CPS ENERGY BOARD OF TRUSTEES SPECIAL MEETING
TO BE HELD ON AUGUST 17, 2020 AT 1:00 PM
BY TELEPHONE CONFERENCE
1 (877) 353-4701

To protect the health of the public and limit the potential spread of COVID-19, the CPS Energy Board of Trustees will hold this special meeting via telephone conference. These meeting standards are based upon the provisions of the Open Meetings Act, as modified by the Governor of Texas in response to the COVID-19 crisis. These modified standards shall remain in place until further notice or until the state disaster declaration expires or is otherwise terminated by the Texas Governor. There will be no in-person public access to the meeting.

At any time during the Board Meeting, and pursuant to the provisions of Chapter 551 of the Texas Government Code, the Board may meet in executive session for consultation concerning attorney-client matters under Section 551.071; for deliberations and other authorized action on real property under Section 551.072; on prospective gifts or donations under Section 551.073; on personnel under Section 551.074; on security personnel or devices under Section 551.076; on economic development negotiations under Section 551.087; to deliberate, vote, or take final action on competitive matters under Section 551.086; to deliberate regarding security audits and devices under Section 551.089; or to deliberate under Texas Government Code Section 418.183(f) about confidential information under the Texas Homeland Security Act.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>TOPIC</th>
<th>ACTION</th>
<th>PRESENTER/ SPONSOR</th>
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<tbody>
<tr>
<td>1</td>
<td>CALL TO ORDER</td>
<td>Execute</td>
<td>Mr. John Steen</td>
</tr>
<tr>
<td>2</td>
<td>SAFETY MESSAGE</td>
<td>Execute</td>
<td>Mayor Ron Nirenberg &amp; Ms. Paula Gold-Williams</td>
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<td>3</td>
<td>INVOCATION</td>
<td>Execute</td>
<td>Mr. Chad Hoopingarner</td>
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<tr>
<td>4</td>
<td>PUBLIC COMMENT (Pre-Registration scheduled from 10:00 AM – 11:00 AM @ (210) 353-4662)</td>
<td>Discuss</td>
<td>Mr. John Steen</td>
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<td></td>
<td>A. Chair’s Announcements</td>
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<td>B. Comments</td>
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<td></td>
<td>UPDATE ON CHAIR’S PRIORITIES</td>
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<td>5</td>
<td>CEO’S REPORT</td>
<td>Discuss</td>
<td>Ms. Paula Gold-Williams</td>
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<tr>
<td>6</td>
<td>ADDITIONAL UPDATES:</td>
<td>Discuss</td>
<td>Ms. Paula Gold-Williams</td>
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<td></td>
<td>A. CPS Energy / SAWS AMI Project (Mr. Jonathan Tijerina)</td>
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<td>B. Other</td>
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<td>REGULAR AGENDA</td>
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<tr>
<td>7</td>
<td>TARIFF LANDSCAPE (Mr. Cory Kuchinsky, Mr. Chad Hoopingarner &amp; Mr. Rick Luna)</td>
<td>Discuss</td>
<td>Ms. Paula Gold-Williams</td>
</tr>
<tr>
<td>8</td>
<td>SOLAR ENERGY GLOBAL TRANSITION / LANDSCAPE UPDATE</td>
<td>Discuss</td>
<td>Mr. Frank Almaraz</td>
</tr>
<tr>
<td>9</td>
<td>NEW ENERGY ECONOMY UPDATE</td>
<td>Discuss</td>
<td>Mr. Frank Almaraz</td>
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<td></td>
<td>CONVENE TO EXECUTIVE SESSION</td>
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<tr>
<td>10</td>
<td>EXECUTIVE SESSION: Please see the narrative list at the top of this agenda for the potential discussion topics.</td>
<td>Discuss</td>
<td>Mr. John Steen</td>
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<td></td>
<td>RECONVENE TO OPEN SESSION</td>
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<tr>
<td>11</td>
<td>ADJOURNMENT</td>
<td>Execute</td>
<td>Mr. John Steen</td>
</tr>
</tbody>
</table>

If the Board meeting has not adjourned by 5:00 PM, the presiding officer may entertain a motion to continue the meeting, postpone the remaining items to the next Board meeting date, or recess and reconvene the meeting at a specified date and time.
CPS ENERGY BOARD OF TRUSTEES
NOTICE OF SPECIAL MEETING
BY TELEPHONE CONFERENCE

To protect the health of the public and limit the potential spread of COVID-19, the CPS Energy Board of Trustees will hold this meeting via telephone conference. These meeting standards are based upon the provisions of the Open Meetings Act, as modified by the Governor of Texas in response to the COVID-19 crisis. These modified standards shall remain in place until further notice or until the state disaster declaration expires or is otherwise terminated by the Texas Governor.

