NV Energy

Energy Efficiency, Renewable Energy & Public Policy Customer Programs

Pat Egan

SVP, Renewables & Smart Infrastructure

Governor's Committee on Energy Choice
Technical Working Group on Innovation, Technology, and Renewable Industries
October 10, 2017

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NV Energy Overview

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

- Headquartered in Las Vegas, Nevada, with territory throughout Nevada
- 2,436 employees
- 1.26 million electric and 164,000 gas customers
- Service to 90% of Nevada population, along with tourist population in excess of 45 million
- 6,011 megawatts of owned power generation

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Nevada Power Company	Sierra Pacific Power Company
• Provides electric services to Las Vegas and surrounding areas • 917,000 electric customers • 4,639 megawatts of owned power generation capacity(1)	• Provides electric and gas services to Reno and northern Nevada • 342,000 electric customers and 164,000 gas customers • 1,372 megawatts of owned power generation capacity(1)

(1) Net summer peak megawatts owned in operation as of March 1, 2017

Agenda

- NV Energy Customer Engagement
- Energy Efficiency and Usage Management
- Incentives and Policy Programs
  - RenewableGenerations Program
  - Electric Vehicles
  - Policy Direction
  - Distributed Energy Resources
- NV GreenEnergy Rider and Renewable Portfolio Standard

Customer Services

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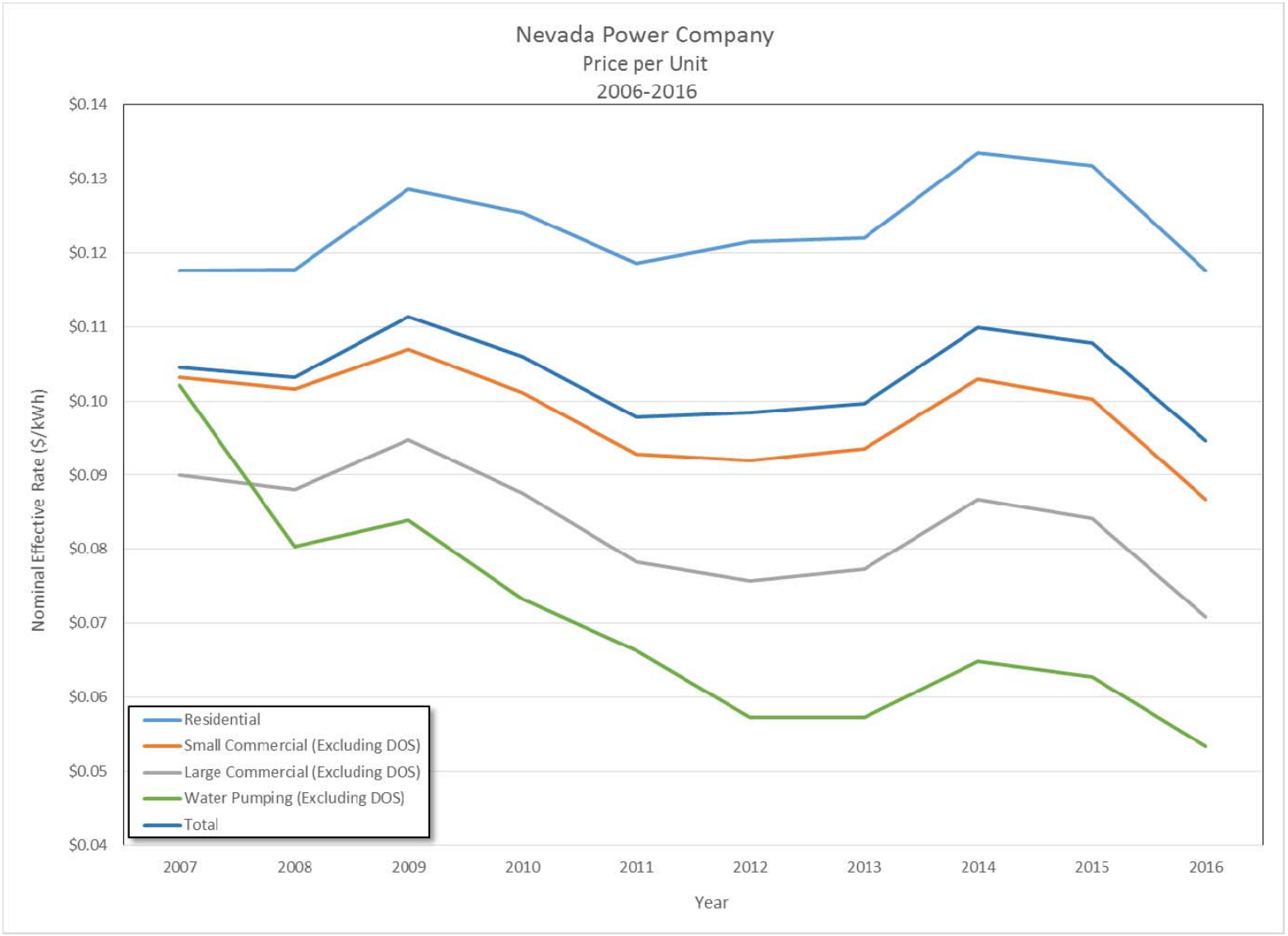
Cost and Impact on Customers

Cost and Impact on Customers



Public Policy Costs in Customer Bill

3000111111122222223 JANE DOE 5000 HAMPTON ST 02-17-2017

PAGE 1 OF 2

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E A19 B19

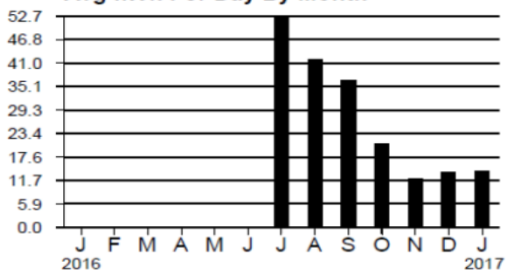
JANE DOE
Service Address: 5000 HAMPTON AVE
LAS VEGAS, NV 80000

Electric Historical Usage Data

Usage History	No. Days	kWh	Avg kWh Per Day
This Month	32	1000	31.25
Last Month	32	442	13.8

Avg Cost Per Day This Month: $2.06

Avg kWh Per Day By Month



Electric: Residential Service

Meter Number	Service Type	Service Period From	Service Period To	Bill Days	Meter Readings Previous	Meter Readings Current	Meter Mult.	Usage
CC000000000	kWh	Jan 17, 2017	Feb 17, 2017	32	28,991	29,999	1	1000

Electric Consumption	1000.000	kWh	x	0.10898	108.98
Temp. Green Power Financing	1000.000	kWh	x	0.00064	0.64
Renewable Energy Program	1000.000	kWh	x	0.00101	1.01
Energy Efficiency Charge	1000.000	kWh	x	0.00118	1.18
Basic Service Charge					12.75
Local Government Fee				5%	6.23
Universal Energy Charge	1000.000	kWh	x	0.00039	0.39

Total Electric Service Amount **$131.18**

DATE DUE:	**Mar 10, 2017**
AMOUNT DUE:	**$131.18**
Account:	**3000111111122222223**
Customer Number:	**1111111**
Premises Number:	**2222222**
Billing Date:	Jan 17, 2017
Next Read Date:	Mar 17, 2017

Account Summary

Previous Account Balance	57.26
Payment - Jan 4, 2017	57.26 CR
Electric Charges	131.18
Current Amount Due	$131.18

Thank you for maintaining an excellent payment record. We look forward to serving you in the future.

[1]Highlighted charges include average monthly residential totals of $2.83 (2.2%) in public policy costs and $6.62 (5.0%) in local and state government fee collection for a Nevada Power Company average residential bill.

Cost and Impact on Customers

Cost of Living Index*

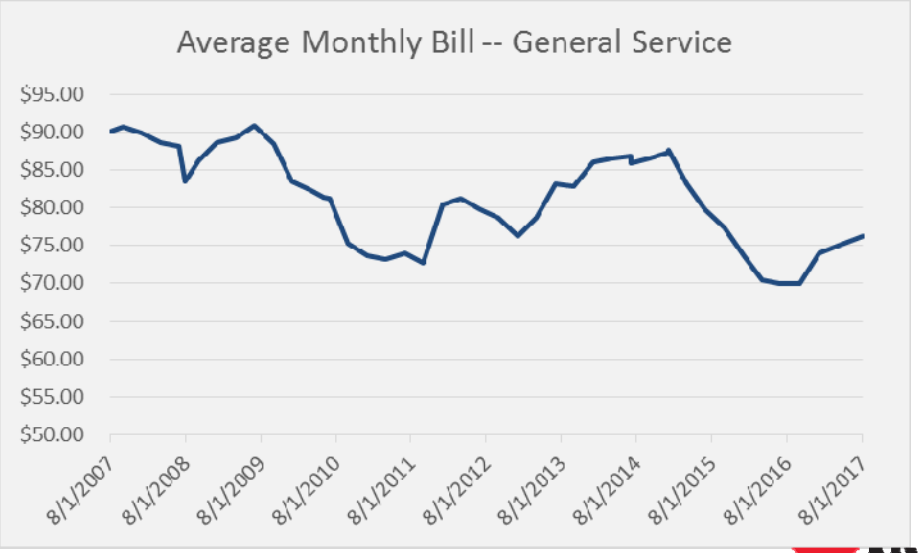
	Las Vegas MSA	Reno-Sparks MSA	U.S. Average
Grocery Items	101.7%	95.3%	100.0%
Housing	108.8%	105.0%	100.0%
Utilities	86.4%	85.2%	100.0%
Transportation	105.9%	110.0%	100.0%
Healthcare	102.7%	108.0%	100.0%
Misc. Goods & Svcs.	95.6%	106.5%	100.0%
Composite Index	100.4%	102.8%	100.0%

Source: Council for Community and Economic Research. This index measures relative price levels for consumer goods and services in 302 Metropolitan Statistical Areas (MSAs). It does not measure tax burden. The average of costs in each MSA is read as a percentage of the average of all participating places. For example, a score of 103.6% indicates that costs in that MSA are 3.6% higher than the national average.
** Q1 - 2017*

Selected Prices from Cost of Living Index

	Las Vegas MSA	Reno-Sparks MSA	U.S. Average
Apartment Rent (per month)	$1,009	$1,130	$1,032
Home Price	$370,769	$335,058	$332,959
Home P+I (per month)	$1,380	$1,255	$1,217
Energy Costs (per month)	$158.99	$117.18	$165.78
Gasoline (per gallon)	$2.42	$2.61	$2.26
Doctor Visit	$108.00	$135.67	$107.63
Prescription Drugs (Annual)	$425.43	$376.50	$426.42

Source: Council for Community and Economic Research (see above). Q1-2017



- ✓ Cost of living in Nevada cities slightly higher than average, with utilities (energy costs) below average and transportation higher
- ✓ Nevada remains one of the top states in which to do business
- ✓ According to the Sep 2017 issue of *Nevada Business Magazine*, Nevada ranks first among states on the "Small Business Policy Index" with energy costs as major advantage

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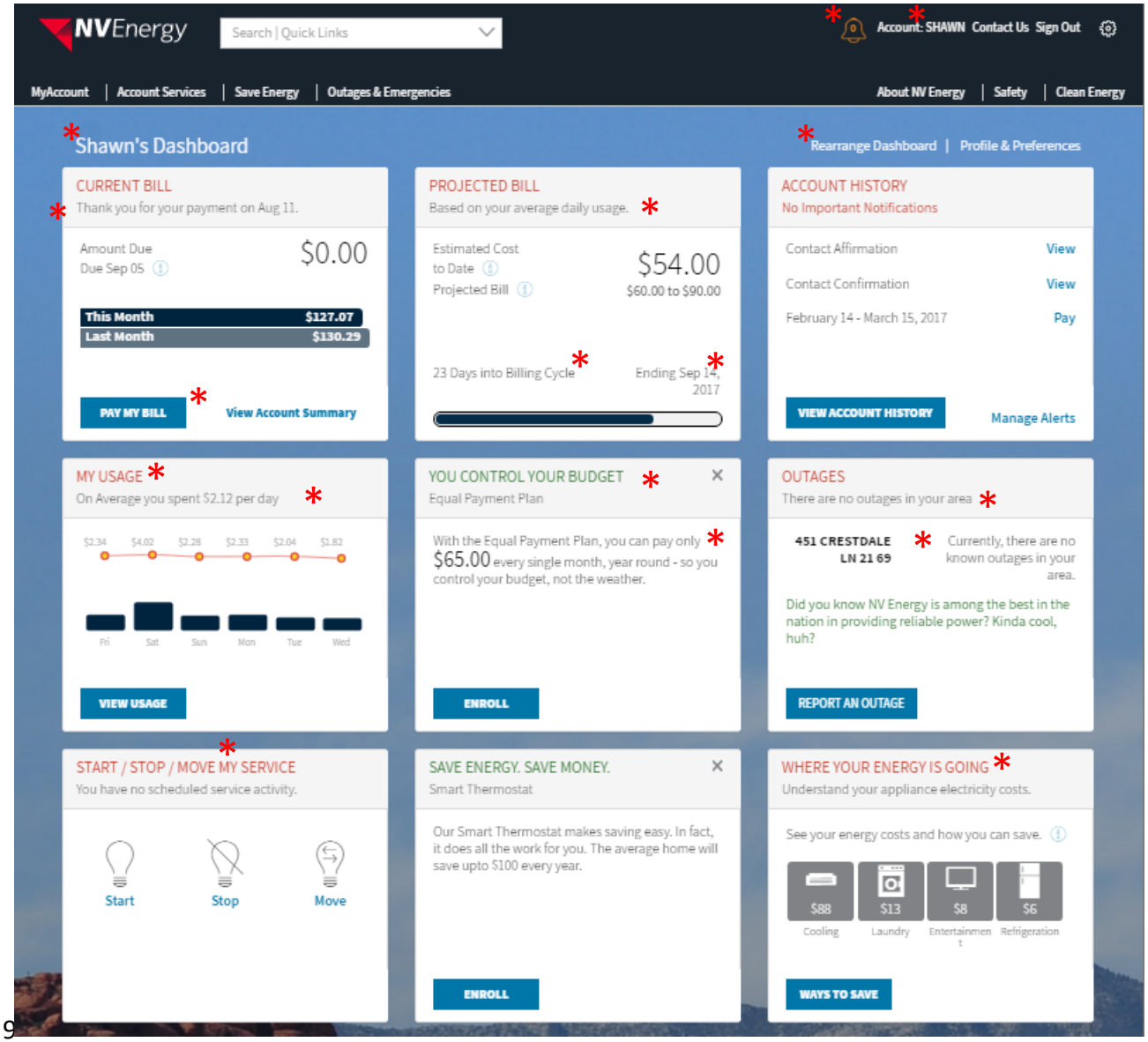
A Personalized Experience



