



ANNUAL REPORT 2018

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Southwest Energy Efficiency Project – June 2019



HIGHLIGHTS

States, localities and utilities in the Southwest continued to adopt and implement effective energy efficiency policies and programs in 2018, with support from SWEEP. Highlights include:

- Electric utilities in the Southwest helped their customers save about 2,300 gigawatt hours (GWh) per year from energy efficiency programs implemented in 2018, equivalent to the electricity use of 230,000 typical households in the region.
- Electric utility energy efficiency programs implemented in 2018 will provide households and businesses about \$900 million in net economic benefits, while also reducing CO₂ emissions by approximately 16 million metric tons over the lifetime of the installed energy efficiency measures.
- With support from SWEEP, states, cities and counties continued to adopt either the 2015 or 2018 version of the International Energy Conservation Code (IECC). As of 2018, the majority of new construction in the region is occurring in jurisdictions that have adopted one of these state-of-the-art building energy codes.
- Commercial building benchmarking and disclosure policies advanced in the region in 2018, most notably with Fort Collins, CO and Reno, NV adopting new benchmarking and disclosure requirements.
- The market for electric vehicles is growing rapidly in the Southwest, due in part to policies that SWEEP advocated. Sales of plug-in vehicles in our region doubled in the last year.
- Due in part to the efforts of SWEEP, states in the region are devoting a large fraction of Volkswagen Settlement funds to EV charging infrastructure and public transit electrification.

Howard Geller, SWEEP Executive Director
June 2019



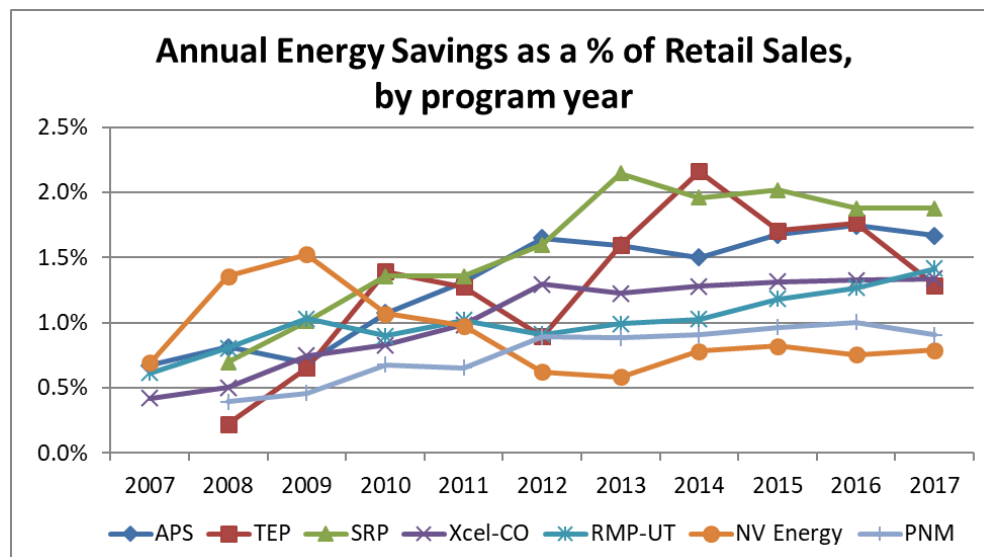
UTILITY PROGRAM

SWEEP advocated for well-funded and effective utility energy efficiency and demand response programs in all of our states in 2018. In addition, we influenced energy efficiency programs and policies through advising utilities and interactions with regulators and other state policy makers. We estimate that all electric utilities in the region spent around \$360 million on demand-side management (DSM) programs in 2018, down slightly from expenditures in 2017. Gas utilities in the region spent about \$50 million on energy efficiency programs in 2018.



The chart below shows the energy savings achieved by the seven largest electric utilities in the region each year as a fraction of retail electricity sales over the past decade. The leading utilities, Salt River Project (SRP) and Arizona Public Service Co. (APS), achieved savings equal to 1.5 to 2.0 percent of their electricity sales as of 2017. Three utilities, Xcel Energy-CO, Tucson Electric Power (TEP) and Rocky Mountain Power (RMP) - saved 1.3-1.4 percent of sales from their 2017 programs. For comparison, no utility in the region saved more than 1.0 percent of sales in 2007 and only one did in 2008. Preliminary energy savings results for 2018 indicate that most of the major utilities either maintained or increased their energy savings in 2018.

1. Energy Savings Achieved by Major Electric Utilities in the Southwest



Utilities in the region are helping their customers save billions of dollars through their energy efficiency and demand response programs. We estimate that households and businesses in

the region will realize about \$900 million in net economic benefits over the lifetime of energy efficiency and demand response measures installed through utility programs in 2018 alone. In addition, there will be around 16 million metric tons of avoided CO₂ emissions over the lifetime of energy efficiency measures installed in 2018.

We established a strong foundation for future expansion of utility energy efficiency programs in Colorado and Nevada in 2018. Below is a summary of our Utility Program activities and accomplishments by state.

Arizona

Arizona has adopted stringent energy efficiency standards for investor-owned electric utilities (IOUs) requiring over 20% energy savings by 2020. The state's major IOUs, APS and TEP, are within reach of meeting the 2020 standards. As of 2018, the two utilities realized annual savings of about 5,350 GWh per year due to cumulative energy efficiency programs under the standards (excluding the demand response credits). This is equivalent to saving about 16 percent of retail sales for the two utilities combined.

In spite of the success of the EE standards, APS proposed deep cuts in its energy efficiency programs including eliminating residential and commercial/industrial (C&I) lighting programs, C&I refrigeration measures and air conditioning efficiency programs starting in 2018. APS argues that energy savings during daytime hours in the spring and fall are no longer as valuable to the utility as in the past given the growing penetration of solar resources; i.e., the duck curve issue. SWEEP has been opposing the program cuts arguing that the programs continue to provide value to the utility system the majority of the time and that APS has failed to demonstrate that the programs are no longer cost-effective.