Notice is hereby given that the CPS Energy Board of Trustees will hold a Special Meeting on Monday, August 17, 2020, at 1:00 p.m., by telephone conference.

The subject of this meeting is to act upon all matters pertaining to the current management and operation of the municipal electric and gas systems, including the acquisition of real property and interest therein, by purchase and condemnation, the facilities, financing, the handling and administration of funds and accounts, consideration of matters relating to operations and administration and such other matters as may be brought before the meeting by the Trustees of the Board, and specifically those matters referred to in the attached agenda, which is incorporated herein.

There will be no in-person public access to the meeting.

The meeting will be audio-streamed on cpsenergy.com. The meeting is also available by calling toll-free 1 (877) 353-4701.

Those wishing to speak on an agenda item during the Public Comment portion of the meeting must register on the day of the Board meeting by phone at 210-353-4662. Registration is open for 1 hour, from 10:00 a.m. CT to 11:00 a.m. CT. Those registering to speak should be prepared to provide the following information:

- First & last name / group or organization
- City & state of residence
- Phone and/or email address
- Agenda item # about which they are speaking
- Group for which the individual is speaking
- Any required translation services

Speakers will be called to speak in the order that they register.

The agenda packet is attached. It and other informational material may be found at:

A recording of the telephonic meeting will be made and will be available to the public in accordance with the Open Meetings Act upon written request.

At any time during the Board Meeting, and pursuant to the provisions of Chapter 551 of the Texas Government Code, the Board may meet in executive session for consultation concerning attorney-client matters under Section 551.071; for deliberations and other authorized action on real property under Section 551.072; on prospective gifts or donations under Section 551.073; on personnel under Section 551.074; on security personnel or devices under Section 551.076; on economic development negotiations under Section 551.087; to deliberate, vote, or take final action on competitive matters under Section 551.086; to deliberate regarding security audits and devices under Section 551.089; or to deliberate under Texas Government Code Section 418.193(f) about confidential information under the Texas Homeland Security Act.

Carolyn E. Shellman
Secretary of the Board
August 12, 2020
OBJECTIVES & TAKEWAYS

• PREVIEW THE POTENTIAL PARTNERSHIP WITH SAWS
• PROVIDE AN OVERVIEW OF WATER AMI DEAL STRUCTURE
• DISCUSS CPS ENERGY AS A NETWORK AS A SERVICE (NAAS) PROVIDER
AGENDA

• GUIDING PILLARS
• SMART GRID ADVANCED METER INFRASTRUCTURE (AMI) BACKGROUND
• FLEXIBLE PATH
• SAWS AMI PROJECT
• DEAL STRUCTURE
• NEXT STEPS
OUR GUIDING PILLARS & FOUNDATION

Reliability  Customer Affordability  Security  Safety  Environmental Responsibility  Resiliency

The CPS Energy / SAWS AMI partnership leverages community assets to maximize customer benefits while enabling our Smart City vision.
SMART GRID EVOLUTION
REINVENTING OUR BUSINESS

Flexible Path:
Smart Grid + Energy Efficiency + More

Past
Present
Future

Edison Era

Transitional to Innovation

New Products & Services

August 17, 2020 Special Board Meeting - CHAIR'S PRIORITIES
SMART GRID AMI
NEW ERA FOR THE UTILITY

Transformational AMI technology increases value to customers & drives the utility of the future.

Customer Benefits
- Accurate bill (less estimates)
- Same day move-in’s
- Web Portal for services
- Data for energy insights

Utility Benefits
- $ Savings
- Fewer truck rolls
- Reduced emissions
- Employee safety

Transformational
- EV integration
- Rooftop solar metering
- New pricing plans
- New services
Over the past 9 years, this collaborative partnership has evolved to Itron being our trusted AMI metering system service provider.