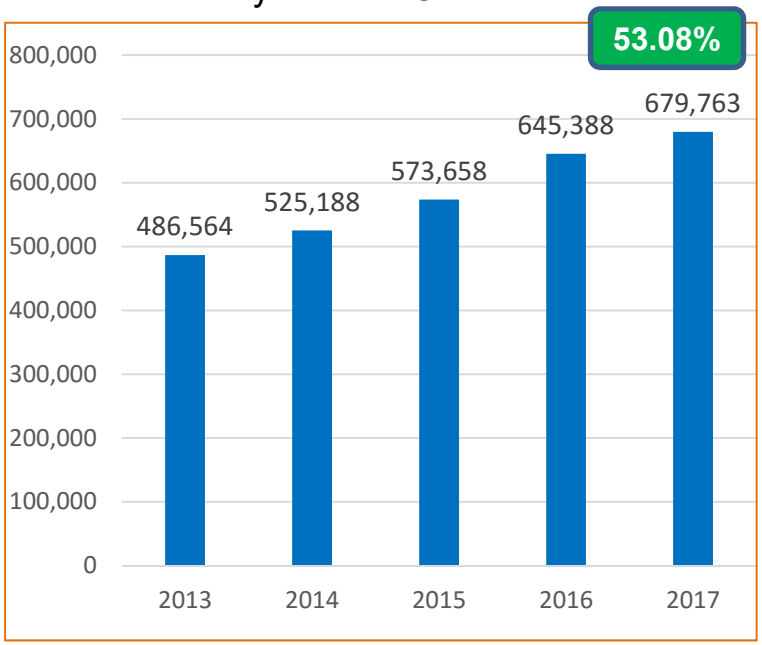
Simple, intuitive design lets customers find items easily and quickly

- ✓ Numerous personalization efforts * designed to bring the "segment of one" concept to all customers
- ✓ A personalized and customizable dashboard that provides the customer the information they want, where they want it, and when they want it

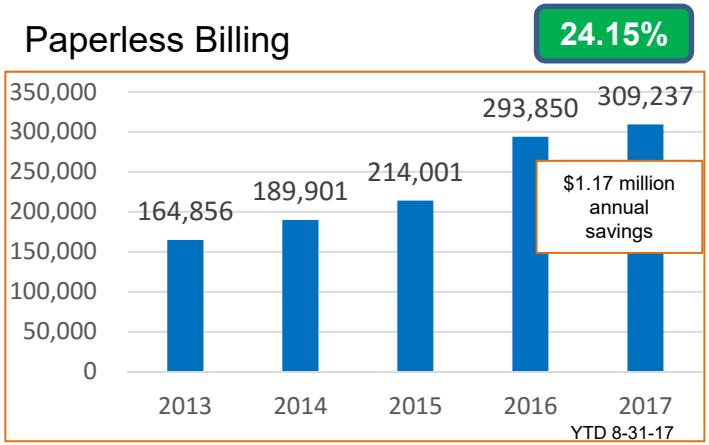
Electronic Transaction Trends

MyAccount Transactions

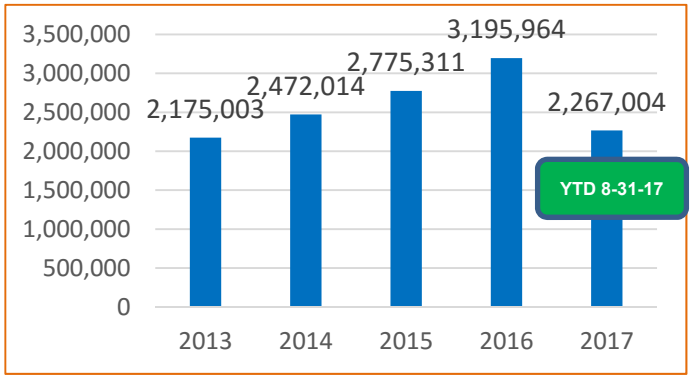
MyAccount Customers



Paperless Billing



Online Payments



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Demand Side Management

Energy Efficiency Services
Demand Response

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NV Energy Demand Side Management Services to Nevada Customers

Commercial	• Advanced assessments and incentives for commercial new construction or retrofit projects • Non-profit agency grants
Schools	• Public school and higher education energy efficiency and demand response projects
Residential AC	• Early replacement or air conditioning retrofit units • HVAC tune ups
Residential Demand Response	• Smart Thermostats • Legacy CoolShare and two-way switches
Commercial Demand Response	• Energy efficiency and demand response controls through smart thermostats, demand limiting devices and universal gateways
Energy Assessments	• Online and home energy assessments to aid customers in identifying energy saving opportunities including direct install measures (LEDs, photo sensors, air filters and coil wraps)
Energy Reports	• Home and business reports providing energy information about usage along with energy saving advice
Energy Education	• Activities that provide energy information through participation in community events, trade associations, custom trainings and work with teachers/students

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Customer Engagement

The Right Tools to Save You Energy and Money

powershift by NVEnergy

- **Awareness**—Strategies include a combination of media (earned, paid, social), direct response customer outreach, and web/mobile/email offerings
- **Recruitment**—Strategies include utilizing pathways through existing customer contact, onboarding support of new customers, referral opportunities and energy education and outreach local community events
- **Retention**—Strategies include utilizing regular communications for continuous engagement and feedback to the Company

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DSM Approval Process

Deferred Energy Accounting Adjustment

- Filed Annually March 1
- Prudency review of costs spent prior year
- Set new public purpose surcharges (EEIR, EEPR)

•NRS 704.110(11)(c), NRS 704.187(3), NRS 704.785 - NAC 703.535, NAC 704.9494, NAC 704.9523, NAC 704.95225

Portfolio Standard Annual Report

- Filed Annually March 30
- Prudency of renewable energy credits from DSM programs

•NAC 704.8877 and NAC 704.8879

Integrated Resource Plan

- Filed Every Third Year June 1
- Approval of three-year demand side action plan
- Approval of prior year measurement and verification reports

•NAC 704.9156

Annual Update Report

- Filed Annually June 30
- Approval of remaining years of action plan
- Approval of prior year measurement and verification reports

•NAC 703.535, NAC 704.934 (8), NAC 704.9522,

Historic Budgets, Portfolio Programs, Energy and Demand Savings

NV Energy	2012	2013	2014	2015	2016
Energy Savings (MWh)	182,472	177,199	231,199	245,903	225,601
Energy Efficiency Programs Peak Reduction (MW)	30	27	36	35	33
Demand Response Peak Reduction (MW)	154.1	178.9	192.3	214.8	228.4
Expenditures ($000)	$38,669	$39,391	$48,875	$45,505	$48,911
DSM Energy Savings as % of Sales	0.62%	0.60%	0.79%	0.82%	0.75%

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DSM Funding Example

- An average residential customer pays approximately $16.00 per year to fund Demand Side Management programs

- That same customer can reduce their energy use by installing a single smart thermostat in their home and decrease their bill by approximately $56.00 per year at Nevada Power and $20.00 per year at Sierra

- By installing a single smart thermostat a NV Energy customer not only recoups the cost to pay for DSM programs but also continues to save additional dollars on his/her bill

Company	Energy Efficiency Charge	Average Monthly Usage Residential	Monthly Energy Efficiency Cost	Annual Energy Efficiency Cost	Standard Electric Rate	Annual Energy Savings to Break Even (kWh)	Annual Electric Savings for one Residential Thermostat (kWh)	Annual Standard Electric Rate Savings
NPC	$ 0.00118	1,110	$ 1.31	$ 15.72	$ 0.11154	140.91	504	$56.22
SPPC	$ 0.00181	743	$ 1.34	$ 16.14	$ 0.08822	182.93	230	$20.29

- The PowerShift by NV Energy smart thermostat program continues to save the customer energy money throughout the life of the thermostat, which is currently 10 years

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Customer Engagement in DSM

PowerShift by NV Energy products and services helps customers conserve energy, lower their energy costs and reduce emissions

- In 2016, PowerShift customers saved nearly 225,000 megawatt-hours of electricity, enough to power more than 110,000 homes
- In 2016, PowerShift provided services to over 159,000 residential customers and 2,357 commercial customers; over 3,000 of these residential customers received in-home energy assessments
- In 2016, PowerShift provided energy education to over 80,000 residential, commercial, and building industry support customers
- In 2017 to date, PowerShift customers included 256,708 residential customer participants, 2,478 commercial customer participants; over 5,000 of these residential customers received in-home energy assessments and energy education has been provided to over 68,000 customers
- For the past ten years the average annual energy savings is 0.94% of total sales, and the cumulative annual energy savings for the past ten years is 2,745 gigawatt-hours

Demand-Side Response
One Example

- 88,361 Customers enrolled
- 253 Megawatts enrolled
- 66 events in 2017
- 164 Megawatts of avoided capacity
- Avoid purchases of expensive peak market energy—substantial savings for customers
- Direct savings for participating customer
- Benefit-remote thermostat and A/C analysis

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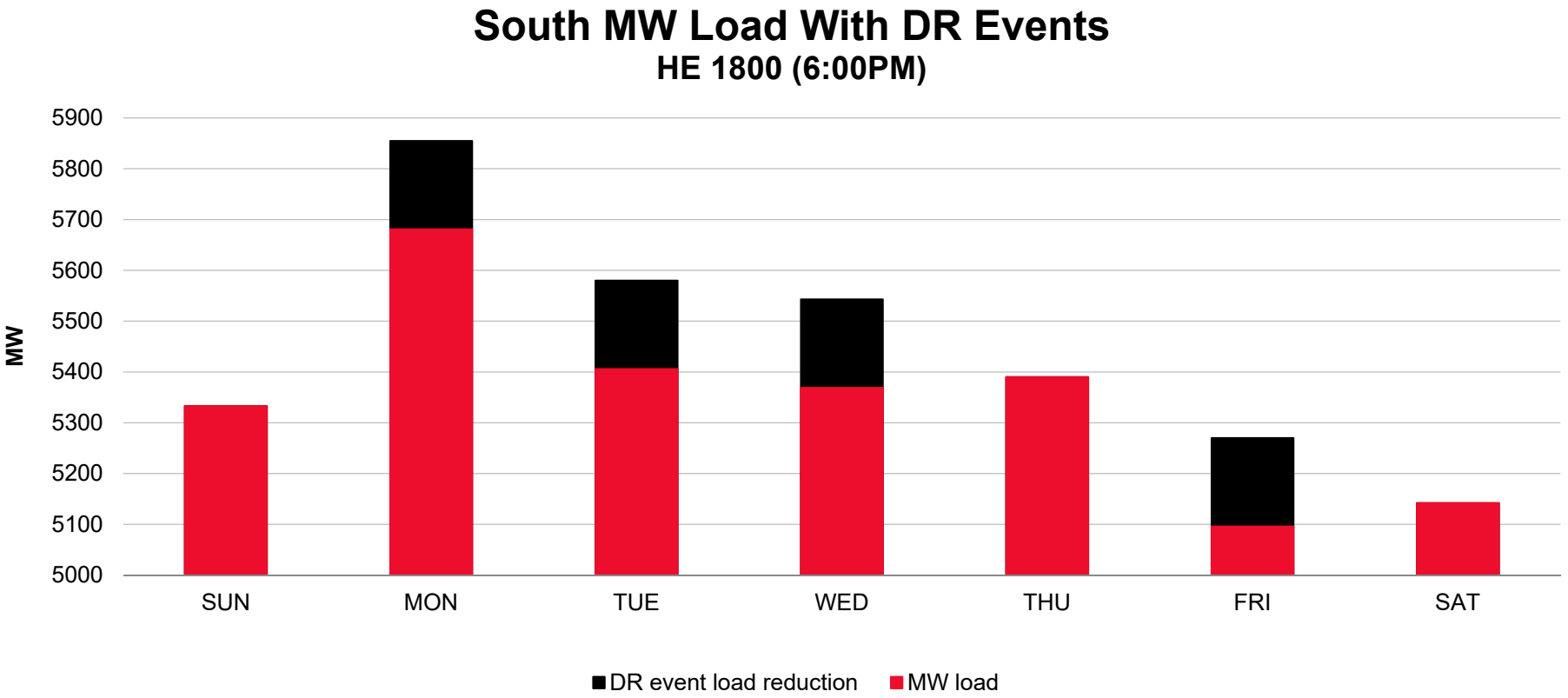
Southern Nevada Demand Response

example June 19 - 25, 2016



2017 Nevada Legislation

- AB 223 – Transition from stand-alone program approval to portfolio approval; allocation of 5% of DSM budget to low income customers
    - NV Energy will need to adjust or modify how it evaluates energy efficiency programs based on a set of programs as opposed to individual programs.
    - This change will now allow programs that historically were not cost effective individually to now be incorporated, thus expanding the types of energy efficiency programs that can be offered.
    - NV Energy will now need to allocate at least 5% of is DSM budget to low income customers.

- SB 150 – Commission establishes energy efficiency targets and cost effectiveness tests
    - The Commission is required to establish by regulation goals for energy efficiency to be included in the company's integrated resource plan.
    - NV Energy required to submit in its' integrated resource plan an energy efficiency plan that meets the goals established by the Commission.
    - NV Energy agreed to conduct a study to evaluate all potential energy efficiency programs by end of 2018.

RenewableGenerations Programs

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RenewableGenerations Programs

- Incentive program created by Legislature in 2003 (NRS 701B) to assist customers with installing private solar, wind, and hydro systems.
- 2013 Legislature set a spending limit of $255.2 million for 250,000 kW[1] of solar and $40 million[2] for wind and hydro combined (no capacity goal).
- 2017 Legislature combined spending limits into one pool of funding, expanded eligible technologies into electric vehicle infrastructure and energy storage.
- 20,439 customers have taken advantage of program.
- Solar is the only program currently receiving active applications from interested customers.
- 78% of all customers taking service under net metering provisions have done so through these programs. Since 2015, the percentage has increased to 85% of all customers.

	Since Program Inception		Applied Toward Legislative Goals	
Program Metrics[3]	Capacity Installed (kW)	Spend ($mil)	Capacity Installed (kW)	Spend
Solar	176,607	$230,105,540	172,817	$212,839,918
Wind	10,360	$26,246,208	9,735	$26,163,708
Water	595	$1,447,500	595	$1,447,500
Total	**187,562**	**$257,799,248**	**183,147**	**$240,451,126**

1. Applies to systems installed on or after July 1, 2010
2. Applies to systems installed after July 1, 2009
3. As of August 31, 2017. Does not include reserved payments on systems with active reservations.

SolarGenerations Total Spending By Category

- Since the program's inception, spending has been tracked by sector
- Schools and Public Institutions received a majority of funding, and the highest average incentive for capacity installed
- Residential customers have generated the largest number of projects

Sector	Total Incentives Paid[1]	Capacity installed (kW)	Completed Projects	Average Incentive ($/ Watt)
Residential/ Small Commercial	$41,652,309	118,536	19,523	$0.35
Large Commercial/ Industrial	$933,784	9,898	28	$0.09
Low Income/ Non Profit	$4,326,902	2,228	52	$1.94
Schools	$110,129,889	27,067	304	$4.07
Public Entity / Public and Other	$73,062,656	18,879	360	$3.87
Total	**$230,105,540**	**176,607**	**20,267**	**$1.30**

1. As of August 31, 2017. Does not include expected future payments for performance based incentives

How Do the Programs Work?

- Program funding is provided by NV Energy's customers through the Renewable Energy Program Rates paid on their monthly bill. The rate is paid on a volume consumption basis.
- The programs are open on a continuous basis until funding is exhausted.
- Plans are proposed annually to the PUCN, reviewed by interested stakeholders, and approved by the Commission.
- Systems with a total capacity of up to 500 kW are eligible.
- Incentives are paid up front at the completion of construction for small systems, or over time for larger systems based on actual performance.
- The renewable energy credits generated by program incentivized systems are assigned to the utility to apply toward the renewable portfolio standard (11.3% of all renewable credits applied by the utility for compliance in 2016).

