

HELPING MEMBER CITIES, COUNTIES, AND SPECIAL USE DISTRICTS SAVE SINCE 2001

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# ENERGY CONSERVATION 101



MAKE A POWERFUL CHOICE



# DIY Energy Conservation Tips

- 1.** Do an audit. Double check each meter location against the associated numbers found on your bill. You may have meters that are no longer in use and each one removed will save you monthly transmission and distribution fees—even those that draw zero electricity.
- 2.** Remind employees to turn off office lights when they leave.
- 3.** Inspect building HVAC ductwork for any air leaks.
- 4.** Weatherize. Caulk windows and make sure outside doors are sealed completely.
- 5.** Change out standard light bulbs for LEDs. Switching traffic signals, parking lot lights, security lighting, and exit signs to LED can cut your energy usage by half or more.
- 6.** Put motion detectors in conference rooms, restrooms, and closets — any room that isn't used all day long.
- 7.** Have your HVAC programmed to turn up the AC overnight, but have it come back on in time for your buildings to return to a comfortable level.
- 8.** Make sure all of your kitchen appliances—refrigerators, ice makers, range tops, stoves—are Energy Star rated.
- 9.** If upgrading your HVAC systems, make sure to get the highest SEER rating possible for your installation. Each step higher in SEER rating saves on energy. For example, just going from a 14 to a 16 SEER can save up to 13% in energy costs.
- 10.** Installing window film can help keep buildings cooler and save on energy costs.

1853



1905



1984



2000





# The TCAP + Gexa Energy Advantage

**Gexa is not only TCAP's billing partner, it has also proven to be a valuable resource to our members, providing energy audits to TCAP members at no cost through Gexa Energy Solutions. This free service has led to savings through infrastructure, lighting, building performance, and other efficiencies.**

Most consumers of electricity search for the best available per kWh contract rate. But what's most often missing from their calculation is the actual amount of energy they are using—or sometimes squandering unknowingly. Gexa is one of the few energy supply companies that can help customers manage both parts of that equation. They help TCAP customers determine best energy savings strategies, and work to solve efficiency issues by financing members' electrical infrastructure upgrades so that the investment is paid back rapidly over time through the savings derived.

Benefits Gexa offers to TCAP members include: no initial cash outlay, decreased electricity consumption; maintenance interruptions avoided; potential tax benefits; and no penalty for early payoff.

Some examples of the ways they have increased efficiencies for members include: LIGHTING—LED conversion, BMS integration, occupancy sensors, daylight harvesting; ON SITE GENERATION—PV solar, battery storage, capacity management, and automated curtailment; BUILDING PERFORMANCE ANALYTICS—ENERGYSTAR® benchmarking, excess energy usage alerts, facility task management, and equipment monitoring; HVAC UPGRADES—boilers and chillers, rooftop units, smart thermostats, BMS installation and calibration, and air handlers.

## CASE STUDY

# City of Everman / Gexa Partnership Results in Estimated \$2.2MM in Savings

When the City of Everman realized it was losing millions of gallons of water monthly due to aging mechanical meters and the clumsy and inaccurate process of meter reading that require three employees three days each month to perform—it turned to Gexa Energy Solutions for help. According to Michael Gunderson, Everman City Manager at that time, “Like many small cities with limited resources, some of our processes remained somewhat antiquated.”

Gexa conducted analyses of both the city’s meter reading processes and its overall electric consumption and recommended replacing nearly 2,000 water meters as well as upgrading the existing lighting at its City Hall, Police Station, Fire Station, Library, Annex, and other city-services locations—even offering to provide financing.

City Council approved the project. And the result? Over \$86,000 in savings year one alone: \$65,700 in lost water meter revenue, \$2,700 in meter read savings, \$15,000 in Lighting energy savings, and \$2,800 in lighting maintenance for a grand total of an estimated \$2.2MM over 20 years.



