



MEETING AGENDA

Group/Meeting Name: Environmental Stakeholder Meeting _____

Date/Time/Location: November 19, 2019 6:00 pm – 7:30 pm Board Room _____

#	Topic	
1.	Welcome, Introductions, Review of Agenda	Kathy Garcia, Mario Bravo
2.	Safety Message	Kim Stoker
3.	Natural Gas <ul style="list-style-type: none"> a. Accurate and balanced public messaging b. Natural gas rebate programs c. Power plant lease proposal <ul style="list-style-type: none"> i. Competitive bidding process ii. Given CPS Energy’s current reserve margin, is this needed for 2020 	Moderators: Fred Bonewell, Richard Lujan, Cris Eugster, John Bonnin, Drew Higgins, Rick Luna Group discussion and input
4.	FlexSTEP <ul style="list-style-type: none"> a. Timeline and process b. Opportunities for public input 	Moderators: Drew Higgins, Rick Luna Group discussion and input
5.	Climate change messaging on CPS Energy’s website <ul style="list-style-type: none"> a. Include GHG emissions portfolio with link to city climate plan b. Describe how CPS Energy is assuring compliance with City’s climate plan 	Moderators: Paula Gold-Williams, Angela Rodriguez Group discussion and input
6.	Time of Use Rates <ul style="list-style-type: none"> a. Opportunities for public input b. App for customer to see generation mix in real time c. Why not applicable to medium and heavy fleet charging 	Moderators: Richard Medina, Drew Higgins Group discussion and input
7.	No Coal by 2025 model	Moderators: Paula Gold-Williams, Cris Eugster Group discussion and input
8.	Q&A / Close	All



QUARTERLY ENVIRONMENTAL STAKEHOLDER MEETING

**Resource materials for the agenda topics requested by
the stakeholder group.**

November 19, 2019





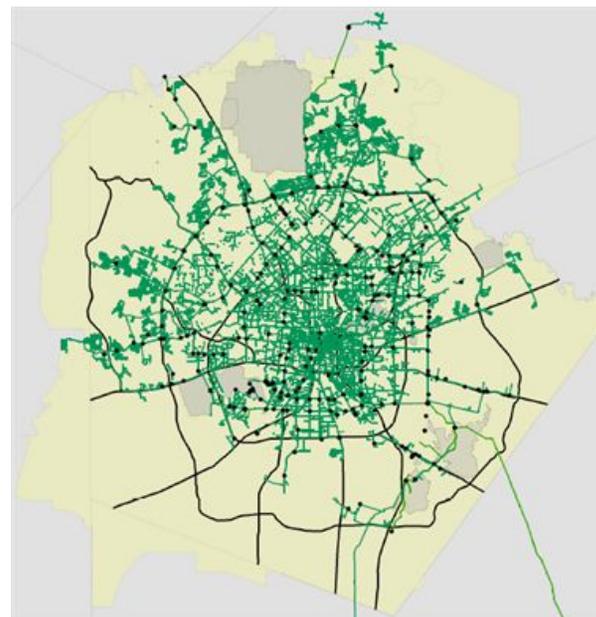
NATURAL GAS



Natural Gas Overview



- CPS Energy is a combination utility providing both electric and natural gas service
- Natural gas service is an important part of CPS Energy's product portfolio
- CPS Energy operates over 5,578 miles of distribution and 89 miles of transmission lines
- We serve over 356,000 natural gas customers and processed over 1,800 rebates last year
- CPS Energy competes with other providers in the natural gas business



CPS Energy natural gas service territory

Natural Gas Rebates



Appliance Rebates – to customers installing a natural gas appliance

- Gas clothes dryer - \$100 rebate
- Gas water heater, tank or tankless - \$50 rebate
- Gas cooktop or stove - \$50 rebate

Gas Conversion Rebates – for converting from electric to a gas appliance

- Gas dryer, up to \$195
- Gas water heater, up to \$1,100 with \$400 for each additional gas water heater
- Gas cooktop/stove, up to \$125

Smart Energy Homes – for builders to include gas furnace and water heater in new builds

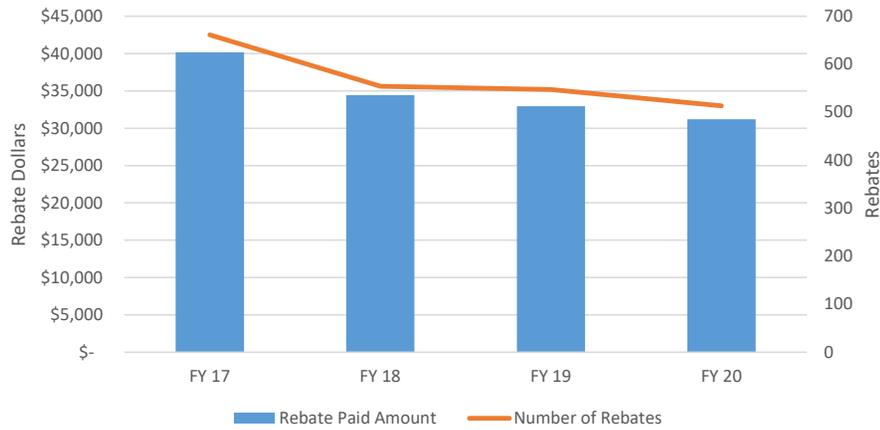
- Gas dryer, up to \$50
- Gas cooktop/range per \$100
- Max of \$150 per home paid to the Home Builder



