

How to Boost Arizona's Economy & Protect Ourselves Against Rising Energy Costs: A SWEEP Guide to Energy Efficiency and Decoupling

What's the problem?

Arizona's gas and electricity costs keep rising. Every year we send more than \$4 billion out of state to pay for our utilities. That's about half of what Arizona spends each year on health care. It's a drain on our economy and pocketbooks, and it means fewer jobs in Arizona. Meanwhile, power generation consumes precious resources like water and dirties our air. This air pollution sickens Arizonans and ups our health care costs by, for example, increasing asthma attacks. Unfortunately, all of these expenses are expected to keep growing unless we do something to rein them in.

What Can We Do?

The least expensive solution is to use energy more efficiently. Just as car owners can save on gas when they properly maintain their vehicles, homeowners can save on electricity with simple fixes like patching leaks in their walls and changing air conditioner filters. Such actions can reduce our utility bills immediately while making our homes more comfortable by eliminating drafts. In addition to these kinds of actions, there is a whole suite of energy efficiency programs available to help Arizonans slash energy waste and save on utility bills. For example, the Home Performance with Energy Star program brings an energy expert to your house to help you diagnose and solve your home's energy problems. The Duct Test and Repair program will set you up with a certified contractor that will repair your cooling system's leaks so that you don't throw away money unnecessarily cooling your attic because of holes in your ductwork. And, if you are thinking about constructing a new home, the Residential New Construction program will work with your builder to ensure that your future residence incorporates the latest advancements in technology and building techniques so that is as comfortable and energy efficient as possible. These are just a few examples of the many opportunities available -- more energy-saving programs for residents and small and large businesses are offered by your utility provider at reduced costs for customers.

How will energy efficiency control costs?

Energy efficiency controls costs in two important ways. First, the least expensive energy is the energy we don't have to generate. Energy efficiency costs between 2-4 cents per unit of electricity saved, while the cost of generating electricity with existing power plants is around 6 cents; and the cost of generating electricity with future power plants (like new coal plants) costs between 8-25 cents. See Figure 1. Second, reducing energy waste saves us money in the long run because it means we don't have to pay for the construction of new power plants and transmission lines.

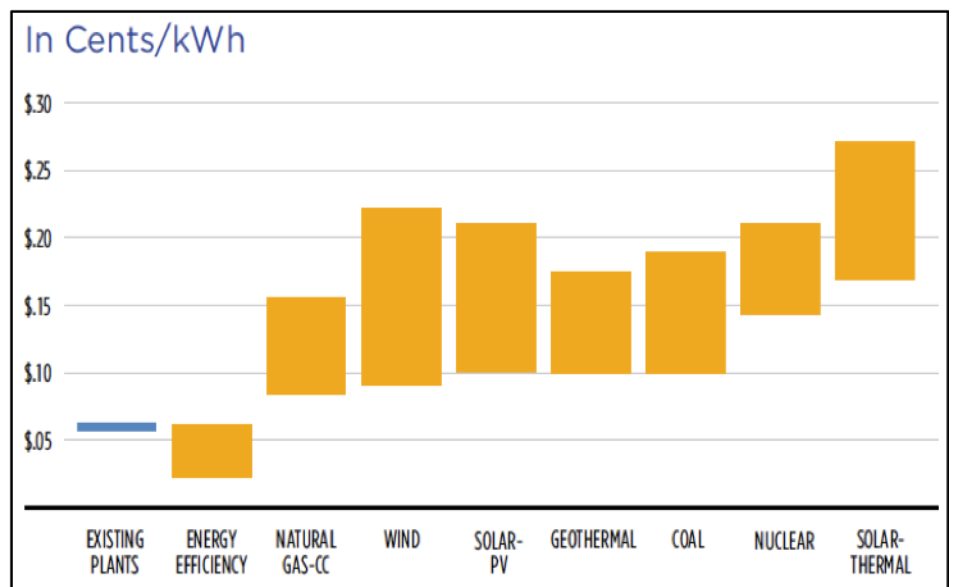


Figure 1: Arizona Public Service Company's Cost to Generate Electricity by Energy Source. Energy efficiency is the least expensive energy resource and costs less than existing and future resources. Source: Arizona Public Service Company, 2010.