Steps to complete a Solar System

1. Partner with an installer to complete a design
2. Submit an application online, receive reservation
3. Construct system
4. Submit completion package
5. Interconnect system
6. Begin receiving incentive payments

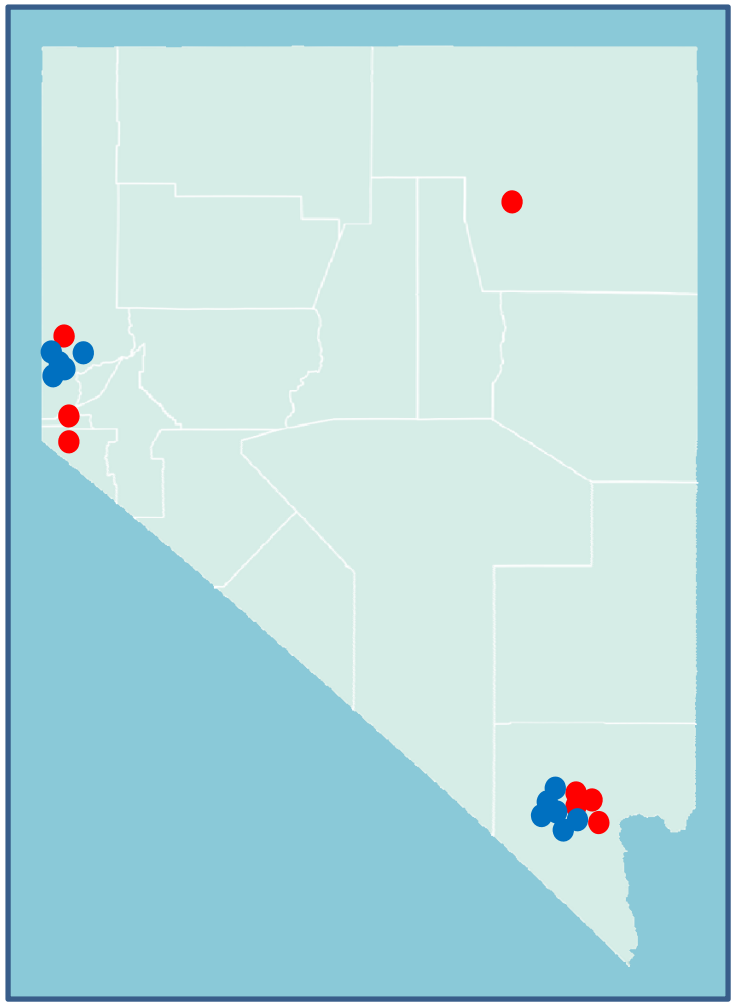
Current Solar Incentive Levels (Beginning 7/1/2017)

Incentives – Residential/Commercial	
Less than 25 kW	$0.245 / Watt
25 kW to 500 kW	$0.0264 / kWh

Incentives – Public/Non Profit	
Less than 25 kW	$0.49 / Watt
25 kW to 500 kW	$0.0527 / kWh

Lower Income Solar Energy Pilot Program (LISEPP)

- Created by the 2013 Legislature to build 2,000 kW of solar capacity to benefit low income customers, paid for 100% from the SolarGenerations program.
- Recipients are required to utilize bill savings towards programs serving low income populations.



PHASE I: 1,000 kW, $3.0 million

- Installed at 8 Title I schools throughout the state.
- Completed in Spring of 2016.
- Utility bill savings must flow directly to benefit student populations at host school.

PHASE II: 1,000 kW, $4.1 million

- Installed at 15 non-profit facilities statewide.
- Completed spring of 2017.
- Utility bill savings must flow directly to benefit the low income and disadvantaged populations they serve.
- Partnered with Governor's Office of Energy who provided $350k toward project.

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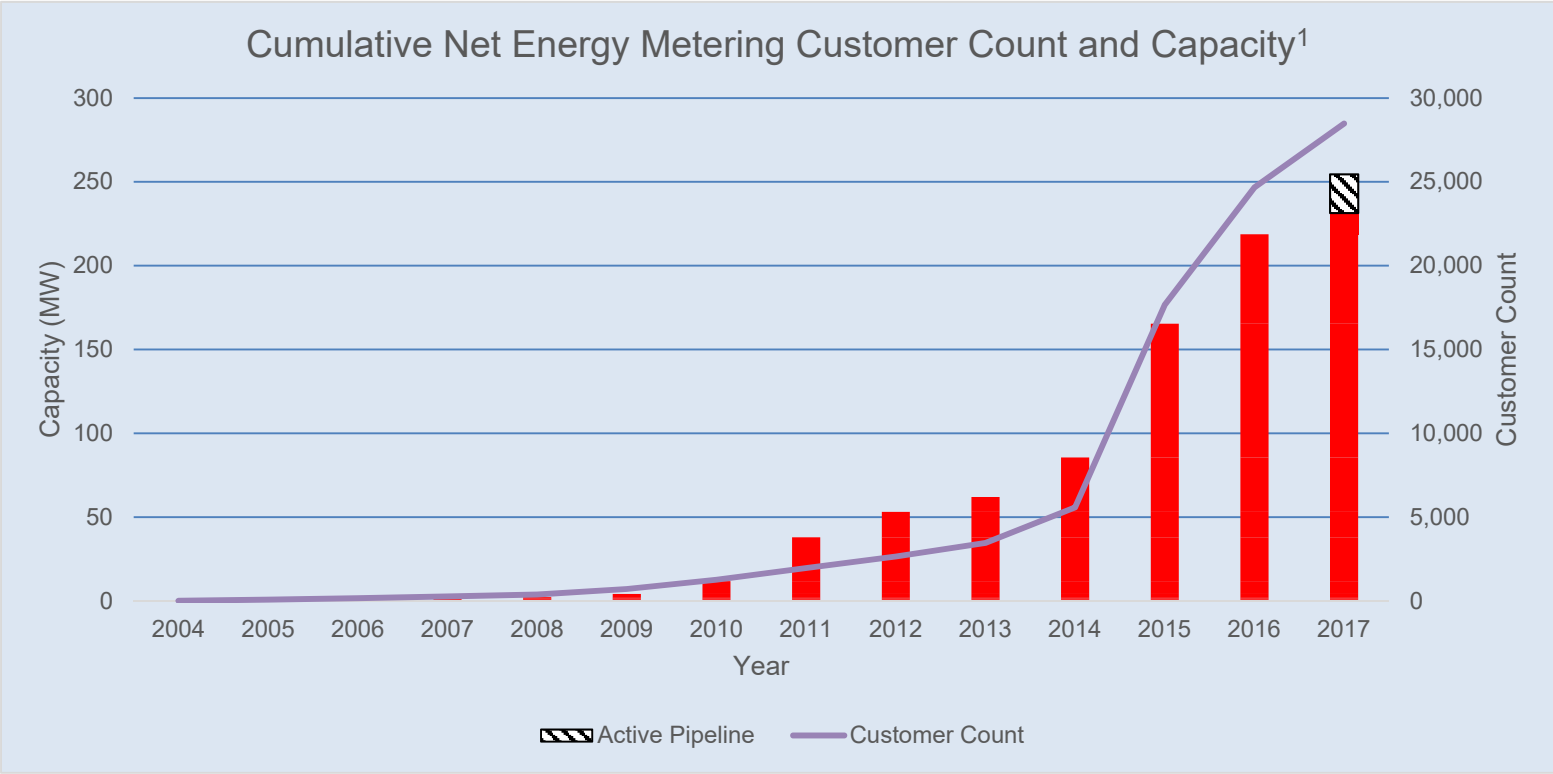
NV Energy Historical Net Metering Information

- 26,273 net metering systems interconnected for 231.4 MW.
- Additional 2,210 systems are currently in the pipeline for 23.1 MW.
- NVE handles the netting function and purchases excess energy.



1. As of August 31, 2017

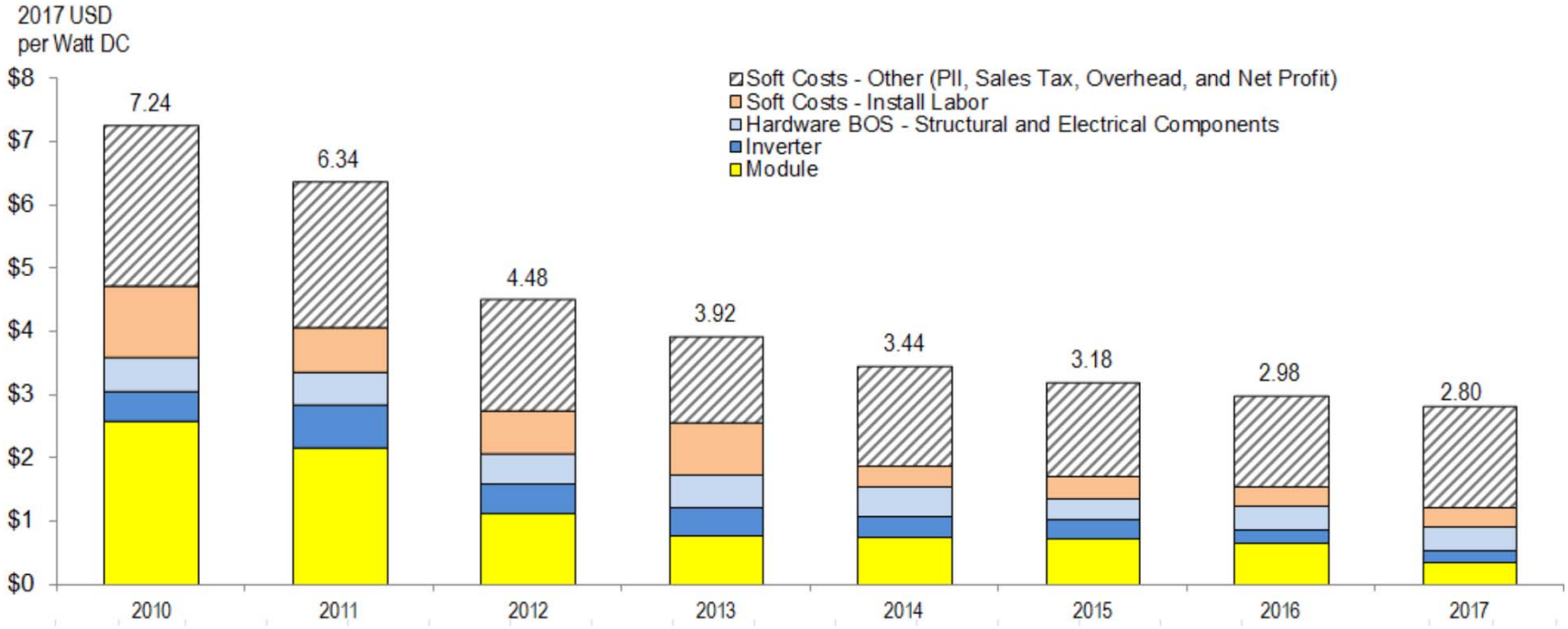
Assembly Bill 405 Changes to Net Metering

- Requires that net metering customers are in the same rate class as similarly situated non-net metering customers.
- Creates four tranches of capacity (for systems 25 kW or less).
  - Tranche 1 –80 MW priced at 95% of price of electricity.
  - Tranche 2 –80 MW priced at 88% of price of electricity.
  - Tranche 3 –80 MW priced at 81% of price of electricity.
  - Tranche 4 –uncapped priced at 75% of price of electricity.
- On September 1, 2017, the Public Utilities Commission of Nevada issued an order implementing Assembly Bill 405.
  - Excluded public policy costs (energy efficiency, low income assistance, renewable energy) from excess energy compensation.
  - Established a queue based on application submitted date to ensure that that 80 MW is installed in each tranche (no more and no less).
  - Created a regulatory asset to track and recover costs associated with implementing AB 405.
  - Implements monthly netting of electricity before determining excess energy compensation.

Residential Private Solar Installation Costs

- Average residential solar installation costs have declined by 61% since the beginning of this decade.
- From 2016 to 2017, costs declined 6%, driven primarily by module cost declines, offset partially by increases in ancillary soft costs.

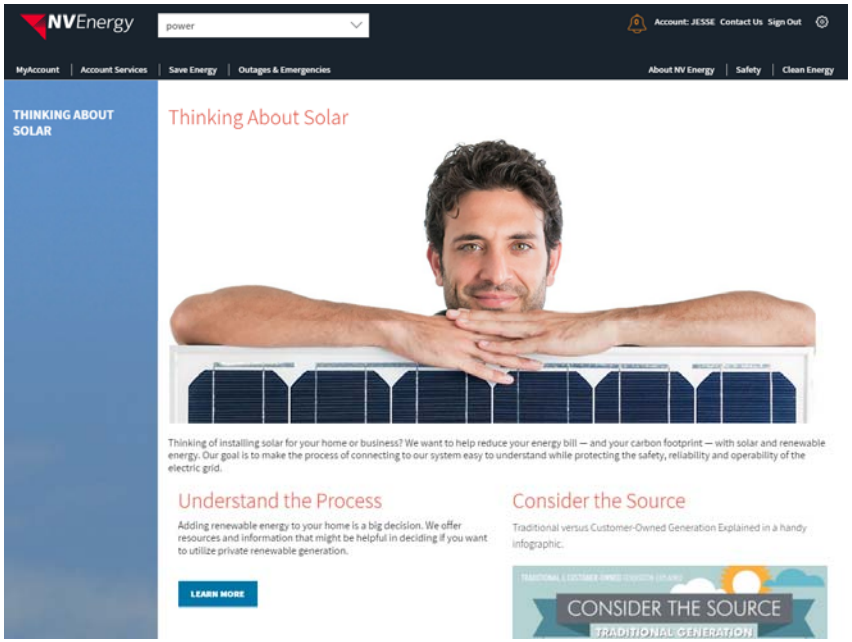
NREL residential PV system cost benchmark summary Q4 2009-Q1 2017



Source: Fu, Ran, et al.; *U.S. Solar Photovoltaic System Cost Benchmark: Q1 2017;* Technical Report NREL/TP-6A20-68925; National Renewable Energy Laboratory; U.S. Department of Energy; September 2017; Pg. 23.

Net Metering Customer Outreach

- Outreach has been an important part of the SolarGenerations program since the inception of the program.
- NV Energy's website contains useful information on net metering billing, tips for customers looking to go solar, and explanations of the interconnection process.
- NV Energy regularly attends community events and has a demonstration trailer to educate customers on technology.
- NV Energy provides presentations to customer groups, including trade groups, homeowners associations, and community organizations.



Senate Bill 145 Enhancements to Program

- Combined individual funding limits into one combined pool of $295.2 million.
- Remaining funding of $54.8 million[1] can be applied toward solar, wind, water, electric vehicle infrastructure, or storage projects.
- $10 million explicitly allocated through the bill toward energy storage.
- Provides for a successor program to LISEPP, allocating up to $1 million per year specifically for low income projects.
- At current incentive levels, funding is adequate to achieve solar 250 MW capacity goal, spend entire allocation toward energy storage, and allow significant investment in electric vehicle infrastructure.
- Retains sunset provisions of NRS 701B to conclude any new projects by December 31, 2021.

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1. As of August 31, 2017. Excludes projects with active reservations that have not yet interconnected.

