data
  - Service territory has experienced strong electric load growth
  - Forecast loads for 2019 and 2020 reflect continued growth, but slight moderation of the most recent trend; Growth for the industrial class due to announced data center and biotechnology expansions within MidAmerican Energy's service territory
  - Data centers attracted to relatively low, stable electric rates, high reliability of service and MidAmerican Energy's wind portfolio



# MidAmerican Energy Capital Investment Plan

- Wind XI
  - Approved in 2016 – up to 2,000 MW
  - \$3.6 billion approved cost cap deemed prudent
  - 1,151 MW in service through 2018; remainder completed by 2019
- Wind XII
  - Approved in 2018 – up to 591 MW
  - \$922 million approved cost cap deemed prudent
  - Completion in 2019-2020
- Wind repowering
  - PTCs reinstated for another ten-year period, some at reduced rates
  - Improved capacity factors from longer blades, more efficient equipment resulting in greater generation
  - GE fleet
    - \$952 million incurred through 12/31/2018, including AFUDC
    - 413 turbines comprising 620 original MW repowered through 2018
    - 293 turbines comprising 440 original MW repowered in 2019-2020
    - 100% of PTC rate expected for all projects
  - Siemens fleet
    - \$62 million incurred through 12/31/2018, including AFUDC
    - 334 turbines comprising 768 original MW repowered in 2019-2021 at 80% of full PTC rate
    - 176 turbines comprising 407 original MW repowered in 2022 at 60% of full PTC rate

	(\$ millions) 2019-2021	Current Plan	Prior Plan
Operating		\$ 1,597	\$ 1,675
Growth		3,442	2,912
Total		\$ 5,039	\$ 4,587



# Build Renewable Energy

## MidAmerican Energy's Iowa Wind Generation<sup>(1)</sup>

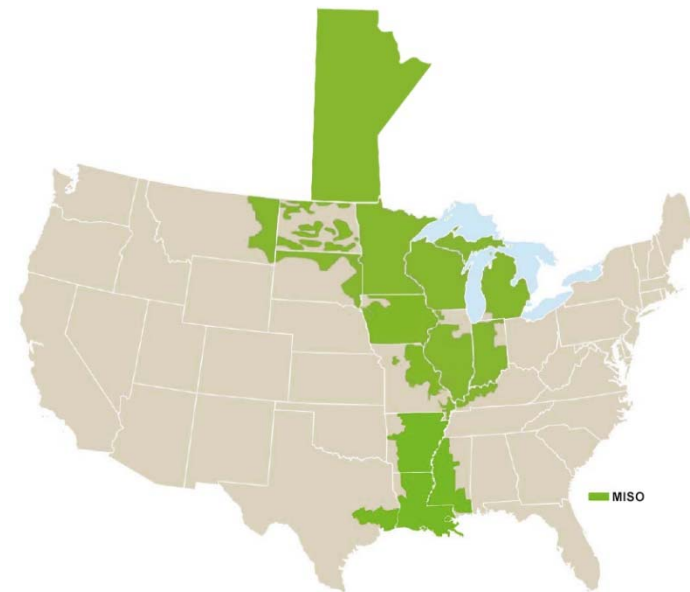
	Green Advantage Percent <sup>(2)</sup>	MW Installed Capacity	Cumulative Investment (\$ billions)
2012 Actual	3%	2,285	\$3.7
2013 Actual	6%	2,329	\$3.8
2014 Actual	28%	2,832	\$4.6
2015 Actual	38%	3,448	\$6.0
2016 Actual	47%	4,048	\$7.0
2017 Actual	51%	4,388	\$8.3
2018 Actual	51%	5,215	\$10.0
2019 Plan	75%	6,265	\$11.6
2020 Plan	95%	6,655	\$12.2
2021 Plan	101%	6,655	\$12.8

(1) Includes investment in repowered facilities

(2) Represents the portion of Iowa retail sales supplied by renewable energy as certified by the Iowa Utilities Board

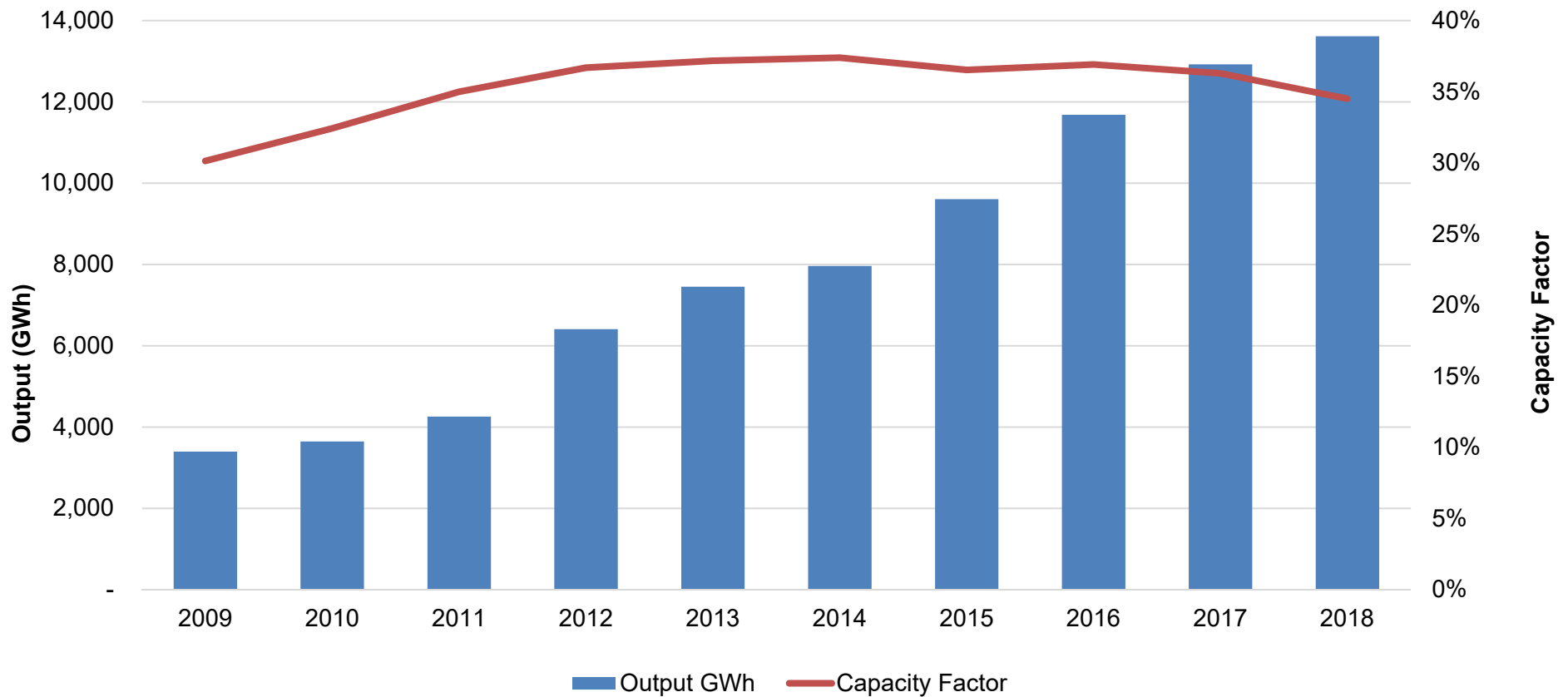
All or some of the renewable attributes associated with the generation have been or may in the future be: (a) sold to third parties, or (b) used to comply with future regulatory requirements

## MidAmerican Energy Participates in the Midcontinent Independent System Operator



The size of MISO's non-renewable installed capacity enables MidAmerican Energy to continue developing wind generation while maintaining satisfactory reliability. Non-renewable sources account for 85% of MISO's capacity

# MidAmerican Energy Wind Performance



(\$ millions)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Wind Production Tax Credits	\$72	\$80	\$93	\$141	\$172	\$183	\$210	\$249	\$287	\$308

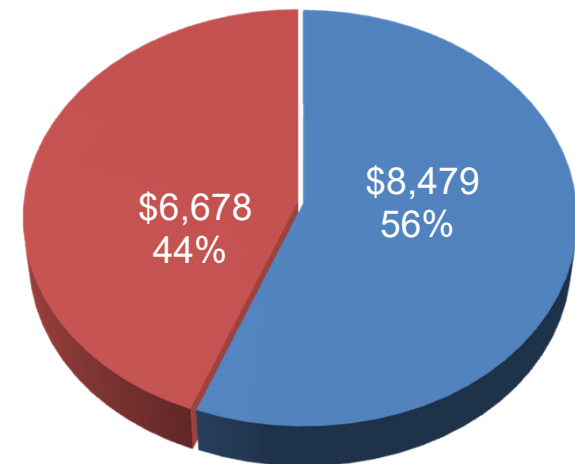
# Rate Status

## Electric rates among the lowest in the Midwest region and the United States

- No expected need for electric base rate increase through 2029
- All state jurisdictions have energy and transmission cost rider recovery mechanisms; Iowa rider includes PTCs from 2,284 MW of the earliest wind projects placed in-service; PTCs from repowered facilities excluded from rider
- Rate base reductions via Iowa revenue sharing and other arrangements mitigate the need for future base rate increases
- Iowa revenue sharing for 2019 and beyond reduces rate base for 90% of pre-tax income on ROEs exceeding a weighted average value calculated annually; based on current forecast, trigger would be 10.6% for 2019
- Proceedings concluded in all states but South Dakota to provide customers the benefit of lower income tax expense resulting from 2017 Tax Reform legislation
- For Iowa electric, MidAmerican Energy's largest jurisdiction, tax reform mechanism provides customers with the benefits of tax reform by lowering current bills for the impact of the lower tax rate (calculated annually) and continuing to reduce rate base for excess deferred taxes

### Forecast 2020 Iowa Electric Net Plant

- 56% of Iowa electric net plant subject to rate-making principles
- 11.5% weighted average return on equity
- 32 years weighted average remaining life



- Subject to Rate Principles
- Subject to General Rate Order



# Energy Storage

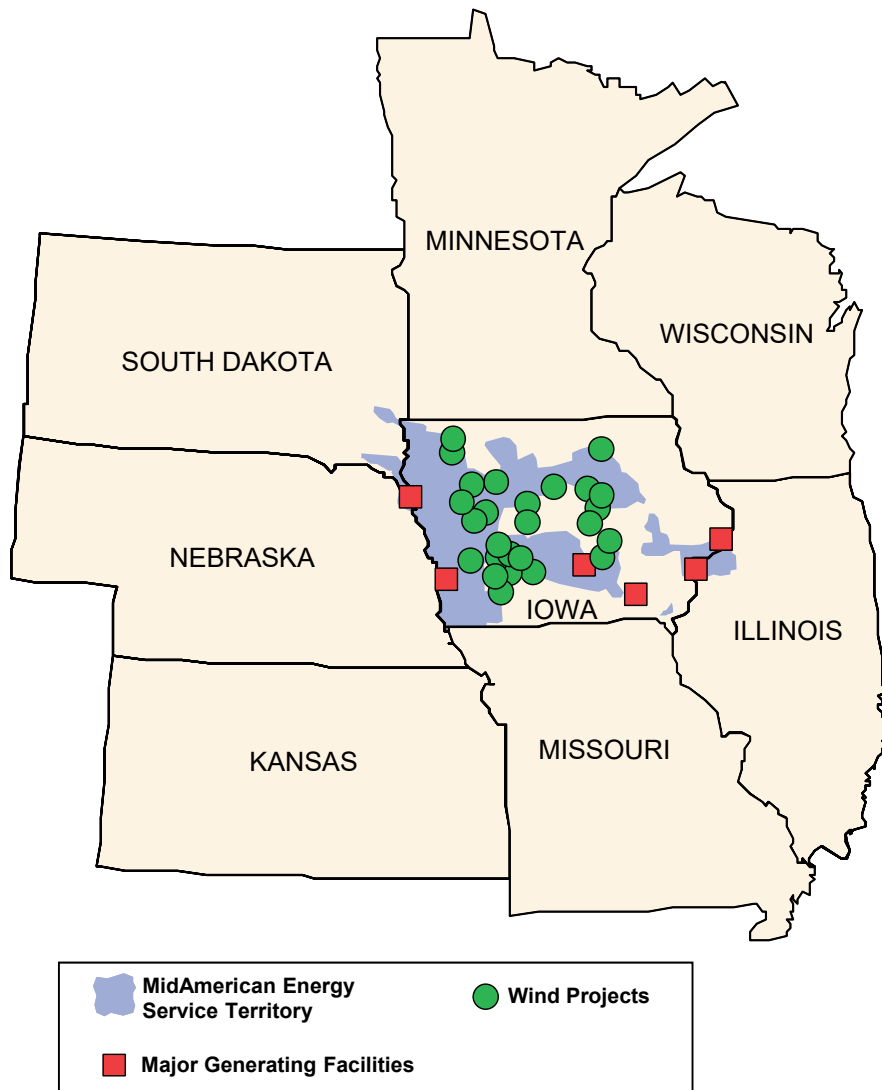


- Installed a 1-MW/4-MWh lithium iron phosphate battery, along with the associated inverter and transformer in 2018
- The \$3 million project connects to a distribution circuit and is being used in a variety of applications to help the company prepare for possible larger scale implementation of the technology as prices for storage continue to decline
- Currently being used for energy balancing purposes, but other possible uses include: reserve capacity, voltage support, frequency regulation, demand response and other potential value streams

# **MidAmerican Energy Appendix**



# MidAmerican Energy



- Headquartered in Des Moines, Iowa
- 3,400 employees
- 1.6 million electric and natural gas customers in four Midwestern states
- 11,188 MW<sup>(1)</sup> of owned capacity
- Owned capacity by fuel type:
 

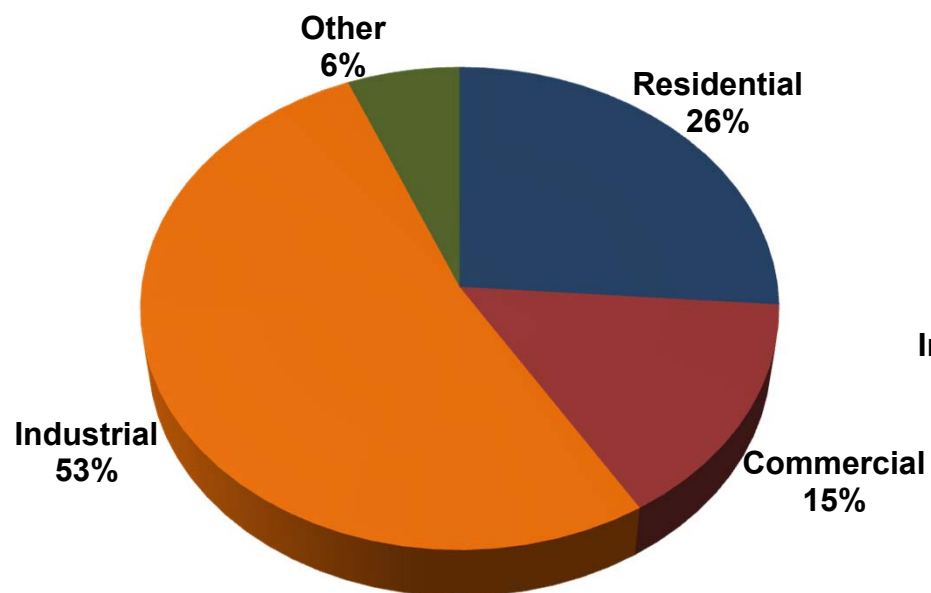
	12/31/18 <sup>(1)</sup>	12/31/00
– Wind <sup>(2)</sup>	59%	0%
– Coal	24%	70%
– Natural gas	13%	19%
– Nuclear and other	4%	11%

<sup>(1)</sup> Net MW owned in operation and under construction as of December 31, 2018  
<sup>(2)</sup> All or some of the renewable energy attributes associated with generation from these generating facilities may be: (a) used in future years to comply with renewable portfolio standards or other regulatory requirements or (b) sold to third parties in the form of renewable energy credits or other environmental commodities

