



2019 ENVIRONMENTAL SUSTAINABILITY & STEWARDSHIP REPORT

***“We are optimally blending the
Tried & True with the New!”***



PRODUCED SEPTEMBER 2020

RELIABILITY | CUSTOMER AFFORDABILITY | SAFETY | SECURITY | ENVIRONMENTAL RESPONSIBILITY | RESILIENCY
FINANCIAL STABILITY



TABLE OF CONTENTS

- Letter from Our President & CEO.....1
- Board of Trustees.....2
- Tone from the Top.....3
- Board Resolution.....4
- Senior Chief Team.....5
- Summary Information.....6
- Sustainability Highlights.....7-13
- Save for Tomorrow Energy Plan (STEP).....14
- Flexible Path** Milestones.....15
- Awards.....16
- Glossary.....17

LETTER FROM OUR PRESIDENT & CEO

OUR SUCCESSFUL ENVIRONMENTAL COMMITMENTS TO DATE!

We all have multiple accomplishments to be proud of, as members of our passionate San Antonio community, which include the following:

- In 2018, we closed two older coal units early as part of the thoughtful progressive transformation of our power generation fleet to cleaner technologies.
- In 2019, as part of our **Flexible Path**SM strategy, we made a foundational commitment to reduce our net emissions profile by 80% by 2040.
- We are now working toward full carbon neutrality by 2050 in support of the City of San Antonio’s Climate Action & Adaptation Plan (CAAP); a plan our Board of Trustees endorsed with a resolution on August 26, 2019.



At CPS Energy, our talented team of more than 3,100 dedicated employees work diligently to provide energy services that are **Affordable, Reliable, Resilient, Secure, Safe**, and increasingly **Environmentally Responsible**. Especially relative to the Environment, we have been on a thoughtful journey for decades to make improvements. While there is much progress to make in the years to come, it is important to take inventory of our many accomplishments to date. Thank you for taking the time to read this report. Your interest inspires us in every way to keep making progress!

Paula

Paula Gold-Williams
President & CEO

BOARD OF TRUSTEES

We are fortunate to have a Board of Trustees that mindfully oversees our company's major strategies and policies. Since we are in the Generation, Transmission, Distribution, Customer Relations, and Retail Service businesses, their oversight covers a wide range of topics and complexities. Especially relative to **Environmental Responsibility**, in 2019 the Board formally endorsed the City of San Antonio's Climate Action & Adaptation Plan through management's continued thoughtful implementation of its **Flexible Path** strategy, which prudently requires our team to implement new solutions that also balance key considerations that include **Customer Affordability, Reliability, Safety, Security, and Resilience**.



John Steen
Northeast Quadrant,
Board Chair



Dr. Willis Mackey
Southeast Quadrant,
Vice Chair



Edward Kelley
Northwest Quadrant,
Trustee



Janie Gonzalez
Southwest Quadrant,
Trustee



Ron Nirenberg
Mayor &
Ex-Officio Member

TONE FROM THE TOP



BOARD RESOLUTION



RESOLUTION IN SUPPORT OF AUGUST 2019 CLIMATE ACTION AND ADAPTATION PLAN

WHEREAS, the City of San Antonio's updated Climate Action and Adaptation Plan (CAAP) is an aspirational framework that has an ultimate goal of reaching carbon neutrality by 2050; and

WHEREAS, CPS Energy has previously launched a Flexible Path strategy that the Management Team is using to leverage its existing generating assets while it thoughtfully and rationally adopts new energy solutions, over time; and

WHEREAS, CPS Energy will continue to diligently monitor technological developments as they become more efficient and economical; and

WHEREAS, CPS Energy will continually strive to be a strong steward of the community's energy utility assets while effectively balancing the following value pillars:

- Security,
- Safety,
- Reliability,
- Resilience,
- Environmental Impact and
- Affordability, and

WHEREAS, CPS Energy will periodically and prudently update its Flexible Path and other critical strategies to ensure relevant macro and micro developments are assessed and, as deemed optimal, incorporated, while ensuring its credit ratings and financial strength are managed and maintained at levels that benefit its customers, community and employees; and

WHEREAS, the implications to CPS Energy of substantial changes to the CAAP, as well as new and significant action and adaptation provisions, must be assessed on a timely basis and such implications shared with the Board of Trustees, the San Antonio City Council and other stakeholders.

NOW, THEREFORE, BE IT RESOLVED that after careful consideration, and in light of the foregoing, the CPS Energy Board of Trustees expresses its support for the August 2019 CAAP draft.

I, Carolyn E. Shellman, Secretary of the Board of Trustees of CPS Energy, do hereby certify that the foregoing is a true and exact copy of a resolution which was unanimously passed and approved at the meeting of the Board of Trustees of CPS Energy, held on August 26, 2019, at which a quorum was present.

WITNESS MY HAND AND SEAL OF THE CPS ENERGY BOARD OF TRUSTEES on the 27th day of August 2019.

Carolyn E. Shellman
Secretary of the Board

145 Navarro • San Antonio, Texas 78205

OUR SENIOR CHIEF TEAM

Understanding the importance of diversity of background, experience, and thought, we are proud that over 60% of our top team leaders are women and people of color!