NV Energy Vehicle Electrification

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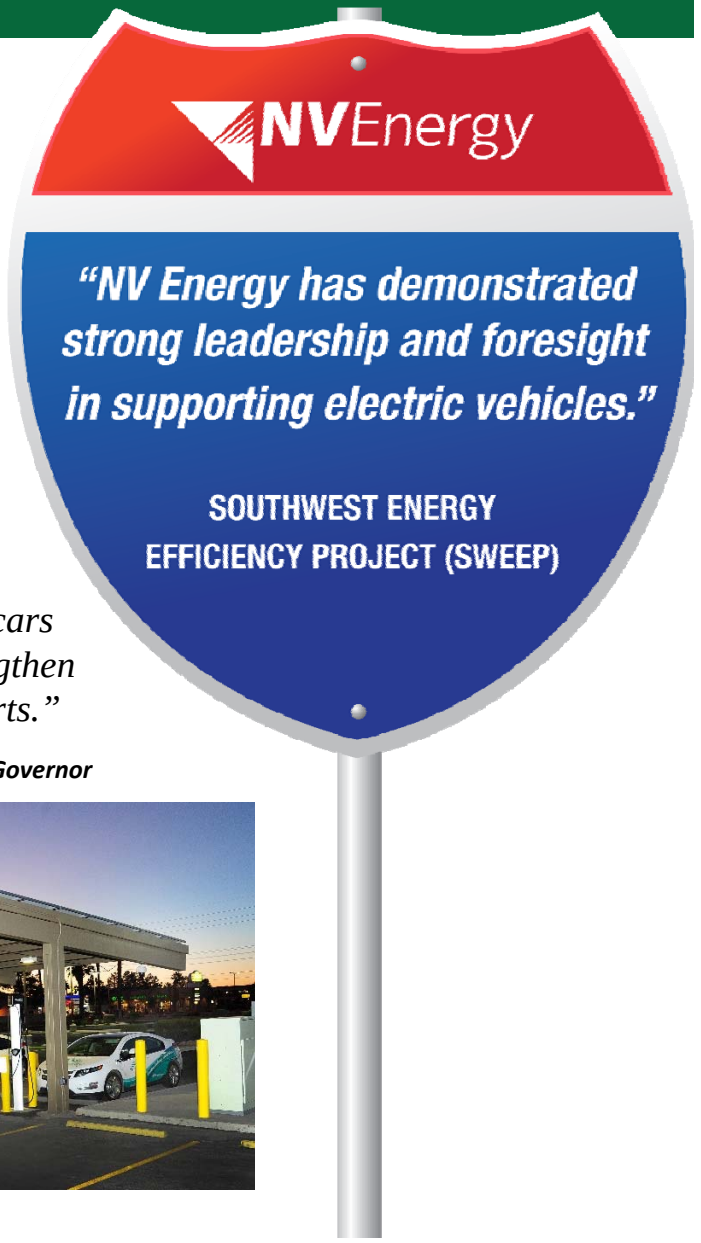
Electric Vehicles
Good For Nevada… Good For Customers

NV Energy Electric Vehicle Program

- Electric Vehicle Time of Use Rates since 2009
  - Residential, Commercial, Multi-Family
- NV Energy Workplace & Public Charging
- Electrification of the NV Energy Fleet
- Charging Station Shared Investment Program
- Nevada Electric Highway Partnership

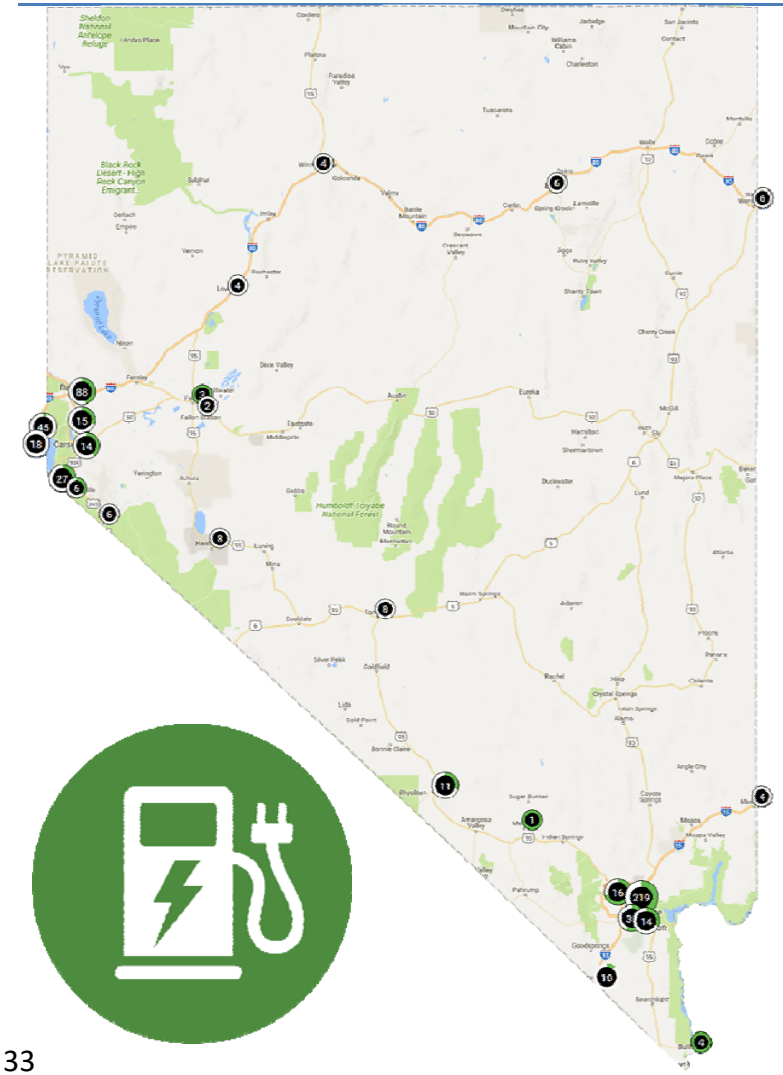
"This Electric Highway will allow electric vehicle drivers to power their cars by tapping into Nevada's own renewable energy resources. This will strengthen our state's energy independence while reducing Nevada's petroleum imports."

-- Brian Sandoval, Nevada Governor



NV Energy Charging Station Shared Investment Program

Partnerships Driving Sustainability



NV Energy partnered with ~50 Nevada companies in 2013 **and doubled** the electric vehicle charging infrastructure in Nevada

- ✓ Airports
- ✓ Universities
- ✓ Shopping Centers
- ✓ Casinos
- ✓ Government Buildings
- ✓ Small Businesses

"NV Energy's innovative and proactive market approach lets it keep pace with Nevada's quickly evolving electric transportation landscape, which Clean Energy Project believes will be central to our state's economic future and the new Nevada."

— Clean Energy Project

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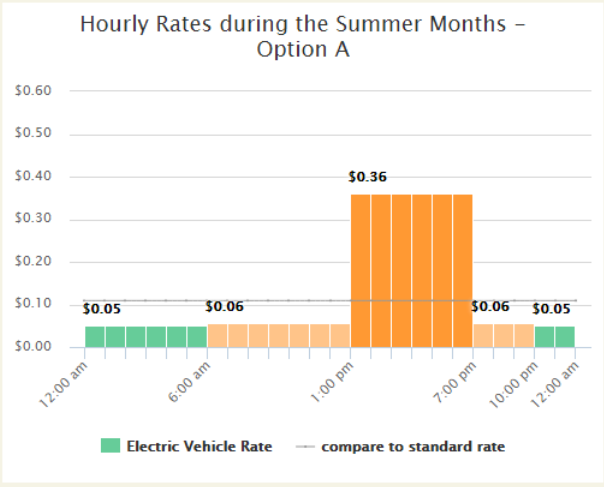
Shifting Electric Vehicle Load via Price Signals

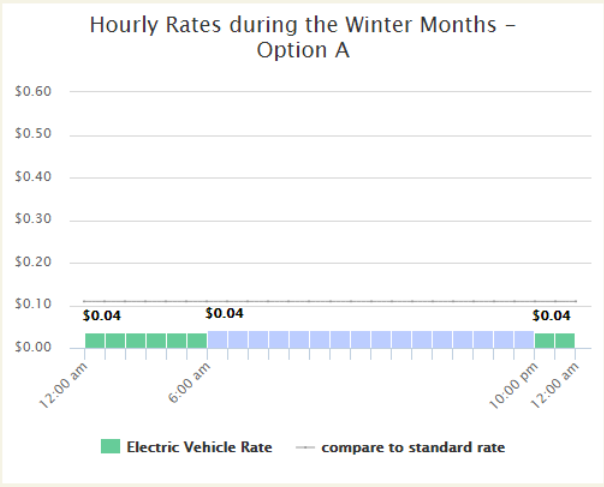
Residential Electric Vehicle Time-of-Use Rates

- **96%** of Nevada Power Customers experience lower bills on their EV TOU than other rate classes.
  - Attrition rate is 1%
  - Participation Rate 36%

- Rate applies to entire home, not just the electric vehicle load
  - **Pro**: successful customers shifted the load of their entire home and save money.
  - **Pro**: participation in rate self-identifies electric vehicles on the grid by premise.
  - **Issue:** not all electric-vehicle owners participate. No current solution to incentivize off-peak behavior of just the electric vehicle load and not the entire home.



Summer Months: Jun Jul Aug Sep



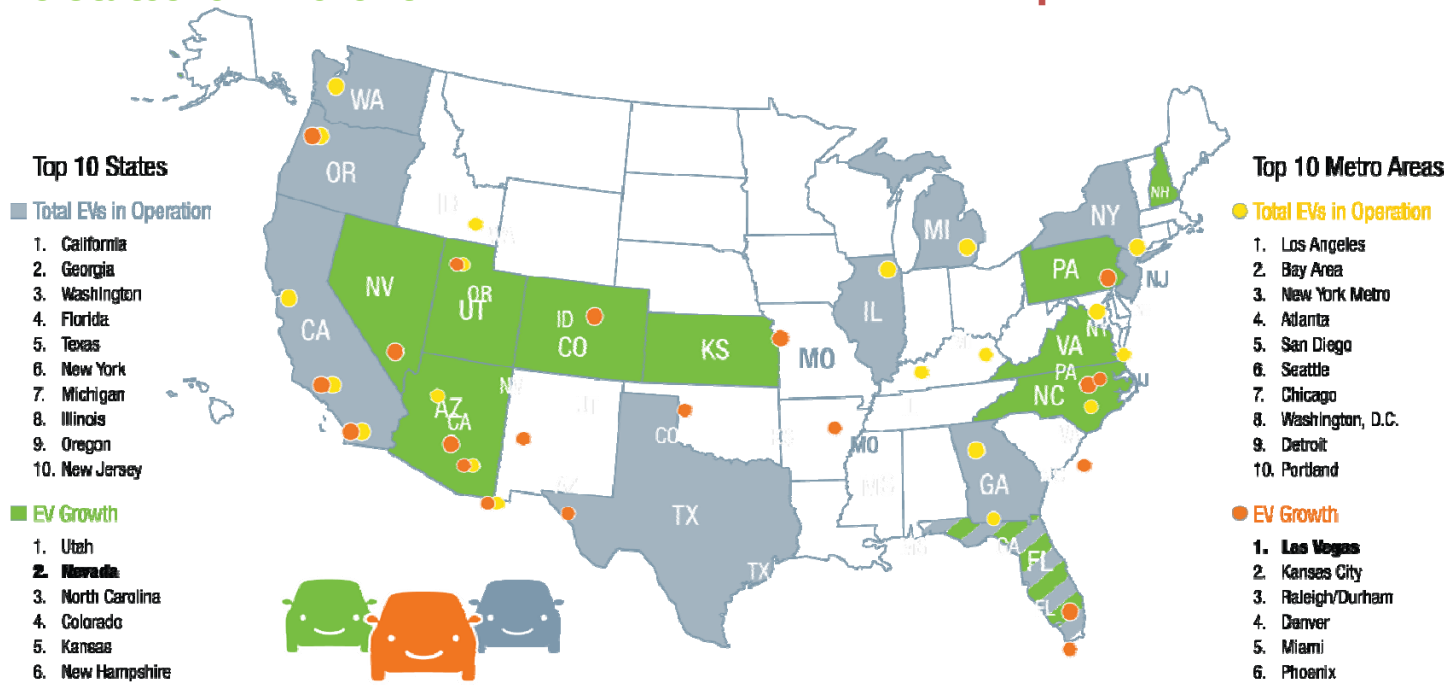
Winter Months: Jan Feb Mar Apr May Oct Nov Dec

Nevada is Primed for Electric Vehicle Growth

With the implementation of the Electric Vehicle Infrastructure Demonstration Program, as part of Senate Bill 145, the Company is poised to support and accelerate the realization of electric vehicle growth in Nevada.

Nevada listed #2
In Top 10 States for EV Growth

Las Vegas listed #1
In Top 10 Metro Areas for EV Growth



Top 10 States

Total EVs in Operation
1. California
2. Georgia
3. Washington
4. Florida
5. Texas
6. New York
7. Michigan
8. Illinois
9. Oregon
10. New Jersey

EV Growth
1. Utah
2. **Nevada**
3. North Carolina
4. Colorado
5. Kansas
6. New Hampshire
7. Pennsylvania
8. Virginia
9. Florida
10. Arizona

Top 10 Metro Areas

Total EVs in Operation
1. Los Angeles
2. Bay Area
3. New York Metro
4. Atlanta
5. San Diego
6. Seattle
7. Chicago
8. Washington, D.C.
9. Detroit
10. Portland

EV Growth
1. **Las Vegas**
2. Kansas City
3. Raleigh/Durham
4. Denver
5. Miami
6. Phoenix
7. Philadelphia
8. Portland
9. San Diego
10. Los Angeles

Source : ChargePoint

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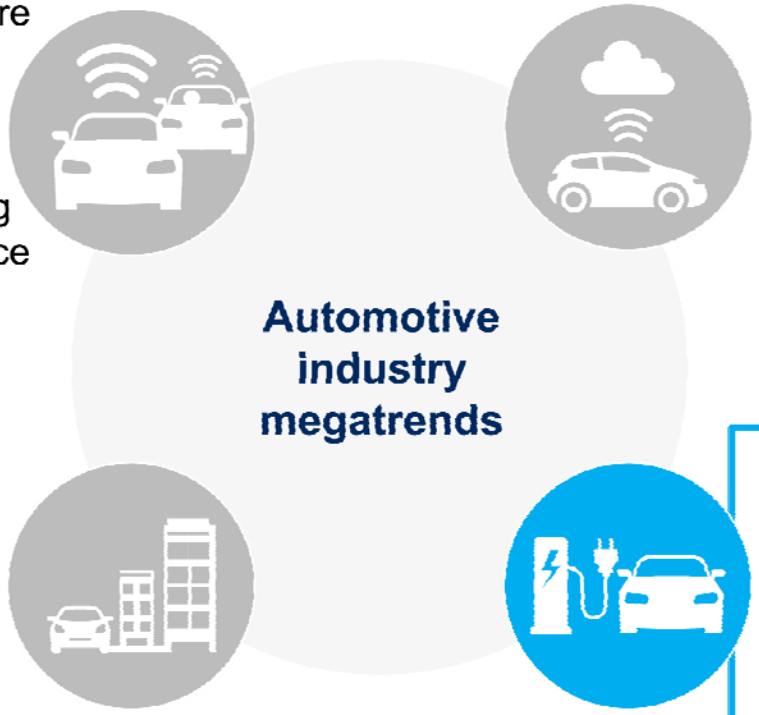
Automotive Industry Megatrends. Electrified. Happening in Nevada

Autonomous

- EV vehicle architecture has a central control unit to facilitate autonomy
- Autonomous charging could add convenience

Connected

- **A connected EV ecosystem could increase the convenience of charging**
- **Connected car grid solutions could enable cost-effective load balancing**



Shared

- **Greater annual driving distances can offer a decisive TCO edge for EVs**
- **Some consumers may prefer access to multiple vehicle types over ownership (including EVs)**

Electrified

- Tightening emissions efficiency rules make EVs necessary to meet standards
- Lower battery costs improve EV economics

SOURCE: McKinsey Sustainable Mobility Initiative

Innovation in Transportation Already in Motion; Autonomous, Connected & Electric ("ACE") Initiatives

Las Vegas launches 1st electric autonomous shuttle on U.S. public roads

*Source; techcrunch.com

Las Vegas is a top 10 market for autonomous vehicle roll-out

*Source; INRIX Autonomous Vehicle Study

Proterra Starts Industry's First Autonomous Bus Program in Nevada

RTC of Washoe County : 4th Street Station, Reno

Fleet Electrification

- As Nevada embarks on transforming the transportation sector, the Company is in a strategic position to provide technical advisory services and charging infrastructure programs to accelerate fleet electrification and thus the environmental and economic goals of the State in an expeditious manner.