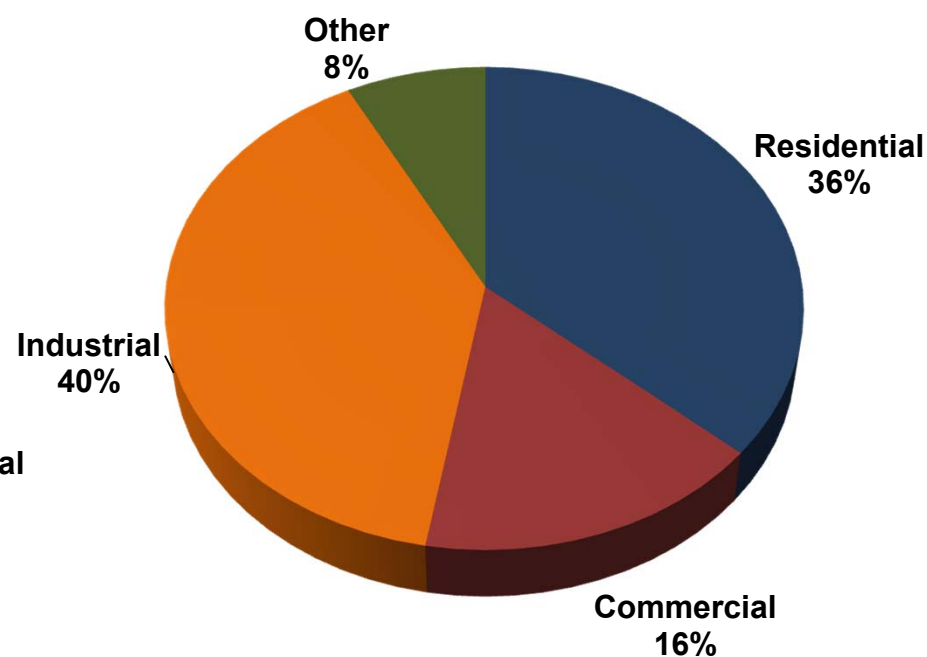
# MidAmerican Energy

## 2018 Retail Electric Sales and Revenue by Class

2018 Retail Electric Sales – 25,851 GWh



2018 Retail Electric Revenue – \$1.9 billion



# Private Generation in Iowa

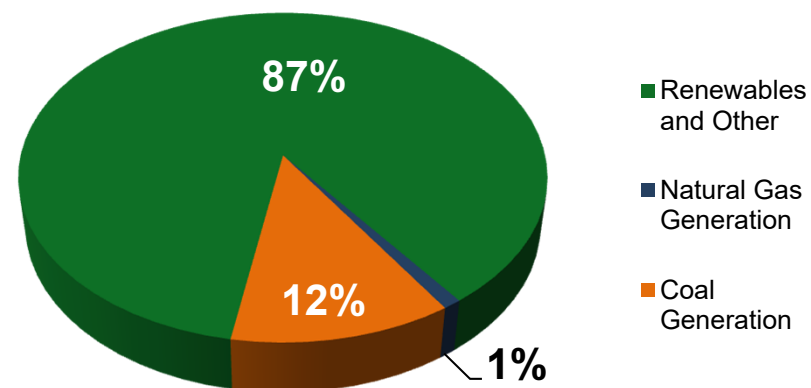
- Private generation activities in Iowa
  - Iowa Utilities Board approved MidAmerican Energy's net metering tariff in 2017 as part of a 3-5 year pilot project
    - Size cap on system equal to customer's "load"
    - Annual payout of excess energy: 50% paid to customer; 50% paid to low-income heating assistance program
    - Payout at avoided cost
  - Inquiry concluded: Avoided costs set at locational marginal price
- MidAmerican Energy's approach to private generation in Iowa
  - Focused on keeping costs low for all customers
  - Pursuing legislative policy changes to eliminate inter-class cross-subsidization through proper tariff design

# MidAmerican Energy Environmental Position

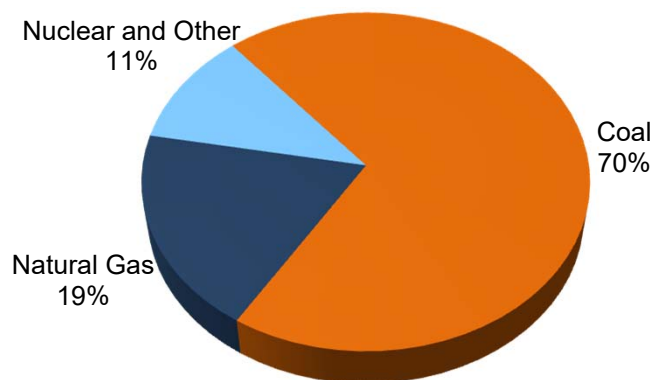
- MidAmerican Energy has 2,705 MW<sup>(1)</sup> of coal-fueled power capacity
- Projected environmental capital spend<sup>(2)</sup>
  - \$73 million from 2019-2021

## Asset Profile

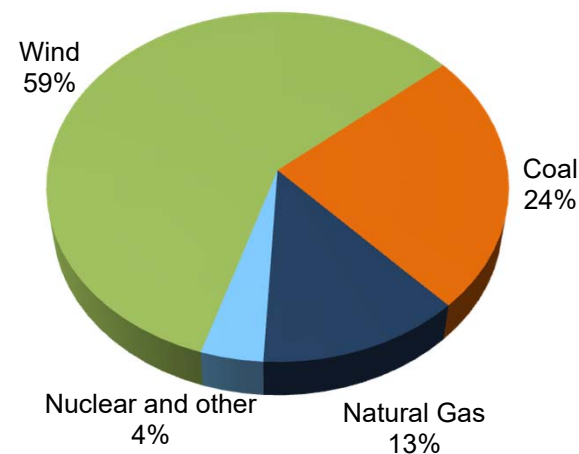
Net Property, Plant and Equipment as of December 31, 2018



## December 31, 2000 Power Capacity – 4,086 MW <sup>(3)</sup>



## December 31, 2018 Power Capacity – 11,188 MW <sup>(3)</sup>



<sup>(1)</sup> Net owned capacity as of December 31, 2017

<sup>(2)</sup> Environmental capital expenditures forecast excludes equity AFUDC

<sup>(3)</sup> Net MW owned in operation and under construction



# 2019 FIXED-INCOME INVESTOR CONFERENCE

**Doug Cannon**

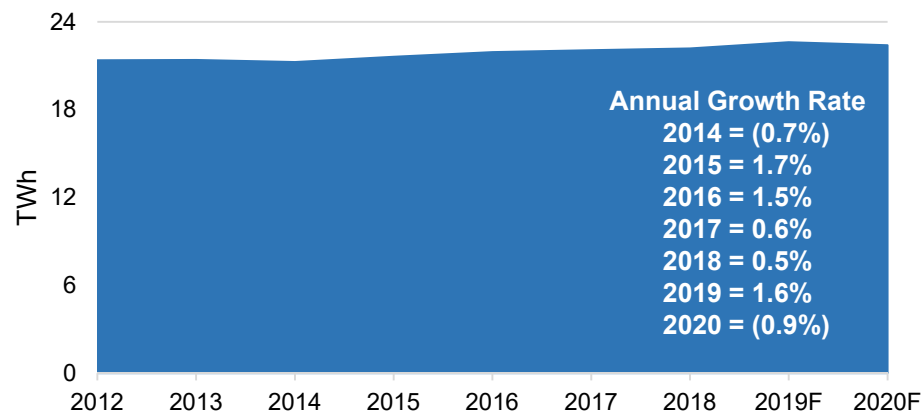
President and CEO

NV Energy

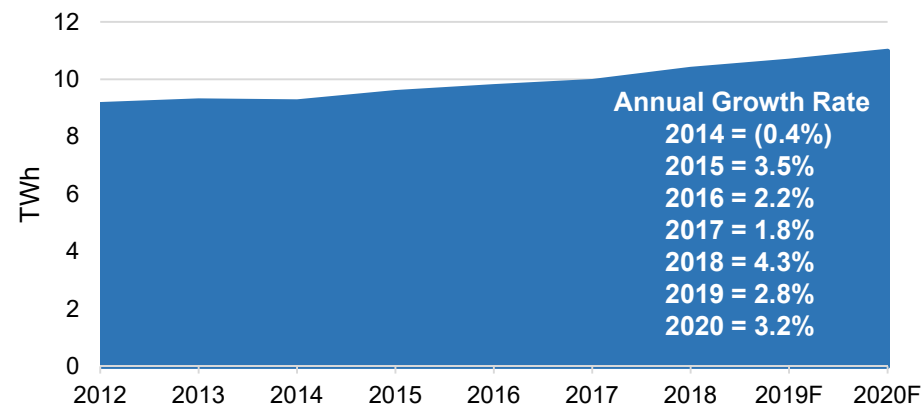
# NV Energy

## Electric Retail Sales

### Nevada Power Electric Retail Sales Weather Normalized



### Sierra Pacific Electric Retail Sales Weather Normalized



### System Load Comparison 2018 vs. 2017

#### Nevada Power

- Commercial up 1.9% due to solid customer growth
- Residential up 0.4% due to solid customer growth partially offset by energy efficiency and private generation
- Industrial down 11.3% due to new distribution-only service customers in 2018. Including DOS, sales were down 0.4%. Retail and convention space increases were offset by energy efficiency programs

#### Sierra Pacific

- Industrial up 6.9% primarily led by manufacturing
- Residential up 1.4% primarily due to robust customer growth
- Large mining up 0.9% as metal prices rise slowly

### Load Forecast For 2019 and 2020

#### Nevada Power

- Retail, small hotel, recreation facilities and residential customer growth drives load growth in 2019

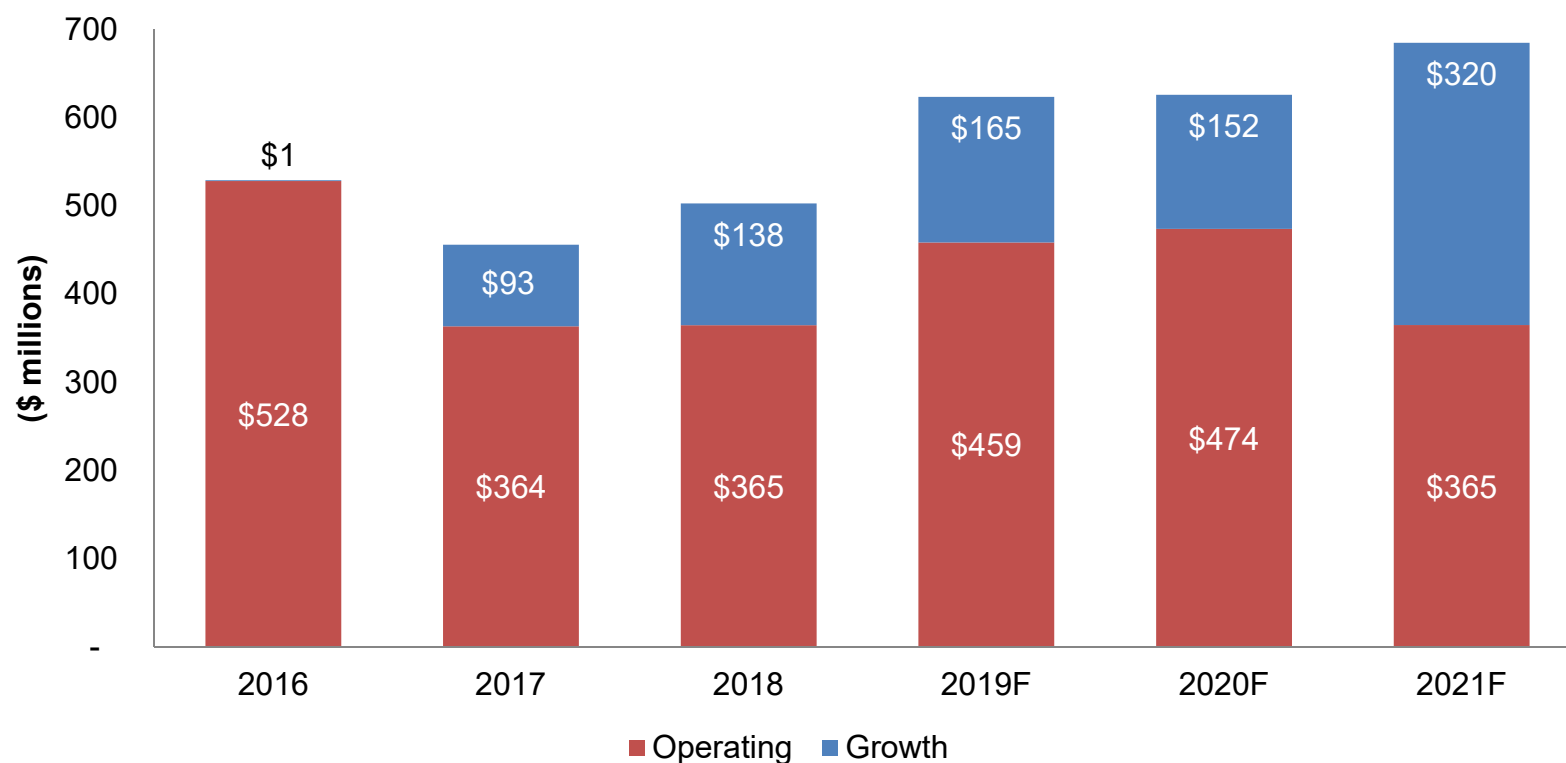
#### Sierra Pacific

- Increasing data center and manufacturing loads will help drive non-residential load growth

# NV Energy Capital Investment Plan

- Capital investment for 2019-2021 increased \$257 million from prior plan due to an increase in planned growth projects

(\$ millions) 2019-2021	Current Plan	Prior Plan
Operating	\$ 1,298	\$ 1,298
Growth	\$ 637	\$ 380
Total	\$ 1,935	\$ 1,678



# NV Energy

## Regulatory Update

- **Sierra Pacific Power Company General Rate Review**

- Preparations on the 2019 Sierra Pacific Power Company general rate review application are underway
- Application must be filed before June 3, 2019, pursuant to Nevada law

- **Joint Integrated Resource Plan**

- In December 2018, NV Energy successfully received approval of its combined integrated resource plan
- Key elements of the approved plan included 1,001 megawatts of new solar photovoltaic purchase power agreements with 100 megawatts of energy storage
- Approval resulted in an unprecedented, concrete plan for creating \$2.2 billion of progressive, clean energy resource investment opportunities in Nevada, and approval to conditionally retire North Valmy Generating Station Unit 1 coal facility in 2021, furthering NV Energy's carbon reduction commitment
- NV Energy subsequently issued a request for proposals for up to 350 megawatts of additional renewable energy and battery energy storage systems, and up to 600 megawatts of non-technology specific firm capacity and energy resources

- **Consolidated Deferred Energy Accounting Adjustment Filings**

- In March 2019, NV Energy filed its annual deferred energy filing, including the sharing of 50% of Nevada Power's earnings with customers above a 9.7% return on equity, 2018 estimated at \$43.3 million

- **Tax Rate Reduction Rider**

- In March 2018, the Public Utilities Commission of Nevada (PUCN) approved NV Energy's request to reduce rates for its electric and natural gas customers in Nevada by \$83.7 million; request was made as a result of 2017 Tax Reform
- In September 2018, the PUCN issued an order requiring the capitalization of all excess deferred income taxes associated with the 2017 Tax Reform until the next general rate case filing
- In December 2018, NV Energy filed a petition for judicial review challenging the PUCN's authority to expand the scope of the company's filing to address adjusted accumulated deferred income taxes



# 2019 Legislative Session

- Nevada's 80<sup>th</sup> Legislative Session began February 4, 2019, and will run for 180 days
- Legislators submitted over 1,000 bill draft requests to the Legislative Council Bureau; NV Energy is tracking 20+ specific energy bills and 50+ other business-related items
- NV Energy is working closely with legislative leaders on numerous energy-related measures that have been proposed during the 2019 legislative session
  - Modifications to Nevada Revised Statute 704B process (alternative energy provider for customers with a load of one megawatt or larger)
  - Increase to the renewable portfolio standard
  - Implementation of community solar program
  - Modification of existing three-year general rate review cycle
- NV Energy continues to maintain relations fostered through the Coalition to Defeat Question 3 to aid in legislative support in 2019

# Wildfire Risks

- NV Energy is acutely focused on wildfire risks
  - Looking at California, one of the key reasons the severity of fires in California is so high centers around the high population numbers in the wildland-urban interface where wildfires are more likely to occur
  - Nevada does not have the same population and density numbers in these type of wildland-urban interface areas throughout the state
- Proactive Wildfire Mitigation Plans
  - Increased circuit patrols, inspections and maintenance
  - Fire season circuit settings that place systems in non-reclosing mode
  - Vegetation management plans
    - Prioritization of high risk areas
    - Shorter vegetation management cycles
  - Fire threat mapping
  - Focus resources and attention on higher risk areas (e.g. Lake Tahoe region)
  - Camera and weather monitoring
  - Proactive outage management including de-energization
  - System hardening including deployment of covered conductor, iron ductile/steel poles and fire resistant pole wrap on wooden poles

# Nevada Revised Statute 704B

## Alternative Energy Providers

- Alternative energy providers continue to actively market to NV Energy's customers
- By directly accessing wholesale energy markets, customers avoid:
  - Generation-related capital, operations and maintenance expense
  - Older vintage, high-priced renewable energy contracts to meet renewable portfolio standard
- Options to address further customer bypass activity include:
  - Alternative pricing plans based on renewable energy resources
    - Optional Pricing Proposal tariff filed November 16, 2018
    - Regulatory decision expected before July 10, 2019
    - The program, if approved, allows customers who use more than 8,760 MWh of electricity per year to enter into a fixed energy price tied to renewable energy only; designed to enhance NV Energy's value proposition by providing predictable energy prices and savings
  - NV Energy general rates continue to decline or remain flat year-over-year
  - Proactive customer outreach and education on value of NV Energy fully bundled service
  - Active participation in alternative energy provider regulatory proceedings, focusing on fair treatment for the remaining customers and a more structured approach to resource planning considerations