In 2018, SWEEP mobilized feedback from businesses and customers opposing the program cuts proposed by APS. The Arizona Corporation Commission (ACC) has delayed acting on APS's proposed DSM program cuts and has still not responded to the proposed cuts as of May 2019. Unfortunately, APS implemented some cuts prior to the ACC taking up the 2018 programs plan. This led to a significant reduction in energy efficiency program expenditures and energy savings in 2018. However, we believe that our work helped to limit these unilateral program reductions and cuts, and also resulted in some proposed restoration of funding and energy savings for 2019.

With respect to Tucson Electric Power (TEP), SWEEP helped to convince the utility to propose increased funding for energy efficiency programs for 2018 and we then worked to support a favorable decision on this proposal by the ACC. ACC action on TEP's 2018 DSM plan was also delayed, but the Commission did finally approve TEP's plan in January, 2019. This will result in a rebound in program activity and energy savings in 2019. However, there were less energy savings from TEP's programs in 2018 relative to savings achieved the prior year.

Utility Integrated Resource Plans (IRPs) are another avenue for advancing energy efficiency policy in Arizona. In 2017, APS and TEP developed IRPs that emphasized the addition of new

gas-fired generating capacity while greatly scaling back energy efficiency and peak demand reduction efforts. SWEEP and its partners developed [Alternative Resource Portfolios](#) for both APS and TEP that consisted of much greater reliance on energy efficiency, demand response, renewable resources and energy storage compared to the utilities' plans. Our analysis showed that the Alternative Portfolios would save consumers hundreds of millions of dollars, reduce pollutant emissions, and reduce risk. We then facilitated a broad range of stakeholders including consumer groups, business groups, tribal representatives and clean energy groups to support the Alternative Resource Portfolios before the ACC.

In March 2018, the ACC decided on a 3-2 vote to “not acknowledge” the IRPs submitted by APS and TEP.¹ In the next round of IRPs, the utilities were directed to develop and analyze resource portfolios with less natural gas and more energy efficiency and other cleaner resources. The Commission also adopted a moratorium on gas generation through December 2018 based on joint comments filed by SWEEP and others, and the Commission recently extended that gas generation moratorium to August 2019.

SWEEP also engaged in considerable work with the Salt River Project (SRP) in 2018, supporting an expansion of SRP's energy efficiency and demand response programs. We were successful in convincing SRP to expand EE program funding in 2018 and 2019, and the energy [savings being achieved](#) by SRP is on the rise. SRP implements a wide range of energy efficiency programs for its customers including a pre-pay metering and education program.

Colorado

An important proceeding took place during 2018 to establish new energy savings and peak demand reduction goals, and consider changes to other DSM policies for Xcel Energy (the main utility in CO) during the years 2019-2023. The utility initially proposed lowering the energy savings goals based on a new DSM Market Potential study and other factors. Some interveners including Commission staff and the consumer advocate supported goals even lower than what Xcel proposed, while SWEEP and other energy efficiency advocates proposed higher energy savings goals.

Settlement negotiations in the proceeding resulted in most parties agreeing to continue the current energy savings goal of 400 GWh per year through 2023 rather than lower the goal (Settling Parties 2018). The Settlement Agreement also strengthened the shareholder incentive mechanism, supports geo-targeted DSM efforts on constrained distribution system feeders, and increases the non-energy benefits adders used in DSM program cost-benefit analysis.

The Commission deliberated in April, 2018 and [approved](#) the energy savings goal originally proposed by SWEEP which is a net energy savings goal of 500 GWh per year, equal to about

¹ The ACC does not accept or reject the utility IRPs but instead either acknowledges them or not. Voting to not acknowledge the plans essentially means the Commission was not supportive of the resource portfolios proposed by the utilities.

1.6 percent of Xcel's projected retail sales during 2019-23 (Colorado PUC 2018). This is a 25% increase relative to the goal of 400 GWh per year in effect during 2015-18. Other proposals advocated by SWEEP were also approved, including doubling the magnitude of the non-energy benefits adders used in DSM program cost effectiveness analysis.

In the latter half of 2018, SWEEP worked on a docket to review and approve Xcel Energy's 2019-20 DSM plan which was developed to meet the new higher energy savings goals approved by the CO PUC. SWEEP advocated for a number of innovative technologies and program features, a number of which were accepted by the utility and other interveners in the docket. A unanimous Settlement Agreement on the DSM plan was approved by the CO PUC in early 2019.

SWEEP also worked on a new three-year DSM plan for Black Hills Energy (BHE), a smaller utility in CO, in 2018. SWEEP was successful in convincing BHE (and other interveners) to significantly expand the DSM plan relative to what the utility initially proposed. The new 2019-21 DSM plan for BHE was approved by the PUC with funding levels and energy savings targets supported by SWEEP.

Nevada

In 2017, SWEEP and other energy efficiency advocates proposed new policies including stand-alone energy efficiency standards. Negotiations with NV Energy resulted in a compromise set of policies that the Nevada legislature adopted in 2017. The new legislation:

- Includes a declaration that it is in the public interest for utilities to maximize the implementation of cost-effective, achievable energy efficiency opportunities;
- Directs the PUCN to set energy savings goals for NV Energy;
- Requires cost effectiveness at the portfolio level rather than individual program level;
- Requires that at least 5% of total utility energy efficiency expenditures assist low-income households in saving energy; and
- Directs utilities and the PUCN to account for non-energy benefits in DSM program benefit-cost analysis.

The PUCN completed a rulemaking in 2018 to implement the new legislation, which SWEEP actively participated in. The proposed rules require NV Energy to achieve energy savings of at least 1.1 percent of sales from its programs each year.

In addition, SWEEP worked to influence the new three-year DSM plan that NV Energy submitted to the PUCN covering 2019-21. SWEEP helped convince NV Energy to propose restarting residential lighting and pool pump programs, and start a new low-income program. The new DSM plan is designed to save a total of 345 GWh per year on average during 2019-21, equivalent to saving about 1.15 percent of projected retail electricity sales annually. This is a big step up from savings levels achieved by NV Energy in recent years. SWEEP helped to negotiate a Settlement Agreement whereby all interveners supported the [expanded DSM plan](#), which was approved by the PUCN.