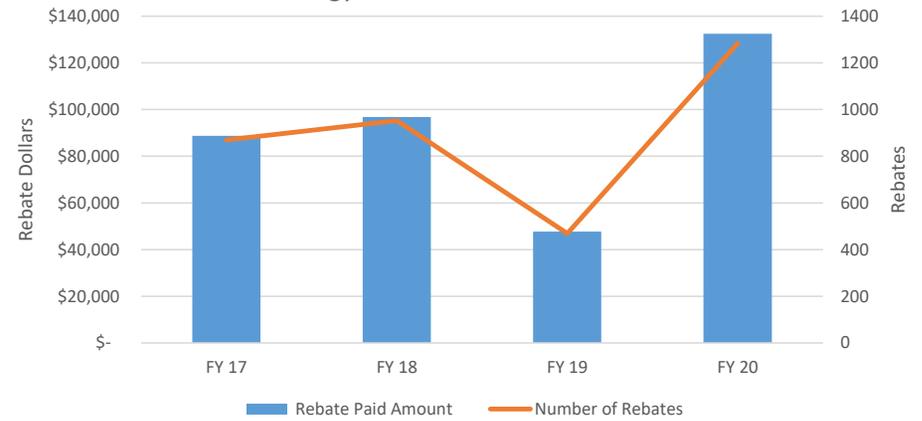
Rebates History



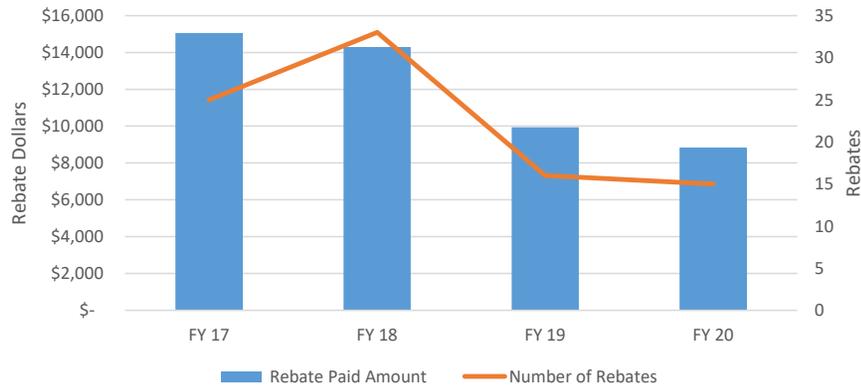
Gas Appliance Rebates



Smart Energy Home Rebates



Gas Conversion Rebates



Rebates History



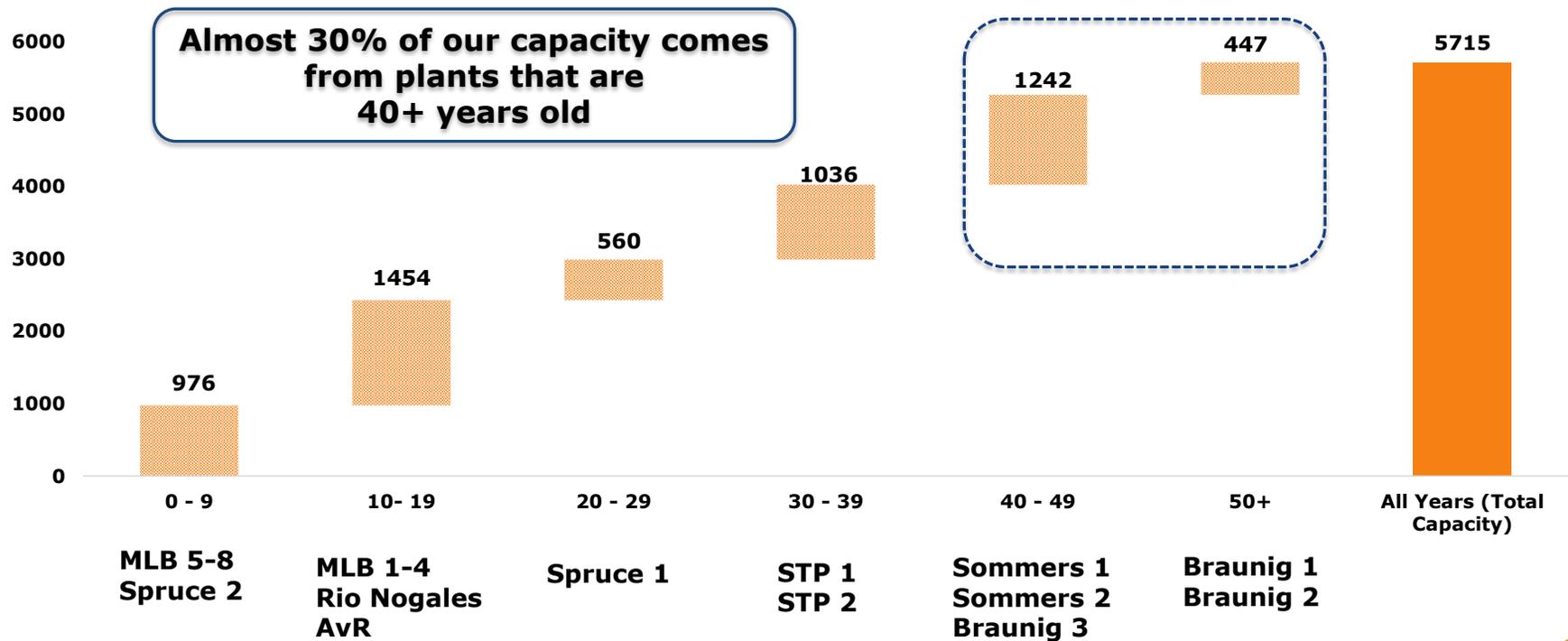
FY 17- FY 20 Gas Rebates								
	Gas Appliance Rebates		Gas Conversion Rebates		Smart Energy Home Rebates		Totals	
Fiscal Year (FY)	Rebate Paid Amount	Number of Rebates	Rebate Paid Amount	Number of Rebates	Rebate Paid Amount	Number of Rebates	Sum of Rebate Paid	Count of Gas Rebates
FY 17	\$ 40,150	661	\$ 15,050	25	\$ 88,800	870	\$ 144,000	1556
FY 18	\$ 34,425	554	\$ 14,295	33	\$ 96,800	953	\$ 145,520	1540
FY 19	\$ 32,950	547	\$ 9,940	16	\$ 47,700	469	\$ 90,590	1032
FY 20	\$ 31,200	513	\$ 8,840	15	\$ 132,500	1284	\$ 172,540	1812
Grand Total	\$ 138,725	2275	\$ 48,125	89	\$ 365,800	3576	\$ 552,650	5940





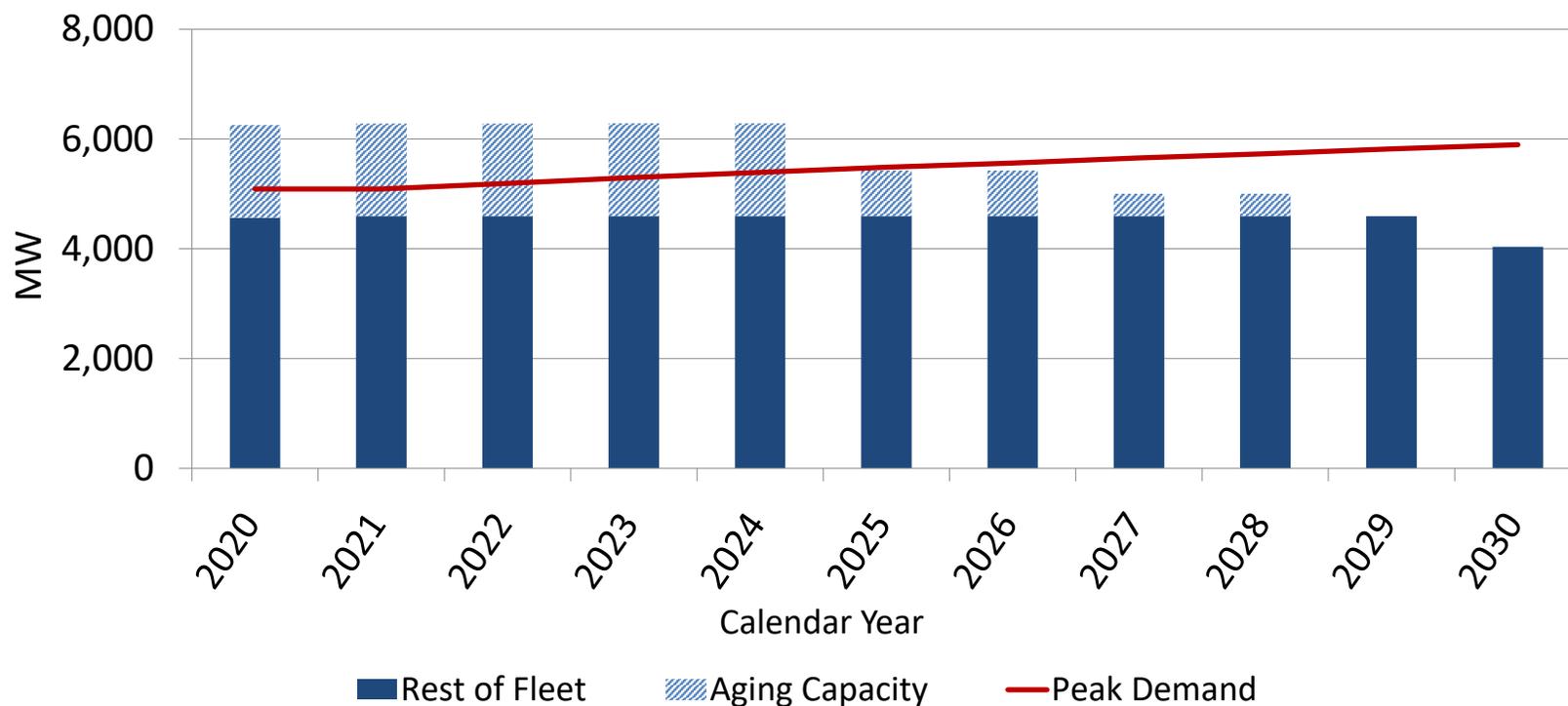
***NATURAL GAS
IS A NECESSARY COMPONENT OF
THE FLEXPPOWER BUNDLE***

OUR PLANTS ARE AGING



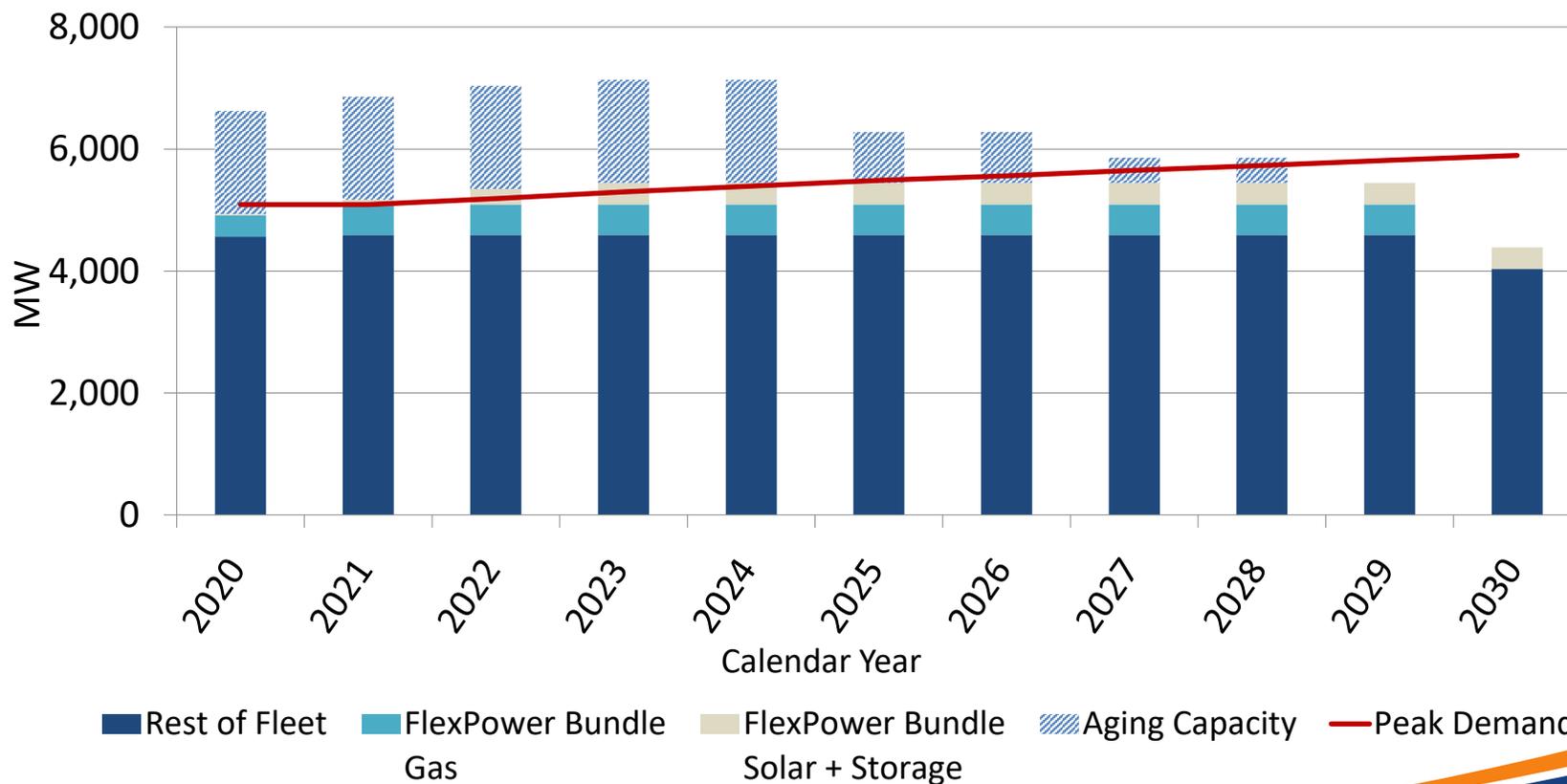
Our team does a great job keeping our plants running. Reliability of our plants continues to be a top priority.