CPS Energy has talented Senior Chiefs who work together as an effective team that stays focused on its **People First** genuine interest in their **Customers, Community, and Employees**. They work diligently every day to optimize the company's abilities to balance its **Guiding Pillars** of **Reliability, Customer Affordability, Environmental Responsibility, Safety, Security, and Resiliency** on a **Foundation of Financial Responsibility**.



Paula Gold-Williams
President & Chief Executive Officer (CEO)



Cris Eugster
Chief Operating Officer (COO)



Fred Bonewell
Chief Security, Safety & Gas Solutions Officer (CSSGSO)



Vivian Bouet
Chief Information Officer (CIO)



Carolyn Shellman
Chief Legal Officer & General Counsel (CLO&GC)



Rudy Garza
Interim Chief Customer Engagement Officer (CCEO)



Frank Almaraz
Chief Administrative & Business Development Officer (CABDO)




Gary Gold
Interim Chief Financial Officer & Treasurer (CFO)

SUMMARY INFORMATION

- We started investing in wind energy in 2000
- We started investing in solar energy in 2010
- Nearly 15% of energy comes from utility-scale wind & solar, rooftop solar, and landfill gas
- Over 1600 MW of renewable capacity equates to over 20% of our total current capacity
- Our renewable energy supply can power about 320,000 homes for an hour on a hot day

Resources Mix Table for Calendar Year (CY) 2019		
Type	CY2019 Total Generation MWh	CY2019 Total % (rounded)
Renewables	4,395,911	15%
Nuclear	8,810,945	29%
Oil	—	—
Natural Gas	9,751,980	32%
Coal	6,642,636	22%
Purchased Power	514,763	2%
	30,116,235	100%



CONGRATULATIONS SAN ANTONIO FOR BEING A SHINING CITY FOR SOLAR ENERGY!

San Antonio Ranks 1st in Texas & 5th in the U.S. for Solar Energy Within City Limits

We are the largest producer of solar power in Texas and number five nationally. Environment Texas Research & Policy Center named San Antonio as a "Solar Star" in its report: Shining Cities 2020, The Top U.S. Cities for Solar Energy. Additionally, the report ranked CPS Energy 2nd nationally among municipally owned utilities in total solar, owned or contracted.

Our award-winning Save for Tomorrow Energy Plan (STEP) was established in 2009 by an ordinance of the City of San Antonio City Council that required CPS Energy to save 771 MW of electricity demand by 2020 at a cost of no more than \$849 million. A year ahead of schedule, we exceeded our goal by reaching 845 MW of cumulative demand savings, without debt or capital spend for 13 years!

In 2019, CPS Energy earned an award from the Alliance to Save Energy for the effectiveness of our STEP program since its inception.

SUSTAINABILITY HIGHLIGHTS

In support of minimizing our impact to our environment, we have made outstanding reductions in our emissions as we journey down a path to a cleaner and lower-emitting future. Those reductions have been across the entire emission landscape and have included steep reductions in not just Greenhouse Gases (GHGs) like Carbon Dioxide (CO₂) that contribute to climate change, but also ozone contributing Nitrogen Oxides (NOx) and other emissions such as Sulfur Dioxides (SO₂), Mercury (Hg) and Particulate Matter (PM), along with reduced levels of water use and waste production.

Some of those reductions are due to the following:

- Implemented emission controls on our plants for NOx, SO₂, Hg, and PM reduction;
- Continued use of low sulfur and ultra-low sulfur coal in our coal units;
- Closed the Deely coal units, 15 years ahead of their retirement date;
- Replaced the Deely Plant with a higher efficiency natural gas fired combined-cycle plant;

- Launched and managed our highly successful STEP energy efficiency and conservation program;
- Became industry leaders in the addition of renewables like wind and solar;
- Began installing battery storage that can enable more renewable additions; and
- Partnered with Southwest Research Institute to develop and implement a combined system of 5 MW of solar plus 10 MW of battery storage.

This list illustrates that the transition to a cleaner energy future has no single solution; there has been no silver bullet. Instead, through the careful implementation of new technology and effective management of our community's current energy sources, we will continue to see progress.

While making these large emissions reductions we effectively balance what our customers expect, including **Reliability, Affordability, and Environmental Responsibility**. As we look toward the future, over the next 30 years, we anticipate our path forward will not be linear. Progressively, on multiple fronts, we continue to build on this foundation of achievements.