# Nevada Revised Statute 704B

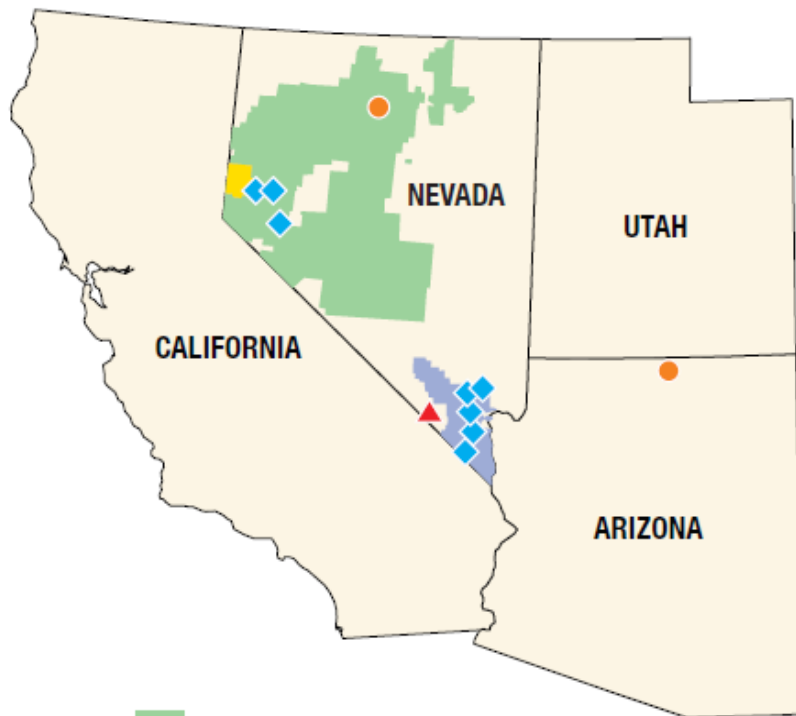
## Alternative Energy Providers

Pending Customer Applicant	Peak Load (MW)	Impact Fee (\$ millions)	Status
Existing Customer Load			
Station Casinos LLC (south)	44.5	\$14.95	Order issued Nov 1, 2018; transition under way
Georgia Pacific (south)	3.4	\$1.29	Order issued Feb 20, 2019
Golden Road Motor Inn, Inc. dba Atlantis Casino Resort Spa (north)	3.9	\$1.76	Order issued Feb 20, 2019
Boyd Gaming Corporation (south)	39	TBD	Application filed; proceedings scheduled
Gaughan South LLC dba South Point Hotel and Casino	10.63	TBD	Application filed; proceedings scheduled
MEI-GSR Holdings LLC (north)	8	TBD	Application filed; proceedings scheduled
Las Vegas Resort Holdings LLC dba SLS Las Vegas (south)	5	TBD	Application filed; proceedings scheduled
Nevada Property 1 LLC dba The Cosmopolitan of Las Vegas (south)	20	TBD	Application filed
Las Vegas Convention and Visitors Authority (south)	17	TBD	Application filed
Eldorado Resorts, Inc.	10	TBD	Formal Letter of Intent
<b>Total</b>	<b>161.43</b>		
New Customers to Nevada			
Fulcrum Sierra Biofuels, LLC (north)	Est. 25	\$0	Order issued Nov 1, 2018; transition under way
Google (north)	Est. 42	TBD	Informal letter
Google (south)	Unknown	TBD	Informal letter
LV Stadium Events Company, LLC (south)	Unknown	\$0	Order issued Feb 1, 2019
Two Blackbirds Hospitality Management LLC (south)	27	TBD	Formal Letter of Intent
Air Liquide Advanced Technologies U.S. LP (north/south)	Est. 12	TBD	Application filed
MSG Las Vegas, LLC (south)	Unknown	TBD	Application filed; proceedings scheduled
Wynn West (south)	Unknown	TBD	Informal letter

- In 2016-2018, 400 MW of customer peak load transitioned to distribution-only service, with impact fees of approximately \$175 million

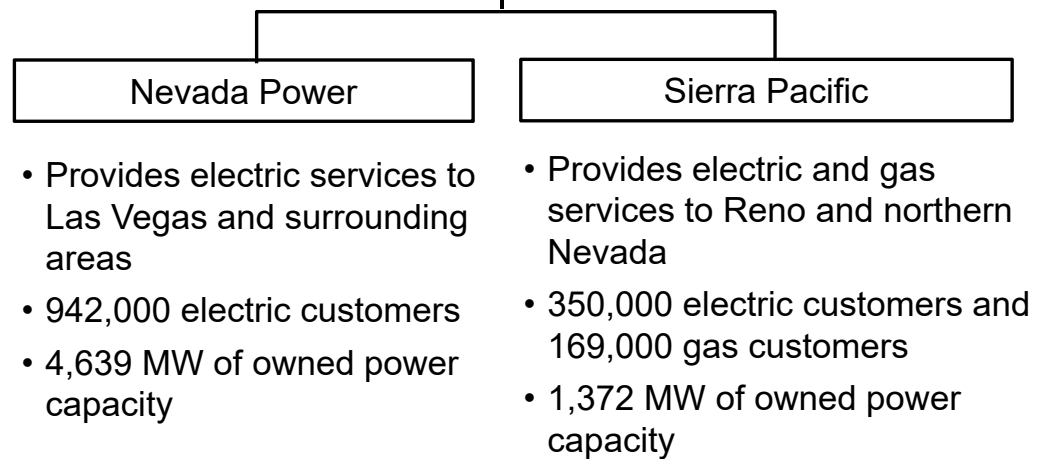
# **NV Energy Appendix**

# NV Energy



- NVE SPPC Electric Service Territory
- NVE NPC Electric Service Territory
- NV Energy Gas Service Territory
- Coal Plants
- ◆ Natural Gas Plants
- ▲ Energy Recovery Plant

- Headquartered in Las Vegas, Nevada, with territory throughout Nevada
- 2,400 employees
- 1.29 million electric and 169,000 gas customers
- Service to 90% of Nevada's population, along with tourist population in excess of 43 million
- 6,011 MW<sup>(1)</sup> of owned power generation (91% natural gas, 9% coal/renewable/other)

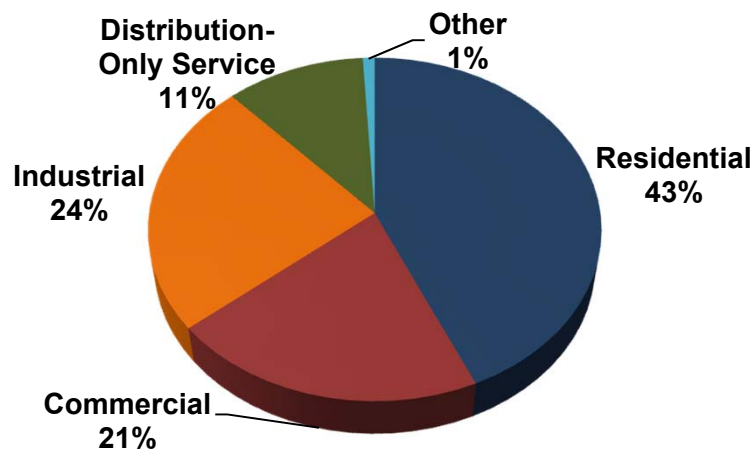


(1) Net MW owned in operation as of December 31, 2018

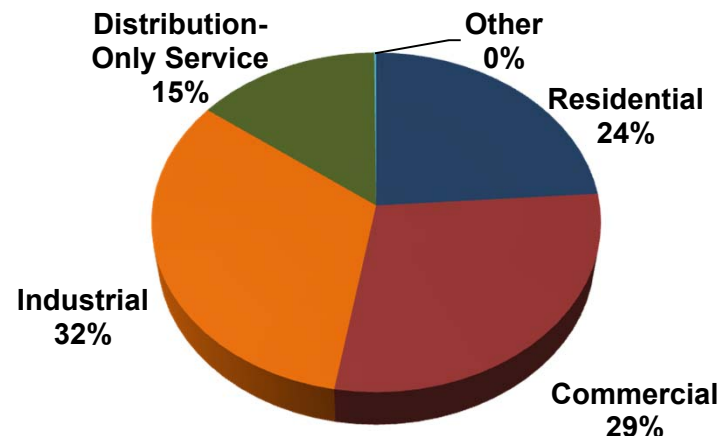
# NV Energy

## 2018 Retail Electric Sales and Revenue by Class

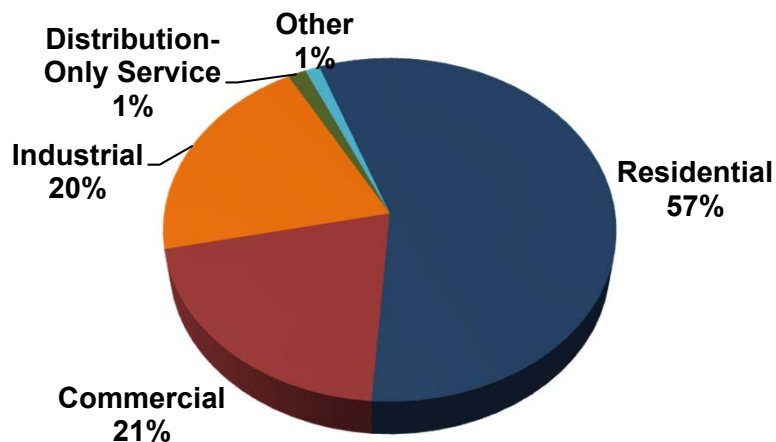
**Nevada Power**  
2018 Retail Electric Sales – 23,017 GWh



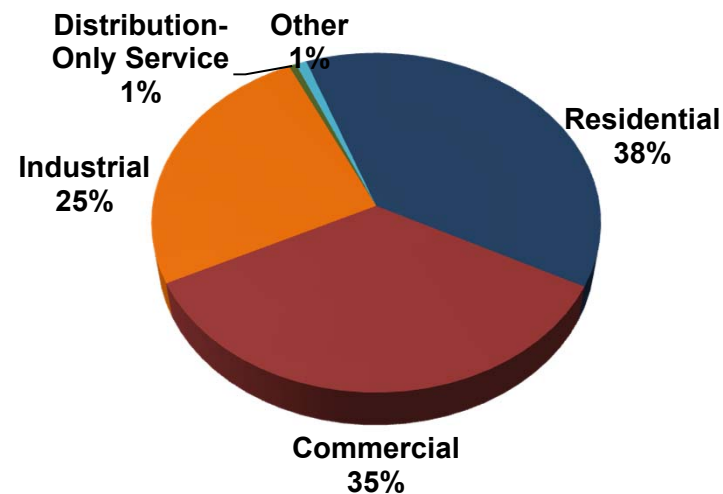
**Sierra Pacific Power**  
2018 Retail Electric Sales – 10,400 GWh



**Nevada Power**  
2018 Retail Electric Revenue – \$2.1 billion



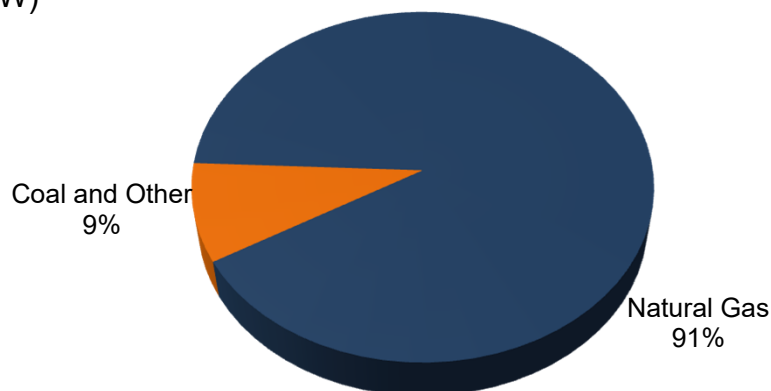
**Sierra Pacific Power**  
2018 Retail Electric Revenue – \$700 million



# NV Energy Environmental Position

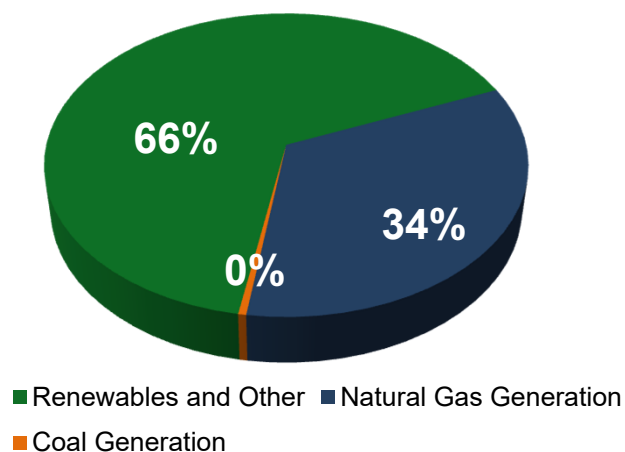
- NV Energy is reducing use of coal-fueled generation
  - 2019 elimination of Navajo interest (255 MW)
  - 2021 conditional retirement of North Valmy Unit 1 (127 MW)
  - 2025 retirement of North Valmy Unit 2 (134 MW)
- Decommissioning expenditures of \$66.3 million in 2019-2021 associated with coal retirements
- Forecast<sup>(1)</sup> environmental expenditures include \$4 million in 2019, \$4.2 million in 2020 and \$4 million in 2021

**December 31, 2018**  
**Power Capacity – 6,011 MW<sup>(2)</sup>**



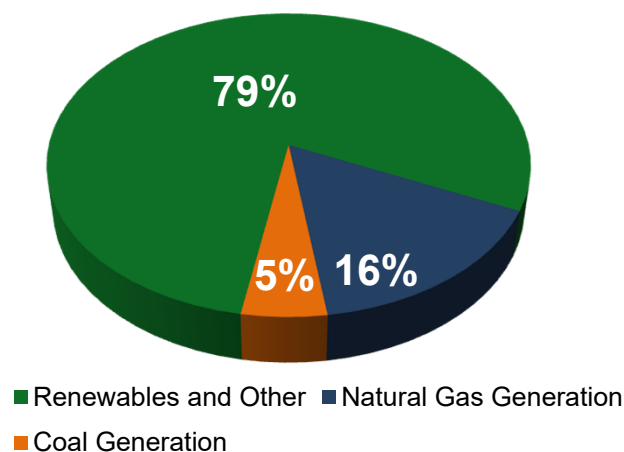
## Nevada Power Asset Profile

Net Property, Plant and Equipment as of December 31, 2018



## Sierra Pacific Asset Profile

Net Property, Plant and Equipment as of December 31, 2018



<sup>(1)</sup> Environmental capital expenditures forecast excludes equity AFUDC

<sup>(2)</sup> Net MW owned in operation and under construction



# Reduction of Coal-Fueled Generating Stations

NV Energy continues to move toward the elimination of coal-fueled electric generating plants by 2025

- Reid Gardner Generating Station, 557 MW coal plant
  - Decommissioned in 2017; demolition is underway through 2019, with site remediation activities to follow
- Navajo Generating Station, 2,250 MW coal plant
  - Six owners: NV Energy (11.3%), Salt River Project (operator), Arizona Public Service, Tucson Electric, Los Angeles Department of Water and Power and U.S. Bureau of Reclamation
  - Scheduled for retirement on or before December 22, 2019, and will begin decommissioning activities in 2020
- North Valmy Generating Station, 522 MW coal plant
  - Two units, co-owned equally with Idaho Power Company
  - Public Utilities Commission of Nevada approved 2018 integrated resource plan with a conditional retirement of Unit 1 by December 31, 2021, and Unit 2 by December 31, 2025
  - Retirement of Unit 1 by 2021 is conditional on maintaining reliable system operations for NV Energy's customers through a stable transmission grid

# Private Generation

- Excess energy compensation is tiered in four 80 MW tranches at 95%, 88%, 81% and 75% of authorized rate for that customer class
  - Tier 1 at 95% credit reached 80 MW capacity August 3, 2018
  - Tier 2 at 88% is open for new applications, which is expected to reach capacity by June 2019
- Private generation forecast to reduce NV Energy's load by 212 GWh by 2020
  - Forecast variables include changes to rate of solar installations due to declining excess energy credit or availability of incentive funding, changes in solar adoption of new construction market and reduced solar system costs

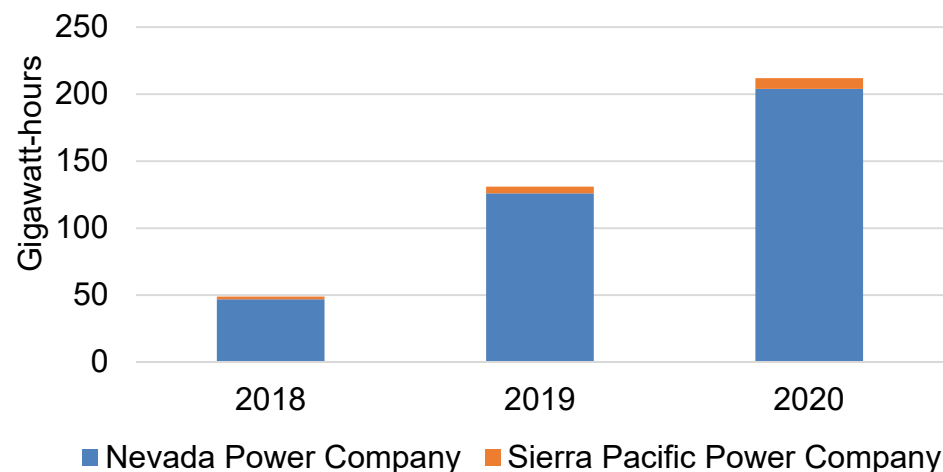
## Private Generation Applications

Tier 2		
Applied Capacity	Installed Capacity	Total Capacity
31.865 MW*	15.645 MW*	47.510 MW*
Tier 1		
Applied Capacity	Installed Capacity	Total Capacity
9.766 MW*	70.236 MW*	80.003 MW*

Source: [www.puc.nv.gov](http://www.puc.nv.gov), updated February 2019

\*The numbers shown will fluctuate as customer-generator applications are submitted, withdrawn or expire.