LOAD FORECAST VS AGING CAPACITY



Aging units comprise our entire reserve margin & are needed to meet our load requirements

LOAD FORECAST VS AGING CAPACITY WITH *FLEXPPOWER BUNDLE*



FLEXIBLE PATH IN ACTION

FLEXPOWER BUNDLE



Up to 900
MEGAWATTS (MW)



Up to 50
MEGAWATTS (MW)



Up to 500
MEGAWATTS (MW)

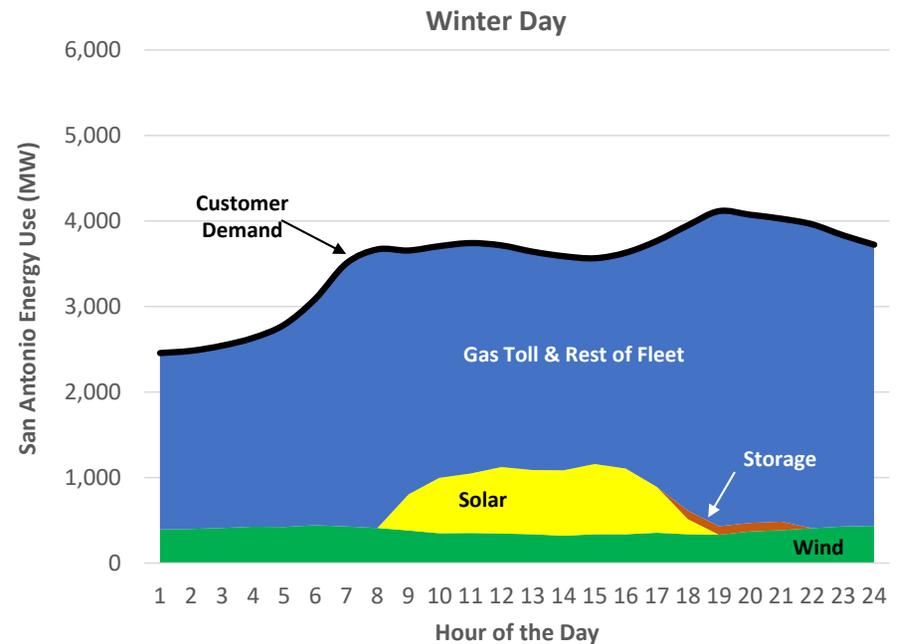
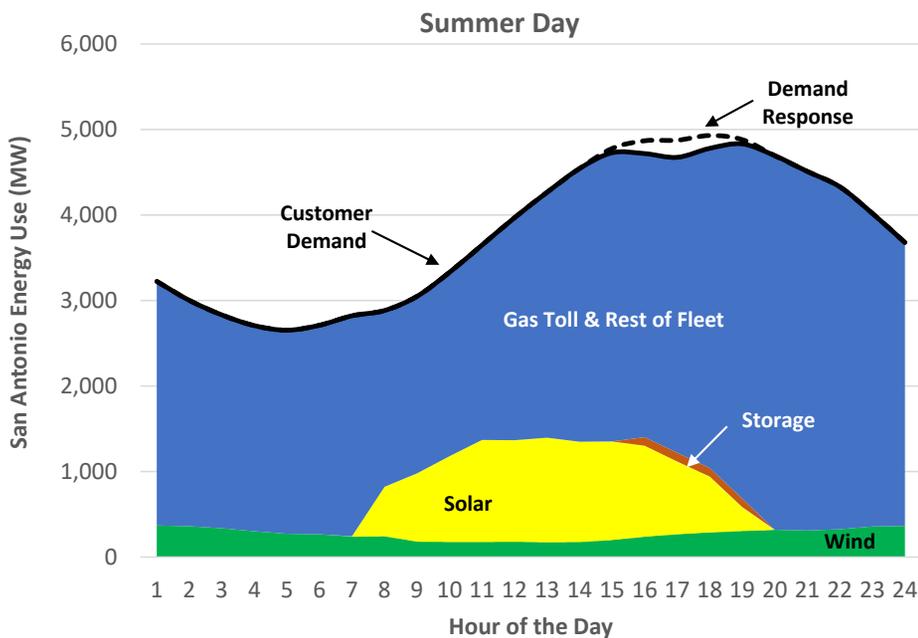
We are going through a process to evaluate adding more renewables

Our approach will:

- Align with our *Flexible Path* Strategy
- Consider options available to ensure reliability, resiliency & affordability
- Include firming capacity like storage & gas-fired generation
- Strengthen reliability for aging assets

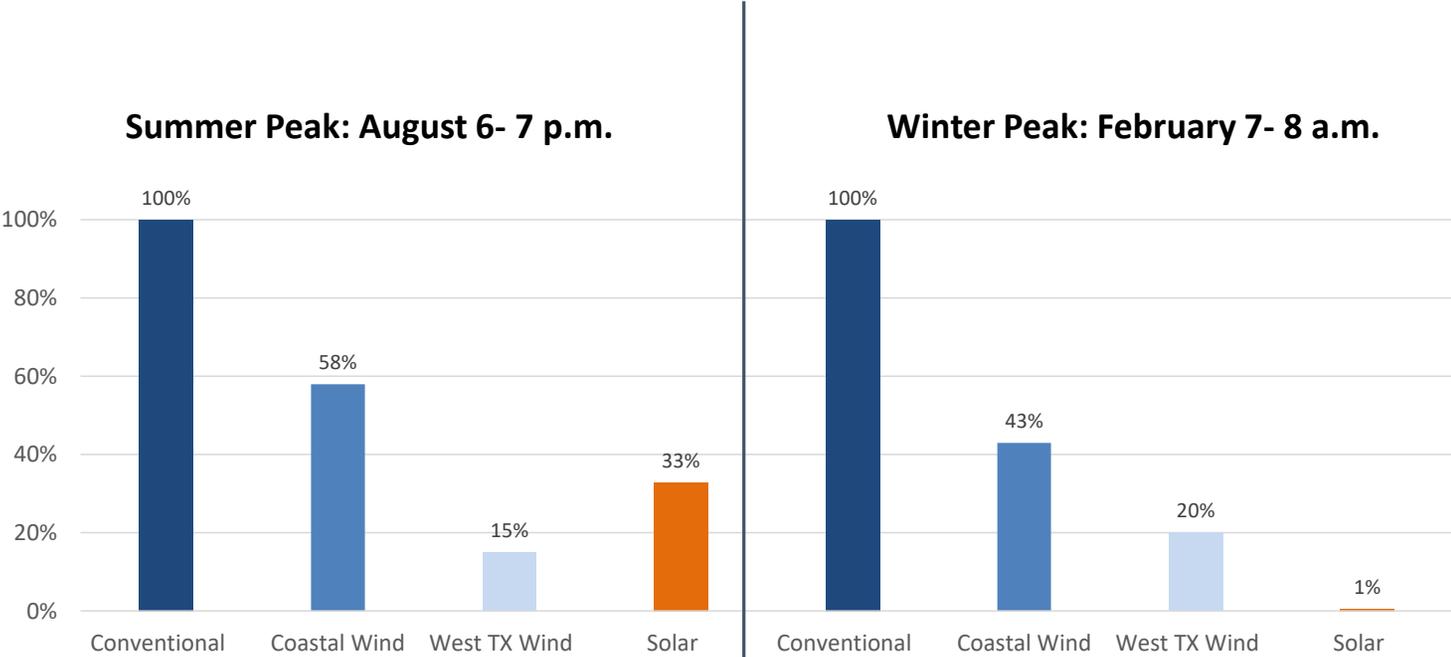
FLEXPOWER BUNDLE

OPTIMIZING RESOURCES



Intermittent solar & wind need to be firmed up with conventional power sources to provide around-the-clock reliability

RESOURCE PEAK AVAILABILITY



Only a portion of renewable capacity is available to meet summer & winter peak

ERCOT NET PEAK LOAD



August 2019 was the second hottest August on record.

A new all-time peak occurred on Monday, August 12th.

Tuesday, August 13th would have been an additional new all-time peak but for the declaration of ERCOT's Energy Emergency Alert (EEA) event.

In August, the highest energy market prices did not occur on the highest load days, but instead on the days of highest "net peak load".