Green Fleet Sustainability All Stars*

- NV Energy has been expanding its hybrid fleet since the first hybrid bucket trucks were available in 2009 and is growing every year.
- Today, 11% of our fleet has electrification technology.
  - 45 hybrid bucket and line trucks
  - 41 hybrid ePTO bucket or line trucks
  - 18 passenger vehicles including the arrival this year of plug-in hybrid pick-up trucks

* Green Fleet Magazine

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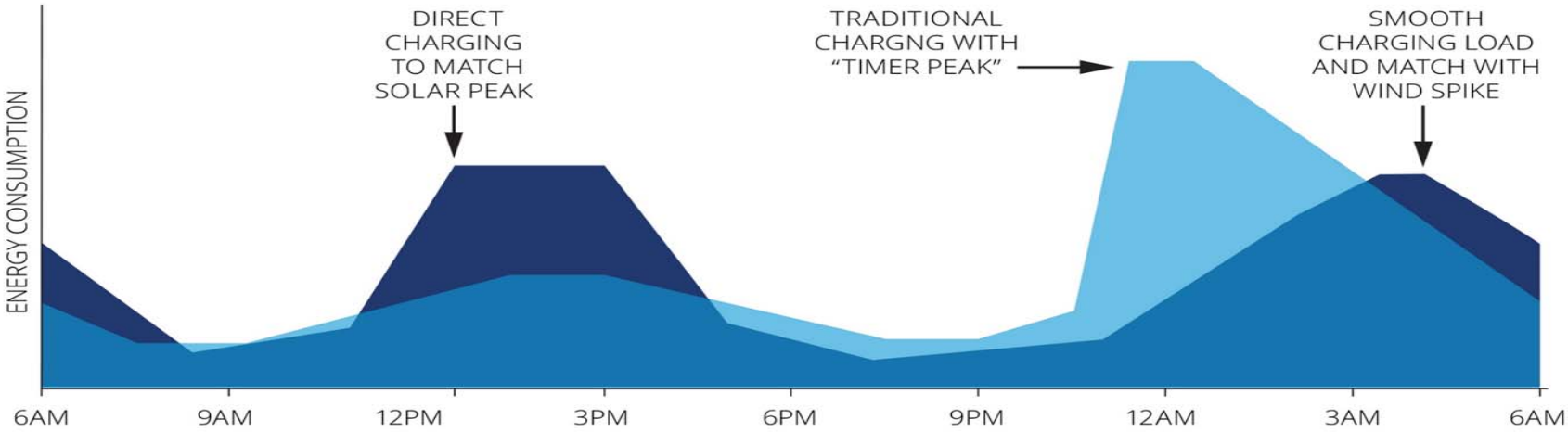
Electric Vehicles as Distributed Energy Resources

If utilities anticipate the load of charging EVs and plan for it proactively, they can not only accommodate the load at low cost, but also reap numerous benefits to the entire system.*



Source: BMW of North America, 2016 with edits from Smart Electric Power Alliance 2017

- NV Energy has been proactive in our electric vehicle program to acknowledge that electric vehicle load may occur at peak and have thus designed levers and incentives in our programs to grow electric vehicle load off-peak wherever possible.
  - Electric vehicle time of use rates for residential, commercial, and multi-family customers.
  - Demand response clause to shed load if necessary for all electric vehicle charging stations encompassed in the NV Energy Charging Station Shared Investment Program.

*Rocky Mountain Institute Electricity Innovation Lab;

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NV GreenEnergy Rider and Renewable Portfolio Standard

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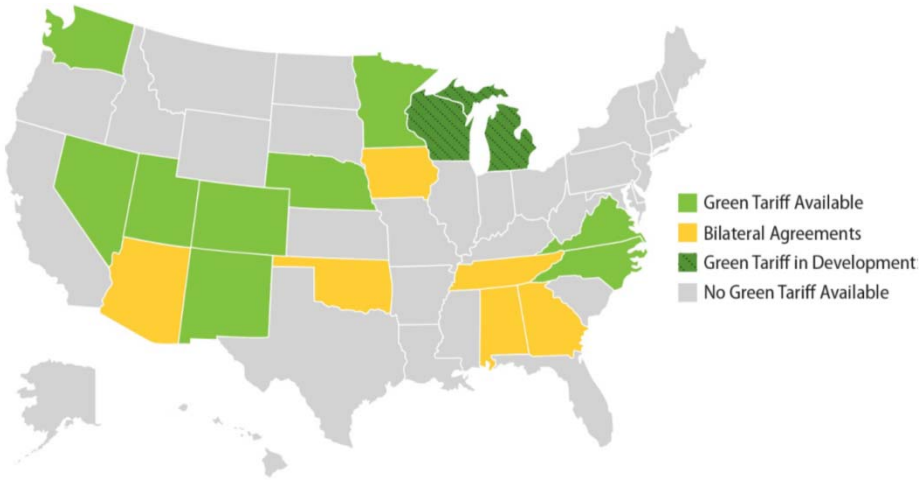
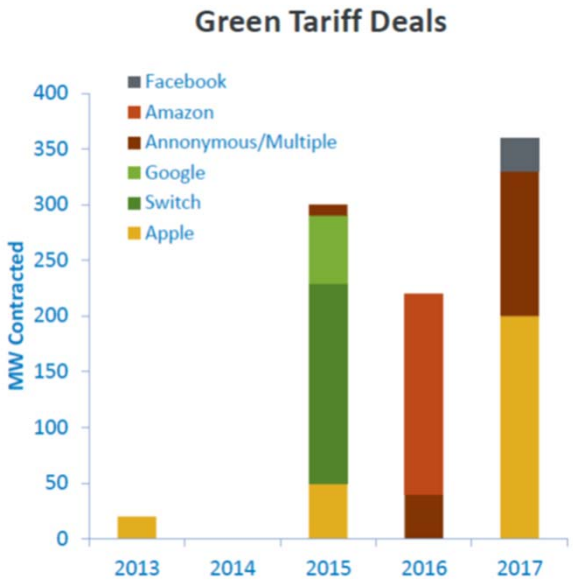
NV GreenEnergy Rider
Policy and Background

- Nevada Revised Statute 704.738 – Program of optional pricing for electricity generated from renewable energy: Authorization of Public Utilities Commission of Nevada ("PUCN") required; Commission may authorize higher rates.
- Schedule No. NGR tariff , approved by the PUCN, also details applicability, rates, terms, and special conditions.
- The NV GreenEnergy Rider ("NGR") program provides a means for customers to have all or some portion of load supported by renewable energy generation.
- Through the NGR, NV Energy and the customer may enter into a special contract (i.e., Renewable Energy Agreement, "REA") under which the customer agrees to assume all of the costs of the renewable energy resource up to a specified amount, not to exceed the customer's total energy consumption.
- The PUCN approves such a special contract upon, a satisfactory showing that NV Energy's other customers do not subsidize the NGR transaction.

Existing NV GreenEnergy Rider Transactions

- Attractive, low-cost option for customers beyond the RPS
- Provides opportunity to improve equipment and installation costs for new solar
- The cost for the renewable attribute is among the best nationally, and customers are able to identify the source
- Customers pay the otherwise-applicable rate for energy
- NV Energy receives the energy and credits customers with the renewable attributes
- Nevada currently has nearly 50% of the commercial “green tariff” total capacity nationwide
- Among the announced green tariff transactions (900 MW total), 448.5 MW have been in Nevada.





Source: Heeter J., Charting the Emergence of Corporate Procurement of Utility-Scale PV, September 2017, NREL/PR-6A20-70003

Green Tariff Transactions Status

- Nevada has the largest percentage of commercial and industrial load under a green tariff.
- 2017 National Renewable Energy Lab report indicates that in 17 states, utilities have offered large customers the option to procure renewables through green tariffs or bi-lateral contracts.
- These partnerships offer customers access to off-site universal scale, low cost renewables.
- Most states have no green tariffs or associated transactions, so customers primarily just purchase RECs.
- Benefits include, but not limited to, long-term renewable energy at fixed price, no additional administration costs or energy expertise required for customers, and utilities can aggregate customer load to get economies of scale.

Source: Heeter J., Charting the Emergence of Corporate Procurement of Utility-Scale PV, September 2017, NREL/PR-6A20-70003

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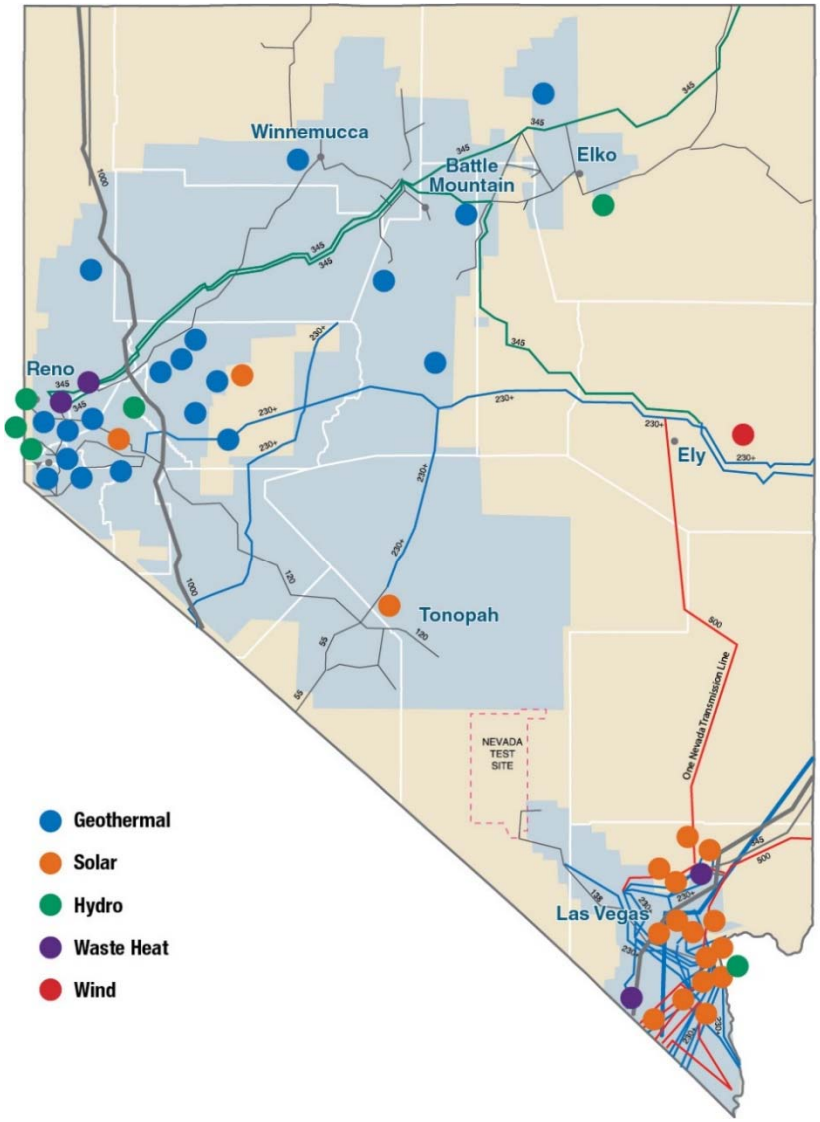
Renewable Portfolio Standard Policy and Background

- Renewable Portfolio Standard (RPS) - Energy policy that promotes the use of clean energy to meet the retail energy needs of the consumers in the state.
  - Renewable energy credit (REC) = 1 kWh
    - Credits are generated from utility scale solar, geothermal, wind, biomass, small hydro projects, and private generation
  - RPS began in the late 1980's when the Public Utilities Commission of Nevada (PUCN) required Sierra Pacific to procure 85 MW of renewables - namely geothermal

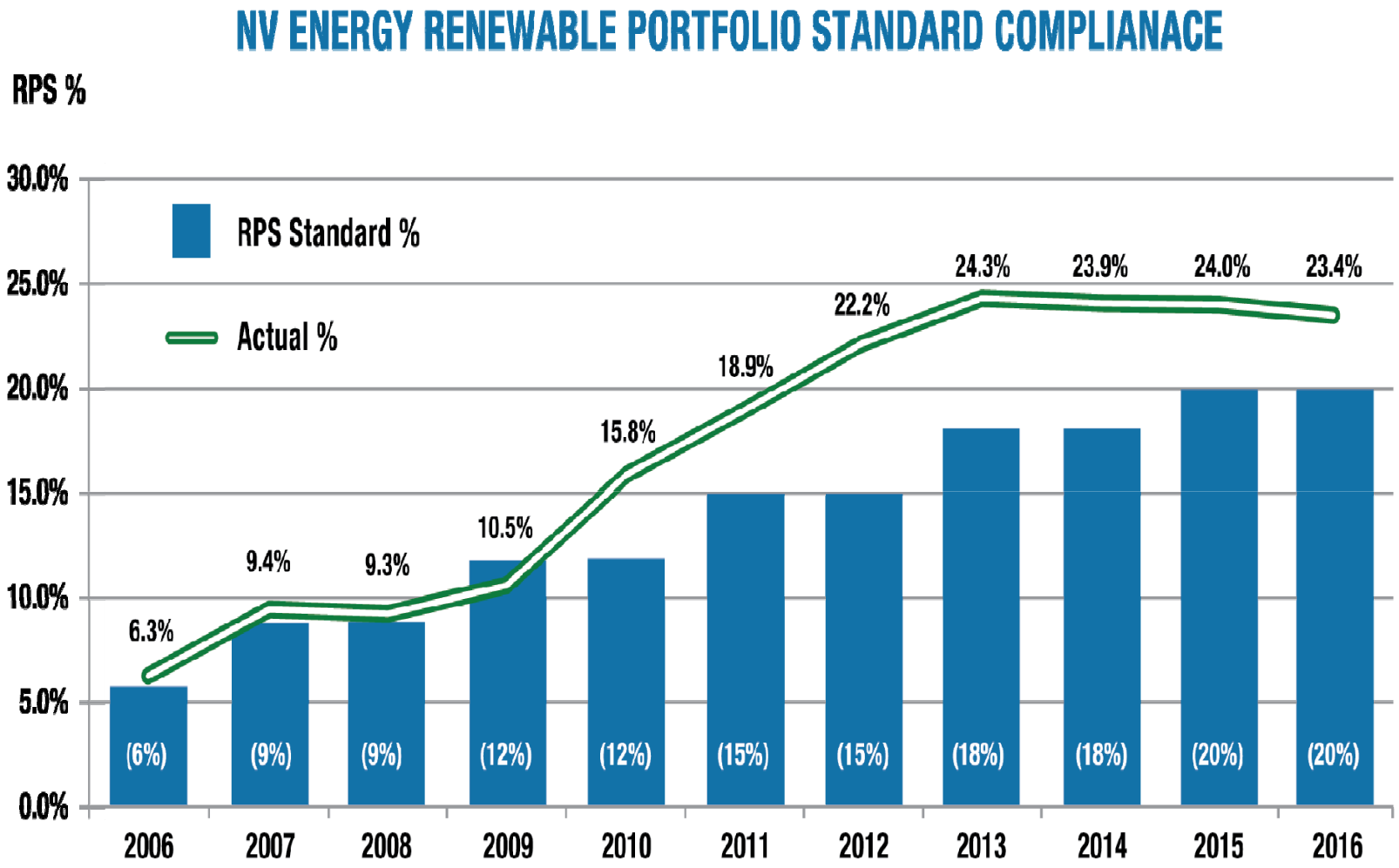
- Energy efficiency is being phased out as a tool to meet the RPS
  - Put in place as a trade-off to increase the RPS
  - Currently 20% of energy efficiency is permitted
  - Decreasing to 10% effective 2020
  - By 2025 energy efficiency will no longer be used in calculations