## Private Generation Implementation (Residential)



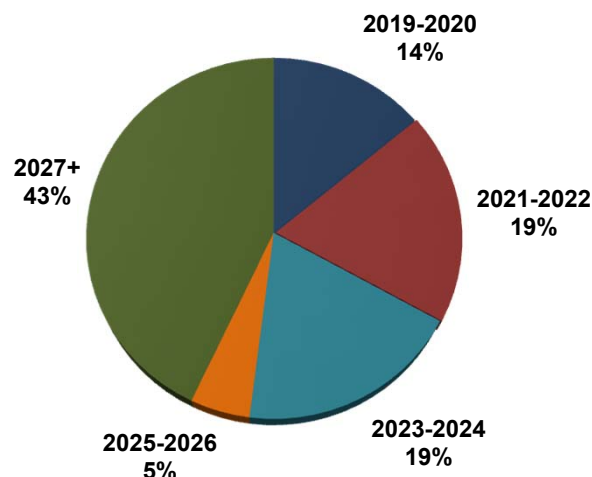


## **Mark Hewett**

President and CEO  
BHE Pipeline Group

# BHE Pipeline Group Shipper Contract Updates

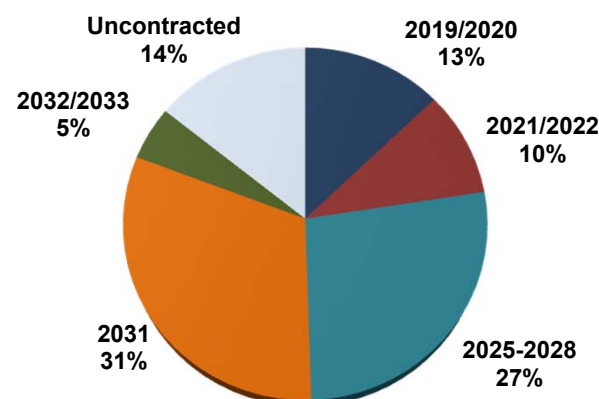
## Northern Natural Gas – Market Area Transportation Contract Maturities <sup>(1)</sup>



- Market Area Transportation weighted average remaining contract term of over eight years
- 81% of 2018 storage revenue resulted from long-term contracts, with an average remaining contract life of approximately seven years
- Long-term contracts with creditworthy counterparties – top 10 customer groups (60% of 2018 revenue) have a weighted average credit rating of A-/Baa1
- In 2018, completed approximately 0.5 Bcf/day in contract renewals, primarily with maximum rate shippers

<sup>(1)</sup> Based on maximum daily quantities of market area entitlement in decatherms as of December 31, 2018

## Kern River – Transportation Contract Maturities <sup>(2)</sup>



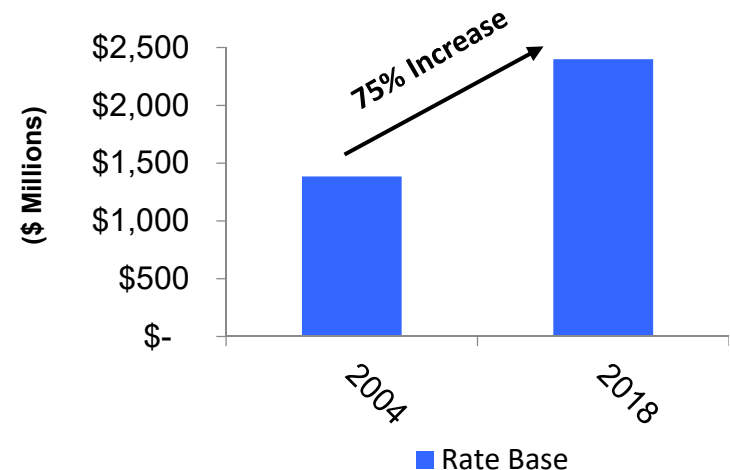
- Weighted average remaining contract term of nine years
- Weighted average shipper rating of A-/A3<sup>(3)</sup>
- 73% of capacity is committed to contracts that expire after 2020
- Shippers that do not meet credit standards are required to post collateral

<sup>(2)</sup> Based on binding shipper commitments for re-contracting and total system design capacity of 2.2 million Dth per day

<sup>(3)</sup> Weighting based on shipper annual revenue for shippers with published credit ratings

# Northern Natural Gas Regulatory Update

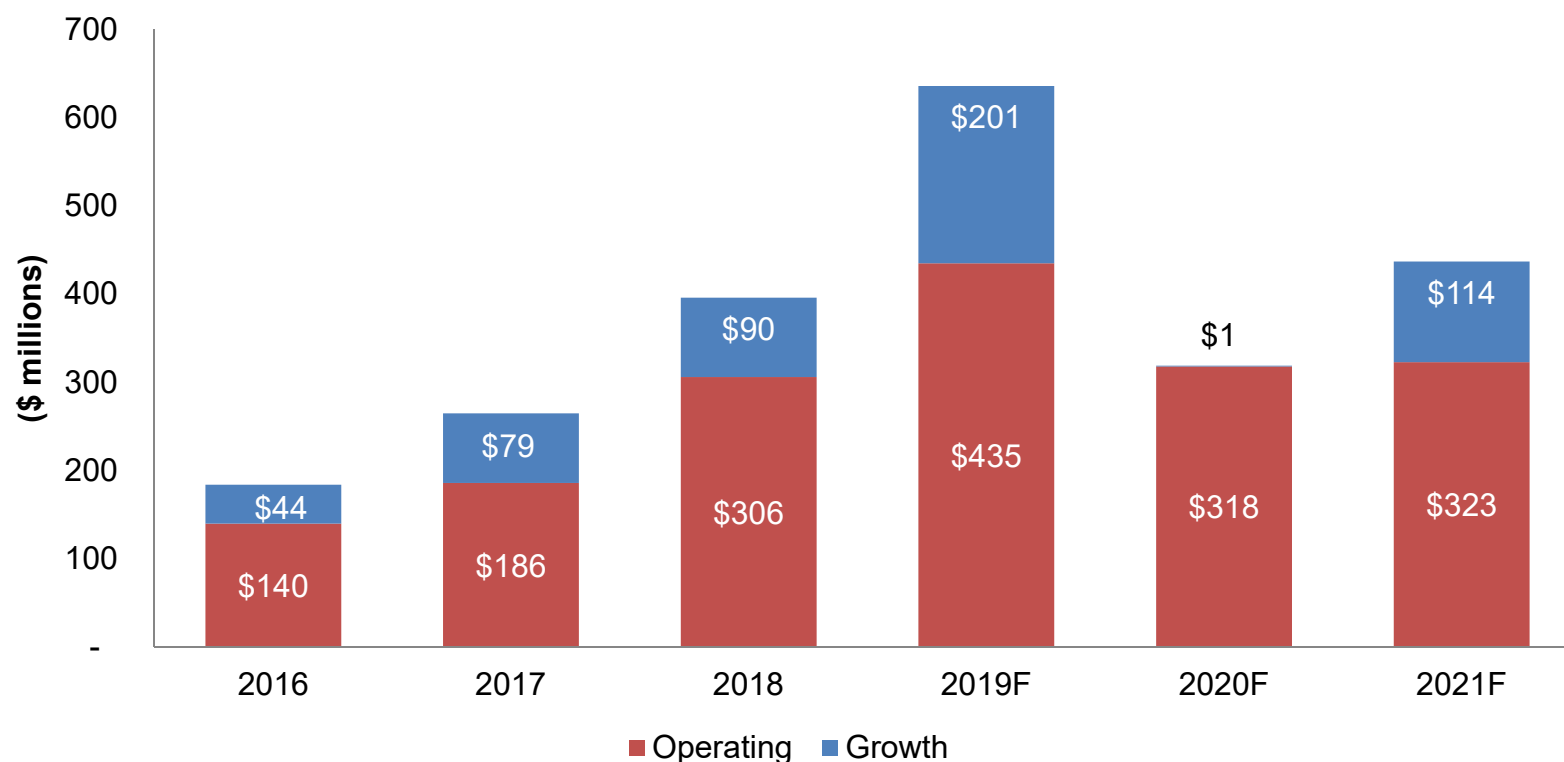
- On January 16, 2019, the FERC initiated a Section 5 rate proceeding against Northern
  - In the filing the FERC calculated a 2018 pro-forma return of 17.3%
  - Northern is required to file a cost and revenue study by April 1, 2019
  - Base period of the cost and revenue study will be calendar year 2018
- On January 28, 2019, Northern filed a motion to terminate the Section 5 rate proceeding
  - FERC had a significant error that overstated Northern's 2018 pro-forma return by 3.6%
    - Return per FERC's 501-G form should have been 13.7%
  - Northern's 2018 actual return was 13.5%
- Northern will file a general Section 4 rate case in 2019
  - Section 4 filing could be as early as July 1, 2019, and higher rates (subject to refund) would start on January 1, 2020
  - Customers could see rate increase of more than 30% from the Section 4 rate case
    - Increase will include 2019 maintenance capital spending, change in book depreciation rates, higher return on equity, market adjustments
  - First rate case in 15 years
    - Will apply to approximately 50% of transportation and storage revenue from maximum rate contracts
  - Rate case could last 2–3 years before resolution
    - Potential second Section 4 rate filing in 2020 for incremental capital spending and expected lower revenue



# Northern Natural Gas Capital Investment Plan

- Maintenance capital investment is greater than depreciation expense driving increases in rate base
  - 2018 book depreciation expense of \$82 million compared to operating capital expenditures of approximately \$300 million

(\$ millions) 2019-2021	Current Plan	Prior Plan
Operating	\$ 1,076	\$ 978
Growth	\$ 316	\$ 293
Total	\$ 1,392	\$ 1,271



# BHE Pipeline Group

## Competitive Advantages

### Focus on Customer Satisfaction

- Northern Natural Gas ranked #1 and Kern River ranked #2 out of 34 interstate pipelines in Mastio & Company's 2019 survey; Northern Natural Gas also ranked #1 among mega-pipelines in customer satisfaction and Kern River ranked #1 among regional pipelines in customer satisfaction
- Both pipelines have been ranked in the top 2 for the past 10 years
- BHE Pipeline Group has been ranked #1 for 14 consecutive years

### Financial Strength and Stability

- **Northern Natural Gas** – Credit metrics have continued to be strong
- **Kern River** – 100% equity capitalization consistent with tariff design
- **Kern River** filed and received approval of its proposal to provide a credit to customers for tax reform that began on November 15, 2018. The rate credit means an annual cost reduction to eligible customers of approximately \$12.8 million. Kern River's tax credit represented 32% of all rate reductions in the 501-G process. Kern River's rate credit would be eliminated if either there was a change in income tax rates or a section 5 investigation was initiated against the company

### Location

- **Northern Natural Gas** – Reticulated system - economically unfeasible to replicate
- **Northern Natural Gas** – Optionality with Field Area - tremendous advantage for customers and pipeline to capture opportunities
  - Proximity to Permian Basin provided for opportunity to capture increased volumes
- **Kern River** – Directly connected to end-use markets in Nevada and California

### Competitive Pricing

- **Northern Natural Gas** – Even with a rate increase, prices are competitive with other pipelines which minimizes level of discounting needed in competitive markets. Competitive rates have been increasing in major markets
- **Kern River** – Period Two rates are the lowest delivered cost interstate pipeline options to southern California
- Long-term contracts with stable markets for both pipelines

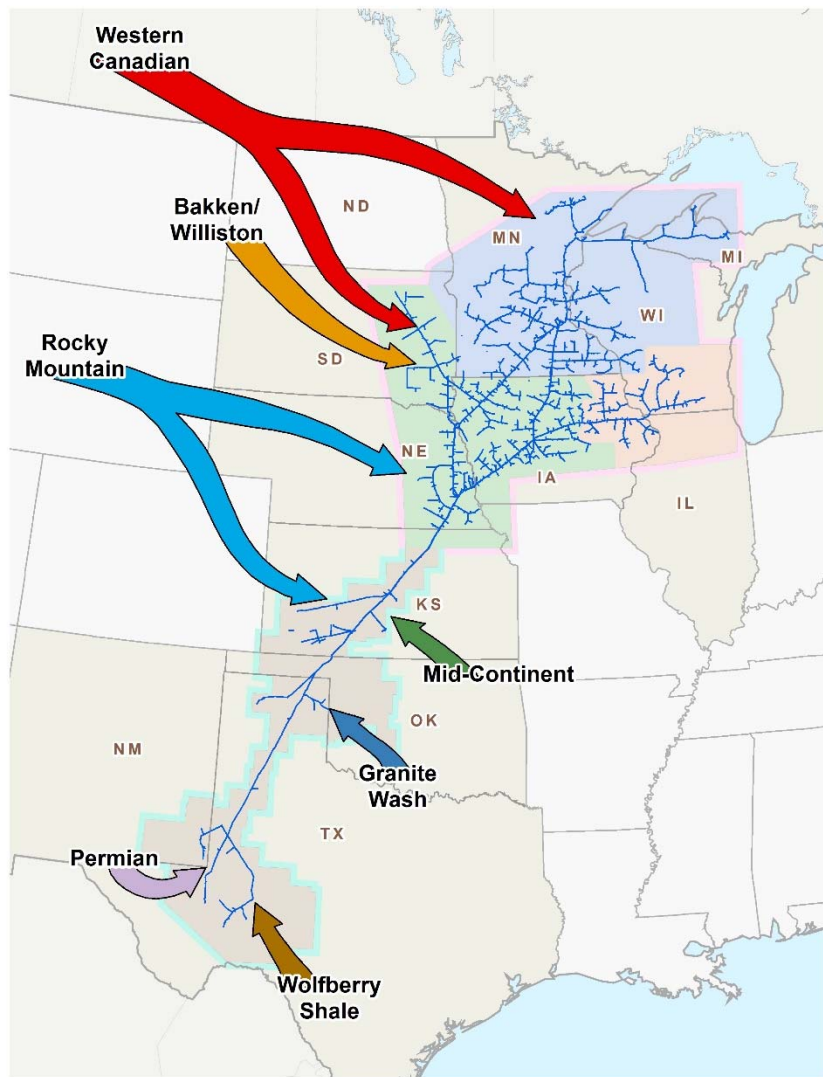
### Operational Excellence

- **Northern Natural Gas** – Long history of commitment to system reliability and operational excellence
- **Northern Natural Gas** set a new peak day record for Market Area deliveries of 5.62 Bcf in January 2019 and a new February record of 5.15 Bcf. There have been five days in the 2018-2019 winter season with Market Area deliveries in excess of 5 Bcf
- **Kern River** – State of the art transmission system

# **BHE Pipeline Group Appendix**



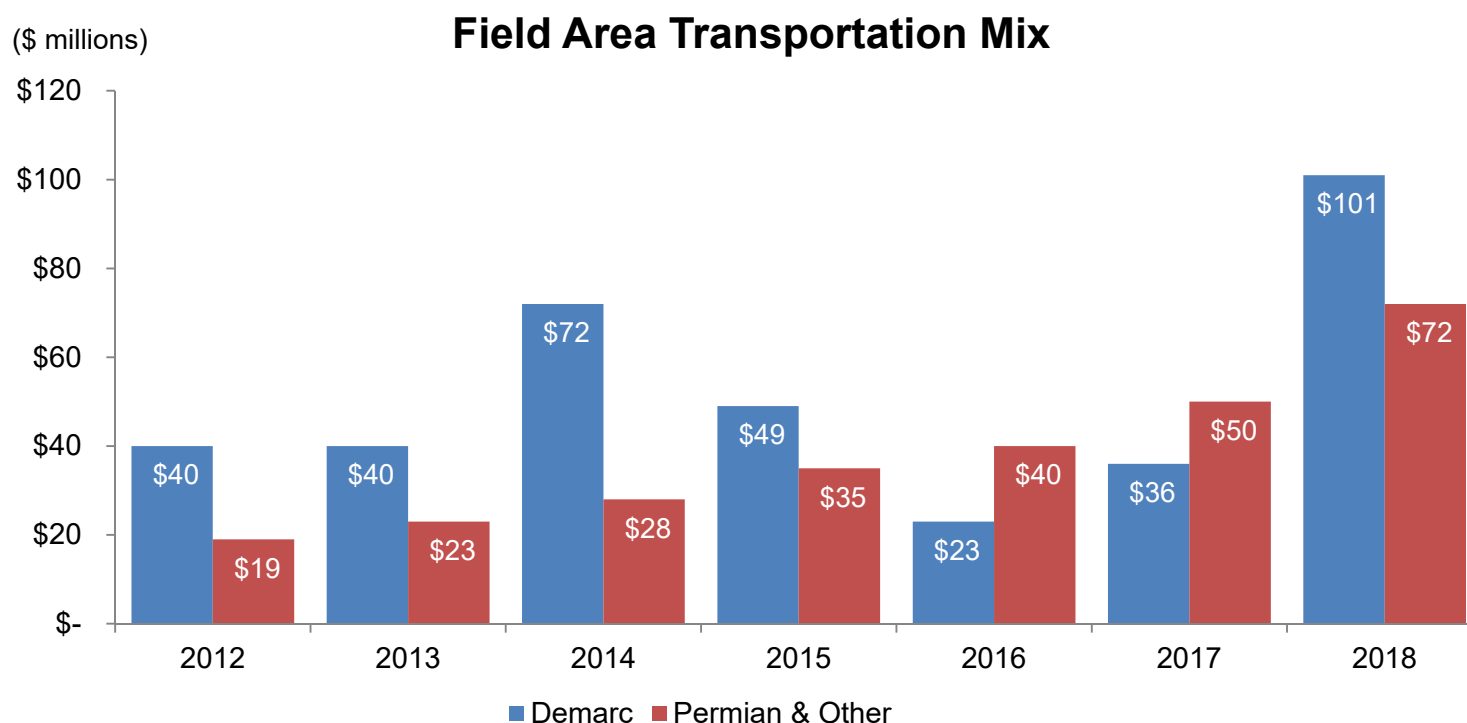
# Northern Natural Gas



- Headquartered in Omaha, Nebraska
- Approximately 925 employees
- 14,700-mile interstate natural gas transmission pipeline system
- 6.0 Bcf per day of market area design capacity; 1.73 Bcf per day field area capacity to demarcation and 1.4 Bcf per day of Permian area capacity
- More than 79 Bcf of firm service and operational storage cycle capacity
- 91% of transportation and storage revenue in 2018 is contracted based on fixed amounts (demand charges) that are not dependent on the volumes transported
  - Market area transportation contracts have a weighted average contract term of eight years
  - Storage contracts have a weighted average contract term of seven years
- Increased the integrity and reliability of the pipeline
- Ranked No. 1 among 16 mega-pipelines and No. 1 among 34 interstate pipelines in 2019 Mastio & Company customer satisfaction survey