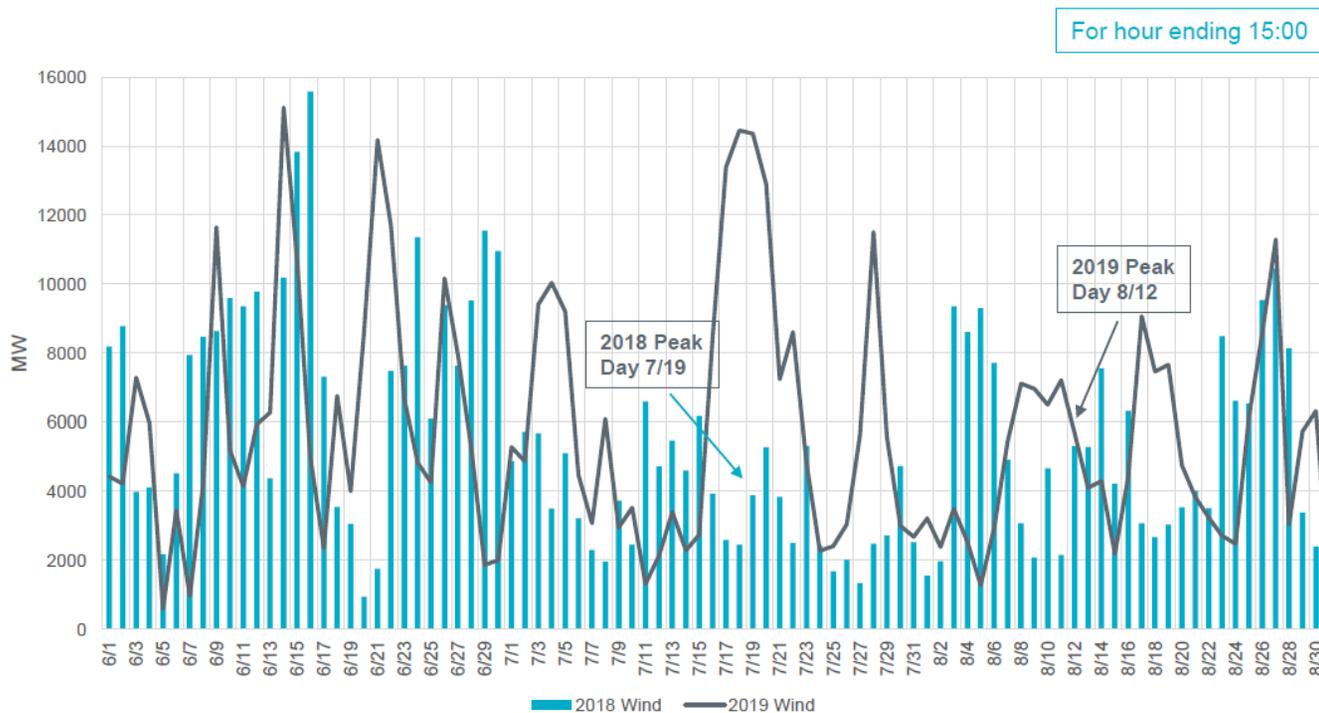
Net Peak Load is a new term in ERCOT defined as the total system demand with wind and solar subtracted from the demand value. Or said differently, load minus wind and solar output.

Tightest conditions frequently occurred earlier in the day from when the peak demand occurred.



Wind Output

- ERCOT had approximately 2,400 MWs of additional installed wind capacity going into summer 2019 compared to 2018.

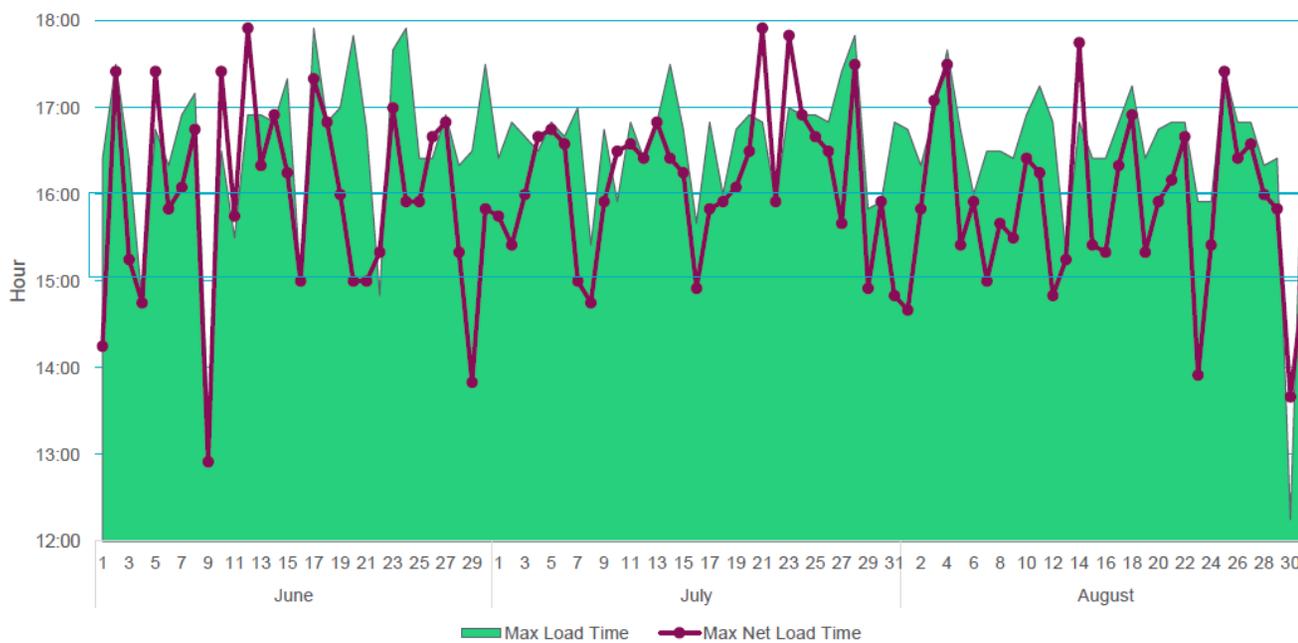


Item 5.1
ERCOT Public



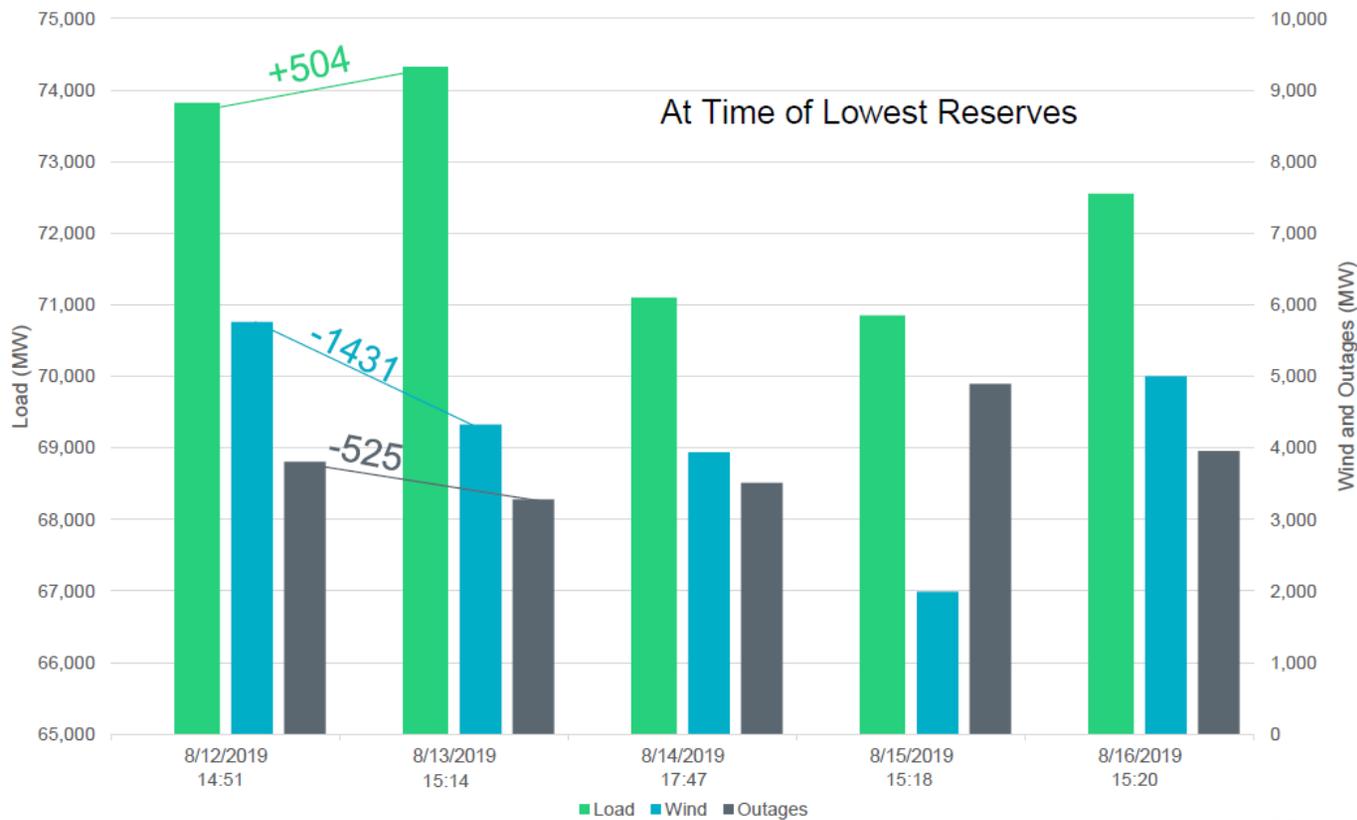
Timing of Peak Load and Peak Net Load (Load-IRR)

- During summer 2019, the peak net load frequently occurred prior to peak load.
- Net peak load occurred prior to 4 p.m. nearly 2/3 of the days in August.