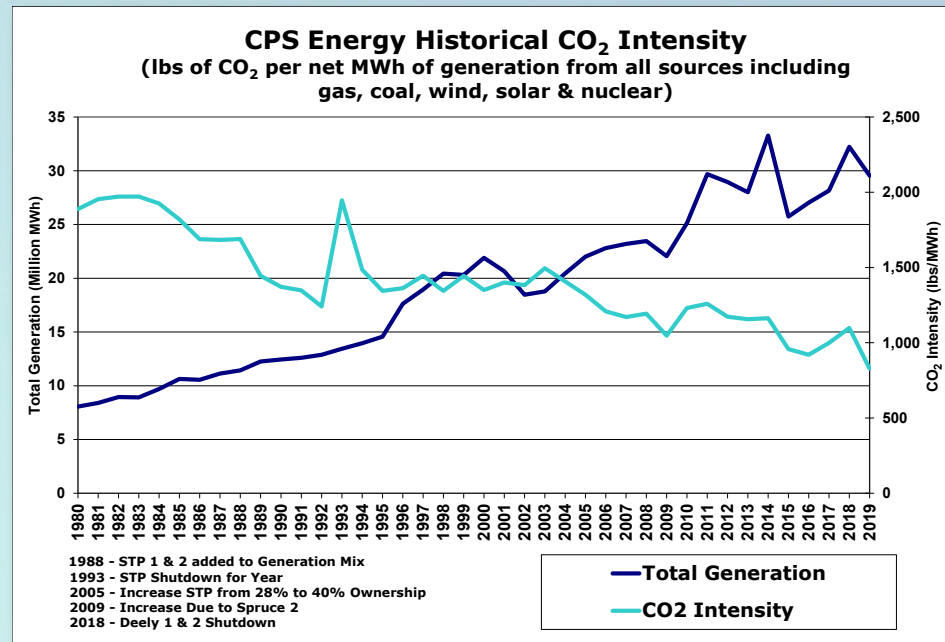
Together, with participation and action from our community, we will continue to achieve positive results as we add balanced incremental solutions to continue to deliver **Reliable, Affordable, Safe, Secure, Resilient, and Environmentally Responsible** energy.

The following sections highlight our long history and achievements in minimizing our impact on the environment in air, water, and waste sectors.



From time-to-time, sheep are responsibly used to help keep the grass at the solar farms well managed.

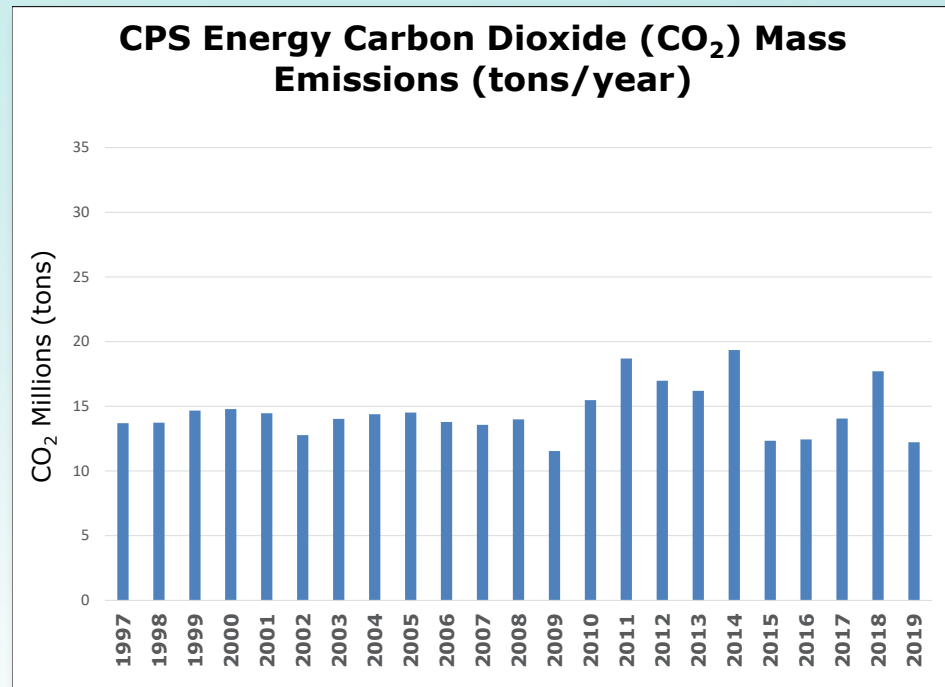
CARBON DIOXIDE (CO₂) REDUCTIONS



Our carbon intensity has been on a beneficial downward trend since 1980. With an increasingly very diverse combination of gas, coal, wind, solar and nuclear energy sources, as well as a huge mitigating commitment to energy efficiency and conservation, CPS Energy's total generation responsibly quadrupled from 1980 to 2019 to accommodate one of the largest and fastest growing cities in the nation. This has helped drive the CO₂ emission rate from 2,000 pounds per net megawatt hour of generation to 827.

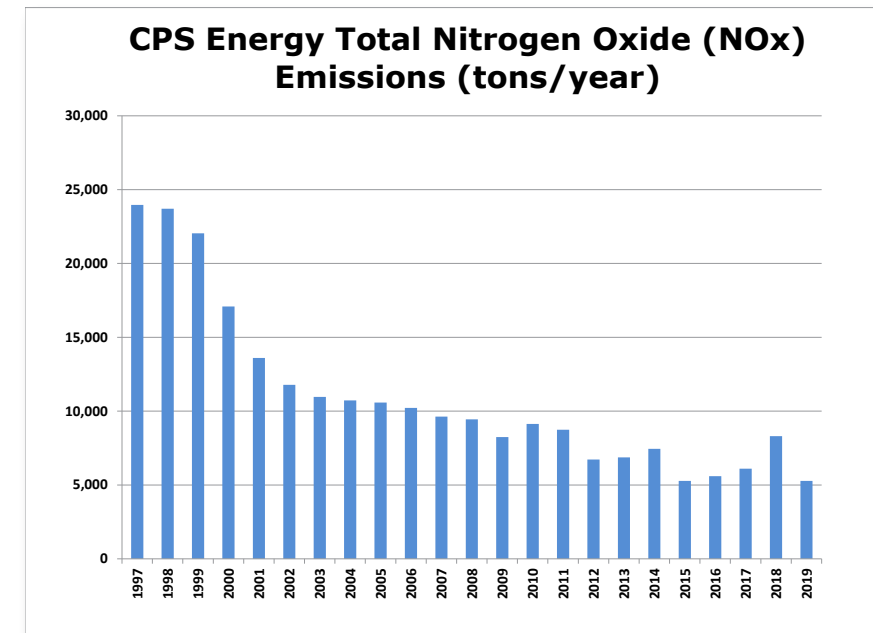
The closure of Deely in 2018 resulted in reduced CO₂ mass emissions; however, it was not the only contributor to the steady downward trend in carbon intensity. This change was also due to our ability to embrace emerging energy efficiency and renewable generation solutions, along with our customers' willingness to utilize our programs. Working together we can continue to realize lasting environmental benefits.