New Mexico

In New Mexico, SWEEP worked on a docket concerning a new 2019-21 DSM Plan for El Paso Electric Co. (EPE), one of the smaller electric utilities in the state. We developed a number of recommendations for improving EPE's plan as filed including maintaining a residential lighting program which EPE had proposed eliminating. This recommendation, as well as a few others, was approved by the PRC.

The three IOUs in New Mexico significantly ramped up their energy efficiency programs in recent years. Combined they are expected to save about 0.9 percent of retail sales annually from programs implemented in 2018, with savings from cumulative efforts equal to about 7.5 percent of total retail electricity use. The utilities are on track to meet the 2020 energy savings requirement in place in New Mexico as part of the Efficiency Use of Energy Act (EUEA).

During 2018, SWEEP developed and began building support for amendments to the EUEA that would establish energy efficiency standards for the period 2021-30 along with other related policies such as requiring the PRC to approve decoupling for any utility that requests it. Although it required considerable work, we were successful in negotiating agreements with PNM, EPE and other clean energy advocates about these policies. We then developed draft legislation that was introduced and enacted in the 2019 legislative session.

Utah

Rocky Mountain Power (RMP), a subsidiary of PacifiCorp, is the only investor-owned electric utility in Utah. SWEEP and its partner Utah Clean Energy (UCE) engaged in a number of activities aimed at expanding the scope and positive impacts of RMP's DSM programs during the grant period. In particular, we provided advice and comments as RMP revised its critical lighting efficiency programs for residential and business customers.

PacifiCorp's IRP, which gets updated every two years, continues to be the primary mechanism for establishing RMP's energy savings targets. Unfortunately, the most recent IRP calls for less energy savings in Utah than did the previous IRP. During 2018, SWEEP and UCE actively pushed back on reducing the energy savings goals. We facilitated a significant amount of feedback to the utility about this from businesses and other entities. As a result, we were successful in convincing RMP to not propose a large reduction in its DSM budget or energy savings targets in 2018, in spite of the conclusions in the most recent IRP. In addition, we advised RMP on ways it can and should maximize cost-effective energy savings and thereby best serve its customers.

We also worked on influencing the energy efficiency assumptions that will go into the next IRP that PacifiCorp is preparing, which is expected to be completed by summer, 2019. In particular, we tried to convince PacifiCorp to use more realistic assumptions about cost-effective energy savings potential which if accepted should lead to higher energy savings goals starting in 2020. This effort continued in early 2019.

TRANSPORTATION PROGRAM

SWEEP made significant progress on transportation initiatives in 2018 including on the multistate EV charging infrastructure campaign, utility engagement on transportation electrification, and state plans for investing VW Settlement funds. In addition, as described below, we were able to move forward on a state EV plan and move towards adoption of clean car standards in Colorado.

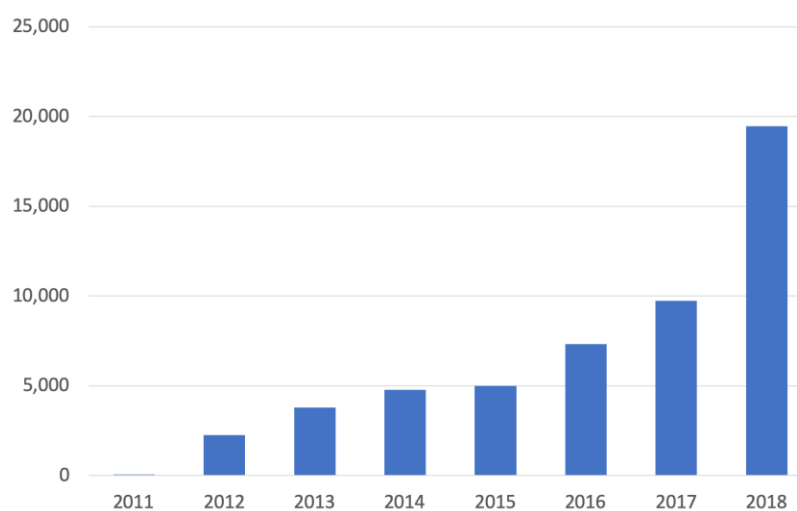


Transportation electrification in our region is accelerating. Sales of plug-in vehicles in our region doubled from 2017 to 2018. (See figure below) There are now more than 50,000 plug-in vehicles on our roads, and sales are growing faster than the national average. Colorado leads the pack with plug-ins accounting for more than 2.5 percent of annual passenger car sales in 2018. Arizona, Nevada and Utah were at or above 1.6 percent.

Multistate EV Charging Campaign

Late in 2016, the Governors of Colorado, Utah and Nevada announced that they would work together to build a regional electric vehicle (REV) charging network on interstate highways I-15, I-25, I-70, I-76, and I-80. We then worked closely with Colorado Governor Hickenlooper's energy advisor on an expanded 8-state REV West MOU which includes Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming. This broader MOU commits the states to work together to electrify all of the interstate highway corridors connecting the states - and sends a strong signal to state agencies in each state that they should support electric vehicle adoption. [Colorado](#), [Nevada](#) and [Utah](#) in particular are making substantial progress on building out their electric highway corridors.

2. Number of Plug-In Vehicle Sales in the U.S. Southwest by Year
(Source: U.S. Auto Alliance)



In November 2018, Governor Hickenlooper announced a \$10.3 million ALT Fuels Colorado grant through the Colorado Energy Office (CEO) to build a network of 33 electric vehicle (EV) fast-charging stations along the state's major transportation corridors.

Volkswagen Settlement Funds

We were successful in getting the maximum allowed level of 15% of the VW settlement funds allocated to light duty EV charging in Colorado, New Mexico and Nevada, and 11% in Utah. Arizona declined to invest any VW funds in charging infrastructure. The Colorado plan prioritizes investment in electric transit buses and school buses. In Nevada and Utah, electric buses are eligible and get greater levels of incentives than diesel or CNG vehicles, but there is no commitment to how much of the investment will go to electric buses.