NV Energy Renewable Energy Projects

- NV Energy customers benefit from a very diverse set of renewable energy resources:
  - 19 Geothermal projects
  - 15 solar projects
  - 5 biomass/methane/waste heat
  - 5 small hydro
  - 1 wind farm



NV Energy RPS Compliance



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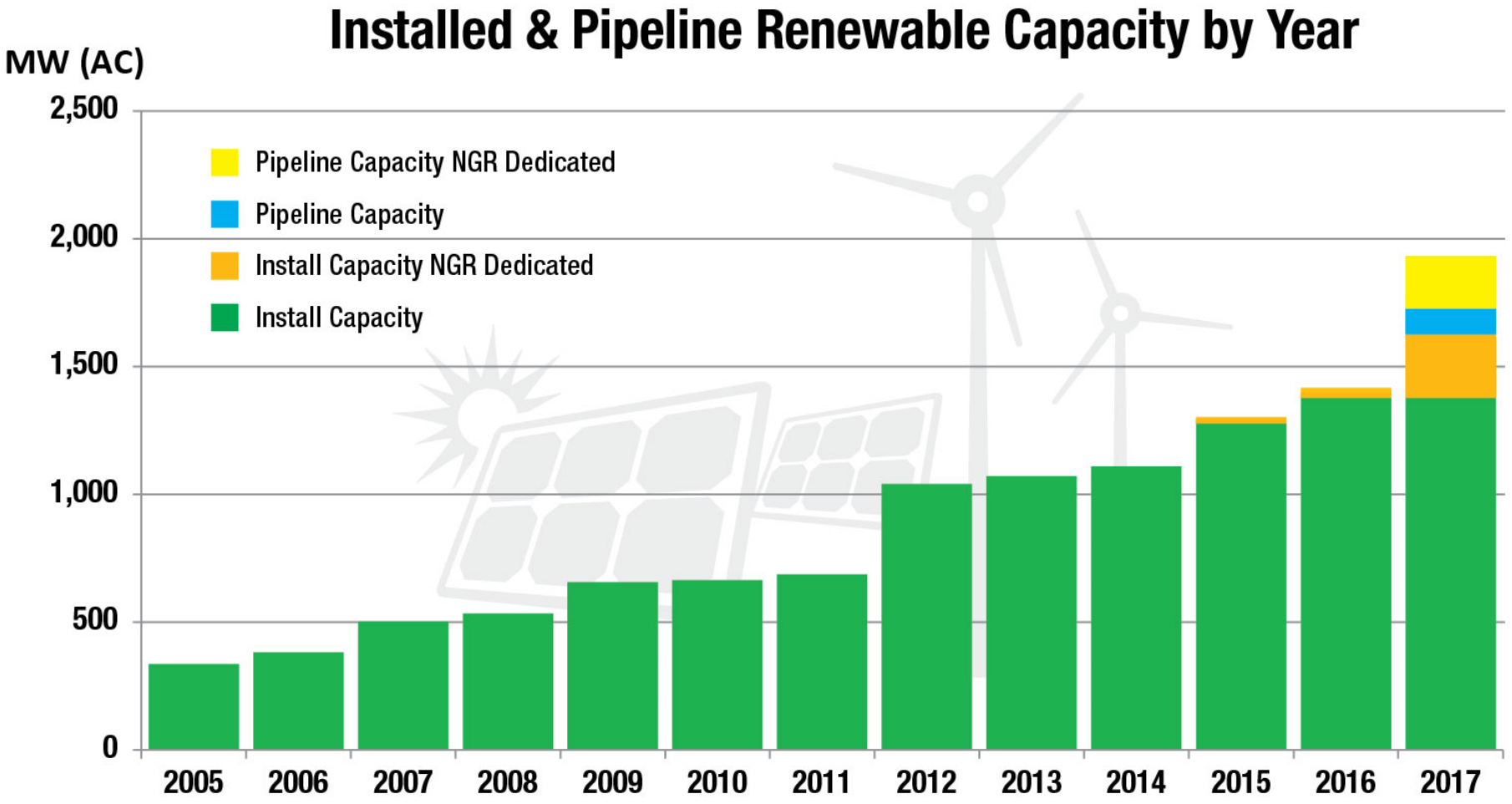
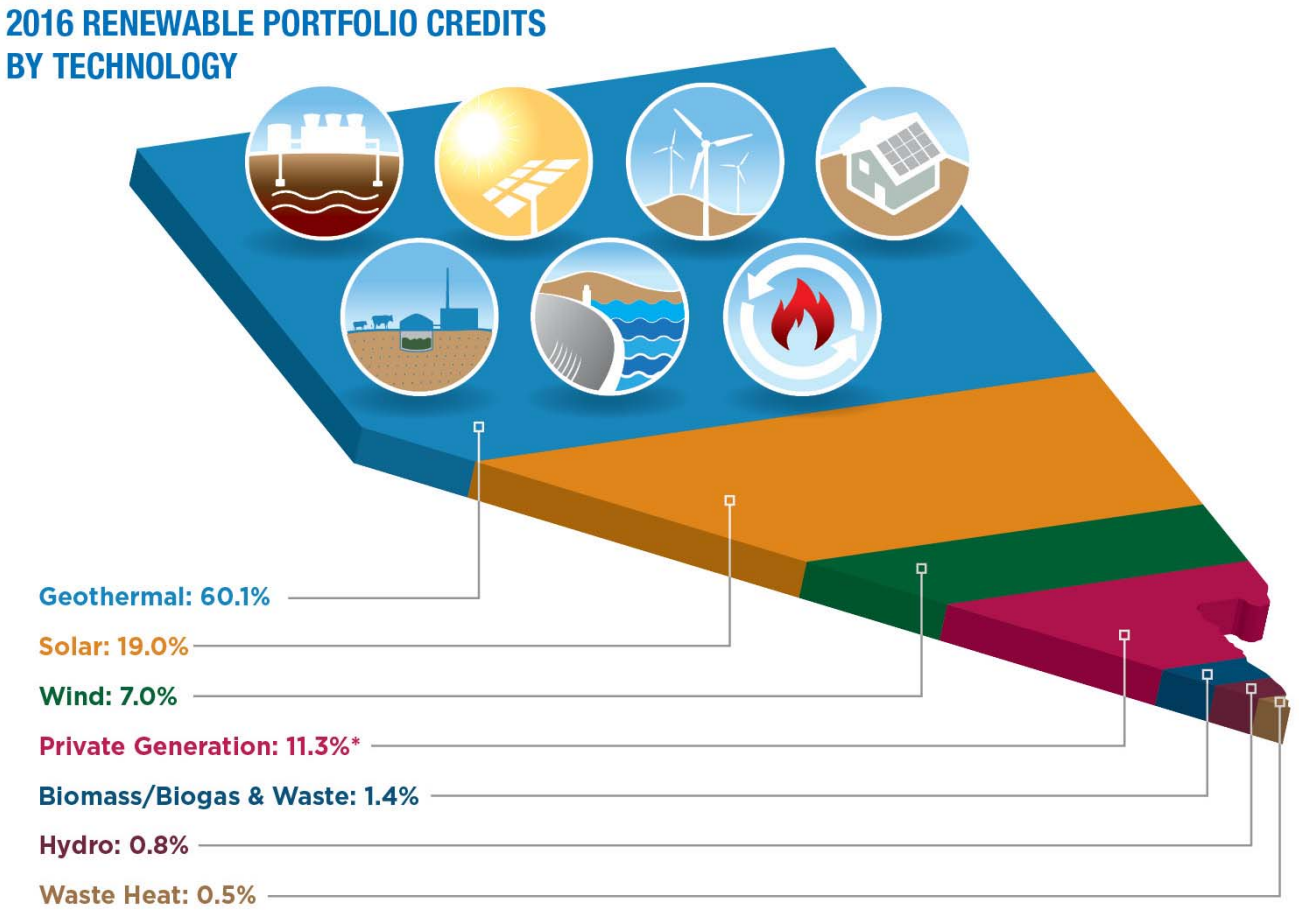
NV Energy Renewable Energy Capacity Growing Steadily



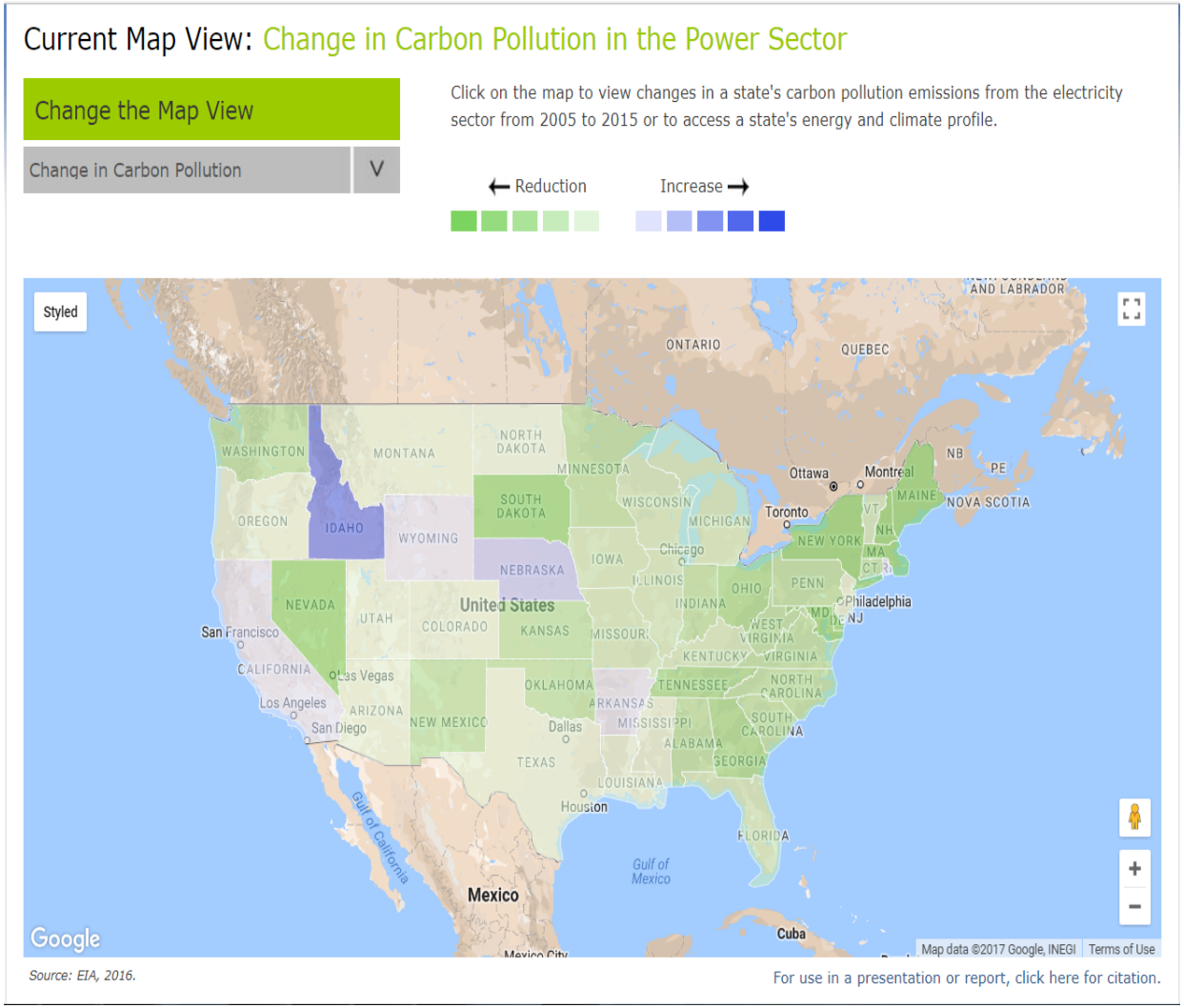
NV Energy Customers Benefit from a Diverse Renewable Energy Portfolio



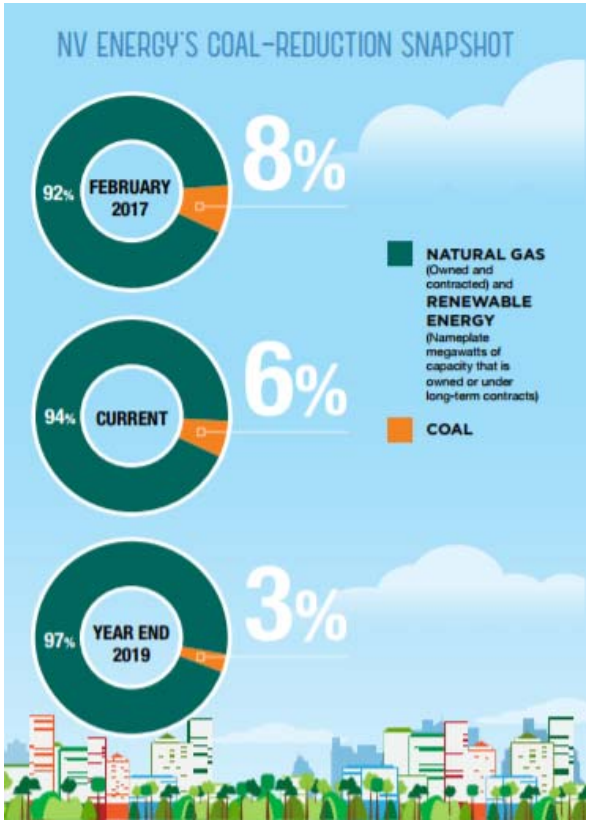
*Private Generation includes solar, wind, and hydro systems installed at a customer locations.