Our **Flexible Path**SM initiatives such as the **FlexSTEP**SM energy efficiency program and our **FlexPOWER Bundle**SM will further facilitate the continued decrease in our carbon intensity.



¹Carbon intensity is the total amount of CO₂ emitted by fossil fuel power generation units (coal & natural gas) in pounds (lbs) divided by the total power generation (MWhs) from all generation sources including coal, natural gas, nuclear, and renewables.

NITROGEN OXIDES (NO_x) REDUCTIONS



By implementing NO_x emissions controls on our power plants, including low NO_x burners, separated overfire air (SOFA), and selective catalytic reactors (SCRs), and closing our two older coal units, we have reduced our NO_x emissions by 78% since 1997.

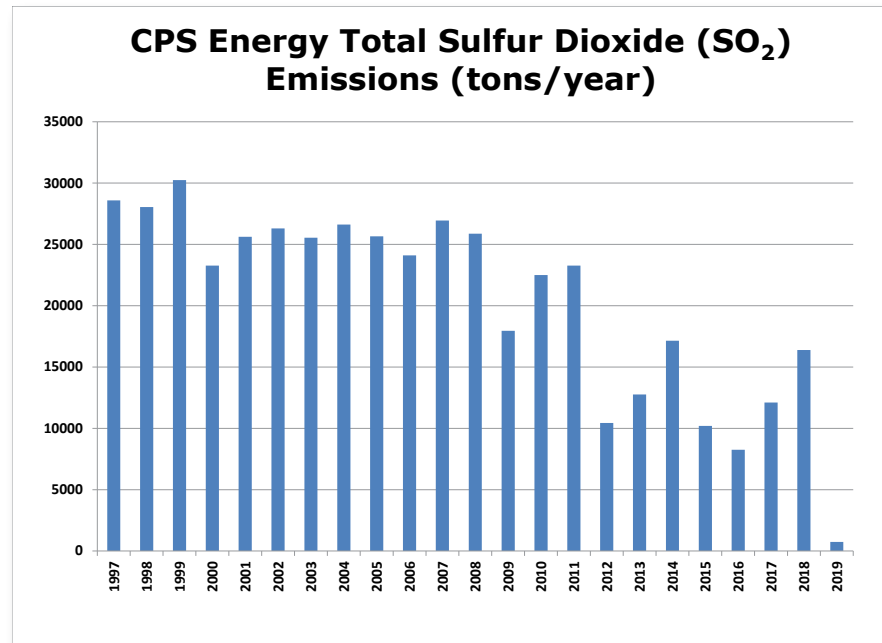
Nitrogen Oxides (NO_x) play a role in the formation of ground-level ozone. Our power plants emit NO_x, as do other sources across the community, such as transportation and industrial processes. In partnership with industry stakeholders, the Alamo Area Council of Governments (AACOG) helps track ozone levels and conducts air quality modeling using data from Continuous Air Monitoring Stations (CAMS) that we fund and operate. We are also working with the City of San Antonio (CoSA) and businesses to reduce ozone emissions community-wide.

To do our part in reducing ozone levels, we have made improvements to our fossil fueled units to control our emissions of NO_x since 1997. By implementing NO_x emission controls on our units, including low NO_x burners, Separated Overfire Air (SOFA) and Selective Catalytic Reactors (SCRs), and closing our two older coal units, we have reduced our NO_x emissions by 78% since 1997.

EMISSIONS PROGRAMS/RESULTS	
NO _x Emissions Controls	Reduced NO _x Emissions by 78% Since 1997
Closing 2 Older Coal Plants	
Energy Efficiency Programs	



SULFUR DIOXIDE (SO₂) REDUCTIONS



Both of the coal units at our Spruce Power Plant, Spruce 1 & 2, have highly efficient Sulfur Dioxide Scrubbers. These two units emit minimal amounts of SO₂. In addition to having very effective control systems, we use low sulfur & ultra-low sulfur coal in the units.