# Northern Natural Gas Field Area Transportation

- Field area revenue becoming less dependent on fluctuating Demarc business
  - 2018 had significantly higher revenue due to competitive Permian supply prices, resulting in wider than normal transportation rates and higher volumes for delivery to Demarc
- Permian Basin revenue increased by 275% from 2012 to 2018
  - Increased demand through Permian expansion projects – including growth to power plants and market constraints
  - Market constraints will decrease to some extent over next few years as additional pipelines are built out of the Permian area



# Northern Natural Gas Expansion Projects

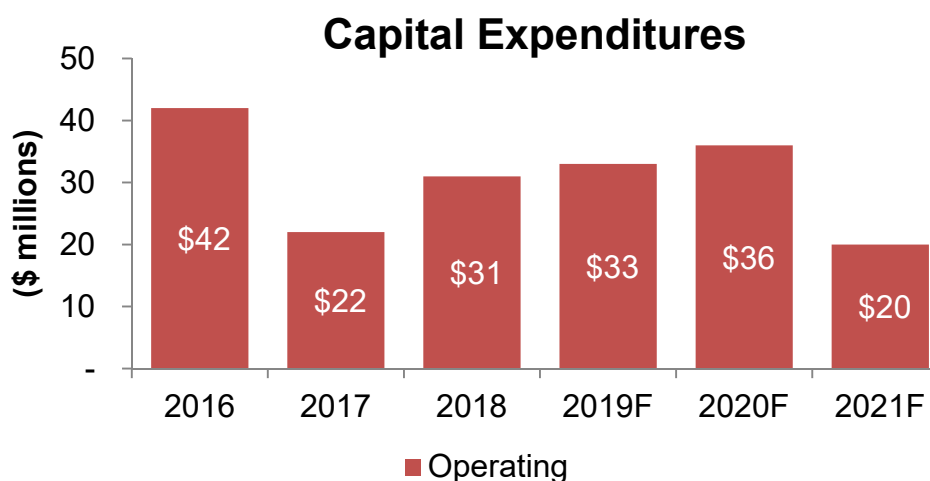
- 2018-2019 Market Area Expansions
  - Total capital expenditures of approximately \$275 million, primarily serving both residential and industrial growth needs for three large LDCs in Minnesota, a power plant conversion in Minnesota and two new power plants in Michigan
  - Incremental entitlement of 240,000 Dth/day
  - Annual demand revenues of \$43 million, with contract terms from five to 25 years
- 2018 Field Area Expansion
  - Total capital expenditures of approximately \$28 million, serving a gas processing plant
  - Incremental entitlement of 200,000 Dth/day (volumes ramp up between 2018 and 2019)
  - Annual demand revenues of \$8 million, with a contract term of five years

# Kern River Gas Transmission

- 1,700-mile interstate natural gas transmission pipeline system
- Design capacity of 2.2 million Dth per day of natural gas
- 89% of revenue through December 31, 2018, is based on demand charges
  - Contracted capacity has a weighted average contract term of nine years
- Ranked No. 2 among 34 interstate pipelines in 2019 Mastio & Company customer satisfaction survey



(\$ millions) 2019-2021	Current Plan		Prior Plan	
Operating	\$	89	\$	80
Growth	\$	0	\$	0
Total	\$	89	\$	80

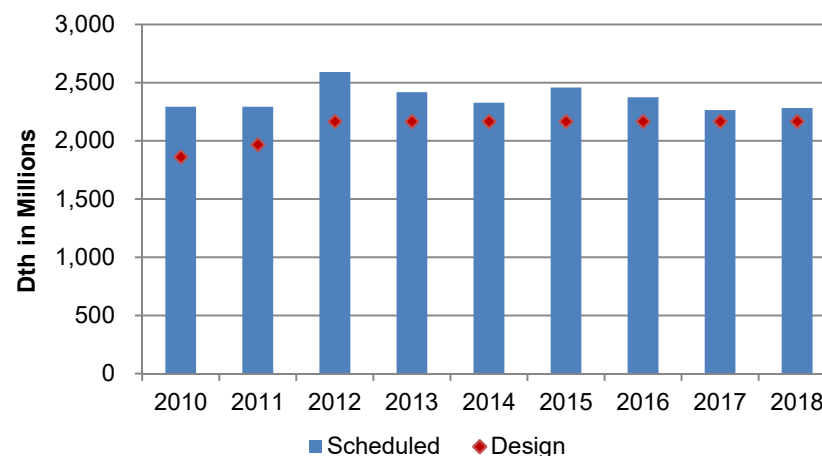


# Kern River Gas Transmission

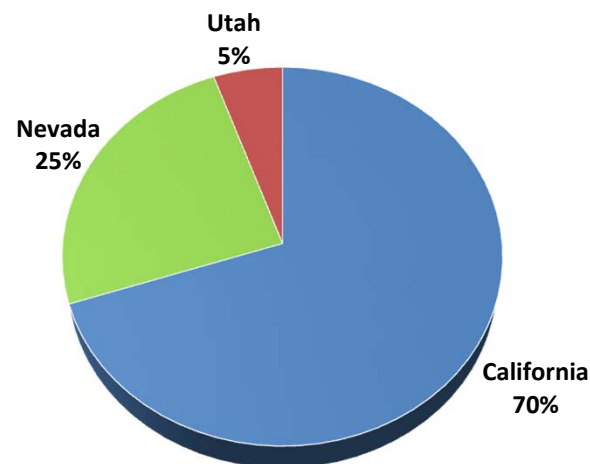
## Strong Demand for Services

- Received 25% of Rockies natural gas supply in 2018
- Delivered approximately 22%<sup>(1)</sup> of California's demand for natural gas in 2017
- Delivered more than 80%<sup>(2)</sup> of southern Nevada's natural gas
- During 2018, scheduled throughput averaged 105% of design capacity

### Daily Average Scheduled Volume



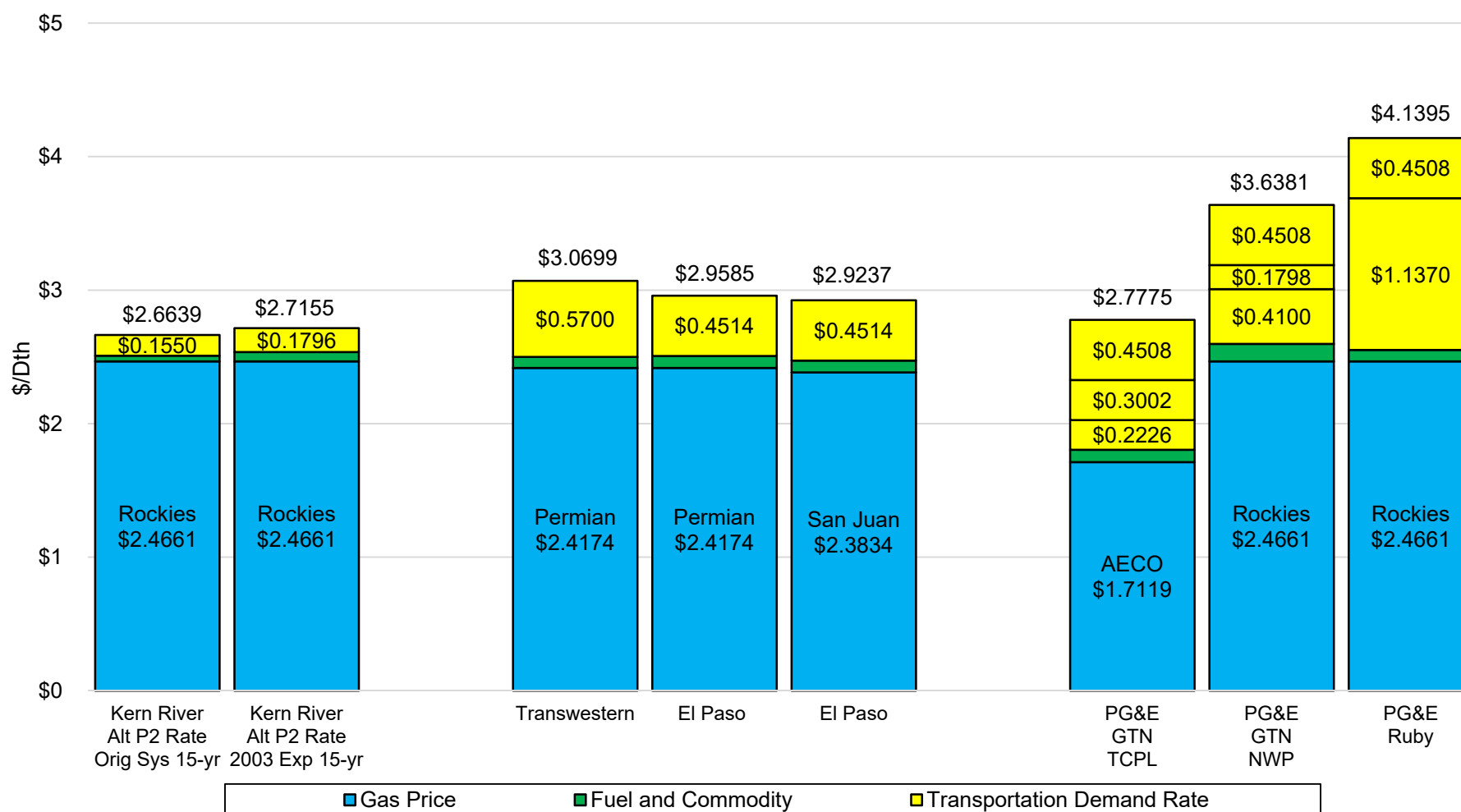
### 2018 Deliveries by State



<sup>(1)</sup> Based on the 2018 California Gas Report

<sup>(2)</sup> Based on Kern River's average scheduled volumes to Nevada and Southwest Gas Transmission Company's system capacity served by El Paso Natural Gas Company, LLC or Transwestern Pipeline Company, LLC

# Lowest-Cost Option to Southern California



Source: Platts M2M Modeled Natural Gas Curves, 120-Month Daily Assessments Dated February 13, 2019



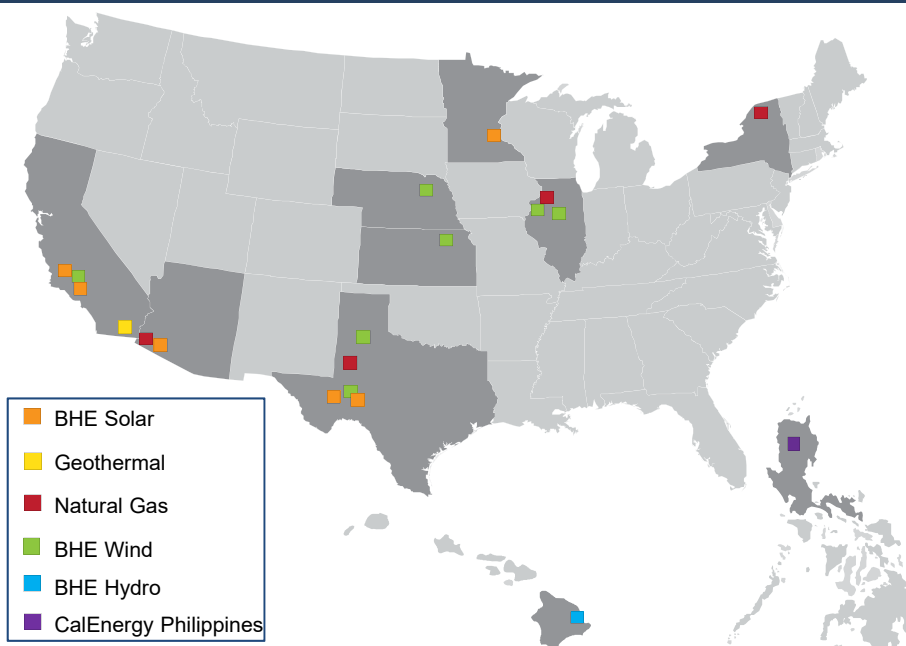
# 2019 FIXED-INCOME INVESTOR CONFERENCE

**Richard Weech**

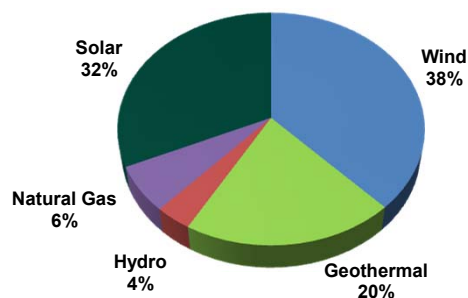
President and CEO  
BHE Renewables



# BHE Renewables



**Portfolio Composition (1)**



	Location	Installed	PPA Expiration	Power Purchaser	Net or Contract Capacity (MW)	Net Owned Capacity (MW)
<b>SOLAR</b>						
Solar Star I & II	CA	2013-2015	2035	SCE	586	586
Topaz	CA	2013-2014	2039	PG&E	550	550
Agua Caliente	AZ	2012-2013	2039	PG&E	290	142
Alamo 6	TX	2017	2042	CPS	110	110
Community Solar Gardens	MN	2016-2018	(2)	(2)	98	98
Pearl	TX	2017	2042	CPS	50	50
					1,684	1,536
<b>WIND</b>						
Grande Prairie	NE	2016	2037	OPPD	400	400
Pinyon Pines I & II	CA	2012	2035	SCE	300	300
Jumbo Road	TX	2015	2033	AE	300	300
Santa Rita	TX	2018	2038	Various	300	300
Walnut Ridge	IL	2018	2028	USGSA	212	212
Bishop Hill II	IL	2012	2032	Ameren	81	81
Marshall Wind	KS	2016	2036	(3)	72	72
					1,665	1,665
<b>GEO THERMAL</b>						
Imperial Valley	CA	1982-2000	(4)	(4)	338	338
<b>HYDROELECTRIC</b>						
Casecan	Phil.	2001	2021	NIA	150	128
Wailuku	HI	1993	2023	HELCO	10	10
					160	138
<b>NATURAL GAS</b>						
Cordova	IL	2001	2019	EGC	512	512
Power Resources	TX	1988	2021	EDF	212	212
Saranac	NY	1994	2019	TEMUS	245	196
Yuma	AZ	1994	2024	SDG&E	50	50
					1,019	970
<b>Total Owned</b>					<b>4,866</b>	<b>4,647</b>

(1) Based on actual generation from January 1 through December 31, 2018

(2) Approximately 100 off-takers for the purchase of all the energy produced by the solar portfolio for a period up to 25 years