Nevada Carbon Reduction

- NV Energy is a leader in carbon reduction, collaborating with policymakers and transitioning while also reducing rates for customers



- ✓ Nevada reduced carbon emissions by 44% between 2005 and 2015
- ✓ NV Energy will be “out of coal” before California



Nevada is a Leader in Provision of Low-cost Renewable Resources

- Moving forward to provide renewable energy solutions to serve existing and new load, while complying the RPS goals
- NV Energy has seen long-term PPA pricing for utility-scale solar resources between $35 and $40 per megawatt-hour (“MWh”) - levelized cost over life of contract
- Since 2015, brought 474 MW of solar capacity online and contracted for another 300 MW
- Renewable energy growth through the utility promotes more rapid Nevada de-carbonization and large new projects (jobs, taxes, leadership)
- Supports improving equipment and installation costs for new solar

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Thank you.

Questions?

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Appendix

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Core Principles

Berkshire Hathaway ownership, combined with our core principles, strengthens the company and provides for long-term sustainability

VISION

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

CULTURE

Personal responsibility to our customers

1	Deliver exceptional customer service across all parts of the organization, resulting in an improved customer experience, as measured by customers.
2	Create a safer environment, on a daily basis, for customers, the general public and fellow employees by delivering an industry-leading occupational safety and health incident rate. Grow team of employees to be the best in the industry, while preparing them for industry challenges and newly created opportunities.
3	Reduce the impact that activities and assets have on the environment by reducing the CO_2 intensity of emissions, decreasing methane emissions and developing renewable resources to deliver a more sustainable environment in the communities where NV Energy operates and the world at large.
4	Actively engage external stakeholders, listening to their needs to properly develop value propositions that eliminate or reduce the need for rate increases and allow the business to achieve the allowed return on equity.
5	Operate assets in an efficient, cost-effective manner that reduces risk for the long-term benefit of customers, with gas pipeline assets experiencing zero unplanned interruptions, electric assets performing in the top quartile of reliability, and generating assets maintaining top decile industry performance; while ensuring no cyber or physical security events occur that impact operations.
6	Deliver strong financial performance, which allows for proper reinvestment in assets.

Community Commitment

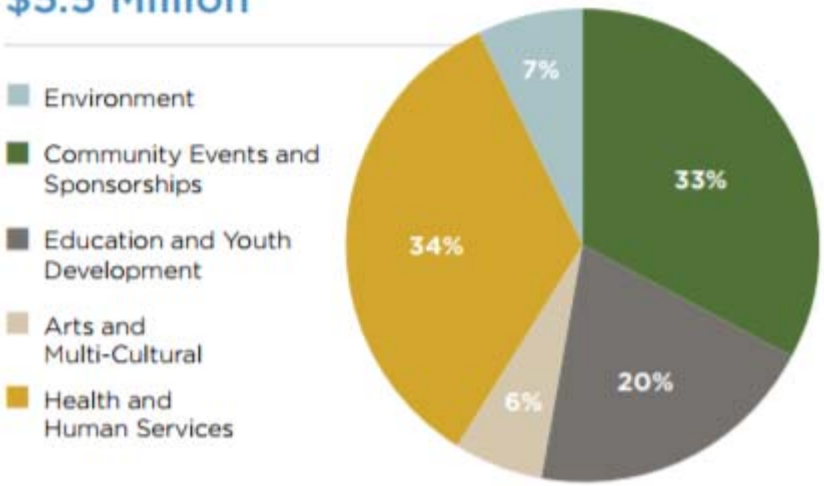
❑ We care about the communities that we serve

- In 2016, NV Energy employees volunteered more than 37,500 hours to causes statewide

NV Energy employees served on 115 nonprofit boards of directors statewide.

2016 Charitable Giving & Community Sponsorships

$5.5 Million



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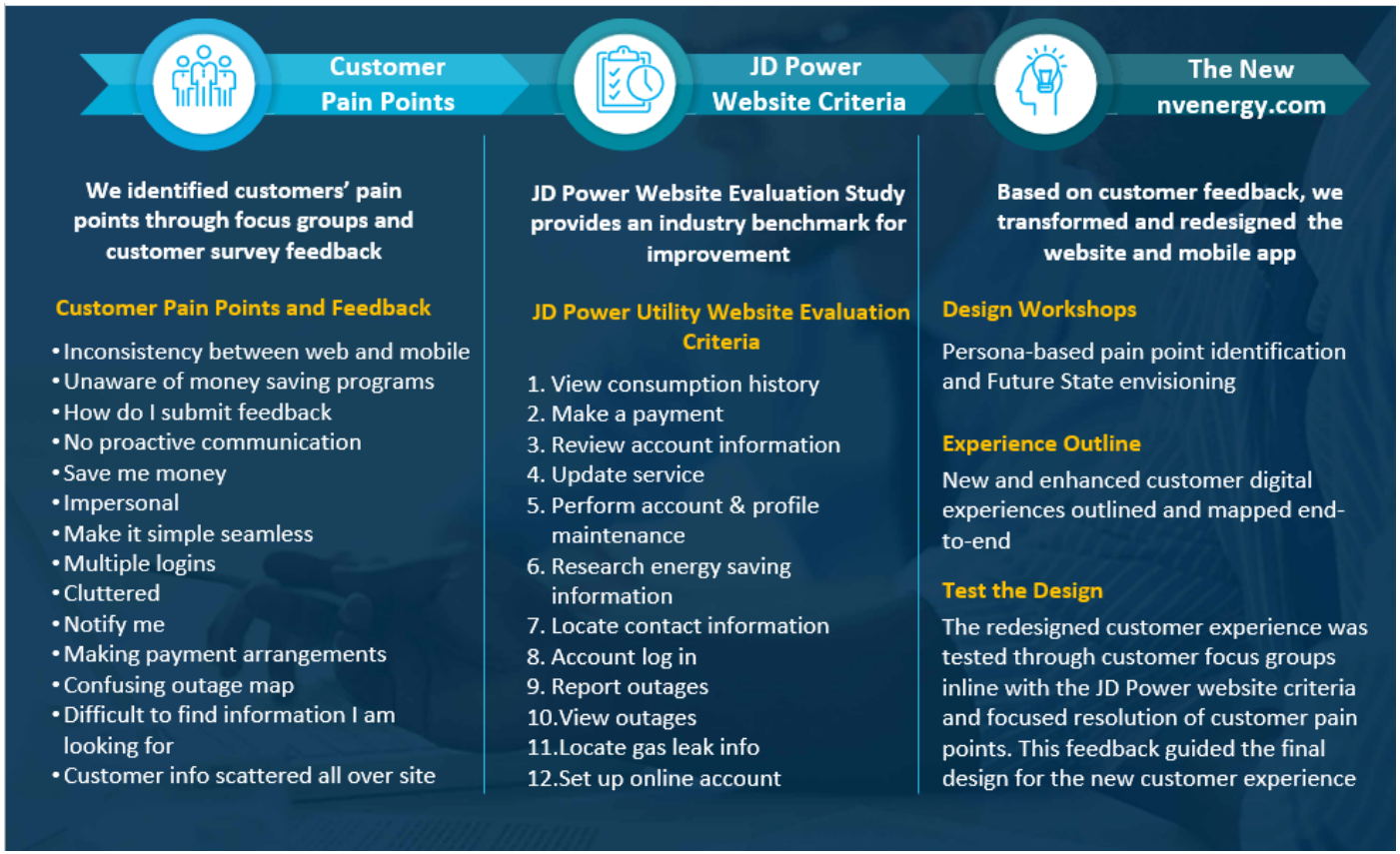
Designed to Meet and Exceed Customer Expectations

- The end product resulted from the application of the plan, execute, measure and correct philosophy



- ✓ Plan – Gathered customer feedback and applied objective assessment criteria
- ✓ Execute – Designed website
- ✓ Measure – Reviewed test website with focus groups
- ✓ Correct – Revised design to eliminate 34 additional pain points

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New Signature Services

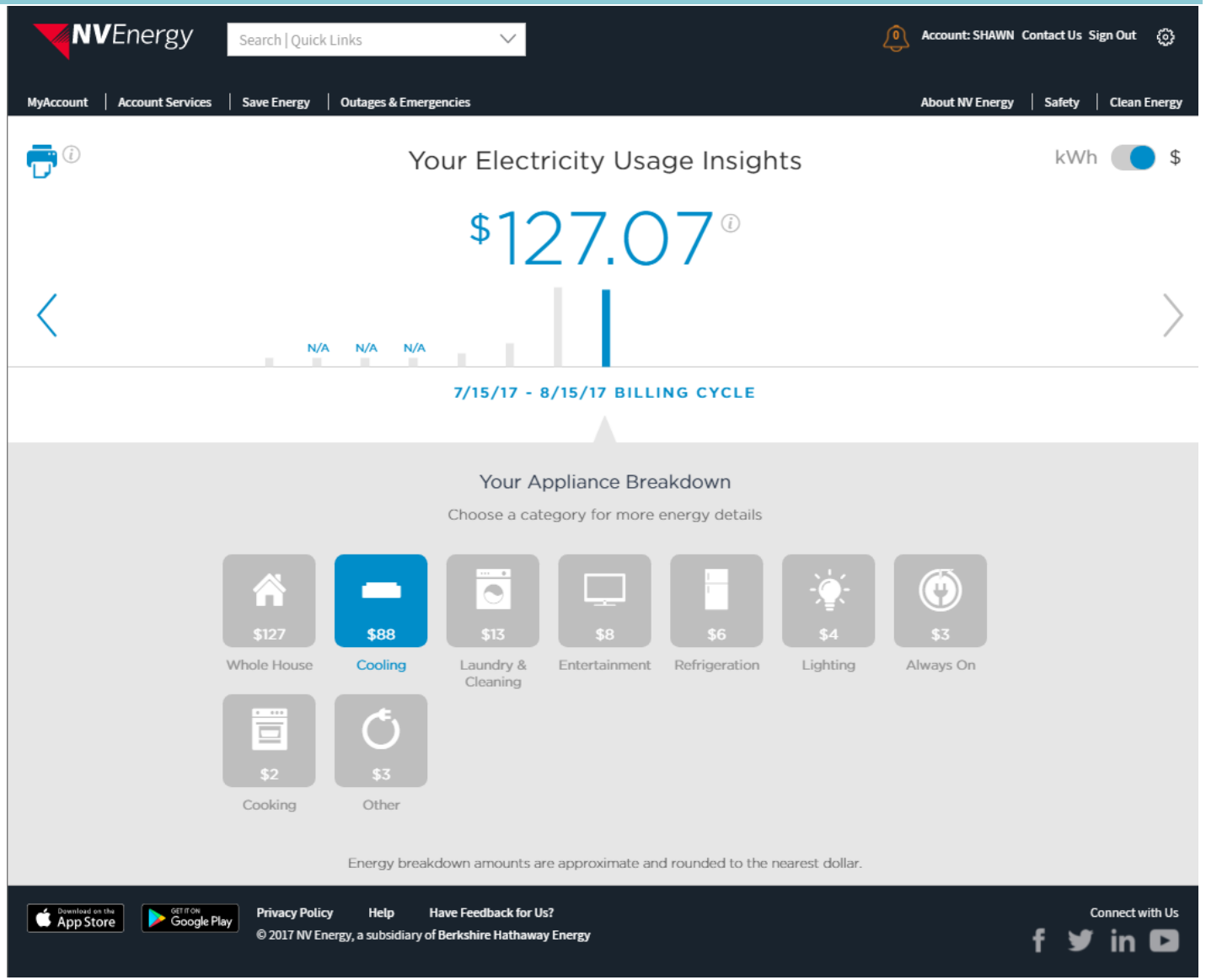
Customers able to view energy consumption by appliances (disaggregation)

- ✓ New disaggregation service that leverages the smart grid

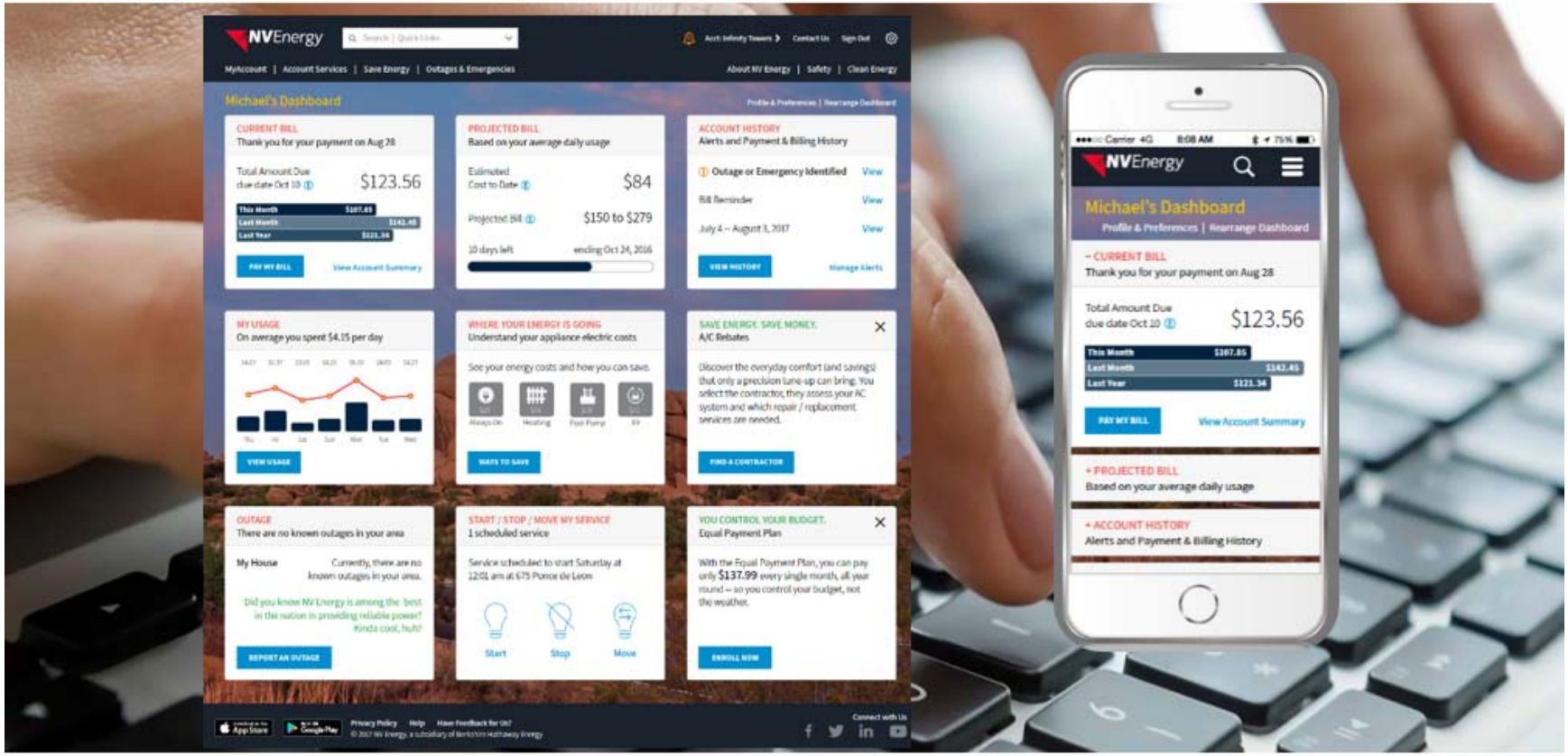
Next BestActions: personalized customer recommendations

- ✓ Enhanced personalization opportunities

Data-driven content such as real-life customer savings examples, advertisement of mobile app, online feedback, etc.