CPS Energy has reduced SO₂ emissions by over 97% since 1997 primarily due to the closure of the Deely units

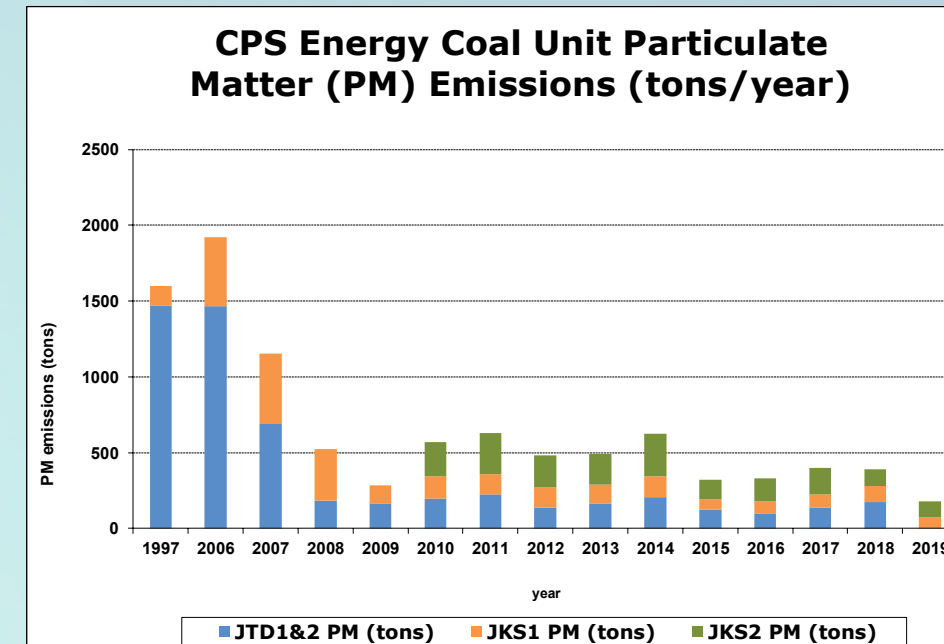
We reduced emissions of Sulfur Dioxide (SO₂) by 97% since 1997. That dramatic reduction is primarily due to the early closure of our two older Deely coal units and you can see that drop in the chart from 2018 to 2019.

SO₂ is formed when sulfur-containing fuels such as coal are utilized for energy production. The SO₂ emissions for our Spruce Power Plant, Spruce 1 & 2, have been lower than the average coal unit in the United States due to the use of low sulfur & ultra-low sulfur coal.

Both of the remaining Spruce coal units have highly efficient Sulfur Dioxide Scrubbers. These two units emit minimal amounts of SO₂.