Why is that?

When more customers use more energy, we eventually need to build new infrastructure like new power plants and transmission lines to meet these growing needs. Notably, customers pay for the cost of this new infrastructure PLUS interest through their energy bills, and new power plants and transmission lines are expensive. Energy efficiency reduces energy usage of the overall system, pushing off the need for us to construct and pay for this costly new infrastructure. In this way, energy efficiency lowers future bills and buys time. For example, instead of having to build and pay for a new power plant two years from now, increased energy efficiency can postpone the need for this new power plant by ten or fifteen years. This additional time allows for new technologies to develop and prices of emerging technologies to become more cost competitive. In the end, Arizona will only have more and better energy options to consider.

Are there other benefits?

Yes. Energy efficiency is a boon for the economy: It helps businesses gain a competitive edge (thanks to new found savings) and creates local jobs that cannot be outsourced. In addition, when residents save on energy bills, they redirect their savings to the local economy – strengthening the local restaurants, stores, and businesses. It also helps the environment by reducing air pollution and water consumption and helps to make our centralized power system less vulnerable to unexpected events like terrorist attacks, natural disasters, and severe weather (including dust storms). See Figure 2.

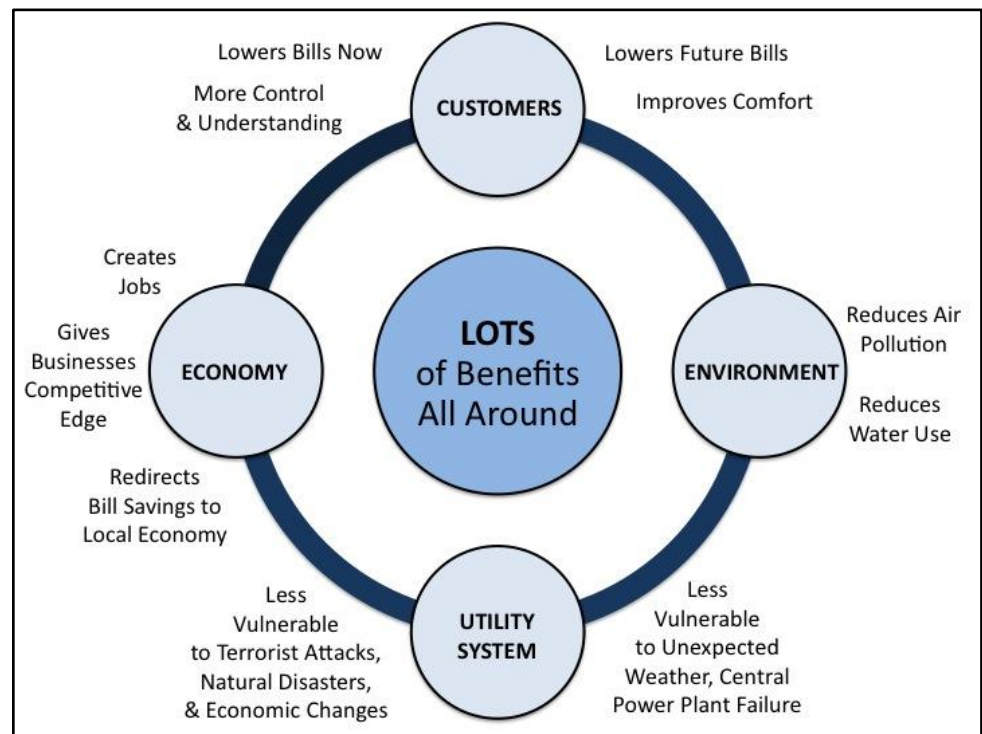


Figure 2: The Benefits of Energy Efficiency. Energy efficiency is beneficial for customers, our economy, our environment, and the utility system.