Load, Wind, and Outage Differences – 8/12-8/13



Outages Shown are non-IRR Outages

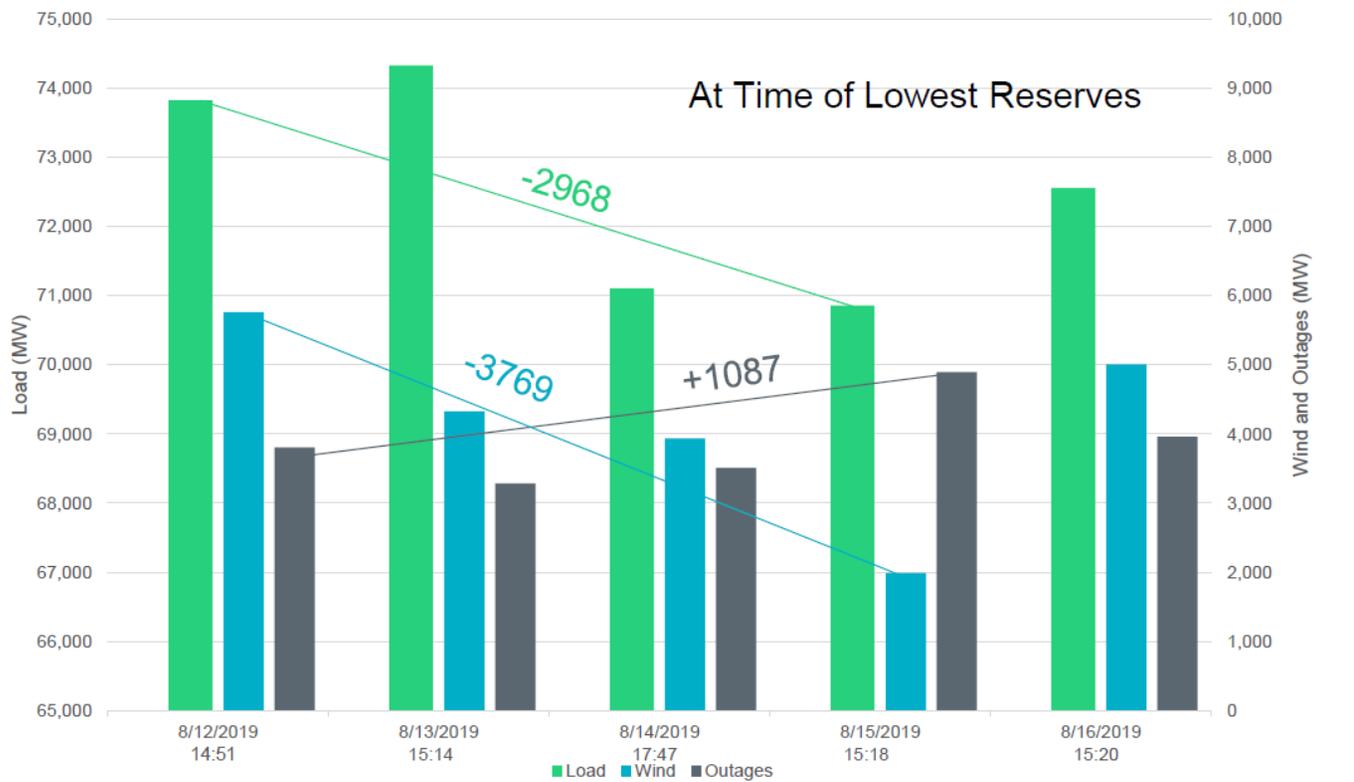


Item 5.1
ERCOT Public

Navigation icons: Save, Print, Previous, Next, Page 17 / 31, Zoom In, Zoom Out, PDF icon



Load, Wind, and Outage Differences – 8/12-8/15



Item 5.1
ERCOT Public

Navigation icons: Save, Print, Up, Down, 21 / 31, Previous, Next, Search

21



FLEXSTEP



FlexSTEP



- We're leveraging the success of STEP to create *FlexSTEP*, our next generation energy management program
- We're looking to continue to provide options to our customers and support market and economic growth
- Currently, we are packaging options for *FlexSTEP* based on feedback from stakeholders and customers

FlexSTEP

Design Principles to deliver benefits to our Community



- 5-year program implemented in phases
- \$40-70 million spend per year (~\$1.96-\$3.43 bill impact)
- Informed by customer feedback
- Diverse program portfolio, reach every customer segment
- Bundling approach to increase value to customers & community
- Embrace new technology
- Reduce emissions
- Support community efforts on economic development



HIGHLIGHTS

STEP Program review



1.4 TWh of gross electricity savings in FY 2019 - **enough energy to power 104,000 Greater San Antonio Area households** for the year. Over the life of STEP so far, it has yielded 6.3 TWh of electricity savings.



680 estimated annual jobs and \$28 million in annual income from FY 2009 to FY 2019. In total, STEP generated 7,500 local job-years and \$312 million in labor income.



3.3 million (short) tons of CO₂ emissions reductions. Additionally, STEP has reduced SO₂ emissions by 6.6 million lbs. and NO_x emissions by 3.1 million lbs.

Source: ICF, STEP Program Review, November 2019

FOCUS GROUPS



Purpose was to explore awareness and perceptions of the STEP program. Participants from residential, small, medium & large business segments.

Segment	What worked well?	Opportunities for improvement
Residential	<ul style="list-style-type: none"> • Energy efficiency ranked third in importance after affordability and reliability • Associated STEP with helping the environment and being comfortable • Customers who own their home are willing to pay to continue the program 	<ul style="list-style-type: none"> • Majority of customers had never heard of STEP, but familiar with some rebates and incentives • Understand AC is most power hungry item in home, but could use education on other ways to save
Small Business	<ul style="list-style-type: none"> • Rated energy efficiency second behind affordability • Very aware of practical ways to improve efficiency in their business 	<ul style="list-style-type: none"> • Low awareness of STEP rebates and incentives • On-site energy assessments would be helpful in showing them ways to save • Need to address renters, not likely to make efficiency improvements to a leased building
Large Commercial	<ul style="list-style-type: none"> • Large customers aware of STEP, knowledgeable and experienced in energy efficiency • See energy efficiency as "the cheapest way to hedge against costs." 	<ul style="list-style-type: none"> • Offering consulting on financing options/ project paybacks could help move projects forward • Looking for new expanded list of incentives and rebates – beyond lighting

PARTNER ENGAGEMENT



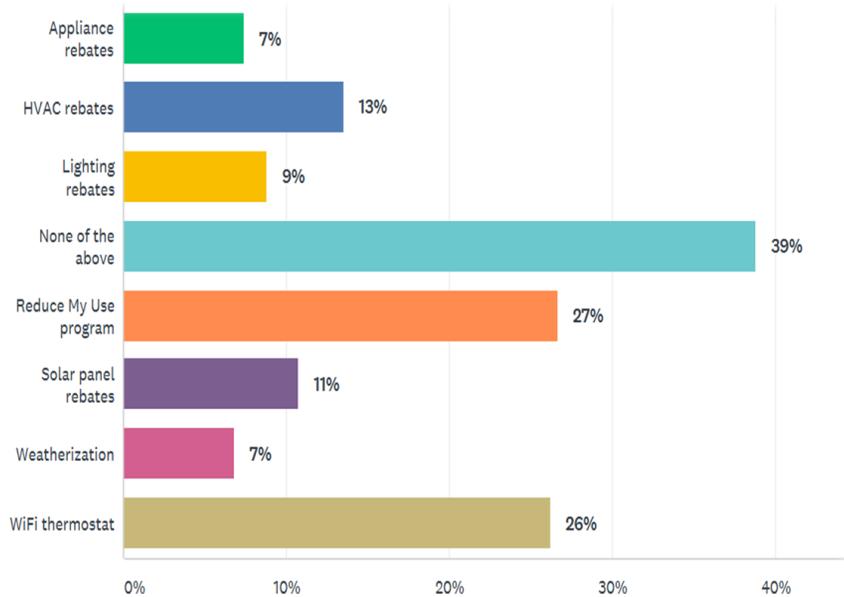
Partner engagement team is reaching out to key community groups

Partner	Focus Area	Date(s)	Feedback
Build San Antonio Green	New home construction, solar	9/6/19 & 11/21/19	✓
Solar Executive Committee	Solar advisory group	9/10/19 & 11/5/19	✓
TCEQ	Regulatory	9/26/19	✓
Solar Stakeholders Group	Solar installer community	10/4/19	✓
Citizens Advisory Committee	Community	10/9/19	✓
AACOG Legislative Update	Government	9/27/2019	✓
Helotes-NW SA Chambers of Commerce	Suburban cities	11/12/19	✓
Greater San Antonio Builders Association	Residential builders	11/13/19	✓
Environmental Stakeholders	Environment	11/18/19	
Real Estate Council of San Antonio (RECSA)	Real estate	12/4/19	
Educational Alliance Partners	Schools districts & universities	January	
San Antonio Manufacturing Association	Manufacturing sector	Pending	

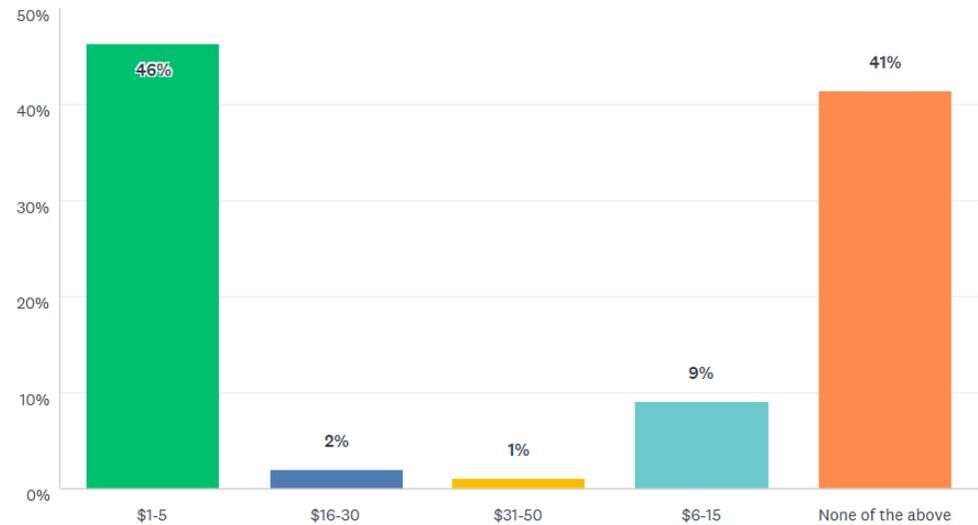
ONLINE SURVEY



22% of respondents have participated in a STEP program



Almost 60% are willing to pay \$1-\$15/month to continue STEP



Sourced from SurveyMonkey on CPSE website, fielded July 2019 – present. N=679 as of 10/14/19.