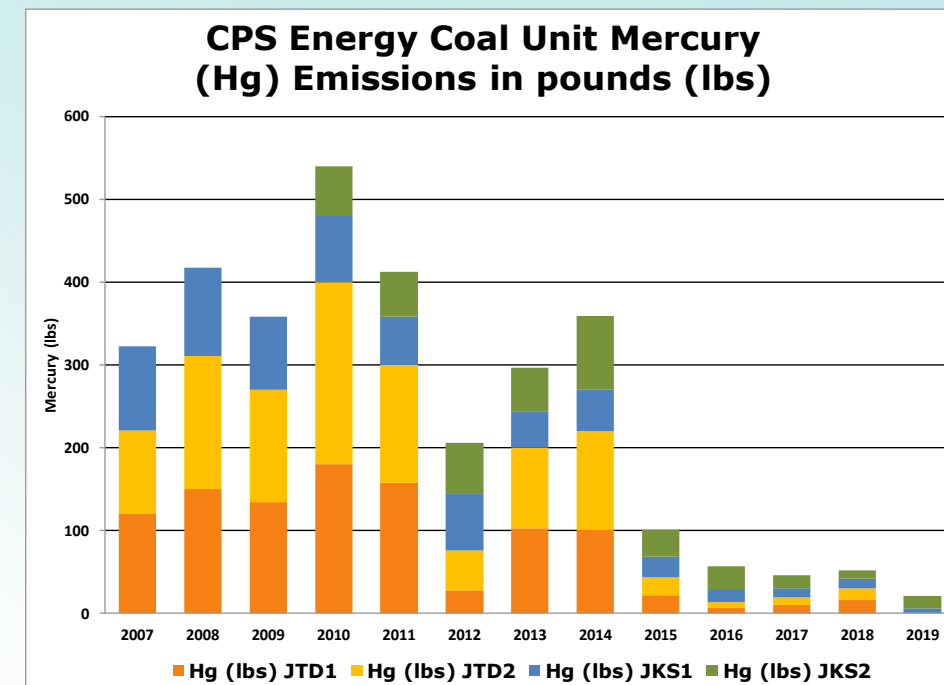
PARTICULATE MATTER (PM) & MERCURY (Hg) REDUCTIONS



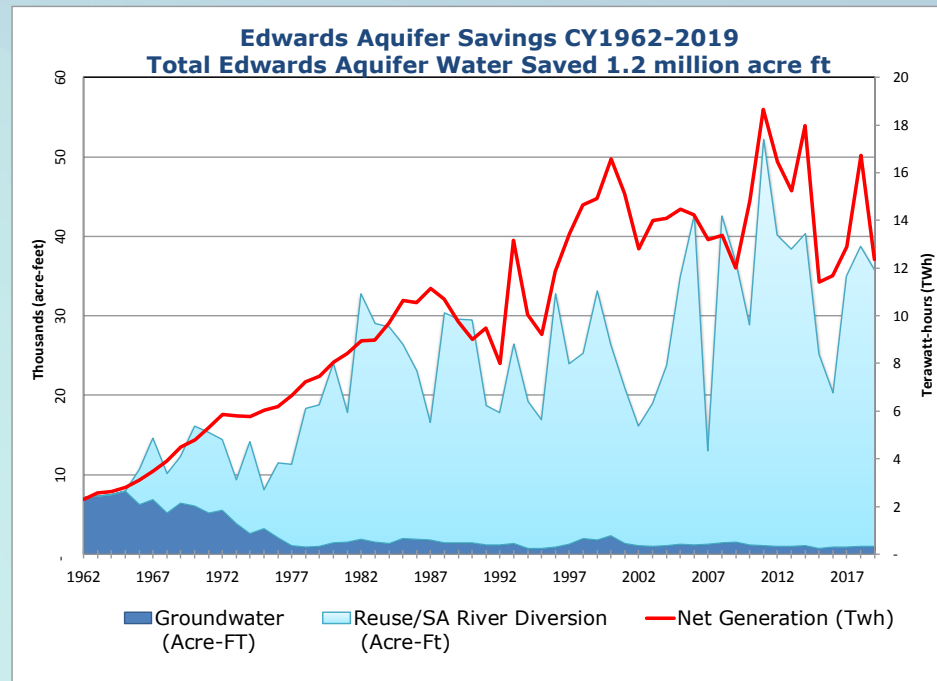
Particulate Matter (PM) and mercury (Hg) emissions have also seen big reductions over time. From 2018 to 2019, the charts illustrate a drop in both PM and Hg emissions due to the closure of the two Deely units.

The largest drop in PM emissions was in 2007 and 2008 when we replaced Deely's older electrostatic precipitator (ESP) control technology with the much newer, more effective baghouse particulate removal systems. Both Spruce units were built with the more effective baghouse systems. Baghouse systems have the capability of removing over 99% of PM.

Reduction in 2007/2008 due to replacing Deely 1&2 ESPs with more efficient baghouse systems



WATER USAGE REDUCTION



By using treated wastewater from the San Antonio River instead of water from the Edwards Aquifer, we save about 11 billion gallons of valuable drinking water every year. Over the past 50 years, that's enough water to fill Canyon Lake three times over.

We have a long history of saving precious water by its reuse at our generation plants. We built Braunig and Calaveras Lakes in the 1960's as cooling for our power plants. Our largest water usage in power generation is lake cooling at the Braunig and Calaveras Plants. Evaporative losses are attributable to natural and forced evaporation from cooling the plants at each site, which is heavily weather dependent.

By using treated wastewater, we save about 11 billion gallons of valuable drinking water every year. Over the past 50 years, that's enough water to fill Canyon Lake three times over.

Water conservation efforts continue with energy conservation programs and renewable energy projects, which use little to no water. CPS Energy also participates in several state water planning stakeholder groups that focus on broader management issues such as long-term future water supply;

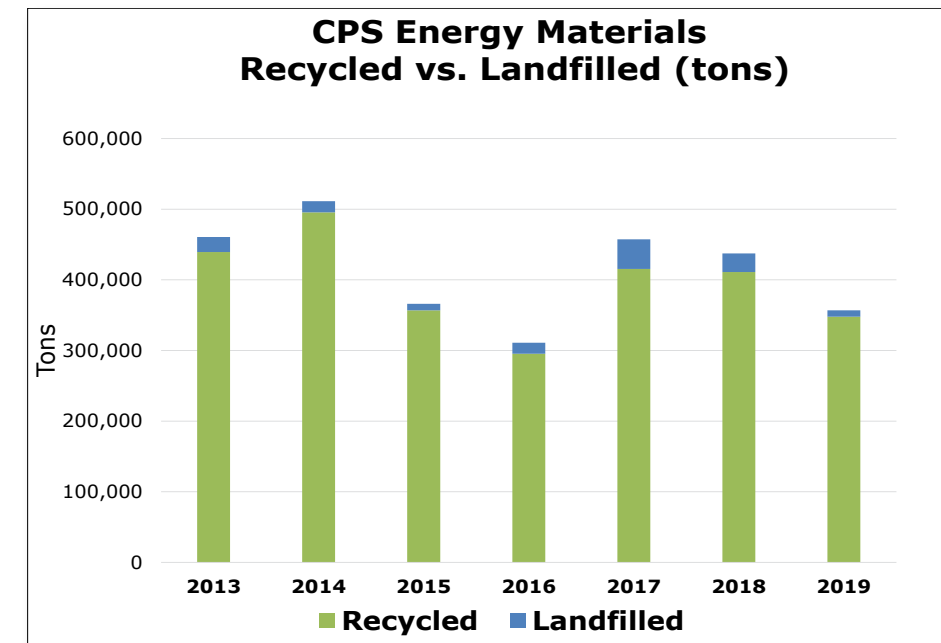
drought planning; endangered species conservation; and environmentally sustainable river, bays, and estuary management.

Braunig and Calaveras Lakes serve as recreational resources for Bexar County and the surrounding area and are managed with assistance from Texas Parks & Wildlife. They provide wetlands and nesting areas for migratory birds as well as prime habitat for other wildlife.