What's stopping us? Most people lack the time, money or expertise to do energy efficiency themselves, especially for those improvements that generate the biggest savings like installing insulation in our attics or having our air conditioners serviced. The other big barrier is that traditional energy utilities don't want us to conserve.

Why not? Because utilities lose money when we conserve electricity and natural gas and make money when we waste it and use more. The more energy they sell, the higher their profits.

Why is That? This is a consequence of the way that regulators set utility rates, or the amount that you are charged on your utility bill per unit of energy consumption.

How are rates set?

Rates are set during a rigorous vetting process, which takes months and sometimes years. During this process utility regulators and other parties advocating on behalf of customers and other interests, determine the exact revenue required for a utility to safely and reliably provide power – no more, no less. A projection of how much energy the utility will sell (based on past experience) is also determined. Finally, the exact revenue required for the utility to safely and reliably provide power is divided by the projection of energy sales, to arrive at the rate you're charged. See Figure 3.

What is the problem with this method?

This traditional method of setting rates puts customer and society interests in direct conflict with utility financial interests because it creates three possible scenarios:

- 1) If the utility sells less energy than projected, it makes less than required for the delivery of safe, reliable service.
- 2) If it sells the same as projected, it makes exactly enough for the delivery of safe, reliable service.
- 3) If it sells more than projected, it makes more than required for the delivery of safe, reliable service.

In other words, when we invest in and benefit from energy efficiency, utilities cannot recover their fixed costs of delivering us energy (i.e., scenario 1). And when we waste -- sending money and jobs out-of-state and polluting our air -- utilities make money (i.e., scenario 3). Ultimately, this waste hurts our pocketbooks because it leads to the need for more energy infrastructure, which drives up our bills.

See Figure 4.

Can we do something to change this?

Yes. We can require utilities to help us use energy more efficiently and modify their business model.

Why should we require them to help us?

Utility support for energy efficiency is crucial. Utilities make investments in energy on our behalf so we want them to invest in resources that are best aligned with our interests. Utilities also touch many customers and understand customer energy usage, so they can craft programs that best meet the needs of Arizonans while delivering those programs cost