IMPACT TO CUSTOMER BILLS



Residential Bill Impact from STEP
Based on an average of 1,000 kWh/month



Everyone pays for STEP as it provides societal benefits to all customers and the community





COSA's CLIMATE ACTION & ADAPTATION PLAN

LINKS ON OUR WEBSITE



SA Climate Ready Climate Action and Adaptation Plan (CAAP) info can be found on the CPS Energy website at this link:

<https://www.cpsenergy.com/en/about-us/environment.html>

The CoSA Office of Sustainability has a sustainability dashboard and we provide data annually:

<https://sasustainability.com/home>



TIME OF USE RATES EV PILOT



EV PROGRAM STRATEGY



Enable the electrification of transportation in our community by delivering customer options that allow us to optimize our infrastructure while delivering a meaningful customer experience



Expand

customer value to increase EV utilization & adoption



Understand

customer needs through analytics and focus groups to eliminate barriers



Engage

with customers to create valuable rates & incentives to reduce grid impacts



Collaborate

& partner with industry, customers and other utilities



Facilitate

the development of EV infrastructure into our community



Product Offerings

Create customer centric offerings that increase value for customers and encourage off-peak charging with benefits to customer, community and our grid.



Operations & Infrastructure

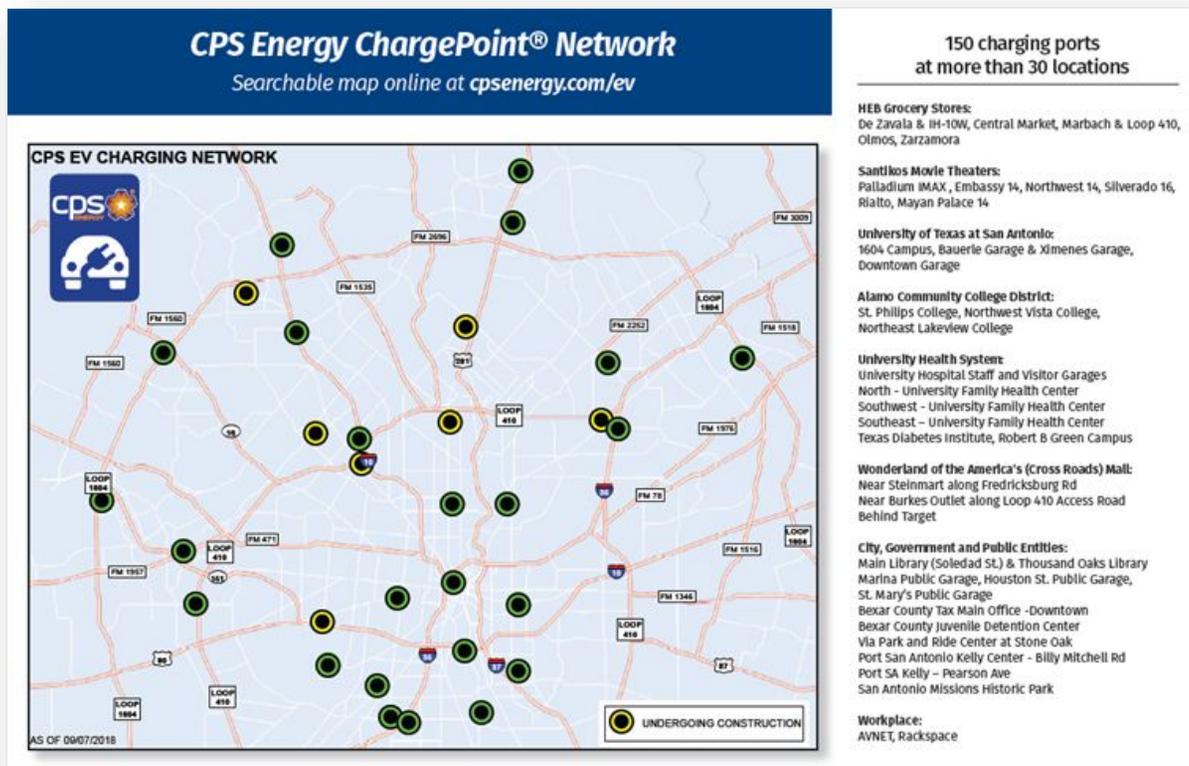
Provide infrastructure solutions to support customer initiatives, facilitate EV adoption and minimize impacts to the electrical grid.



Education & Marketing

Drive adoption of EV's by educating employees, consumers, businesses and partners.

CHARGING INFRASTRUCTURE



- 240 Charging ports Stations in San Antonio
- 150 Level 2 charging ports at 30 location owned by CPS Energy
 - Network upgrades are 60% complete
- 1st EV Fast Charging Station opened in April owned by Electrify America

PRODUCT OFFERINGS



	Residential Pilots				Commercial Pilots		
Pilot Programs	Managed Charging	Peak Time Rebate	Whole-Home TOU	EV-Only TOU	CPS Energy Level 2 Network	Small-Medium Charging	DC Fast Charging
Program Description	One-time equipment rebate; monthly participation credit	One-time rebate; monthly participation credit	Monthly potential savings	Monthly potential savings	Yearly flat rate program; Pay as you go charging by hour	Program under development For < 100 kW chargers	Pilot DCFC Rate For >100 kW charger plazas
Objectives	Shift EV charging load from on-peak to off-peak				TOU on all charging services to manage load. Programs to enable 3 rd party services.		
Customer Benefits	Rebates on charging equipment Behavior based savings				Access to expanded charging network.		



January 6, 2020

To the Members of the Environmental Stakeholder Group,

Thank you for participating in our stakeholder meeting on November 19, 2019. This past year was another year of progress in receiving input and feedback on our **Flexible Path**, and more specifically on key components of the **Flexible Path: FlexPower Bundle** and **FlexSTEP**. You are important contributors to shaping these initiatives and the robust dialogue and information sharing that occurs at these meetings continues to be valuable and insightful. This letter serves to memorialize our joint discussion and to provide responses to questions and comments that you raised.

Role of Natural Gas

We are a dual utility, providing both electric and natural gas service. With our natural gas system originating in 1860 and being Texas' oldest utility, you can imagine we have a lot of residential, commercial and industrial customers that want, and even depend on, this service. Natural gas is three times more efficient than electricity in many applications, meaning there is less energy lost while sourcing natural gas to the customer. Also, direct end-uses of natural gas, such as cooking, and space and water heating, lowers the demand for other, more carbon intensive forms of energy and helps to achieve net carbon emission reductions. Our natural gas utility plays a contributing role in reducing greenhouse gas emissions.

We noted your concerns regarding the information on our website pertaining to natural gas rebates. Natural gas is an efficient energy choice for home heating and for heat-generating appliances, and we are a leader in helping our customers, both electric and natural gas, use energy as efficiently as possible. As such, we offer numerous rebates, incentives and education programs.

Natural gas is a necessary component of the **FlexPower Bundle**. As we discussed, the **FlexPower Bundle** considers adding up to 900 MW of solar, up to 50 MW of energy storage, and up to 500 MW of a leased natural gas resource that is already operating in ERCOT. We agree that solar, wind, and emerging technologies will help efforts to make the energy we all use cleaner. However, the very nature of these intermittent resources requires that we continue to invest in clean and readily available energy that ensures the lights stay on when the sun isn't shining, or the wind isn't blowing. The **FlexPower Bundle** approach for adding these resources will be conducted through a competitive and transparent Request for Proposal process. This all said, we always consider other technologies and encourage other suppliers to contact us with their offerings.

At our November CPS Energy Board of Trustees meeting, members from Environmental Defense Fund and Public Citizen distributed questions on the **Flexible Path** and **FlexPower Bundle**. **Those questions were briefly discussed the next day at our meeting and subsequently shared with you by email. Attached to this letter are those same questions and our responses.**



January 6, 2020

FlexSTEP

This year, we have been focused on achieving our original Save for Tomorrow Energy Plan (STEP) goal of reducing our community's demand for electricity by 771 MWs. As shared in the meeting, we have achieved the STEP goal one year ahead of schedule and under budget by about 15%. At the same time, we have been actively pursuing feedback on **FlexSTEP**, the next generation of our energy and conservation programs. **FlexSTEP** will be comprised of diverse programs intended to reach every customer segment, including economically challenged customers, which is a concern the group raised. After our meeting, we emailed you the current list of STEP programs along with their cost-effectiveness. We would really like your input on which programs you would like to see included going forward. We would be happy to set another meeting to discuss this.

CPS Energy Website

We genuinely care about our customers' and stakeholders' experiences with our utility. Not only in-person, but over the phone, through the media, online and every other means for an interaction. Our company website is an important aspect of our utility's public identity and a critical means for sharing information with the public. We have and continue to share information on our environmental stewardship and sustainability activities. Our website includes links to the SA Climate Ready CAAP and the City's Office of Sustainability (to which we supply data). At our meeting, you asked that we consider restarting a sustainability report, or alternatively, providing more detailed information on our website. We have heard your request and will be reassessing how to expand the information provided and enhance our stakeholder experience.

Time of Use Rates

To incentivize electric customers to use energy during times of the day when the cost of generating electricity is low, some utilities are implementing Time of Use (TOU) rates. In developing well-designed TOU rates, numerous and complex questions must be answered. Examples include:

- Will the TOU rate save customers money while at the same time reduce our utility's peak demand?
- Can such rate structures be beneficial for all our customers?
- What about our customers with limited flexibility and special needs?