Unified Technology Stack Enhances Flexibility



- ✓ Single, unified technology stack allows customer to transition seamlessly and intuitively from desktop to mobile to application
- ✓ Single, unified technology stack improves "speed to market" by facilitating one build across all channels

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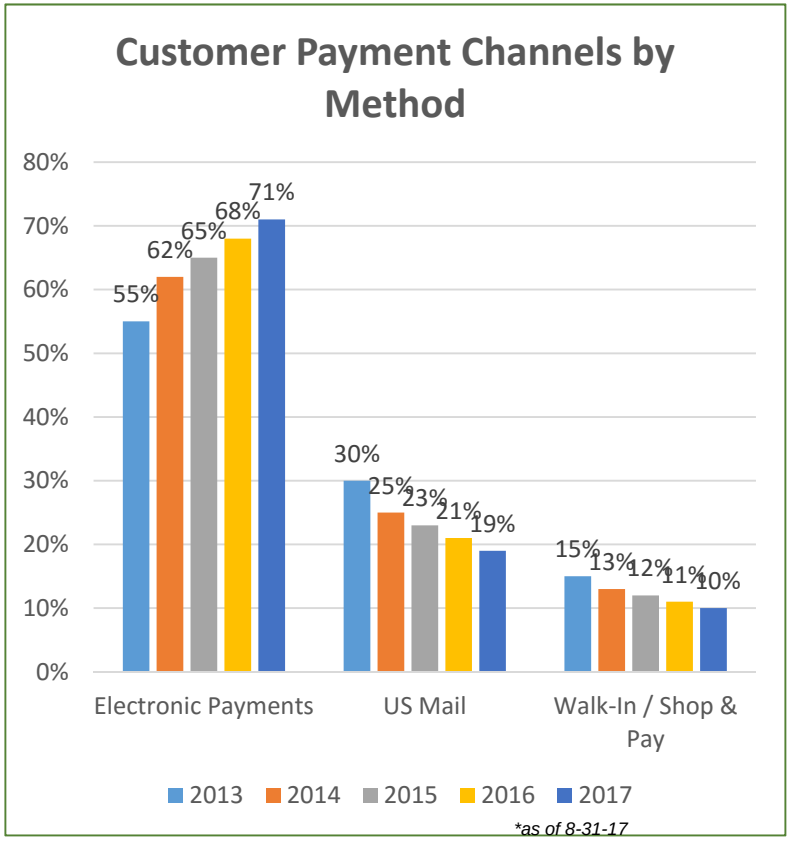
Customer Payment Trends

- Billing and credit operations is forecasted to create and manage over 13.2 million customer bills in 2017
- Over 200 locations throughout the state of Nevada accept walk-in payments over the counter as well as through self-service payment kiosks
- NV Energy has collected and processed over 9.5 million payments in 2017 through August 31, 2017

Payment Method	# of Payments
Electronic	6,908,036
US Mail	1,896,526
Walk-in	0
Shop N' Pay	806,838
Kiosk	139,851
Total	**9,751,251**

*as of 8-31-17



Business Services

- Business Solutions Center
  - Premium contact handling
  - Energy-saving advice and program information
  - In-depth knowledge of commercial customer service
  - NV Energy Business Toolkit
  - https://www.nvenergy.com/account-services/business-solutions-center/toolkit.html

Northern Nevada

(775) 473-6998

Toll-free: (877) 377-6387

BusinessSolutionsNorth@nvenergy.com

Southern Nevada

(702) 402-1000

Toll-free: (866) 791-0345

BusinessServices@nvenergy.com

- MyAccount
- Customer Digital Experience

powershift by NVEnergy

- ✓ Free Energy Assessment
- ✓ Free Classes and Seminars
- ✓ Incentivized Energy Audits
- ✓ Small Business Savings
- ✓ Rebates for Installation of Qualifying Efficient Equipment

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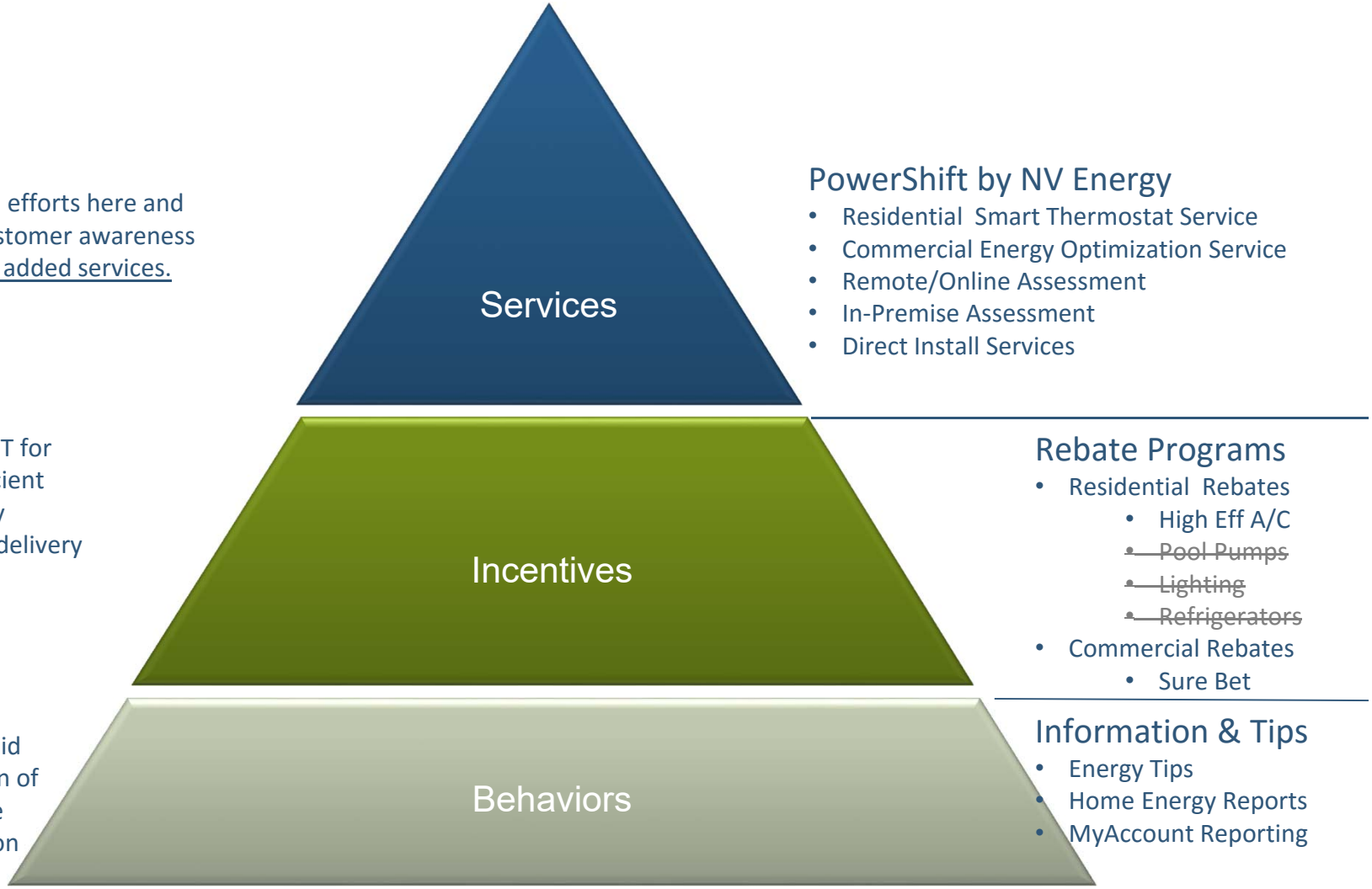
DSM Funding

- Three-year action plan is approved in the Integrated Resource Plan
- The action plan is reviewed in non Integrated Resource Plan years, and the budget and savings are reviewed and remaining years of the action plan are approved again
- The associated costs and carrying charges are collected in a regulatory asset balancing account
- During the annual Deferred Energy Accounting Adjustment (DEAA) filing, DSM costs are approved for prudency, and the Energy Efficiency Charge (rate on bill) is reset and goes into effect on October 1 of that year
- The current Energy Efficiency Charge is $0.00118 at Nevada Power and $0.00181 at Sierra. The average residential customer pays approximately $1.31/mo. at Nevada Power and $1.34/mo. at Sierra

Customer Centric Energy Management

NV Energy DSM efforts are focused on delivering higher levels of energy savings and customer satisfaction by increasing the focus on direct delivery of Energy Services that support a more efficient electric grid

Ramp up efforts here and focus customer awareness on value added services.



PowerShift by NV Energy

- Residential Smart Thermostat Service
- Commercial Energy Optimization Service
- Remote/Online Assessment
- In-Premise Assessment
- Direct Install Services

Leverage IT for more efficient and timely incentive delivery

Rebate Programs

- Residential Rebates
  - High Eff A/C
  - ~~Pool Pumps~~
  - ~~Lighting~~
  - ~~Refrigerators~~
- Commercial Rebates
  - Sure Bet

Ensure solid foundation of actionable information

Information & Tips

- Energy Tips
- Home Energy Reports
- MyAccount Reporting

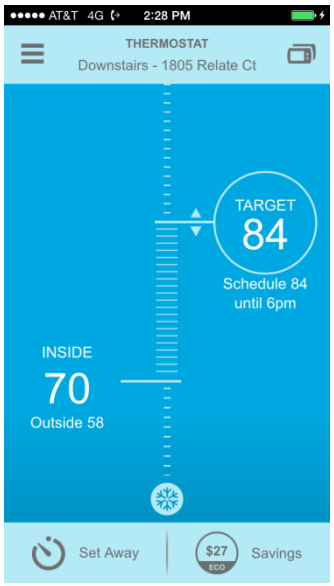
Residential Demand Response
250 Megawatts and Growing…

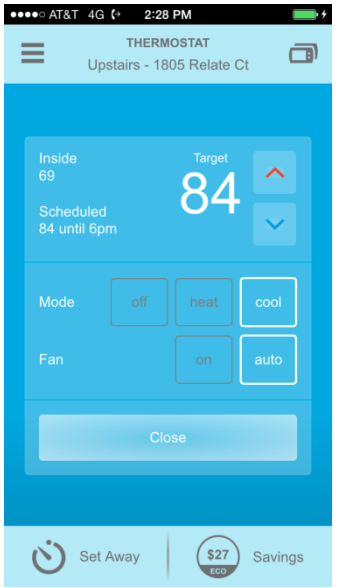
Energy Efficiency Optimization Service

HVAC Fault Detection Service

Remote Control

Enhanced data analysis identifies new savings opportunities





NV GreenEnergy Rider Process

- The REA between NV Energy and the qualified customer sets forth a price (i.e., renewable resource rate) that the customer pays for the renewable energy attributes supplied by NV Energy. This rate must be set in a manner that satisfies the PUCN that NV Energy's other customers are not potentially subsidizing the NGR transaction.
- Historically, this rate has been set by calculating the levelized difference between NV Energy's costs in acquiring the renewable energy resource and NV Energy's current long term avoided costs ("LTAC"), as the LTAC is periodically calculated and filed with the PUCN.
- This rate paid by the NGR customer does not benefit NV Energy; instead it is a credit to offset higher fuel and purchased power expenses that would otherwise be borne by non-participating NV Energy customers.
- A power purchase agreement ("PPA") is also entered between NV Energy and the renewable energy supplier to support the REA with the customer.
- Both the PPA and REA are subject to the PUCN approval.
- The existing pricing methodology has been approved by the PUCN at least seven times and, therefore, has a minimum level of regulatory risk.

Renewable Resource Rate Background

- Renewable resource rate structured such that it captures the resource cost in excess of NV Energy's applicable long-term avoided cost of energy.
- This was the approach proposed to the PUCN and approved six times.
- The full renewable resource rate amount attributable to the transaction above the long-term avoided cost of energy that NV Energy's customers would otherwise pay for energy. In effect, the renewable resource rate captures the "green renewable resource rate" that the participating customer would pay to avoid any adverse impacts to NV Energy's non-participating customers.
- To ensure NV Energy captures all costs on behalf of its non-participating customers, the special contract's term will be for the life of the array, and the output of the renewable resource is not restricted in any way by the participating customer's load.

Renewable Resource Rate Background (cont.)

- The calculation in detail.
  1. Take the present value of the [25] year annual projected revenue required with respect to the renewable energy resource.
  2. Take the present value of NV Energy's [25] year weighted average annual projected avoided cost of energy.
  3. The difference between 1. and 2. is then converted into an annuity using a term of 25 years and a discount rate equal to NV Energy's PUCN-approved rate of return.
  4. That annuity is then divided by the levelized annual production (in kilowatt-hours) of the renewable energy resource to come up with the renewable resource rate for [25] years.
- In calculating the avoided cost for this analysis, NV Energy would utilize the weighted average monthly marginal cost of energy by year using the PROMOD hourly marginal energy costs, as set forth in the most recently approved PUCN filing.

NV GreenEnergy Rider Details

- Utilizing the NGR rate methodology approved by the PUCN for supporting a large generator service ("LGS") customer's new incremental load, NV Energy has been able to secure uniquely low NGR rates for LGS customers in southern Nevada.
  - This is due in large part to the abundant solar resource in southern Nevada and the present ability of solar developers to monetize the 30% federal investment tax credit ("ITC") available under Section 48 of the Internal Revenue Code.
  - As of December 2015, the 30% ITC has been extended for another five years. The developer can monetize the full 30% if construction starts before 2020, 26% if before 2021, 22% before 2022, or 10% for construction starting in 2022 or later.
- Over the past year in southern Nevada, NV Energy has seen long-term PPA pricing for utility-scale solar PV resources between $35 and $40 per megawatt-hour ("MWh") - levelized cost over life of contract.

Key Opportunities with NGR Program's Improvement

- Customers are interested in renewable energy options for load growth and sustainability goals
- Nevada is strategically located with industrial land attractive to new large-load customers
- The NV GreenEnergy Rider ("NGR") provides a competitive advantage to NV Energy, particularly with new technology customers—pairing low base rates with low cost renewables
- Customer demand for additional renewable energy will drive development of NGR deals
- System integration costs will be assessed for renewables penetration, and existing tariffs will need to be revised or new tariffs may be needed for creating maximum customer value
- NV Energy is being asked to pursue new transaction structures for large commercial customers that provide price certainty and the ability to match load with renewable energy

Opportunities

- Multiple large industrial parcels, shovel-ready lands and low costs: Tahoe-Reno Industrial Center, Apex Industrial Complex, West Henderson, and Crossroads Commerce Center
- NV Energy is key contributor to aggressive Nevada economic development team, pursuing multiple data center, distribution center and industrial process companies
- Nevada represents substantial additional solar development opportunities
- The NGR option has been successful with the PUCN
- NV Energy will present an option to the PUCN to offer customers long-term renewable energy purchase

Success Plan

- Pursue large-load economic development and support development efforts and improve NGR solution
- Leverage state, local and energy company economic development resources
- Provide creative/comprehensive renewable energy and efficiency strategies for industrial prospects
- Formalize NGR option and gain PUCN support
- Identify customer(s) to utilize option and identify renewable resource to pursue
- Partner with major developers and suppliers for transacting with customers