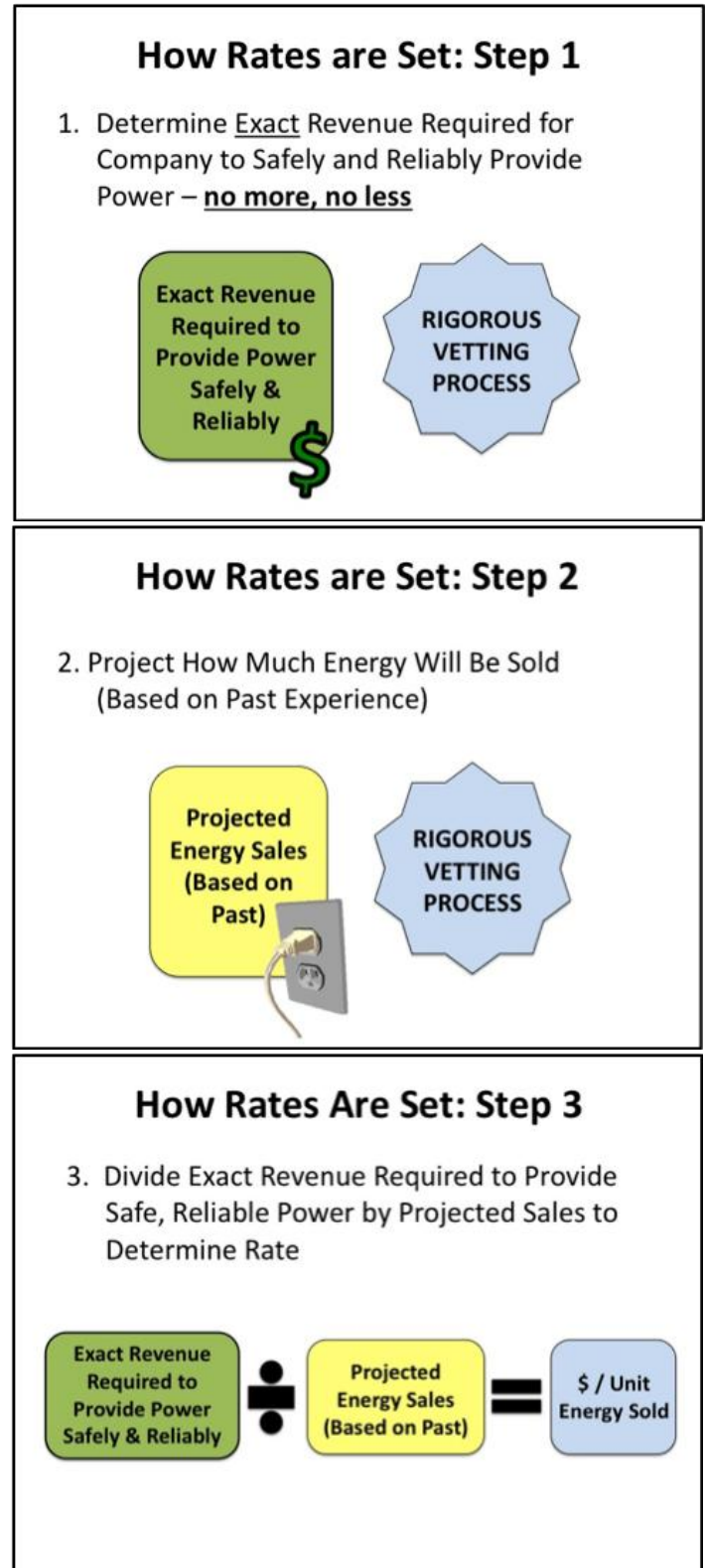


Figure 3: The Three Steps Involved in Setting Rates

efficiently and broadly. Additionally, utilities have a presence in political and economic arenas; have a lot of clout; and are at the nexus of partnerships among builders, inspectors, customers, stakeholders, companies, and policymakers, so they are in a unique position to advocate for energy efficiency practices and policies that benefit Arizona including the development of more energy-efficient appliances and building practices. Finally, customers often turn to utilities when they need help managing high bills. So utilities play an important role in introducing residents and businesses to the availability of energy efficiency offerings.

How do we require them to help us?

The good news is that last year Arizona passed rules that require natural gas and electric companies to help us use energy more efficiently. Arizona’s utilities are now developing, expanding, and launching energy efficiency programs like the Home Performance with Energy Star program mentioned earlier. These programs will make our homes and businesses more efficient and reduce the amount of gas and electricity we need to buy. All you have to do is enroll.

How can we modify utility companies’ business models?

By changing how they are allowed to make money. In 30 states, gas or electric companies practice what is called “decoupling.” With decoupling, utility companies do not make money based on how much electricity or gas they sell. Instead, the amount of money they make is based on how well they serve customers, how many customers they serve, and how well they cut expenses.

How are rates determined with decoupling?

Under decoupling, rates are still based on the same vetting process, projections, and experiences discussed earlier, but with a few important differences:

- If utility companies take in the exact revenue required for them to deliver service safely and reliably, nothing happens.
- If they take in more revenue than required to deliver service safely and reliably, customers get a refund of the total amount over-collected. Rates go down by a few percentage points.
- If utility companies take in less revenue than required, rates go up by a few percentage points. Although the potential refund you get is unlimited, rate increases are constrained by 3%.

Either way, utility company revenues aren’t tied to how much gas or electricity is used. See Figure 5.