Due to this complexity, we are initially focusing on one aspect of electricity use, electric vehicle (EV) charging. We maintain a network of 150 Level 2 charging ports around San Antonio, and overall the city has about 240 charging ports. And in April, Electrify America opened our city's first EV Fast Charging Station. This coming year, we will likely offer optional residential and commercial TOU rate pilot programs designed to increase EV adoption while encouraging off-peak charging. We will work with our enrolled customers to better understand their needs and create valuable rates and incentives. In our experience, it has been in our customers' best interests to start with a product like this, introduce it, provide time for transition, collect public input and feedback, make adjustments as needed, and over time find ways to introduce the TOU rate concept more broadly.



January 6, 2020

No Coal by 2025

Years ago, we began a process to reduce our coal use and increase our renewable energy portfolio. Today, our **Flexible Path** and **FlexPower** Bundle concepts give us a framework for moving forward with that process, focusing on smaller increments of capacity over shorter time horizons. Power supplies must meet the needs of our community in terms of providing **Affordable, Reliable, Safe, Secure, and Resilient** electric and gas services, while caring for the **Environment**.

At our meeting, we discussed the sequence of events that need to occur as we continue our transition to cleaner energy resources. We have aging natural gas steam power plants in our fleet that will need to be retired over the next 5-10 years. We have an obligation to our customers to plan for the replacement of those power plants before they come offline. We must ensure our customers have consistent, reliable electricity. Additionally, state projections indicate that the energy market will continue to be tight in the coming years, with increasing risk of exposure to high prices. We need to either proactively build replacement capacity, or secure power to ensure our community is not unnecessarily exposed to higher levels of risk and expense. The **FlexPower** Bundle will strengthen the reliability of our generation fleet as we replace that capacity with solar, firmed up by storage and a leased natural gas resource.

As part of this discussion, you raised questions regarding the operation of these natural gas steam power plants and their nitrogen oxide (NOx) emission rates. The plants became operational in the late 1960s to early 1970s and while they are nearing retirement, remain vital to our power generation mix and important to the state's capacity levels. They have been key to helping us provide reliable and affordable energy during peak load demands and protecting our customers from volatile energy prices. The units typically only operate during our peak summer and winter loads when demand is high or when other units in our generation fleet are not available. Ozone season runs from March through October and there are about 7 to 10 ozone action days per year. The NOx rates of these plants range from 0.08 - 0.15 lb/mmbtu. Publicly available emission data may be found at: <https://www.epa.gov/airmarkets/power-plant-data-viewer#Instructions>

Potential to Convert Coal Units to Natural Gas

During the meeting, we stated a continuing interest in working collaboratively with you and other stakeholders. We specifically asked for your feedback on a major opportunity to further reduce carbon emissions, which is the potential to convert the Spruce coal units, sometime in the future, to natural gas. A good case for switching from coal to natural gas comes when there is the possibility to use existing infrastructure to provide energy services with lower emissions. Given the time it takes to build new renewables and to implement energy efficiency improvements, this represents an opportunity for emissions reductions. The suggestion garnered very little interest or comment, even though natural gas is a cleaner form of energy.

The meeting was later followed by a new round of environmentalist allegations that CPS Energy was "holding solar hostage." This is not the case at all. While we thought it could work to launch all components of the **FLEX**Power Bundle in 2019,



January 6, 2020

we continue to get questions about the effectiveness of all the components, including solar. We are therefore willing and able to take more time for more discussions.

We look forward to talking more about solar, energy storage, and other technologies that are new and/or evolving, as well as today's natural gas that is serving as a helpful global transition fuel to the path to net zero carbon emissions by 2050.

In Conclusion

We appreciate everyone who takes the time to share their thoughts and feedback with us and we thank you for your active engagement in our Environmental Stakeholder meetings. It is our pleasure to serve all our customers and we are committed to continue sharing information about the complexities and benefits of both existing and evolving energy solutions.

Sincerely,

Kathy Garcia, on behalf of,

Paula Gold-Williams

President & CEO

CPS Energy

Attachments:

- Recent Questions From and CPS Energy Responses To Public Citizen & EDF
- Pre-read Resource Materials, Provided Nov. 11, 2019
- Meeting Agenda, Nov. 19, 2019

The following handouts were provided in this section because environmentalists who came to the November 19, 2019 meeting confirmed they were interested. The same handouts and are also included in the last tab of this book because the materials were received initially at a Board of Trustees meeting.



A No-Bid Natural Gas Contract is Risky for CPS Energy Customers

At the October 28 CPS Energy board meeting, staff indicated that they are seeking board approval to negotiate a 10-year no-bid contract with an unnamed, hand-picked company for a natural gas-fired power plant. The contract would be for two 250 megawatt blocks of capacity, with one block starting in 2020 and the other in 2021. CPS Energy hopes to negotiate both contracts to run through 2030. The utility plans to use a competitive bid process for additional solar and battery storage capacity.

Entering into a financial commitment of this magnitude and duration without soliciting competitive proposals risks wasting ratepayer money. CPS Energy customers will pay for any excessive costs. As a city-owned utility, CPS Energy should be especially attuned to this risk. It should seek competitive bids for all major purchases to ensure ratepayers are protected.

Why have utility staff determined that natural gas capacity will serve its needs best? CPS Energy staff appear to want additional flexible, or dispatchable, electric generating capacity. This may not actually be needed in the short term, but assuming it is, a better approach is to issue an all-source RFP, listing requirements such as capacity, dispatchability, flexibility, and any other criteria and allow companies to submit proposals that include the resources that would be most cost competitive. Perhaps a large battery charged by inexpensive wind and/or solar would be cheaper than natural gas. Other utilities have used these types of technology-neutral request for proposals with great success.

CPS Energy staff have requested approval to negotiate with the unnamed company they have selected before the end of the year. The board should give this request thoughtful consideration and discussion and demand a competitive and transparent procurement process for this large financial commitment. Customers are counting on the board to protect them from unnecessary rate hikes.

Please contact Kaiba White (kwhite@citizen.org, 607-339-9854) with any questions.

JANUARY 6, 2020

RESPONSE TO PUBLIC CITIZEN FROM CPS ENERGY:

For approximately three years, we have been in the community talking about the future of energy. These discussions were filled with input from diverse stakeholders, including the environmental stakeholder group, and helped us develop our **Flexible Path** strategy. The input also included **People First!** Community Fairs, numerous focus groups, and helpful customer surveys. Periodically, this input and feedback has been and will continue to be shared via our website. Detailed information including presentations, public comment cards, Q&As and full transcripts from our Board Input Sessions can be found on our website at: <https://www.cpsenergy.com/en/about-us/who-we-are/trustees/board-public-input-sessions.html>

As a result of the public input we received, in July 2019, we proposed the **FlexPower** Bundle, which is a blended power approach for adding incremental generation resources. The **FlexPower** Bundle considers adding up to 900 MW of solar, up to 50 MW of energy storage, and up to 500 MW of a leased natural gas resource. At the October 28, 2019 CPS Energy Board meeting, CPS Energy did not request board approval to “negotiate a 10-year no-bid contract with an unnamed, hand-picked company for a natural gas-fired power plant.” The proposed approach for adding all **FlexPower** Bundle resources will be through a competitive and transparent Request for Proposal process. The **FlexPower** Bundle is intended to be a diversified solution set, including some emerging technologies, that recognizes today’s renewables alone cannot support all our community’s customers consistently and reliably, 24/7/365. And in proposing this, we continue our public input process of receiving feedback and commentary on this approach. No decisions have been made.

As we continue receiving input, we consistently hear that we must provide **Affordable, Reliable, Safe, Secure, and Resilient** electric & natural gas services, while caring for the **Environment**. That is why we have proposed this blended approach. Taking too much traditional generation off the grid too fast could inadvertently disrupt the goals our community is trying to achieve. While we seek cleaner forms of energy production, we also have to ensure that our customers have consistent, reliable power particularly when the sun doesn’t shine and the wind doesn’t blow.

Solar power is very weather and time-of-day dependent, which is why natural gas generation is needed to compensate for when the sun does not shine. Therefore, the purpose of including the natural gas resource is to firm up the solar component of the **FlexPower** Bundle under all-weather or time-of-day conditions. We are currently considering the duration of the natural gas resource while taking into account new and emerging technologies that may surface in the near term.

Emerging energy storage technologies will certainly help, but they have not yet advanced far enough to become a cure-all. Energy storage, such as batteries, is still very costly per unit in comparison to solar and natural gas resources. The additional natural gas capacity in the **FlexPower** Bundle will be designed to proactively bridge to a time when energy storage can reach better pricing levels and increased energy discharge/use timeframes. While battery storage systems are currently being designed in the 4-hour duration range, we need to get longer timeframes to reliably compensate for when the sun does not shine. The **FlexPower** Bundle will strengthen the reliability of our generating fleet as we phase

out aging power plants over the next several years and replace that capacity with solar, firmed up by battery storage and a leased natural gas resource.



Public Comments on CPS Energy FlexPower Bundle Proposal

CPS Energy is soliciting feedback on their FlexPower Bundle proposal. However, CPS Energy has not provided the public with sufficient information about this proposal in order for the public to provide informed feedback.

JANUARY 6, 2020 RESPONSES FROM CPS ENERGY TO EDF ARE EMBEDDED:

1. CPS Energy has shared proposed additions to their generation mix but not their demand forecast. What is your forecasted increase in demand over the next 5-10 years?

It has been highly publicized that both the Texas and San Antonio's population levels are expected to climb significantly over the next 20-plus years. Assuming future Save for Tomorrow Energy Plan funding will be approved, the growth will be proactively moderated by our active optimization of successful energy efficiency and conservation. Accordingly, we currently believe gross customer usage is expected to grow about 1.5% per year, on average, over the next 25 or so years. While this is not extreme growth, it is significant. Even so, growth could be lower or higher, over time. To that point, there are increasing reports of a national recession potentially over the next couple of years. Only time will tell what will occur in the future. We will monitor and update our projections every year.

2. Given that CPS Energy currently has a large reserve margin, do we need to procure any additional natural gas generation capacity next year?