**“Today we can read our meters in one day in any weather. The labor savings is huge. And with same day readings every month, our data is more accurate, consistent, and we have fewer customer complaints.” — Mike Gunderson, City Manager**

By partnering with Gexa Energy Solutions at TCAP’s suggestion, the City of Everman will save for decades to come.



# Is Solar Right for You?

**Solar power can be beneficial in the right situations. But solar may not be the right fit for every member. Some may benefit, others may not. In fact, some end up paying more. Yet, surprisingly, we encounter cities that “like the idea” and want solar, period. Cost aside, there’s still plenty to know when thinking about a solar project. Keep in mind a solar installation doesn’t generate power at night and generates less electricity during mornings, evenings, and on cloudy days.**

## **1. WE’LL BE GETTING “FREE” POWER FROM OUR SOLAR INSTALLATION.**

There’s no such thing as a free lunch. And, the up-front investment in solar panels is just the start. There’s also installation, tying into your existing electrical infrastructure, and the additional cost of ongoing maintenance—typically small.

## **2. WE CAN SIGNIFICANTLY REDUCE OUR ELECTRICITY BILL WITH SOLAR POWER.**

For most cities, adding solar is meant to supplement the electricity it purchases, but only a limited number of organizations can generate enough electricity on their own to avoid buying from a traditional provider. However the addition of solar can significantly reduce the amount of energy purchased from the member’s provider.

## **3. WE CAN STORE POWER IN BATTERIES FOR TIMES OF HIGHER DEMAND.**

Adding battery storage, such as the Tesla® Powerwall, may allow you to retain your solar system’s excess generation for later use. But adding batteries can dramatically increase both the price and the complexity of your solar project.



#### 4. WE CAN MAKE MONEY SELLING BACK THE EXCESS POWER WE GENERATE, RIGHT?

This is a common selling point. But you need to know that, in Texas, you're not automatically compensated for the excess capacity your system contributes to the grid. You will have to obtain written agreement from your Retail Electric Provider (REP) to buy that excess power back from you.



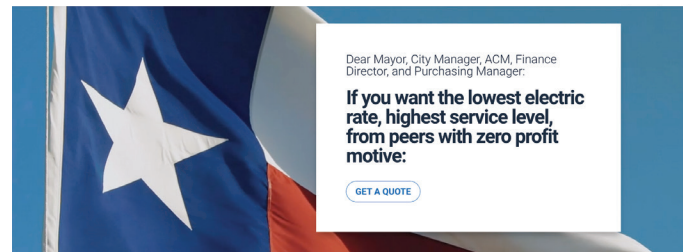
#### 5. ALL SOLAR SOLUTIONS ARE PRETTY MUCH EQUAL—AREN'T THEY?

Most solar installs fall into two categories. The first is where the provider installs the solar project on your site and turns ownership over to you. The second is where the provider will continue to own the equipment and only sell you the power it generates. Both approaches have pluses and minuses, which is why it's best to seek out an impartial, expert adviser.

*If you are looking at a solar solution, call TCAP and let us help you.*

## On tcaptx.com

If you look under the City Matters tab on our website you will find access to our Energy Conservation Library in one convenient spot.




- [Energy Efficiency Best Practices](#)
- [City Energy Efficiency Websites](#)
- [Council Of Governments](#)
- [Energy Links](#)
- [Funding Projects](#)


- [Solar Power Initiatives](#)
- [TDSP Programs](#)
- [City Efforts In The News](#)
- [Energy Savings Calculators](#)




# Demand Response in a Nutshell

TCAP partners with Gexa and offers eligible members the ability to save money by strategically limiting their loads via one of three specially designed “Demand Response” programs. Gexa Energy works with you to develop an energy strategy that allows you to participate in the best demand response program for you. Here's how it works: During certain peak periods and events, Gexa dispatches notices to the customers who in turn respond according to their strategies.