CPS Energy monitors the water quality and aquatic environment of Braunig and Calaveras Lakes and contributes to projects and studies that protect and enhance the fisheries, including fish stocking, to provide a safe environment for recreation and wildlife. The lakes and surrounding wetlands also provide habitat for migrating birds and are enjoyed by birding enthusiasts.



WASTE REDUCTION



Each year, we recycle most of our waste material rather than disposing of it in landfills. From 2018 to 2019, 16,000 tons less waste went into landfills.

The chart above illustrates the amount of materials recycled versus disposed of in landfills. Each year, we recycle most of our waste material rather than disposing of it in landfills. From 2018 to 2019, 16,000 tons less waste went into landfills.

Recycling is an important part of our environmental commitment. Examples of recycled materials include coal ash, paper, cardboard,

used oil, metals, tires, and batteries. The amount of coal ash generated fluctuates year-to-year. For example, there was approximately 456,000 tons of coal ash generated in 2014 compared to only 240,000 tons in 2016.

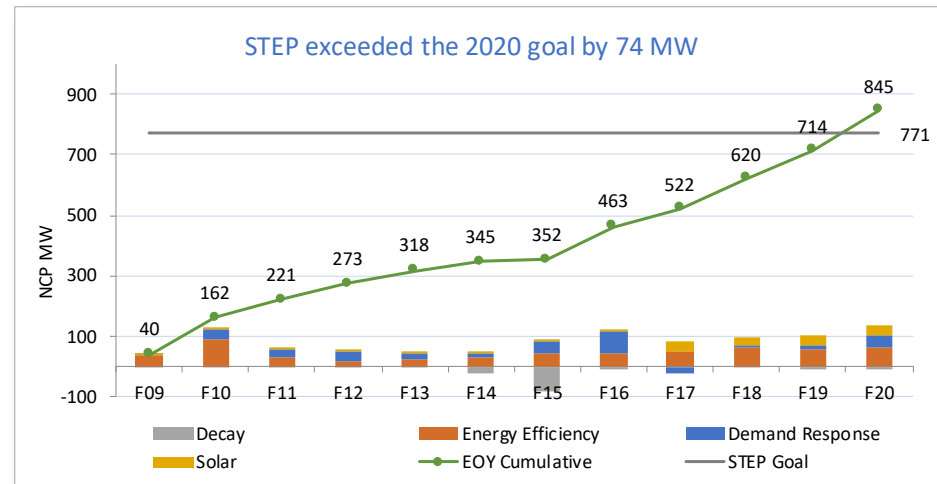
The amount of single stream recyclables such as plastic, paper, cardboard and aluminum cans collected from our offices and

service centers increased nearly four-fold from 2018 to 2019, which indicates an increased level of individual effort and dedication to recycling by our employees.

We will continue our commitment to recycling materials and turning waste streams into useful products, rather than disposing of them in landfills.



SAVE FOR TOMORROW ENERGY PLAN (STEP)



Our **STEP** program is an initiative that aimed to save 771 MW of electricity from 2009 to 2020. We accomplished 845 MW of cumulative demand reduction, without debt or capital spend for 13 years.

The Board of Trustees and San Antonio City Council approved **STEP** in 2009 and created an ordinance based on the program presented and designed to deliver benefits:

- Delaying or avoiding the need for new generation capacity & transmission infrastructure
- Leverage emerging technologies
- Help customers manage their energy consumption
- Support job creation & economic growth
- Reduce carbon emission & air pollution

The sustainability vision of **STEP** placed us at the forefront of a new energy era. It brought economic development to San Antonio by creating green jobs locally with new skills. Energy conservation and demand response was embraced as the “Fifth Fuel” and created additional diversity in our generation mix, avoided the need for a new power plant, and reduced dependence on fossil fuels.

STEP bridged the transition to our more diverse generation portfolio and is a key aspect of our dynamic **Flexible Path** strategy.



STEP bridged the transition to our more diverse generation portfolio and is a key aspect of our dynamic **Flexible Path** strategy. We accomplished 845 MW of cumulative demand reduction without debt or capital spend for 13 years.

STEP HIGHLIGHTS

ELECTRICITY SAVINGS

STEP saved a gross total of 1.1 terawatt-hours (TWh) of electricity in FY 2019, enough energy to power 104,000 Greater San Antonio area households for 1 year. Over the life of **STEP** so far, it has yielded 6.3 TWh of electricity savings.

STEP IS COST EFFECTIVE

FY 2009 to FY 2019 **STEP** had a Utility Cost Test benefit cost ratio of 1.9, indicating **STEP** provided \$1.93 of benefit for every \$1 invested by CPS Energy.

ECONOMIC DEVELOPMENT

BENEFITS OF STEP

Our **STEP** partnerships with New Energy Economy (NEE) businesses made an economic impact of more than \$5 billion cumulatively since the NEE's inception in 2013. Each year they've provided an average of 600 local jobs.