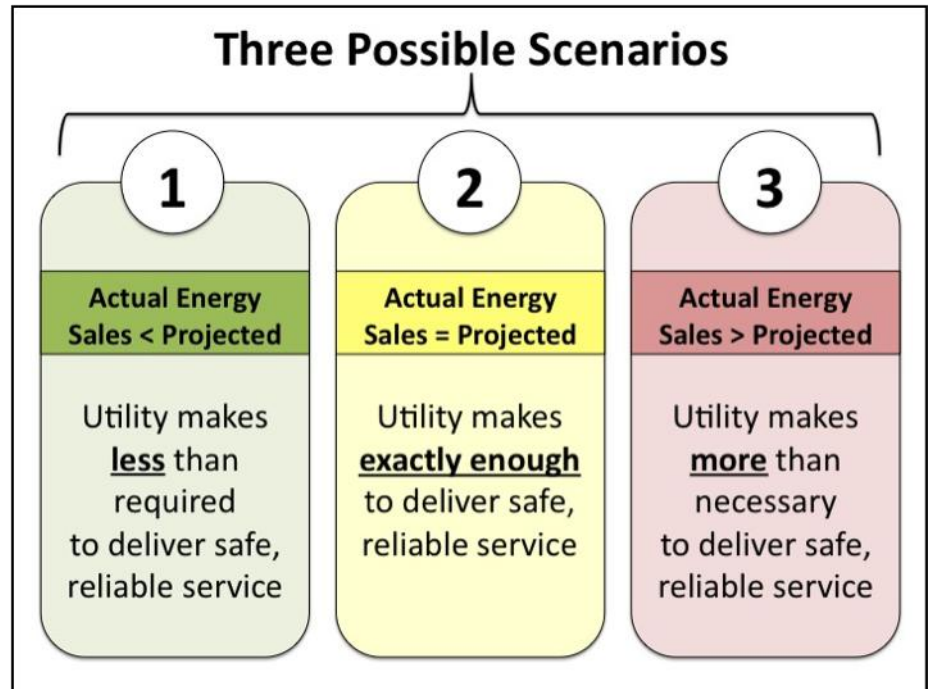


Figure 4: Three Scenarios that Arise as a Result of Traditional Rate Setting. This method of setting rates puts the interests of customers and society in direct conflict with the financial interests of utilities

How will this impact my utility rates?

Instead of your rates being steady and then suddenly jumping up dramatically because of a rate hike, changes in rates will be more gradual, changing slightly every month. When combined with energy efficiency, your monthly utility bill will go down even if your rates go up.

How?

By making your home more efficient and reducing the amount of gas and electricity you need to buy through energy efficiency offerings and programs. Decoupling just makes these programs financially feasible by aligning customers' interests with utility companies' interests, allowing utility companies to establish and promote the energy efficiency programs that save us cash. Over the long run, rates stay lower because utility companies don't have to build new power plants, which we pay interest on and are one of the most expensive items on our bills.

Decoupling on its own won't impact our bills, but when combined with effective energy efficiency, our bills will go down.