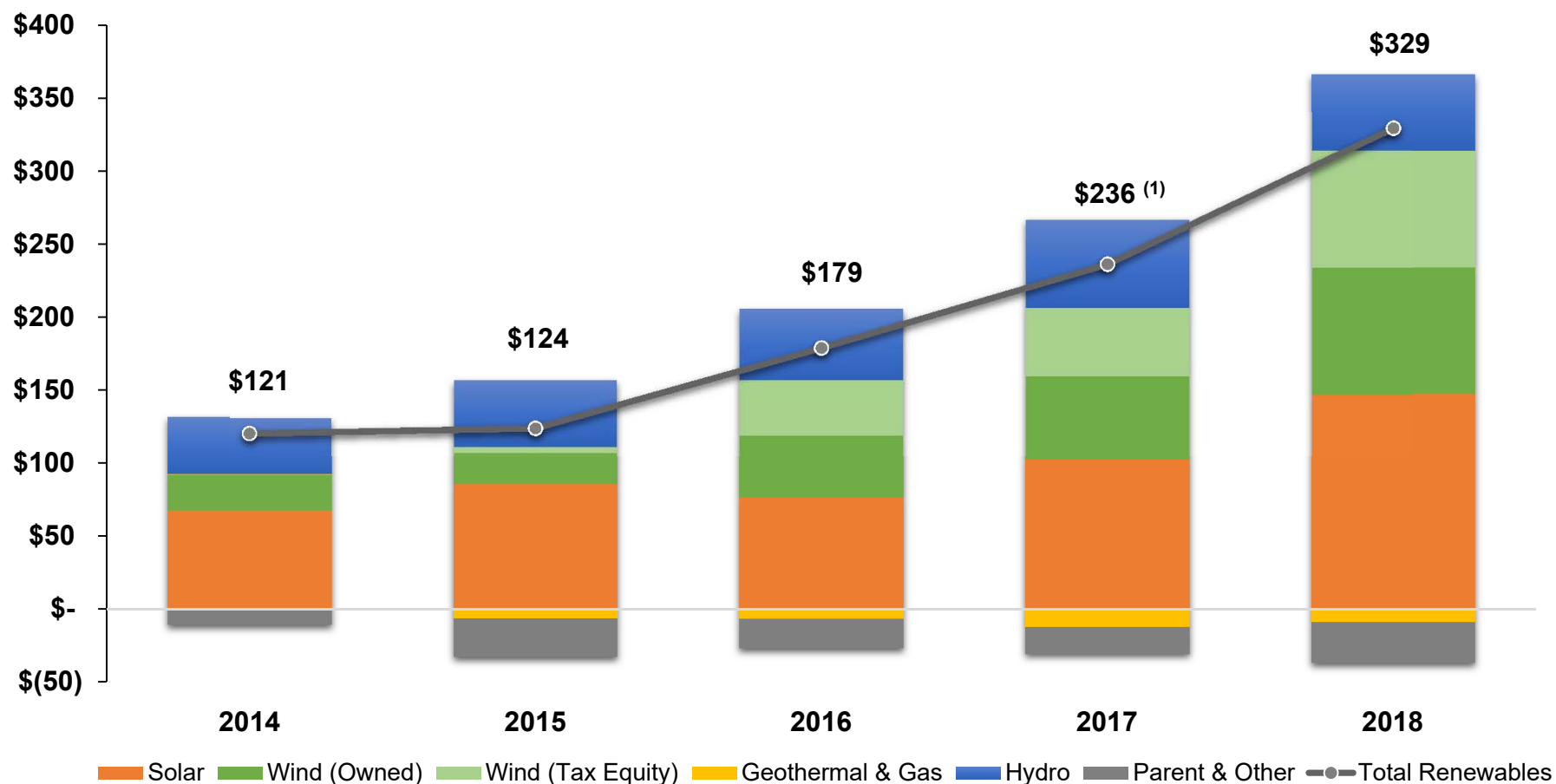
(3) Separate PPAs exist with Missouri Joint Municipal Electric Commission (20 MW), Kansas Power Pool (25 MW), City of Independence, Missouri (20 MW) and Kansas Municipal Energy Agency (7 MW)

(4) 69% of the Company's interests in the Imperial Valley Projects' Contract Capacity are currently sold to Southern California Edison Company under long-term power purchase agreements expiring in 2019 through 2026. Certain long-term power purchase agreement renewals for 244 MW have been entered into with other parties at fixed prices that expire from 2028-2039, of which 202 MW mature in 2039



# BHE Renewables

## Material Net Income Growth (\$m)



- Additional new investments and improved operations continue to drive net income growth. Net income grew 39.4% in 2018

<sup>(1)</sup> Normalized 2017 net income excluding \$628 million of tax reform benefits

# BHE Renewables

## 2018 New Wind Capacity



### **Santa Rita**

- 300 MW project in Texas
- Commercial operation achieved in May 2018



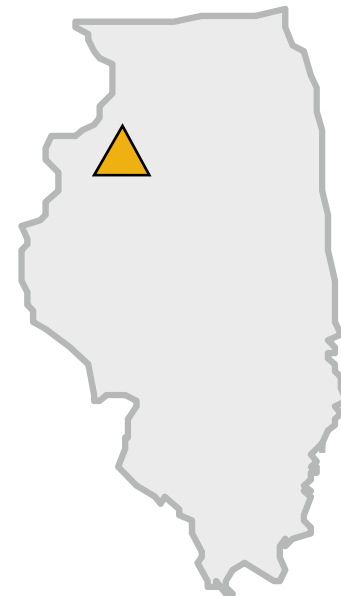
# BHE Renewables

## 2018 New Wind Capacity



### Walnut Ridge

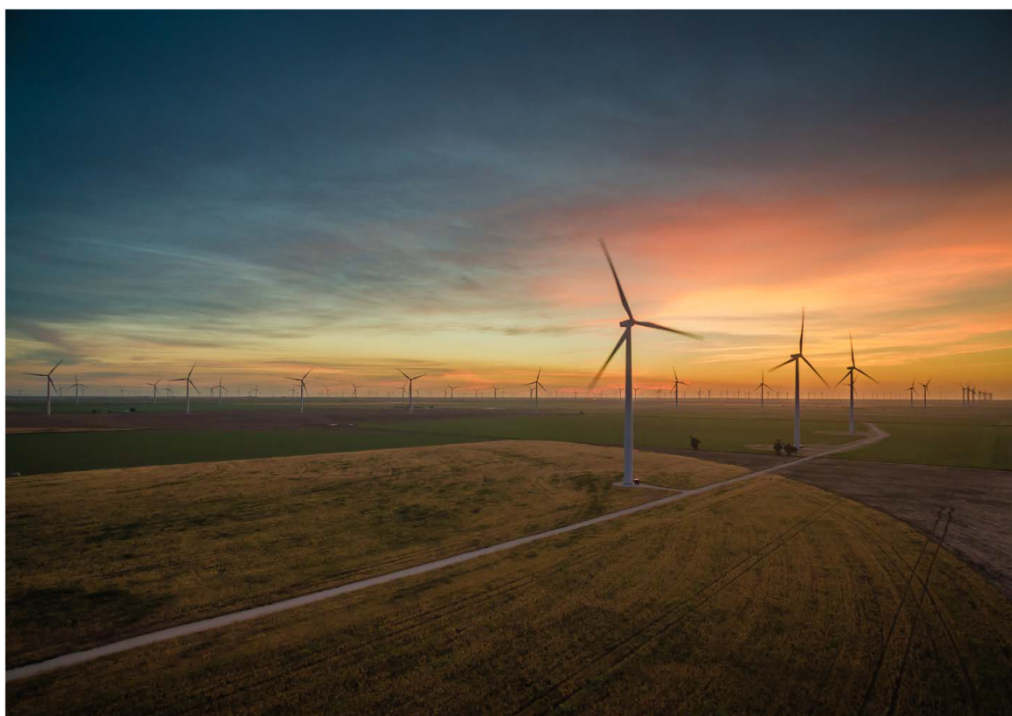
- 212 MW project in Illinois
- Commercial operation achieved in December 2018



# BHE Renewables Tax Equity Investments

	Invested by Year				Future	
	2015	2016	2017	2018	Commitments	Total
Capacity (MWs)	204	829	602	808	1,634	4,077
Investment (\$m)	\$ 170	\$ 584	\$ 403	\$ 698	\$ 1,400	\$ 3,255

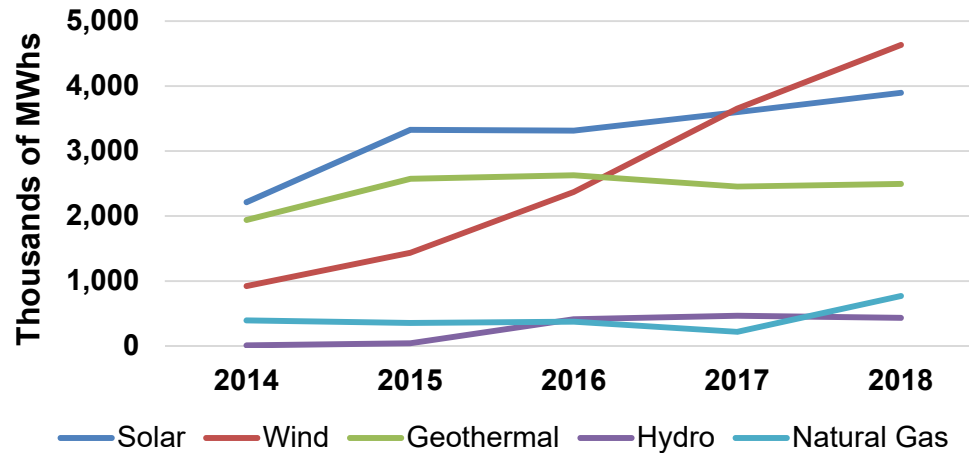
- Tax equity investments enable investment in new renewable energy projects
- Accounted for as equity method investments





# BHE Renewables Operational Performance

Owned Generation by Type



	2017 Capacity Factor	2018 Capacity Factor
Wind	36.2%	39.3%
Solar	29.8%	29.0%
Geothermal	82.4%	84.5%
Hydro	38.4%	35.7%
Gas Plants	2.4%	9.3%
<b>Total</b>	<b>29.7%</b>	<b>32.4%</b>



# 2019 FIXED-INCOME INVESTOR CONFERENCE

**Scott Thon**

President and CEO  
AltaLink

# AltaLink, L.P.

## Strong 2018 Results

- Continue to Maintain Top Quartile Operational Performance well ahead of Canadian Peer Group
  - **Safety** – Canadian Electricity Association (CEA) President's Award of excellence for top transmission employee safety for the second consecutive year
  - **Reliability** – Best ever reliability of service provided to customers
  - **Customers** – Best ever customer satisfaction survey results for direct customers at 96%
  - **Environment** – Recognized as a sustainable electricity company by the CEA
- Exceeded Customer Savings Offering in the 2017-2018 Negotiated Settlement
  - Reductions of C\$40 million in maintenance capital spending
  - Savings of C\$30.1 million in operating expenses, which was C\$14.6 million better than the Negotiated Settlement
  - Rate levelization measures delivered
- Executing on Further Customer Rate Relief through Five-Year Flat Tariff Commitment
  - 2019-2021 GTA represents the first three years of five-year commitment to flat tariffs of no higher than the 2018 approved revenue requirement of C\$904 million
- Rate Base is levelling at C\$7.6 billion
  - Strong cash flow more than enough to support a capital program of C\$300 – C\$400 million per year over the foreseeable future

# Alberta Economic Outlook

## Economic Recovery Underway, but Challenges Linger

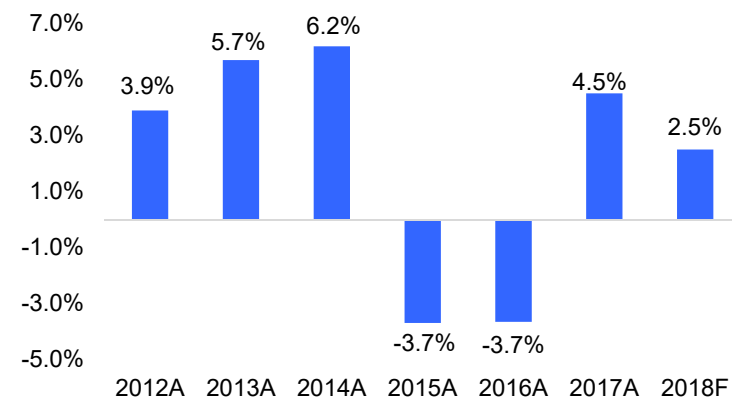
### Alberta

- In 2018, Alberta was Canada's third-largest economy and fourth-most populated province
- After nation-leading growth of 4.5% in 2017, real GDP is expected to be 2.5% in 2018
- Employment gains have been moderating compared to last year's strong pace with the province adding more than 42,000 jobs since October 2017. The unemployment rate has averaged 6.7% year-to-date but is expected to decline to 6.3% in 2019
- With energy market access issues persisting in 2019, weaker corporate profits and slower oil production growth will dampen investment and exports for the year. Based on recent developments, 2019 growth is forecast to slow to 2.0%
- 2018 pool prices increased significantly due to the early retirement of some coal units and impact of carbon tax price increase

### AltaLink

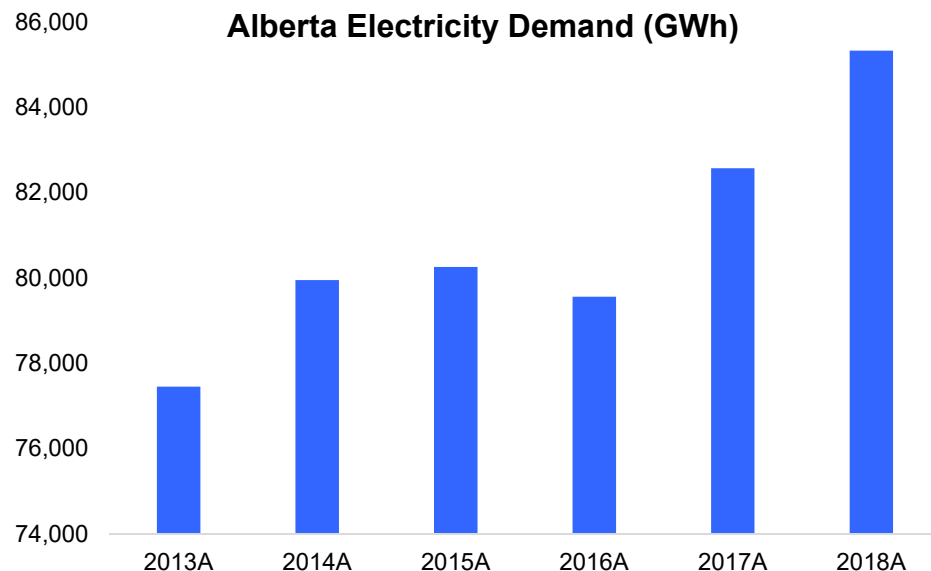
- No major system upgrades expected in the near-term. Renewables investments will leverage existing transmission infrastructure
- After strong growth, load is levelling
- AltaLink is not exposed to volume or price risk
- AltaLink continues to be focused on reducing customer cost

### Alberta Real GDP Growth

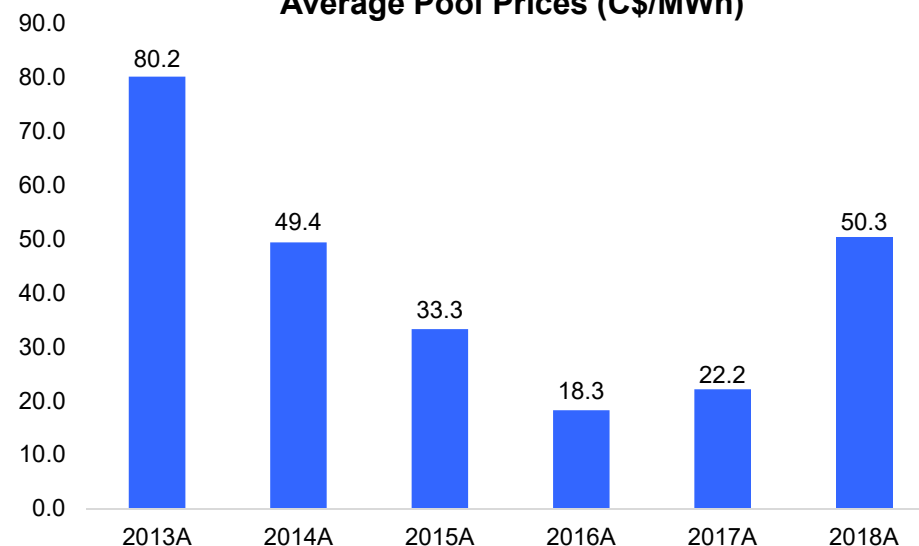


Source: Statistics Canada and Alberta Treasury Board & Finance

### Alberta Electricity Demand (GWh)



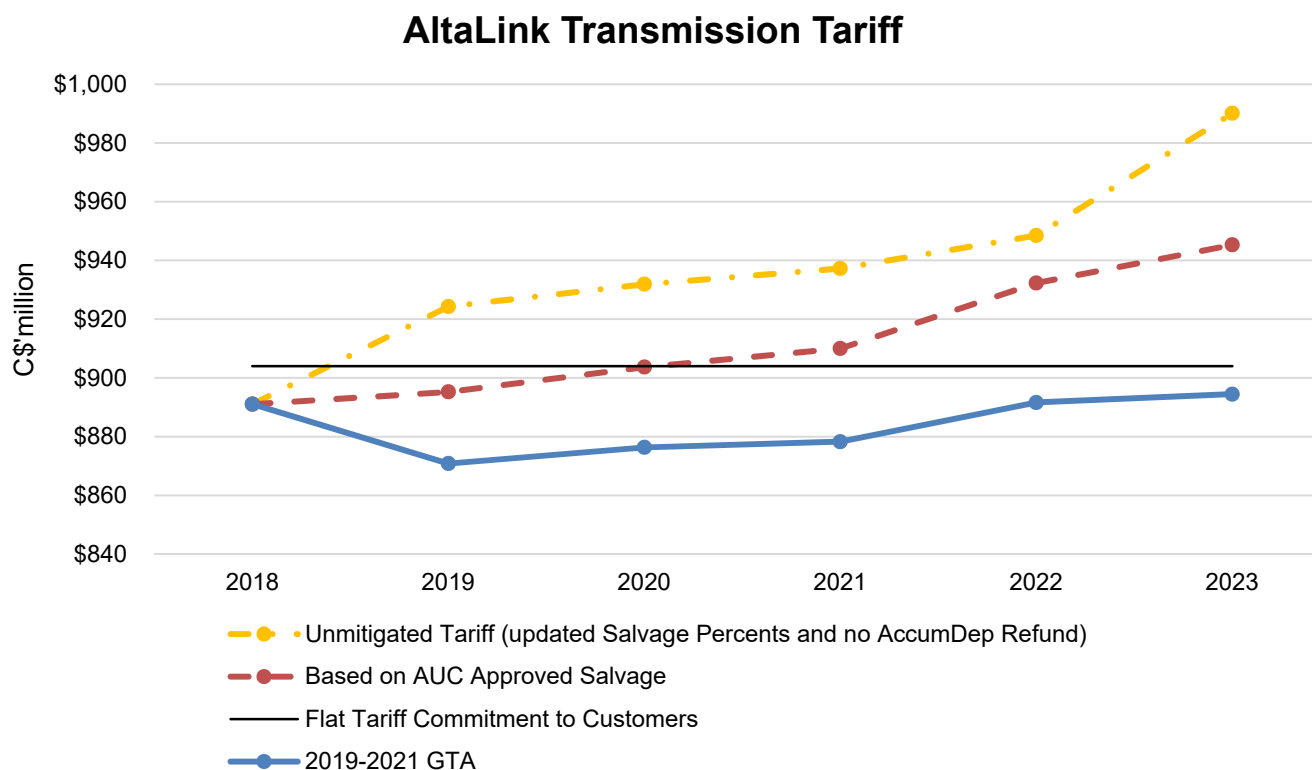
### Average Pool Prices (C\$/MWh)