In Colorado, we organized a broad coalition effort that brought many diverse voices to the stakeholder process. The draft plan reflected most of the elements that we proposed including the full 15% for light duty charging, as well as substantial funding for electric transit buses and school buses. The final plan, released in March 2018, had no substantive changes from the draft plan. We are now working with the incoming governor on an executive order to focus all of the funding on electrification.

In New Mexico, SWEEP's advocacy and organizing helped to convince the state to accept our recommendation that 15% of VW funds be allocated to light duty EV charging stations. However, the remaining 85% is largely slated for diesel replacement, and we have been advocating that the incoming governor rewrite the plan to focus more on electric buses and trucks.

In Nevada, we have worked with partners to provide public comment to the NV Department of Motor Vehicles task force. The task force initially released a draft plan that includes the full 15% for charging infrastructure. In addition, SWEEP worked with partners to provide advocate for a stronger focus on electrification of public transit. The final plan does set larger incentives for electric vehicles rather than diesel or CNG vehicles. And, in the initial funding round, over 80% of the funding ended up going to electrification of airport ground support equipment.

In Utah, we provided analytical support to a taskforce convened by the Utah Department of Environmental Quality, including analysis demonstrating that utility funding for EV charging is inadequate. We helped to convince decision makers to devote 11% of VW funds for EV charging infrastructure. The final plan allocates 74% of the funds to replacing diesel trucks or buses with new diesel, CNG or electric vehicles, but gives larger incentives for electric vehicle replacements.

Arizona Utility EV Work

SWEEP led a vigorous and successful effort in the last quarter of 2018, focused on Arizona utility EV policy. SWEEP held a series of meetings with ACC commissioners, and spoke at an

EV workshop urging the Commission to adopt an EV policy. The ACC voted three days later to direct staff to develop an EV policy for their consideration. SWEEP then partnered with Western Resource Advocates to contract with M.J. Bradley & Associates for an independent [analysis](#) detailing the many benefits of greater EV use in Arizona. The report found that increased adoption of clean EVs would reduce utility costs for Arizona families, reduce transportation costs for drivers, support the local economy, and improve air quality for all Arizonans. Among the findings, if Arizona develops policies to support a rapid adoption of EVs, reaching one million EVs on the road by 2030 and over 7 million by 2050, it would generate \$31 billion in net economic benefits statewide.

SWEEP worked with ACC staff to influence the draft EV policy, using the M.J. Bradley analysis to support a vigorous utility role in supporting transportation electrification, and developed a joint statement signed by 17 businesses, consumer organizations and NGOs. There was some opposition - notably from the Western States Petroleum Association and from the Arizona chapter of AARP - but the ACC voted 4-1 to adopt a [policy](#) that will enable utility investment in EV infrastructure, education and programs. We anticipate proposals from TEP and APS in 2019, based on the new policy.

Colorado Utility EV Work

In both 2017 and 2018, policies were proposed to allow IOUs to own electric vehicle infrastructure and to set out standards for PUC review of an EV plan. SWEEP helped to draft and support these policies. However, the policies failed after opposition from Americans For Prosperity. In response, SWEEP advocated that the PUC should develop a policy document in which the PUC would provide its interpretation on what types of utility investment and EV specific rate structures are appropriate under the existing statutes.

This effort helped to convince the PUC to establish a workgroup on a series of issues including appropriate rate structures for EV charging, both residential and nonresidential; recommendations around make-ready investments; and other strategies to promote beneficial load growth. SWEEP served on the workgroup; helped to recruit other workgroup members from transit agencies, local governments, and the state air agency; and played the key convening role to get two sets of joint comments from over 20 stakeholders, which largely shaped the final report to the PUC. The joint comments and final report may be viewed [here](#). We also advocated directly to Xcel Energy leadership that they propose a meaningful EV plan, and worked to build support for utility EV legislation that was enacted in 2019.

Nevada Utility EV Work

SWEEP joined with coalition partners to intervene in the docket that set the implementation rules for SB 145, the 2017 legislation that created the Electric Vehicle Infrastructure Demonstration program. In May, 2018, the Public Utilities Commission of Nevada (PUCN) issued regulations that include:

- Allocating \$15 million towards incentives for electric vehicles;
- Requiring NV Energy to prioritize fast charging along highways as well as the conversion of buses and other heavy-duty vehicles to electric vehicles;

- Allowing NV Energy to own and operate fast charging stations along highways. SWEEP submitted joint [comments](#) with the Natural Resources Defense Council, Sierra Club, and Western Resources Advocates during the development of the regulations.
- SWEEP also joined with the same partners to participate in the docket establishing NV Energy's first EV plan. We submitted comments, and participated in settlement negotiations. The PUC [approved the settlement](#) in June, 2018. The Commission action affirms that \$15 million is set aside for the EV program, and approves the initial annual plan. The plan includes customer incentives for Level 2 and fast charging in workplaces, fleets and multifamily housing; investment in fast charging along highway corridors to help implement the Nevada Electric Highway plan in conjunction with the Governor's Office of Energy; and a custom grant program that can fund projects such as transit electrification, complementing investments contemplated in the Nevada VW settlement [environmental mitigation plan](#). The stipulation also requires NV Energy to file a transitional demand tariff for fast charging.

Utah Utility EV Work

SWEEP joined with Utah Clean Energy to participate in the dockets implementing the Sustainable Transportation and Energy Plan legislation. The Utah Public Service Commission approved allowing Rocky Mountain Power to invest \$10 million over the next five years in electric vehicle (EV) infrastructure, providing customer education on EVs, and creating pilot time-of-use rates for EVs. RMP agreed to offer incentives up to \$7,000 for Level 2 chargers, and up to \$63,000 for DC fast chargers, as well as creating a custom grant program to allow larger proposals to be considered. The final decision incorporated multiple changes suggested by SWEEP and Utah Clean Energy.