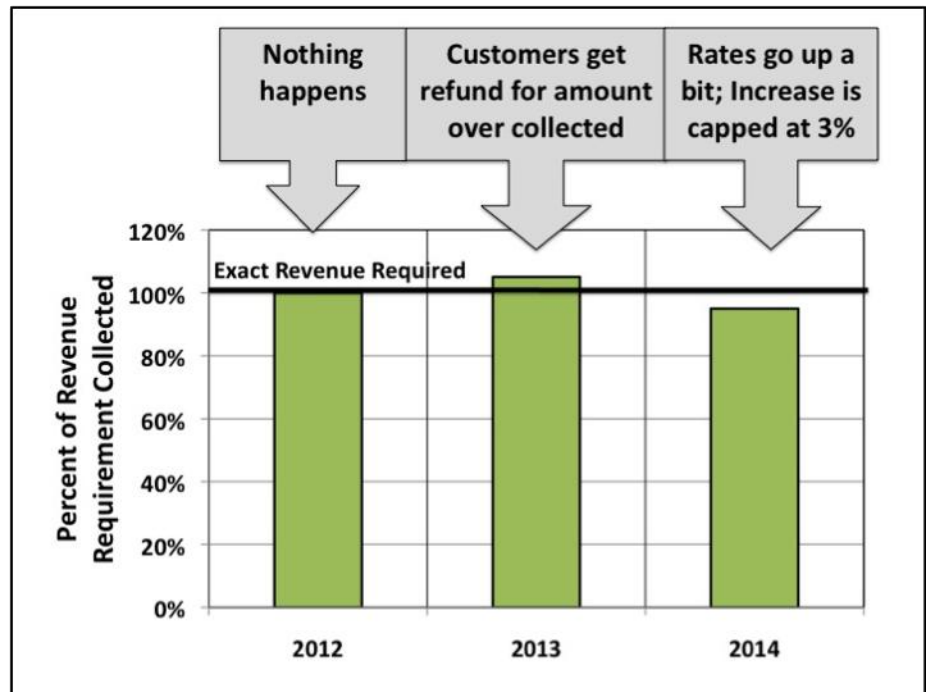


Figure 5: The Mechanics of Decoupling. When a utility takes in the exact revenue requirement, nothing happens. When it takes in more, customers receive a refund for the total amount over-collected. When it takes in less, rates go up a few percentage points, but that increase is capped.

How are these energy efficiency programs paid for?

The energy efficiency programs have to pay for themselves: the costs must be more than offset by savings. Energy efficiency programs are analyzed and monitored to make sure they do this and stopped if they don't. Some of these programs require an initial investment that comes from ratepayer money, but that investment is less than the amount that ratepayers will save. The common sense behind these programs is easy to understand: when we use energy more efficiently, we will save money.

What's the other option?

Do nothing. Under this scenario, our rates and our monthly utility bills will go up dramatically in coming years. Arizonans will continue to send more and more money out of state. There will be fewer jobs and a weaker economy in Arizona, and it's less likely that we get rid of the drafts in our houses. Meanwhile, utility companies will under-recover their fixed costs; be reluctant and unenthusiastic about helping their customers save; and will file rate cases more frequently leading to higher utility bills for customers and sudden rate hikes.

How do we know that decoupling and energy efficiency really work?

Decoupling and conservation programs have already been demonstrated to save money and energy in other states, and an independent, scientific analysis by the Lawrence Berkeley National Laboratory found that ratepayers in Arizona would save billions of dollars with decoupling and energy efficiency programs. The Arizona Corporation Commission also screens energy efficiency programs to ensure that the benefits of these programs outweigh the costs. Decoupling and energy efficiency programs will be monitored, and if they are ineffective, they will be stopped.

How can I find out about energy efficiency programs available for me or my business?

- If you are an Arizona Public Service Company (APS) customer, you can find out more at:
http://www.aps.com/main/green/choice/choice_20.html
- If you are a Southwest Gas customer, you can find out more at:
<http://www.swgasliving.com/rebates?whoami=Homeowner>

What about impacts on low-income residents and seniors?

Energy efficiency programs are available for low-income residents and seniors and will be especially beneficial for those on fixed-incomes as they will leave more of the limited dollars available for other household needs. All of these programs will help seniors and low-income residents keep their utility bills more affordable. There are also specific energy efficiency programs targeted at low-income residents, such as low income weatherization programs that help these customers upgrade their homes at no cost to the occupants.

What happens next?

Last year, the Arizona Corporation Commission, the government body that regulates Arizona's utilities, unanimously adopted a policy statement on decoupling. This statement outlined how decoupling should best be implemented for Arizona using lessons learned from other states. The Commission is now considering the implementation of decoupling for two utilities -- Southwest Gas and Arizona Public Service Company -- using the Commission's policy statement as a guide. Final decisions are expected this fall and next spring.