Source: Alberta Electric System Operator



# Flat for Five – Tariff Levelization



- Approved customer rate relief initiatives have delivered savings of about C\$650 million for the years 2015-2018 and are expected to deliver additional savings of about C\$270 million during the 2019-2021 GTA period
- The 2019-2021 GTA includes additional savings of approximately C\$200 million for the years 2019-2021
  - If approved, this will result in total customer savings of over C\$1.1 billion for the period 2015-2021
- The proposed rate relief measures in AltaLink's 2019-2021 GTA are not expected to have an impact on the company's credit ratings

# **AltaLink Regulatory Update**

## **Large Regulatory Files Completed in 2018 (DACDA & GCOC)**

### **2014-2015 Direct Assign Capital Deferral Account (DACDA)**

- Includes 202 projects and total net capital additions of C\$4 billion
- The DACDA is the final step in the process to approve prudence of capital additions, other deferral account balances and cancelled project expenses
- Disallowed approximately C\$30 million or about 0.7% of requested capital additions

### **2018-2020 Generic Cost of Capital (GCOC)**

- Decision released August 2, 2018 approving an 8.50% ROE and an equity ratio of 37% for 2018 to 2020 and as placeholders for 2021
- The Alberta Utilities Commission (AUC) intends to explore the possibility of returning to a formula-based approach to cost of capital matters as part of the next proceeding.
- Currently the AUC considers “comparable investments”, “capital attraction” and “financial integrity”, collectively referred to as the fair return standard, in its GCOC decision making
- The AUC found that the flow-through method for calculating deemed income taxes should continue to be used as the default method
- The AUC reiterated its position that it is not prepared “to depart from its historical practice of maintaining credit ratings in the A-range”

# AltaLink Regulatory Update

## Future Regulatory Files and UAD

### **2019-2021 General Tariff Application (GTA)**

- GTA filed August 23, 2018
- First three years of five-year commitment to flat tariffs at no higher than the 2018 approved revenue requirement of C\$904 million
- Key issues include depreciation/salvage rates, approval of new salvage methodology and whether a third year of the GTA should be included in the application
- All rate relief measures maintain a FFO/Debt rating that supports an “A” category credit rating

### **Utility Asset Disposition (UAD)**

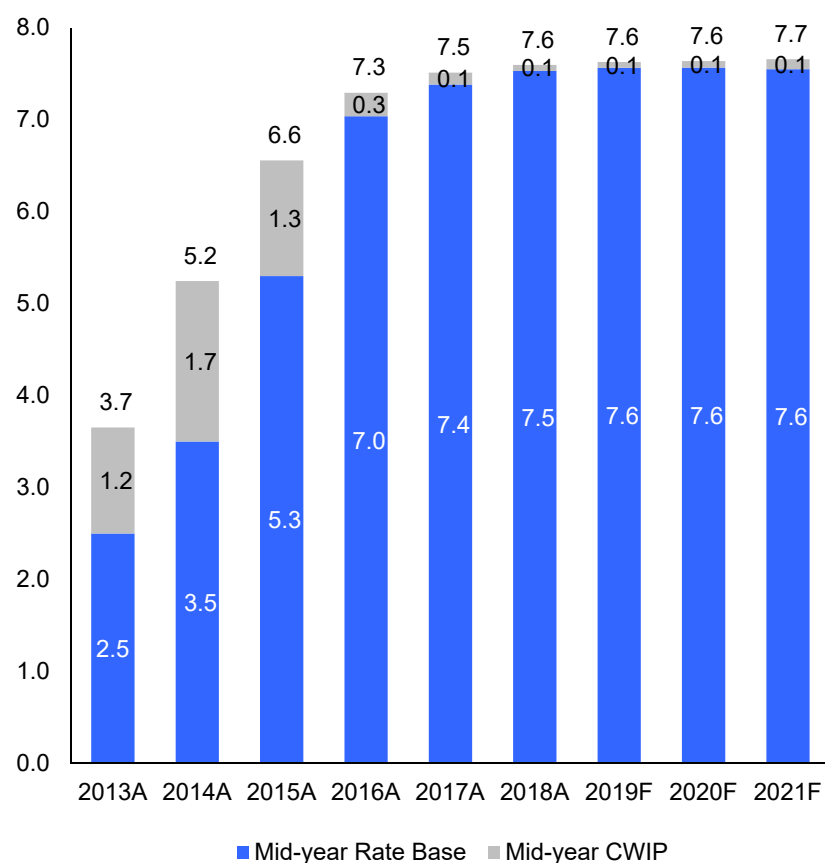
- Under the UAD Decision dated November 26, 2013, utility shareholders are responsible for the net book value of utility assets that are taken out of utility service as a result of an “extraordinary retirement” before the original cost of the assets has been recovered from customers through depreciation
- The Alberta utilities sought to have this decision addressed through legislative reform after having been unsuccessful in the courts. This led to the Alberta Government’s release of Bill 13
  - In Q2 2018, the Alberta Government tabled Bill 13 which specifically recognized broad discretion in AUC’s powers including stranded assets and UAD matters
  - After receiving significant feedback from the financial community, debt and equity investors, the Alberta Government removed all references to UAD from Bill 13
  - Alberta Government consultations are planned to resume post-2019 election

# Strong Rate Base Capital Investment in Place

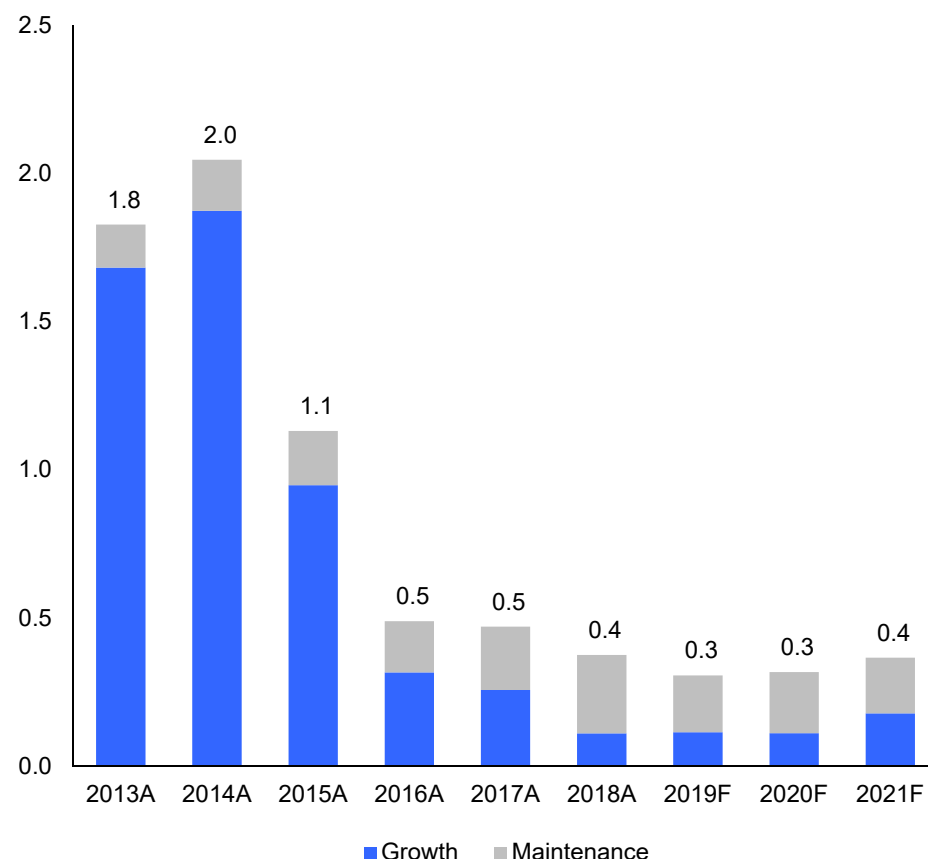
## With Projected Capital Expenditures Normalizing

(C\$ billions)

### Rate Base Levelling at C\$7.6 billion



### Gross Capital Expenditures



Forecast based on 2019-2021 GTA, August 2018

# Alberta Climate Leadership Plan Update

- The province reached a settlement with coal generators to phase out all coal plants by 2030
- An economy-wide carbon tax was implemented January 1, 2017, to encourage energy efficiency and cover the cost of transitioning to renewables
  - Starting January 1, 2018, the carbon levy doubled to C\$30 per ton of CO<sub>2</sub> emissions based on “best of gas” emission standard
- Government targeting to procure 5,000 MW of renewables (wind, solar, hydro) through the Renewable Electricity Program (REP) by 2030
  - REP1: 600 MW of wind awarded in December 2017 at a Canadian record low average price of C\$37/MWh
  - REP2 and REP3 auction results announced in December 2018
    - REP2: 363 MW, 25% minimum indigenous component. Three successful proponents at an average price of C\$38.69/MWh
    - REP3: 400 MW, same criteria as REP1. Two successful proponents at an average price of C\$40.14/MWh
- 94% of new generation capacity resulting from REPs 1-3 will directly utilize AltaLink’s transmission system
- REPs at high risk of going away with change in government post-2019 election

# **AltaLink Appendix**

# AltaLink, L.P.

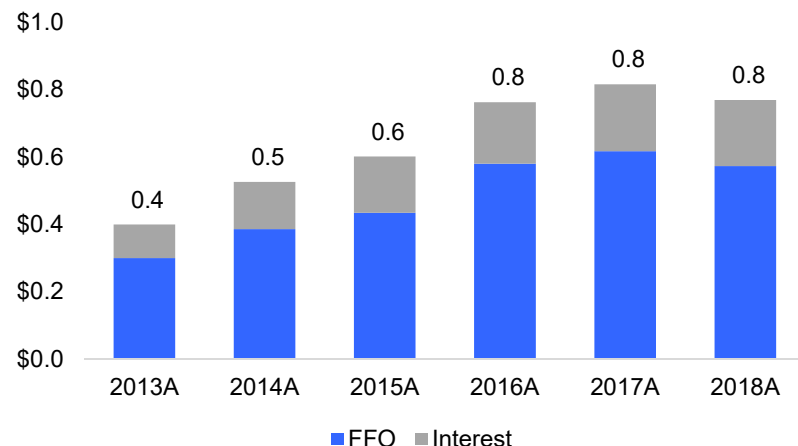


- Owner and operator of regulated electricity transmission facilities in the Province of Alberta
  - Supplies electricity to approximately 85% of Alberta's population
- Approximately 8,200 miles of transmission lines and 313 substations within the Province of Alberta
  - No volume or commodity exposure
  - Supportive regulatory environment
  - Revenue from AA- rated Alberta Electric System Operator (AESO)
- Mid-year 2019 forecast rate base of C\$7.6 billion as per the 2019-2021 GTA filing

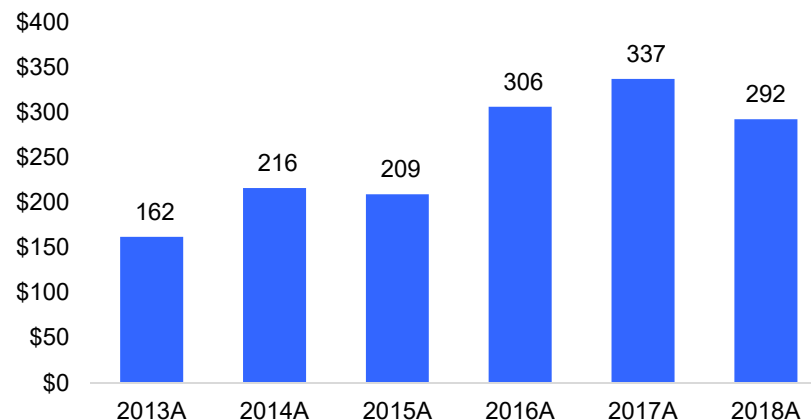
# Financial Strength

## Strong Cash Flow and Improving Credit Metrics

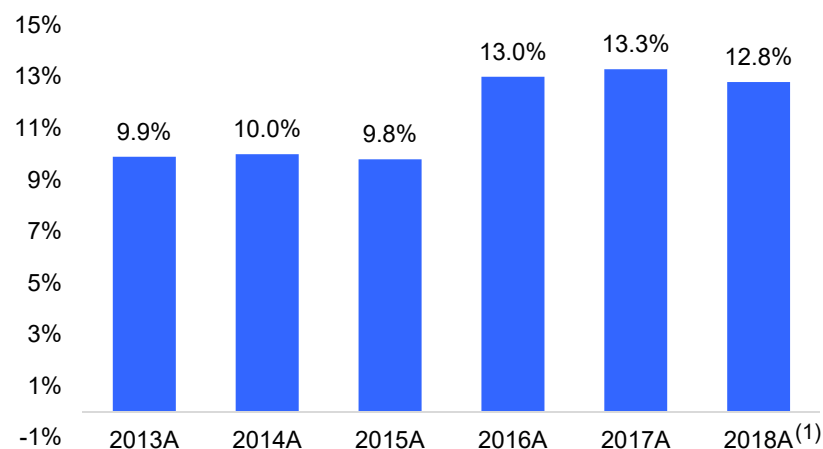
**EBITDA (C\$ billions)**



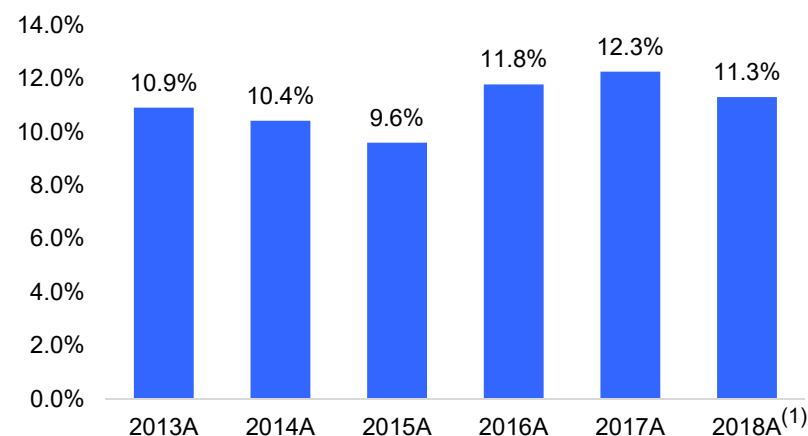
**Net Income (C\$ millions)**



**Cash Flow / Total Debt (as reported by DBRS)**



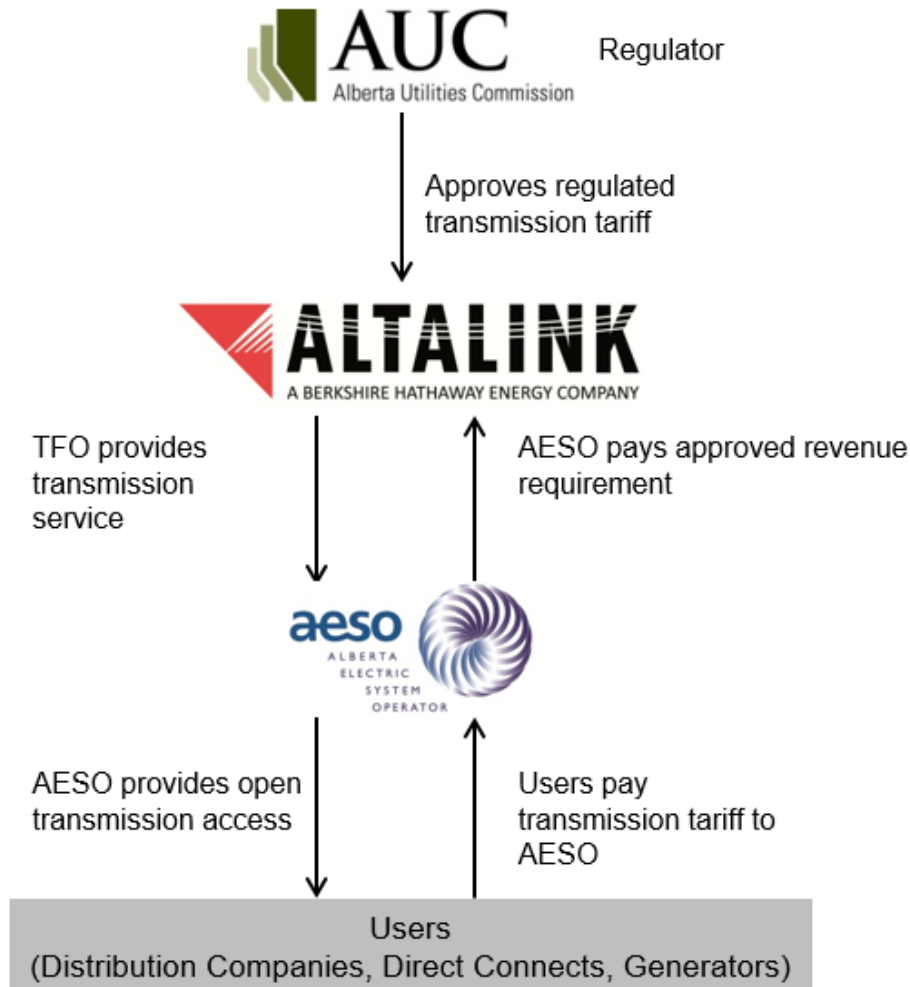
**FFO / Debt (as reported by S&P)**



<sup>(1)</sup> AltaLink estimate



# Regulatory Framework Supports Predictable Revenue



- AltaLink receives approved tariff from AESO in equal monthly installments
  - No exposure to variability in electricity prices
  - No electricity volume risk
- Tariffs based on cost-of-service regulatory model under a forward test year basis
- The AESO, who is responsible for system planning, directs substantially all of AltaLink's capital spending