Other Transportation Program Accomplishments

SWEEP proposed and facilitated conversations about the potential for Colorado to adopt the Clean Cars Program, otherwise known as the Low Emission and Zero Emission vehicle standards (LEV/ZEV). This grew into a major coalition effort, which led to Governor Hickenlooper issuing an [executive order](#) in June 2018 directing the state health department to initiate a rulemaking on adoption of the standards. The state Air Quality Control Commission [voted unanimously](#) in November to adopt the Low Emission Vehicle standards, and to direct the state health department to initiate a rulemaking on Zero Emission Vehicle standards in 2019. This effort will help counter any action to rollback national vehicle emission rules.

SWEEP also issued a [report](#) in 2018 on state and local policies that can help steer the self-driving car future towards shared and electrified vehicles. This is our first step towards serious engagement in this issue. Our key recommendations are that cities and states consider rules that:

- Incentivize, and ultimately require, automated vehicles (AVs) and ride-share companies (such as Uber and Lyft) to use battery-electric technology;
- Invest in the charging infrastructure required to transition AV and ride-share fleets to electric vehicles;

- Structure future vehicle emissions standards to provide incentives for AVs that achieve high-vehicle occupancy; and
- Create vehicle miles travelled (VMT) fees for AVs and ride-share companies that vary by vehicle occupancy - for example, a self-driving car carrying no human passengers or freight for delivery should pay a higher mileage fee than a vehicle with human occupants.

These recommendations have largely been incorporated into the [report](#) of the Mobility Choice Blueprint, which brings significant grass-tops support.

Colorado Transportation Funding

Over the last few years, SWEEP's efforts have placed multimodal transportation as an essential element of any transportation funding measures that move forward. In 2018, we were able to get agreement with three key interests - the Denver Metro Chamber of Commerce, the Colorado Contractors' Association, and the Metropolitan Mayors' Coalition - to include substantial investments in multimodal transportation in their policy proposals. Ultimately, language proposed by SWEEP was included in [Senate Bill 1](#), which increases state transit funding over the next two years by a factor of four. In addition, language proposed by SWEEP was included in ballot measure 153, which would increase state multimodal funding by more than a factor of ten. However, this measure was defeated by voters in November.

BUILDINGS PROGRAM

SWEEP helped states, cities and counties in the Southwest move forward with the adoption and implementation of either the 2015 and/or 2018 International Energy Conservation Code (IECC) in 2018. We communicated the benefits of the code for the environment and economy, and we worked with a large number of jurisdictions and stakeholders to promote state-of-the-art energy codes.



SWEEP promoted state and local adoption of commercial building benchmarking, transparency, and upgrade requirements for commercial, multifamily, and public properties, and efforts to expand benchmarking in privately-owned buildings. We worked with the cities of Reno, Fort Collins and Denver to adopt and then implement these ordinances in 2018.

We encouraged state energy offices and utilities to promote better code compliance and enforcement through trainings and webinars. We worked with energy office program managers to allocate funding for these training efforts as well as studies to better understand the levels of code compliance. We also urged utilities to fund code training activities in their service territories.

SWEEP engaged in a number of activities aimed at expanding the market for net zero energy (NZE) and zero energy ready homes and commercial buildings in 2018. We urged cities, counties and states to set NZE goals, adopt ordinances, and approve other policies to stimulate NZE and zero energy ready construction. In addition, we encouraged housing authorities to add zero energy options to qualified allocation plans for affordable housing.

In addition, SWEEP spearheaded efforts in the region to convince state and local governments to make state-of-the-art energy codes and NZE construction initiatives a priority in plans for achieving carbon emissions reduction goals.

SWEEP worked in 2018 to prevent any weakening of energy efficiency requirements in new homes that also included solar photovoltaic panels on roofs, energy storage or off-site renewable energy. As a result of our efforts, communities in Arizona and Nevada retained the beneficial levels of energy efficiency in the 2015 or 2018 IECC, while also providing a pathway for builders to include solar PV systems in their new dwellings.

By the end of 2018, 70% of all construction activity for the year fell under one of the two latest energy codes (see chart below). The majority of buildings in most states were constructed

under the 2018 IECC or 2015 IECC. In Arizona, 48% of construction occurred in municipalities that had adopted the 2018 IECC, while 30% occurred in municipalities on the 2012 IECC. In Colorado, 60% of new construction occurred in communities under the 2015 IECC, with 12% on the 2018 IECC. In Nevada, 93% of construction occurred in communities that adopted the 2018 IECC. Even in Wyoming, 45% of new construction occurred in communities that had adopted the 2015 IECC.

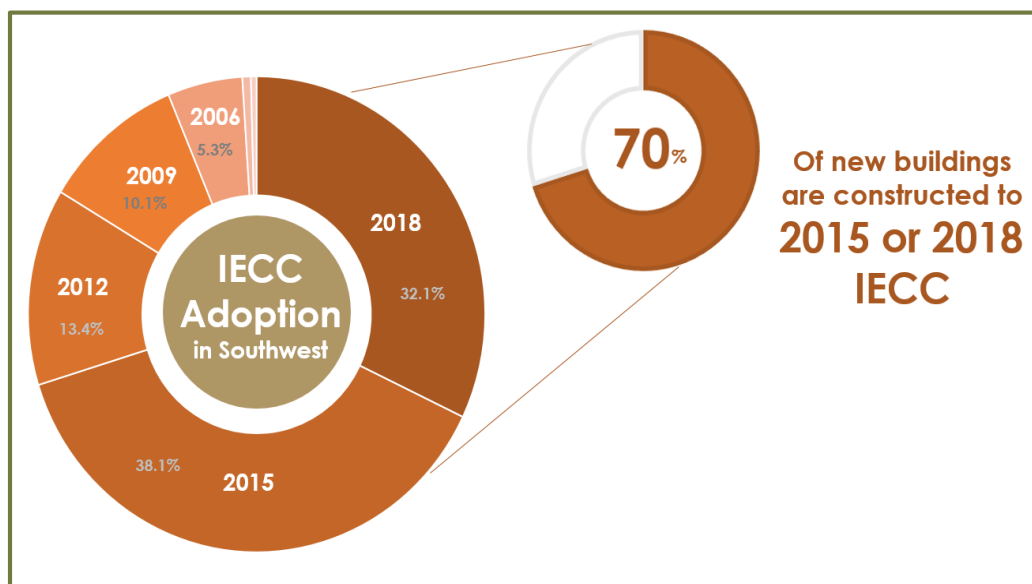
Arizona

SWEEP worked extensively in Arizona during 2018 to assist municipalities in adopting the 2018 IECC. Phoenix adopted the 2018 IECC in June with implementation starting in fall 2018. This city has approximately 20% of residential construction activity in the state. Elsewhere in the state the jurisdictions of Tucson, Pima County, Peoria, Mesa, Tempe, Avondale and Glendale adopted the 2018 IECC. In addition, we provided comments and proposed changes to the state building official association (AZBO) template of local amendments and to the City of Flagstaff to help them align their energy code with their climate goals.