 **4CP | 4 Coincident Peak** This program enables participating members to reduce their transmission and distribution charges for the following year by curtailing load during each of ERCOT’s four 15-minute coincident peak events in June, July, August, and September of the current year. Customers must have interval meters with peak loads in excess of 100 kilowatts.

 **EDR | Economic Demand Response** This program saves members dollars in the form of bill credits by allowing Gexa to limit their energy consumption during specific periods when real-time market prices are their highest. You decide upon notification of each event whether or not to participate.

 **ERS | Emergency Response Service** This program allows participating members to get paid for standing ready to reduce their load by a pre-

defined amount when directed by ERCOT to do so. Demand reduction is mandatory and must be done within 10-30 minutes of ERCOT notification to you.

All three programs are administered by Gexa and endorsed by TCAP. Through this partnership, TCAP continues its tradition of helping its members save money by strategically partnering with one of Texas’ largest retail electricity providers.

Leveraging its extensive industry expertise, Gexa determines how your best savings can be realized. They work with you to determine which of the three programs it has designed and implemented that will save you the most money on energy costs, improve your overall operational efficiency, and reduce your greenhouse gas emissions.

PROGRAM	SAVINGS	PERIOD	OPTIONAL ?	NOTIFY ?	TEST FREQUENCY	CAN COMBINE
<b>4CP</b>	Monthly TDSP Reduction	Jun/Jul/Aug/Sep	Y	Y	Initial Setup	Yes, w/ EDR
<b>EDR</b>	Additional Revenue	Year-Round	Y	Y	Initial Setup	Yes, w/ 4CP
<b>ERS</b>	Monetize Capacity	3 x 4-month periods	N	Y	Per ERCOT	Yes, w/ 4CP

# Finding Money For Your Project



This is the classic chicken/egg conundrum. You want to implement projects to help save money, but you first need money to fund the project. Below are just a handful of funding sources. These grants and low-interest loans do not comprise a comprehensive list. Please contact TCAP for more information.

**GEXA ENERGY SOLUTIONS FOR BUSINESS** — See inside front cover for more information.

**LOANSTAR REVOLVING LOAN PROGRAM** — The Texas LoanSTAR (Saving Taxes and Resources) Revolving Loan finances energy-related, cost-reduced retrofits of facilities. Borrowers receive low-interest loans to help pay for these efforts. Applicants repay the loans from the energy cost savings realized by the projects. Guidelines for project eligibility, fund availability, and project funding and repayment are set forth in the State Comptroller rules. Twice each year, the State Energy Conservation Office (SECO) publishes a Notice of Loan Fund Availability for LoanSTAR loans. <https://comptroller.texas.gov/programs/seco/funding/101918/>

**EPA GRANTS** — EPA partners with local governments and other eligible entities to protect human health and the environment through a systematic process that awards federal grants that leverage local expertise. Every year, EPA awards a significant portion of its budget in grants to its partners for Comprehensive Environmental Response, Compensation, and Liability Act, Section 104(k), Clean Air Act, Section 103(b)(3), Clean Water Act, Section 104(b)(3), Federal Insecticide, Fungicide, and Rodenticide Act, Sections 18, 20 and 23, Safe Drinking Water Act, Sections 1442(c) and c(A), Toxic Substances Control Act, Section 10, as amended by Public Law (PL) 106-74.

**GRANTS.GOV** — Managed by the Department of Health and Human Services, Grants.gov is an E-Government initiative operating under the Office of Management and Budget. It provides a common website for federal agencies to post discretionary funding opportunities for grantees to find and apply to them. The Grants.gov system makes it faster, easier, and more cost effective for applicants to electronically interact with federal grant-making agencies.

**TDSP PROVIDERS** — Both Centerpoint and TNMP offer CitySmart Programs providing technical and financial support to help cities overcome barriers to implement energy efficiency improvements. Cash incentives are offered for renovation, new construction, and maintenance projects resulting in reduced energy consumption.