# C\$1.1 billion of Proposed and Approved Customer Rate Relief

## Approved & Proposed Customer Rate Relief: 2015 - 2021 Impact

		Customer Rate Relief (in millions of dollars)						
		2015	2016	2017	2018	2019	2020	2021
Approved	Discontinuation of CWIP-in-rate base	69	13	4	2	-	-	-
	Refund of previously collected CWIP-in-rate base	123	142	-	-	-	-	-
	Change from future income tax to flow through	-	68	89	90	90	91	90
	Reduction in operating costs	-	-	8	8	-	-	-
	Reduction in capital spending	-	-	-	1	1	1	1
	Increase in revenue offsets	-	-	1	1	-	-	-
Proposed	Depreciation surplus refund	-	-	16	16	-	-	-
	Reduction in salvage collection	-	-	-	-	44	49	56
	Depreciation refund	-	-	-	-	10	10	10
	Reduction in depreciation	-	-	-	-	5	6	6
<b>Total annual rate relief</b>		<b>192</b>	<b>223</b>	<b>118</b>	<b>118</b>	<b>151</b>	<b>157</b>	<b>163</b>
<b>Cumulative relief</b>		<b>192</b>	<b>415</b>	<b>533</b>	<b>650</b>	<b>801</b>	<b>959</b>	<b>1,121</b>

- Approved customer rate relief initiatives have delivered savings of about C\$650 million for the years 2015-2018
  - C\$600 million for the 2015-2016 GTA and C\$50 million for 2017-2018 Negotiated Settlement
  - Approved initiatives will deliver additional customer savings of about C\$270 million during the 2019-2021 GTA period
- As part of Flat for Five, the 2019-2021 GTA is proposing additional savings of about C\$200 million for the years 2019-2021
  - If approved this will result in total customer savings of over C\$1.1 billion for the period 2015-2021
- Strong customer satisfaction survey results for direct customers, with scores of 91% for 2017 and 96% for 2018



## **Phil Jones**

President and CEO  
Northern Powergrid

# Northern Powergrid

## Regulatory and Political Overview

- ED1 performance continues to improve
  - Costs and outputs: on target
  - Customer satisfaction: performance comparable to the prior year
  - Network performance: 4 consecutive years of strong performance
  - Revenues reduce and RAV grows as regulatory asset life transitions to 45 years
  - Inflation protection continues to apply
  - Ofgem confirmed there would be no mid-period review
- Ofgem is signaling a tougher outlook for the RII02 reviews with lower base returns, weaker incentives, and a return to five-year price control periods

<i>(£ millions) – U.S. GAAP</i>	2018	2017
Revenues	764	737
Operating Income	364	379
Capex	401	488
RAV	3,262	3,132
Interest Coverage	3.4x	3.3x
Debt to RAV	58%	60%

<i>Regulatory Parameters</i>	ED1 (2015-2023)	DPCR5 (2010-2015)
Allowed Equity Returns <sup>(1)</sup>	6.0%	6.7%
Allowed Cost of Debt <sup>(1),(2)</sup>	2.3%	3.6%
Annual Totex <sup>(3)</sup> vs DPCR5	95%	100%
Average Annual RAV <sup>(4)</sup> Growth	1.2%	3.7%
Regulatory Asset Life	20-45 years	20 years

(1) – Plus RPI inflation

(2) – ED1 indexed, figure stated for 2017-2018

(3) – Total activity costs

(4) – 2012-2013 prices

# Northern Powergrid Regulatory Update

- Northern Powergrid's next price control starts in 2023
- The direction signalled by Ofgem for the forthcoming RII02 transmission and gas distribution reviews is more conservative:
  - The indicative base cost of equity of 4.0% (plus CPIH) is around 2.5 percentage points lower than the current allowed return
  - A general reduction in incentive strength and a cap on overall returns reduces the scope for outperformance and cash flow
  - The potential for the introduction of a complex cash flow floor mechanism reduces the pressure on Ofgem to properly compensate risks and ensure financeability
- The remaining items, in isolation, appear manageable, however the general direction is to reduce the scope for outperformance
- Our strong balance sheet protects Northern Powergrid from the credit risk injected by Ofgem's wider RII02 thinking, but that position is not reflective of the entire sector
- We will be among those pushing Ofgem hard to retain a focus on driving efficiency, outputs and long-term investment for customers through well-balanced, incentive-based price controls

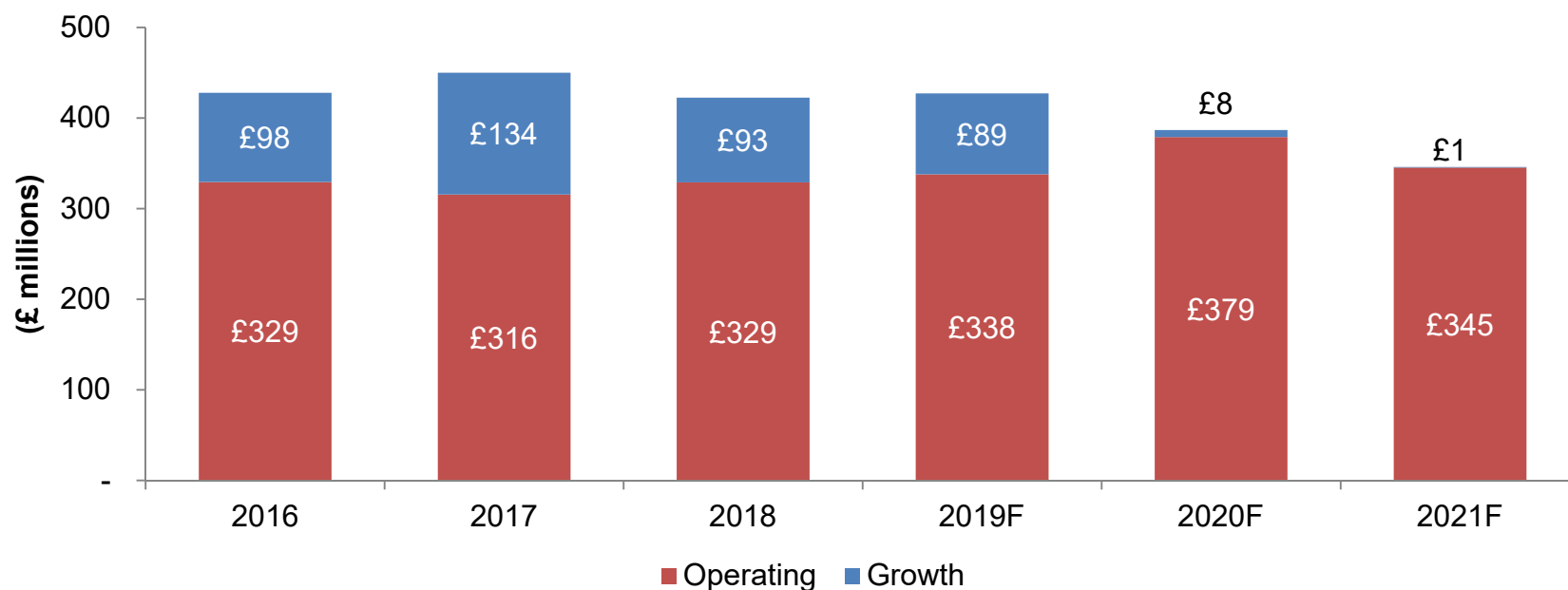
# U.K. Political Environment

- Our assessment of Brexit's impact on Northern Powergrid is unchanged – the fundamentals of our business are not directly affected by the outcome of negotiations
- The nationalization rhetoric continues – it certainly has not increased in prominence; if anything, the likelihood has reduced:
  - Significant costs of implementation for minimal customer savings means the policy is not popular, even within much of the Labour Party, nor in many of its core supporters (e.g. a number of trade unions)
  - There is no sign of the Labour Party having the level of support that would be necessary to push something like this through
- Our approach remains unchanged – we continue to provide the best possible service to our customers at low cost and continue to stay engaged with regulators and key stakeholders

# Northern Powergrid Capital Investment Plan

- Operating capital delivers our ED1 output commitments
- The smart meter rental business continues to grow with capital expenditure expected in 2019 of £89 million, which is lower than the peak of 2017 as the industry transitions to the second generation of smart meters

	(£ millions) 2019-2021	Current Plan	Prior Plan
Operating	£	1,062	£ 1,062
Growth		98	98
Total	£	1,160	£ 1,160



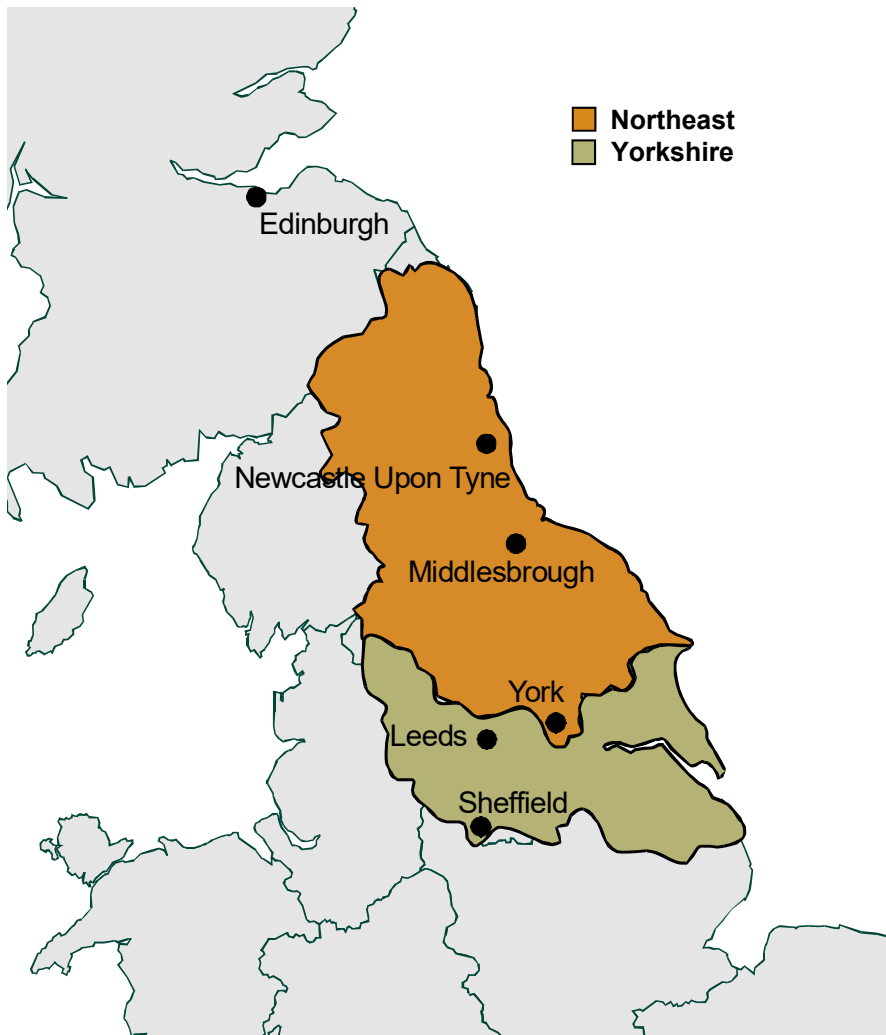
# Growth Opportunities in the U.K.

- Outlook for the Baltic Gas Project (49% owned by Northern Powergrid) remains encouraging
  - Final Investment Decision is likely by the end of 2019
- Smart meter rental continues to grow - but deployment has been delayed and is likely to continue into 2020
  - Over 2.1 million smart meter units have been deployed to date and we have total contracted volumes of 2.9 million meters with an investment value of £460 million
- Looking to the longer term, our existing network provides development opportunities - particularly as the low-carbon agenda continues to signal a need for more investment in networks
- Transaction prices have remained high as corporate activity reshapes energy markets. We will continue to monitor opportunities



# **Northern Powergrid Appendix**

# Northern Powergrid



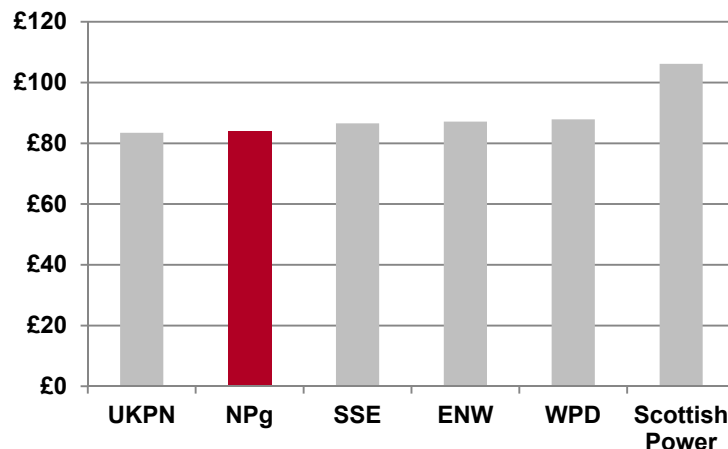
- 3.9 million end-users in northern England
- Approximately 61,000 miles of distribution lines
- Approximately 60% of distribution revenue from residential and commercial customers through December 31, 2018
- Distribution revenue (£ millions):

Customer Type	<u><b>12 Months Ending</b></u>	
	<b>12/31/2018</b>	<b>12/31/2017</b>
Residential	305	315
Commercial	91	95
Industrial	260	230
Other	9	9
Total	665	649

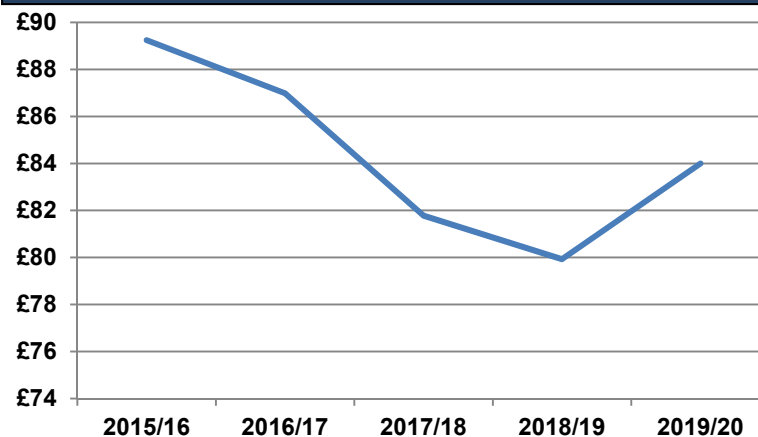
# Comparison of Customer Rates

- Ofgem estimates that the average domestic customer in Great Britain will pay £88 per year in 2019-2020 for electricity distribution costs<sup>(1)</sup>
- Our average customer will pay £84.01, which compares favorably to other DNOs
- Our prices are approximately 8% lower in real terms than in 2015
- By the end of the ED1 price control, our prices are forecast to be 6% lower in real terms than in 2015
- Actual customer bills are sensitive to the geographic region in U.K., consumption volumes and timing differences in recouping asset investments via Distribution Use of System charges in customer bills

**Typical Domestic Customer Charges (2019-2020)**



**Average Northern Powergrid Customer Charges (2015-2019)**



(1) Nominal terms, Source: Ofgem Annual Report 2017-2018



# 2019 **FIXED-INCOME INVESTOR CONFERENCE**