Colorado

In Colorado, we worked with a diverse set of stakeholders to provide education, training, materials, and support to advance energy codes at the local level. There are now approximately 87 jurisdictions in the state that have adopted the 2015 or 2018 IECC. Successful adoption wins in 2018 include Colorado Springs and the surrounding communities adopting the 2015 IECC with minimal changes. Much engagement and negotiation was needed to achieve this outcome. The 2018 IECC was advanced in Adams and Jefferson County which are located in the Denver Metro area and a few smaller Colorado communities with another 10 reviewing, and planning on moving ahead in the first half of 2019.

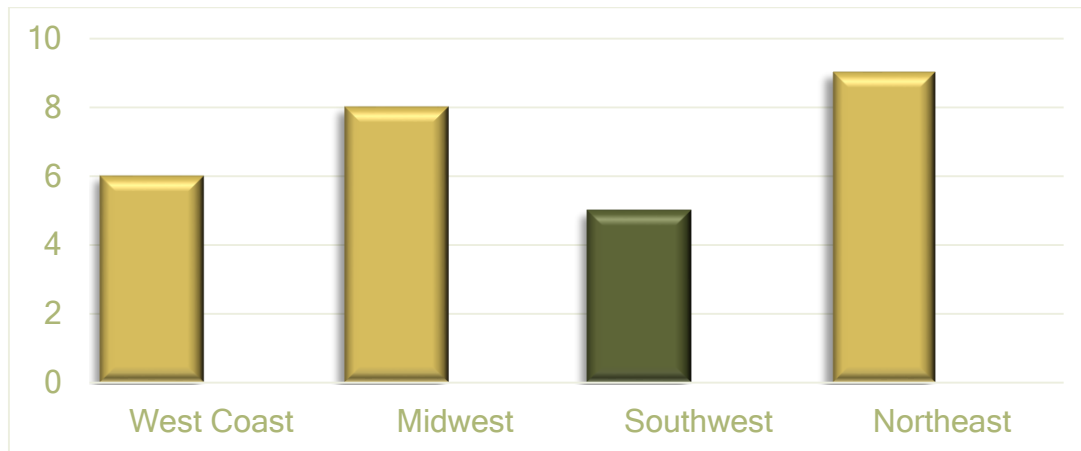
3. Energy Code Penetration in Southwest



The City of Fort Collins became the 25th city nationally to adopt a benchmarking and

transparency policy for commercial and multifamily buildings. The ordinance is innovative as it will apply to buildings 5,000 square feet and up whereas other cities only include much larger buildings; and second, it includes water benchmarking as well. As with many similar policies across the country, Fort Collins will phase in the benchmarking and transparency requirements over time. This new ordinance helps reinforce how not just larger cities but medium-sized cities as well can benefit from benchmarking and transparency policies that help businesses identify energy efficient (and inefficient) buildings.

4. Number of Cities with Benchmarking Ordinances by Region



Nevada

Significant work was carried out in Nevada to assist the state in adopting the 2018 IECC.² As a result, the state adopted the 2018 IECC with no amendments. In southern Nevada the communities of Las Vegas, Henderson, and Clark County adopted the 2018 IECC during the third quarter of 2018. Boulder City and North Las Vegas have indicated they will move forward in first quarter 2019. In northern Nevada the City of Sparks and Washoe County adopted the 2018 IECC. We provided extensive input to retain a strong foundation of building efficiency in residential codes in Nevada, before a solar credit is allowed, and were successful with this effort in all local adoptions during 2018.

Reno's City Council passed a benchmarking ordinance in January, 2019, after much work in 2018 to position the ordinance for adoption. The ordinance is expected to save \$62 million on energy bills, create 300 local jobs, provide \$14 million in air quality benefits by 2030, as well as promote Reno's position as a leading sustainable city to attract new businesses and investments. The new ordinance requires commercial and multifamily buildings above 30,000 square feet to track and report on energy usage over time.

New Mexico

In 2018, we laid the groundwork to advance the statewide energy code in New Mexico. SWEEP worked extensively on the New Mexico Energy Roadmap with a large and diverse

² The state of Nevada adopts an energy code that applies in parts of the state that do not adopt a local code.

stakeholder group, and one of the key outcomes was a recommendation to adopt the 2018 IECC. Presentations and discussions were provided to the state building department on the importance of advancing the energy code, with direct reference to the energy roadmap report. Action on this front is expected in 2019.

The City of Albuquerque has commenced review of the 2015 IECC with plans by local leadership to adopt one of these up-to-date energy codes in 2019. The goal is to have the state adopt the 2018 IECC which will require Albuquerque to update from the 2015 IECC.