Our Reserve Margin is the amount of capacity by which our certain and reasonable generating capacity exceeds the needs of our residential, commercial, industrial, and wholesale customers. While we work diligently and proactively to maintain our generation units, the older the plants are more likely to be shut down due to age or mechanical failure. Proactively, we therefore plan for the replacement of plants before they need to come offline so that our customers are better assured of Reliable and Affordable energy services.

We have the privilege and obligation to manage the community's energy assets. We need to either proactively build replacement capacity or secure consistent levels of power to ensure our community is not unnecessarily taking on higher levels of energy delivery risks. Keeping in mind that both new solar and a natural gas resource can take years to build and activate, the proposed natural gas resource, by design, would give San Antonio customers more energy certainty as we proceed into a period when energy prices are escalating significantly, especially when days are very hot.

There is only a small group of natural gas resources that have capacity that is available for

external customers to purchase. Assuming the capacity from the resource is not bought by some other party beforehand, CPS Energy could secure it for our customers, which would decrease the exposure to quickly increasing power prices. It would reduce customer bill volatility, including extreme price spikes. Accordingly, the **FlexPower** Bundle is a very prudent and responsible approach to keeping our reserve margin healthy over the next 4-to-10 years.

Over time, we will also explore other emerging energy technologies. We will leverage them into our system prudently as they become more effective and efficient.

3. If CPS Energy is not retiring any natural gas power plants until 2023, why do we need to start procuring more NG generation capacity in 2020?

Prudent planning is an important commitment we make for our customers and our community. Older plant retirements are expected to occur over the next 5-to-10 years. As mentioned in the previous paragraph, there is a need to mitigate the risks posed by depending on these aging plants over the next few years. The ERCOT market continues to be very tight in the coming years, with increasing risk of exposure of our customers to high prices should one or more of our older units fail during the summer or winter peak hours. The natural gas resource will also help firm up the substantial proposed solar capacity of up to 900 MW and protect our customers from the risk of high prices.

4. After your board voted unanimously to support the city's climate plan goals, why is CPS Energy staff proposing to add more fossil fuel generation capacity over the next two years than renewables generation plus battery storage?

To the contrary, we are proposing the addition of much more solar and energy storage than we are proposing to "lease" from a natural gas resource. In fact, within the **FlexPower** Bundle, solar and storage capacity (950 megawatts) exceeds the natural gas capacity (500 megawatts) by almost 50%. Coincidentally, the 900 megawatts of solar capacity proposed within the **FlexPower** Bundle would also increase solar capacity in the Texas energy market by almost 50% - from approximately 1,900 megawatts to about 2,800 megawatts.

Furthermore, the term of the solar Purchase Power Agreements, which are basically leasing arrangements, are expected to be 25-year commitments. This is much more extensive than the shorter 4-to-10 year potential natural gas capacity agreements. A limited term for the natural gas resource portion of the **FlexPower** Bundle provides a reliable bridge to a future when energy storage should become more cost effective.

The Climate Action and Adaptation Plan (CAAP) sets a solid goal of net-zero emissions by 2050. We believe that it is not practical to only assume the path over the next 30 years is linear. All solutions today and in the near future cannot be renewables only because there is no energy when the sun does not shine. We further believe that progress will occur a few steps at a time, year-after-year, through thoughtful and balanced interim solutions. Again, this will ensure that our customers receive consistent / reliable and affordable power over the next 30 years as we all work to reach our goals.

We will continue to take a deliberate approach in introducing energy storage systems in the future. The exact velocity of these improvements are not known.

Finally, while our Board voted unanimously to support the CAAP in the fall of 2019, it is important to note that the Board's formal resolution explicitly requires our management team to thoughtfully work within the broad strategic framework of our **Flexible Path**. The Board resolution can be found on our website at:

<https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/BOT-Presentations/2019.08.26%20CAAP%20Resolution.pdf>

5. Battery prices dropped 85% between 2010 and 2018. Isn't a ten year lease of a natural gas power plant too long of a commitment given the current rate of technological advancements?

Just because prices have dropped on battery energy storage systems (BESS) over the past few years does not necessarily equate to them being affordable today. Over the past three years, CPS Energy has been dispatching a small BESS into the ERCOT market to gain operational experience. We also own and operate a larger combined solar and BESS facility (10 MW capacity, 1-hour duration or a 5 MW, 2-hour duration), that is scheduled to be fully on-line in December of this year. With this new solar/BESS facility, CPS Energy has taken a major step in using this new technology to produce emission-free renewable energy during high energy use days. We will continue to take a deliberate approach in introducing energy storage systems in the future.

6. Is a ten year commitment to natural gas generation a wise investment when a carbon tax could possibly be passed at the federal level in the next few years?

Please keep in mind that, to date, there has been no formal commitment for any timeframe on any part of the **FlexPower** Bundle. Conversely, we are entering an exploratory period where we will seek more definitive third-party information, which will include recommending definitive timeframes for each part of the Bundle. The initial power quantities in the **FlexPower** Bundle have basically been made as general suggestions to create helpful context. A ten-year agreement for a natural gas resource is more of an outside range. The agreement could be as short as four years.

There has been talk of a Carbon Tax for more than 10 years. While this may or may not happen in the foreseeable future, our solid energy portfolio diversification will help mitigate the relative financial impact to our customers' bills.

While the level of carbon price assessments could be notable, customers could be more impacted by power supply gaps that are more probable for solar power that does not generate when the sun does not shine. The gaps could increase power price volatility and escalation.

Finally, while a carbon tax could increase financial pressure, we believe it will be applied broadly to all market participants. We also believe our diverse energy portfolio will help us mitigate the impact.

7. Would the natural gas-powered generation be used year-round or just during peak demand seasons? Would it be used to sell electricity to CPS Energy service territory customers, ERCOT wholesale customers. or both? If both, to what extent for each?

The natural gas resource would be used to serve both our retail and wholesale customers. As presented to the Board of Trustees, a natural gas resource dedicated to CPS Energy

would return the most value to our customers if it runs based on market conditions. It therefore would have the potential to run at any hour of the year. Its output, combined with the output of the rest of the CPS Energy portfolio, would serve the CPS Energy customer base. To the extent there is excess energy produced by the entire portfolio, beyond the needs of the retail customer base, this is considered off-system sales, the benefits of which serve to meet the financial needs of CPS Energy and defer the need for annual rate increases, which has been the case for the last six years. The capacity will be used as needed. Even so, it would represent less than 10% of our total portfolio before and after the older natural gas resources are closed.

8. What is the efficiency of the gas unit that CPS Energy wants to contract with?

Efficiency is used to describe the energy that a certain system can extract and make useful from its energy source. Since only combined cycle technology is being considered for the natural gas resource, the efficiency is expected to be very high; in the 50% range (which is similar to our existing combined cycle fleet efficiency). As a comparison, our older natural gas, coal, and nuclear resources are in the 30% to 35% efficiency range, new solar photovoltaic modules are in the 18% to 20% efficiency range, and new wind turbines are about 50% efficient.

9. To what extent has this proposed gas plant been depreciated? Is this a power plant that would otherwise be retiring, but a lease by CPS Energy will extend the life of it?

A specific natural gas resource plant has not been selected, therefore the power plant life is not known. Specific information related to depreciation status and plant life would be under the control of the generation asset owner. However, since only combined cycle units, early in their operational lives, are under consideration, any arrangement would not extend the life of a unit that would otherwise retire.

10. Do CPS Energy's existing gas procurement contracts provide enough natural gas to power this additional proposed NG power plant or would CPS Energy need to pursue an additional natural gas supply contract?

While we work diligently and proactively to maintain our generation units, the older the plants are more likely to be shut down due to age or mechanical failure. Proactively, we therefore plan for the replacement of plants before they need to come offline so that our customers are better assured of Reliable and Affordable energy services.

A specific natural gas resource has not been selected. Details of the natural gas supply arrangement would be determined at a later time. Since the natural gas resource would be an existing plant in the ERCOT market, contracts for natural gas supply already exist. CPS Energy could assume these contracts, negotiate our own, or simply reimburse the owner for the natural gas it schedules to the unit on our behalf. Natural gas is a robust and "liquid" market (i.e. a market with very transparent pricing), so any of these options are possible and relatively equivalent.

11. Could CPS Energy achieve a higher reserve margin by taking the proposed budget for battery storage over the next few years and instead spend it on energy efficiency programs?

We have and will continue to deploy a multi-faceted approach to improve San Antonio's

energy and environmental landscape. To date, we have:

- Closed older coal units;
- Replaced higher emitting coal plants with lower emitting and younger natural gas resources;
- Launched and managed a large and highly successful energy efficiency and conservation program (called the Save for Tomorrow Plan - STEP);
- Become leaders in wind and solar energy.

While energy efficiency and conservation funding is an often less expensive per unit energy investment than energy storage, we need to keep our solutions diversified for the foreseeable future. This said, we will launch into a new exploratory period that will give us more up-to-date information about market offerings. In this way, we keep our options open and optimized.

Energy efficiency programs, such as demand response, can reduce peak consumption. Over the past 10 years, CPS Energy has added over 200 MW of demand response capability. There is an economic and practical limit to the maximum amount of demand response capacity that can be achieved. This limit is much smaller than the 1,700 MW replacement capacity needed to meet peak demand in the next decade.

Thanks again for your continued environmental-focused feedback and engagement about our **Flexible** proposals.

Environmental Defense Fund

For questions please contact: Mario Bravo
Project Manager, Texas Energy
Environmental Defense Fund
210-965-7987 mbravo@edf.org

CPS Energy

For questions please contact: Kathy Garcia
VP of Governmental Relations, Regulatory
Affairs and Public Policy
CPS Energy
512-461-9433 ksgarcia@cpsenergy.com