Flexible PathSM MILESTONES



March 2018 – **Flexible Path** strategy announced

June 13, 2018 – CPS Energy Board of Trustees Public Input Session

October 8, 2018 – Solar + Battery Energy Storage project groundbreaking

November 27, 2018 – CPS Energy Board of Trustees Public Input Session

December 31, 2018 – JT Deely Plant closure

February 18, 2019 – CPS Energy Board of Trustees Public Input Session

March 11, 2019 – Battery storage at Solar + Battery Storage project is live

April 9, 2019 – San Antonio ranks 1st in Texas, 7th in nation for solar energy capacity by Environment Texas Research and Policy Center in its Shining Cities 2019 report

May 7, 2019 – Big Sun Community Solar launches to provide additional 5 MW of community-owned solar power

May 27, 2019 – **FlexPOWER Bundle** blended energy approach announced to add incremental generation capacity

July 29, 2019 – Feedback begins to define **FlexSTEP** energy efficiency and conservation programs

August 27, 2019 – CPS Energy Board of Trustees endorsed the Climate Action & Adaptation Plan through management's continued thoughtful implementation of its **Flexible Path** strategy

November 19, 2019 – Our **STEP** program achieves 771 MW savings goal one year ahead of schedule and 15% under budget, as confirmed by third party verification. Actual savings achieved over the program is 845 MW.

March 9, 2020 – Request for Proposal for consulting assistance for the future **FlexPOWER Bundle** issued

May 27, 2020 – San Antonio ranks 1st in Texas, and advanced to 5th in the nation for solar energy capacity by Environment Texas Research and Policy Center in its Shining Cities 2020 report

July 27, 2020 – **FlexPOWER Bundle** Request for Information (RFI) announced globally, in 10 languages, to invite innovative energy and technology providers to provide new ideas to inform development of **FlexPOWER Bundle** Request for Proposal (RFP) and the **FlexSTEP** RFP

OUR GUIDING PILLARS



AWARDS

Recent Environmental Awards

- Green Fleet Award (#12) – The 100 Best Fleets
- 2019's Chairman's Award – Alliance to Save Energy
- Smart Energy Provider – American Public Power Association (APPA)
- 2019 Environmental Champion Utility – Escalent



Industry Awards for STEP

- 2020** - Thought Leader for Public Engagement – Peak Load Management Alliance (PLMA)
- 2019** - Chairman's Award – Alliance to Save Energy
- 2019** - Smart Energy Provider – American Public Power Association (APPA)
- 2018** - Energy Innovator Award – APPA Demonstration of Energy & Efficiency Developments (DEED)
- 2017** - International Project of the Year – POWERGRID
- 2016** - Energy Innovator Award – APPA Demonstration of Energy & Efficiency Developments (DEED)

THINKING GLOBALLY, ACTING LOCALLY

Our next big thing was successfully launched earlier this year.



We're looking for solutions around the globe for you!

More to come...

GLOSSARY

CO₂ – Carbon Dioxide, the most commonly produced greenhouse gas.

Carbon Intensity – The total amount of Carbon Dioxide (CO₂) emitted by fossil fuel power generation units (coal & natural gas) in pounds (lbs) divided by the total power generation (MWhs) from all generation sources including coal, natural gas, nuclear, and renewables.

Carbon Sequestration – The process of capturing and storing atmospheric carbon dioxide. It is one method of reducing the amount of carbon dioxide in the atmosphere.

Calendar Year (CY) – January 1 to December 31

Demand Response (DR) – Demand Response is a change in the power consumption of electric customers to better match the demand for power with the supply. Customers may adjust power demand by reducing or shifting tasks that require large amounts of electric power.

Energy Efficiency (EE) – Energy Efficiency is using technology or services that requires less energy to perform the same function.

Fiscal Year (FY) – For CPS Energy, February 1 to January 31.

Flexible PathSM – CPS Energy's strategic approach to thoughtfully discover, explore, and implement new power generation and demand-side solutions to transform the utility to lower and non-emitting energy resources over the next 20 years and beyond.

FlexPOWER BundleSM – An initiative supporting the **Flexible PathSM** strategy; envisioning adding 900 Megawatts of generation capacity by adding solar, storage, and firming capacity to the utility's power generation mix.

FlexSTEPSM – A dynamic, flexible program for promoting energy efficiency, conservation, and new technology that builds on CPS Energy's proven **STEP** model for delivering energy savings and empowering customer choice.

Hg – Mercury

Kilowatt-hour (kWh) – A standard unit to measure electricity. One kWh is 1,000 watts of electricity used for 1 hour.

Megawatt (MW) – A measure of capacity to produce electric power. A megawatt equals 1,000 kilowatts or 1,000,000 watts. One megawatt can power about 200 homes on a hot day.

New Energy Economy (NEE) – An ecosystem of partnerships with businesses that share our vision for clean energy, innovation, and energy efficiency.

NO_x – Nitrogen oxide

NCP – Non-coincidental peak, reducing energy consumption throughout the day.

Particulate Matter (PM) – Solid particles and liquid droplets found in the air.

(Short) Ton – Approximately 2,000 pounds

SO₂ – Sulfur dioxide

SM – A service mark identifying services owned by CPS Energy.

STEP – CPS Energy's Save for Tomorrow Energy Plan

Terawatt-hour (TWh) – 1 billion kilowatt-hours (kWh)

Utility Cost Test (UCT) – A way to measure the benefits of a program with respect to the cost of achieving those benefits.

The data from charts on pages 8, 9, 10, 11 is reported by CPS Energy to the Texas Commission on Environmental Quality (TCEQ) and is publicly available on the United States Environmental Protection Agency's website. <https://ampd.epa.gov/ampd/>



145 NAVARRO SAN ANTONIO, TEXAS 78296