Utah

Utah has legislative requirements that prevent modifying the residential provisions of the energy code more than once every six years, but does not have the same requirements on the commercial energy code. SWEEP and its partner Utah Clean Energy (UCE) participated in code development committee meetings, where we provided cost analysis (a legislative requirement) and economic and environmental benefits of adopting the 2018 IECC for commercial buildings at the state level. SWEEP and UCE also advanced specific residential provisions that meet the legislative requirements but would provide additional energy savings in new homes in Utah. The state legislature adopted the 2018 IECC for commercial buildings in 2019.³

Heat Pump Study

SWEEP completed a study titled [Benefits of Heat Pumps for Homes in the Southwest](#). The study analyzes whether heat pumps are cost-effective for consumers and would reduce energy consumption and greenhouse gas (GHG) emissions in five major southwestern cities. It considers installation of heat pumps for space heating in both new and existing homes, as well as heat pump water heaters, as a substitute for natural gas heating which is currently the predominant fuel source for heating in the region. The study found the following:

- For new homes, ductless mini-split heat pumps are cost-effective in all areas of the Southwest and reduce GHG emissions by 19-46 percent.
- For existing homes, heat pumps are cost-effective in Phoenix and not in other cities, but do reduce primary energy use and GHG emissions.
- Heat pump water heaters yield large primary energy and GHG emissions savings compared to gas water heaters, but are not yet cost-effective on a lifecycle cost basis without a subsidy.

The study recommends incentives for ENERGY-STAR rated ductless heat pumps in new homes and for heat pump water heaters, and for heat pumps in existing homes that currently use electric resistance or propane heating. The study also recommends education and market transformation efforts in order to increase product availability, consumer and builder awareness, and proper installation practices. The study is being used to advise policymakers and other stakeholders interested in the topic of beneficial electrification in buildings.

³ Utah's mandatory statewide energy codes must be approved by the state legislature.

INDUSTRIAL PROGRAM

SWEEP's industrial energy efficiency efforts in 2018 included:

- Encouraging utilities in the Southwest to adopt best practice energy efficiency programs for industrial customers;
- Working with Boulder County's Cannabis Steering Committee to improve energy efficiency in the county's cannabis grow operations;
- Promoting industrial efficiency in CO and UT through voluntary networking meetings and recognition programs.



Utility Industrial Energy Efficiency Programs

SWEEP provided input to several of our major utilities regarding [Strategic Energy Management](#) (SEM) programs in 2018. We encouraged Xcel Energy to offer an SEM cohort program and an industrial re-commissioning program, which Xcel agreed to do as part of its 2019-20 DSM plan. Adding these two new programs will help Xcel to achieve its overall energy-savings goal. SWEEP also provided comments to help Xcel increase its energy savings from the Energy Information Systems (EIS) program, which is a SEM program delivered to customers on an individual basis.

In April 2018, with support from our contractor Stillwater Energy and in partnership with NV Energy, SWEEP presented a four-hour SEM workshop to energy managers of several university and large school districts in Nevada. The energy managers were participants in NV Energy's pilot energy manager co-funding program.

SWEEP led two teleconference discussions on SEM programs for all the major utilities in our region with SEM or SEM-related programs in 2018. We discussed the characteristics of good potential SEM customers, and how to do outreach to recruit these customers into an SEM program.

Cannabis Energy Efficiency

Colorado and Nevada legalized the recreational use of marijuana in 2012 and 2016, respectively. New Mexico and Arizona also allow the use of marijuana for medical uses. Cannabis cultivation is an energy-intensive operation, about ten times as intensive per square foot as commercial offices. Cannabis production now accounts for about 1% of Colorado's total electricity consumption.

In 2018, SWEEP served on the steering committee for Boulder County's Cannabis "Energy Impact Offset Fund." The steering committee makes suggestions to the Boulder County Commissioners regarding how to spend the money in the fund, collected from growers based on a charge of \$.02/kWh of electricity consumption. In October, SWEEP helped coordinate the first workshop on energy efficiency opportunities for Boulder County cannabis operations. The workshop was well-attended, and the participants seemed enthusiastic about pursuing the energy efficiency opportunities presented.

SWEEP also collaborated with Denver's Cannabis Sustainability Working Group, and is helping this group promote energy efficiency best practices. And in the fall of 2018, SWEEP began planning a national webinar on policies and programs to improve energy efficiency for cannabis grow operations. We identified several speakers and planned the agenda for this webinar, subsequently delivered in the spring of 2019.

Industrial Networking and Recognition Programs

In 2018, SWEEP organized and led three networking meetings for Colorado industrial facilities. All meetings were well-attended and featured discussions on specific topics such as energy-efficient lighting and SEM.

In Utah, SWEEP's partner Utah Clean Energy coordinated an [industrial energy efficiency recognition event](#), which was held at the Utah State Capital in September 2018. Three companies with facilities in Utah - Holcim, J.R. Simplot Company and Kihomac, Inc. - received the 2018 Excellence in Energy Efficiency Award. Utah Clean Energy also coordinated one networking meeting in 2018.

COMMUNICATIONS

Our communications efforts in 2018 supported public, news media, and social media outreach to help each of SWEEP's programs achieve, or make significant progress towards, key strategic objectives. In addition, communications staff helped program staffers write, edit, and publish numerous reports and blogs during the year. These efforts enabled SWEEP to boost its profile both nationally and in our region.⁴

NEW CLEAN ENERGY BILLS >



The transportation program garnered considerable coverage in 2018. For example, the prestigious national policy publication [Stateline](#) covered the ways many states plan to use VW emission fraud settlement funds to encourage deployment of electric vehicles and thereby improve their air quality, and quoted SWEEP Transportation Program Director Will Toor. KCNC-Channel 4 in Denver broadcast a lengthy news story about the increasing popularity of electric vehicles, relying heavily on information from SWEEP. Forbes magazine's online publication covered SWEEP's report on electric vehicle group-buy programs and quoted SWEEP Senior Transportation Associate Matt Frommer. In addition, SWEEP or its partner Utah Clean Energy were quoted in stories about EVs in the Denver Post, Denver Business Journal, Deseret News, Tucson Daily Star, and elsewhere in 2018.

The utilities program, too, made the news in several states. For example, in Arizona, both the [local](#) media and national [trade](#) publications covered SWEEP's opposition to proposed cuts in utility efficiency plans. The utility program also earned [news](#) coverage when it joined with three other clean energy groups to oppose Nevada's ballot Question 3, the Energy Choice measure. In addition, Colorado Politics ran a [feature story](#) on SWEEP in 2018.

The buildings program remained active both through the news media coverage and on social media. A national trade publication used one SWEEP blog as a basis for its story "[2009 Called](#). It Wants Its Energy Code Back." Also, SWEEP presented its 2018 Energy Codes Count Award to Henderson, NV - an event that prompted a positive local [television](#) story.

The industrial program gained national attention with its report on energy efficiency potential in the cannabis industry. The report received national trade publication [coverage](#) well into 2018.

⁴ See <http://www.swenergy.org/press-coverage/archive> for all press coverage in 2018.

SWEEP's social media outreach continued to broaden our audience, with our Twitter feed surpassing all other platforms both in number of SWEEP followers and the frequency with which they share our tweets or comment on our items. Across all social media platforms, all of SWEEP's followers, likes, shares, and comments are organic, so they represent real people with real interest in our work and messages; we do not use bots or other tricks to boost readership or our results.

The figures below reveal the growing reach of our communications efforts in 2018:

- **Number of earned media news stories in 2018:** over 60
- **Number of blogs published:** 19
- **Facebook** followers as of end of 2018: 565 (up about 10% in 2018)
- **LinkedIn** followers: 225 (up in 2018)
- **Twitter:** 2,300 followers (up about 200 in 2018)

OTHER ACTIVITIES

SWEEP held its [Fifteenth Annual Southwest Utility Energy Efficiency Workshop](#) in Santa Fe, NM in 2018. The workshop provided a forum for discussion of the latest trends and emerging themes in utility DSM programs in the region. The 2018 workshop also featured presentations on the role that high efficiency heat pumps could play in future utility programs, grid-integrated homes and how connected technologies are changing the DSM landscape,



the potential impact of national lamp efficiency standards on utility programs, energy efficiency opportunities in water and wastewater treatment facilities, and more.

SWEEP continued its partnership with the U.S. Department of Energy and other regional energy efficiency organizations (REEOs) in 2018. With funding from DOE, all six REEOs worked within their regions in areas of mutual interest such as building code education and support, assistance to state and local governments, and advancing energy efficiency in the industrial sector.

SWEEP presented its [Leadership in Energy Efficiency Award](#) to one individual in 2018: Steven Bean, manager of energy efficiency and demand response programs for Public Service Company of New Mexico (PNM). Mr. Bean led PNM's energy efficiency programs since 2008 and retired in early 2019.

SWEEP continued to expand its successful [Allies Program](#) in 2018. The program involves solicitation of financial support from energy efficiency businesses and other organizations that support SWEEP's mission. The Allies Program, launched in 2014, had 39 participants at the end of 2018.

PUBLICATIONS

The following reports were published in 2018 and are available on the SWEEP web site at: <http://www.swenergy.org/publications>

Electric Vehicle Cost-Benefit Analysis. Report prepared by M.J. Bradley & Associates for SWEEP and Western Resource Advocates. Dec. 2018.

W. Toor. **Transportation Electrification in Nevada.** Nov. 2018.

EV-Ready Building Codes: Preparing new buildings for EV charging stations. Oct. 2018.

W. Toor, M. Salisbury and M. Frommer. **Shared, Electric, and Self-Driving: How states and municipalities can encourage autonomous vehicles to be shared and electric.** Sept. 2018.

GoEVCity Colorado. SWEEP and partner organizations. Sept. 2018.

Home Energy Rating Variability Study: A Comparison in New Single-family Homes. Report prepared by SWEEP and partner organizations. Sept. 2018.

W. Toor. **Economic Benefits Provided by The Roaring Fork Transportation Authority: 2011-2018.** Aug. 2018.

H. Geller. **Maintaining Strong Utility Energy Efficiency Programs Beyond 2018: Challenges and Prospects in the Southwest.** Aug. 2018.

E. Burgess, J. Schlegel and E. Zuckerman. **Is the "duck curve" eroding the value of energy efficiency?** Aug. 2018.

M. Frommer. **Electric Vehicle Group Buy Programs: Handbook and Case Studies.** July 2018.

N. Kellogg. **Is it Possible to Buy a Zero-Energy Ready Home without Breaking the Bank.** July 2018.

N. Kolwey and H. Geller. **Benefits of Heat Pumps for Homes in the Southwest.** June 2018.

C. Brinker. **Five Trends and Observations in Energy Codes - Colorado Edition.** May 2018.

C. Brinker. **Energy Codes Are Life-Safety Codes.** March 2018.

M. Salisbury. **Electrifying Transportation: Boulder County's Clean Future.** Jan. 2018.

SUPPORTERS

SWEEP is grateful for the financial support it received from the following organizations in 2018:

- Anonymous Foundation
- Denver Foundation
- Catena Foundation
- Colorado Energy Office
- Conservation Colorado Education Fund
- Edwards Mother Earth Foundation
- Energy Foundation
- Heising-Simons Foundation
- Natural Resources Defense Council
- Turner Foundation
- U.S. Department of Energy
- U.S. Environmental Protection Agency
- Boulder County, CO
- Black Hills Energy
- Dominion Energy
- El Paso Electric Company
- New Mexico Gas Company
- NV Energy
- Public Service Company of New Mexico
- Rocky Mountain Power
- Salt River Project
- Southwest Gas Company
- Tucson Electric Power Company
- Xcel Energy



In addition, SWEEP thanks its Allies for their financial support. See the [SWEEP Allies list here](#).

STAFF AND STATE REPRESENTATIVES (JUNE 2019)

- Howard Geller, Executive Director
- Justin Brant, Senior Associate Utility Program
- Christine Brinker, Senior Associate Buildings Program
- David Ellenberger, Director of Communications
- Matt Frommer, Senior Associate Transportation Program
- Kirsten Frysinger, Operations Director
- Nancy Kellogg, Program Associate Buildings Program
- Neil Kolwey, Industrial Program Director
- Travis Madsen, Transportation Program Director
- Caryn Massey, Arizona Program Associate
- Jim Meyers, Buildings Program Director
- Ellen Zuckerman, Senior Associate Utility Program
- Jeff Schlegel, Arizona Representative
- Tammy Fiebelkorn, New Mexico Representative
- Tom Polikalas, Nevada Representative
- Kevin Emerson and Sarah Wright, Utah Representatives