**ITRON BACKGROUND**

- Opened San Antonio Office in 2014
- Collaboration is ongoing as we extend the reach of the network
  - Works diligently with us on system needs & maintenance
  - Delivers & works with us to maintain high reliability levels
    - We expect this to continue
Our Flexible Path
BALANCING THE TRIED & TRUE WITH THE NEW

- FlexPOWER Bundle adds capacity with blended solar, storage and gas
- Energy storage smooths the supply of intermittent renewables
- We enable public WiFi hubs and city service kiosks
- Updated grid allows for quicker response and power restoration
- Casa Verde STEP reduces energy loss for customers with income-qualifying homes
- Demand Response through customers voluntarily reducing electricity use during periods of high demand
- STEP rebates encourage use of energy-efficient appliances & HVAC
- Drains are used for monitoring, surveying and mapping purposes
- Quick-cycle peaking units help meet excess demand
- Street lights automatically adjust by dimming or brightening, based on traffic, improving energy efficiency
- Our poles and wire are the backbone to support enhanced high-speed connectivity
- Enhanced technology for natural gas detection is safe and effective
- Simply Solar programs broaden access and interest in renewable energy solutions
- App-enabled electric vehicle charging is also able to supply power
- Communication devices allow for real-time delivery of information across the network
- Energy storage systems support industrial, government, commercial and residential customers
- Efficient is our incubator for new and emerging clean energy technologies
- Enhanced Data Center expertise
- Enhanced security
- Smart parking meters transform downtown open parking availability
- CPS Energy
- cpsenergy.com/flexiblepath

10/23/19
CPS ENERGY / SAWS AMI PARTNERSHIP

Our strategic partnership with Itron & SAWS optimizes value to our community

- Expands the intelligence of the SAWS water distribution system
- Promotes the means for better cost management
- Improves water information & services to customers

The strategic partnership will leverage a community asset that brings value to our shared customer base that enables value & new benefits.
CPS ENERGY AS THE NAAS PROVIDER

- NaaS provides access to network at attractive terms
- Competitive cost of ownership to SAWS
- Optimizes existing AMI infrastructure

This partnership expands our ability to maximize our investment for the betterment of our community.
DEAL STRUCTURE

Itron provides Software as a Service (SaaS), hardware

Existing AMI contract:
- Electric Meters + Network equipment + Field tools
- Network monitoring

We provide NaaS

Itron as prime provides SAWS the “single point of contact” for contractual obligations.

Unique partnership that leverages our existing AMI network while providing SAWS with a proven, reliable & cost effective water AMI solution.
NEXT STEPS

• Come back on August 31, 2020 to ask for resolution support

• Request final approval to begin pilot phase of SAWS AMI Project
  ▪ SAWS Board Meeting, September 1, 2020
  ▪ Begin rollout phase with our expanded partnership
  ▪ Track & test performance of systems

• Keep our Board & key stakeholders up to date on pilot & full deployment efforts
Thank You
Appendix
# Glossary / Definitions

<table>
<thead>
<tr>
<th>Acronym or Word</th>
<th>Definition</th>
<th>Acronym or Word</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AMI</td>
<td>Advanced Meter Infrastructure</td>
<td>NaaS</td>
<td>Network as a service</td>
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<td>NaaS</td>
<td>Network as a service</td>
<td>SaaS</td>
<td>Software as a service</td>
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</table>
TARIFF LANDSCAPE

PRESENTED BY:

Cory Kuchinsky
Interim V.P., Strategic Pricing &
Enterprise Risk Management & Solutions

Rick Luna
Director, Technology & Product Innovation

Chad Hoopingarner
Sr. Director, Strategic Pricing

August 17, 2020
Informational Update
TODAY’S SPEAKERS

Cory Kuchinsky
Interim V.P., Strategic Pricing & Enterprise Risk Mgmt. & Solutions

Chad Hoopingarner
Sr. Director, Strategic Pricing

Rick Luna
Director, Technology & Product Innovation
OBJECTIVES & TAKEAWAYS

• REVIEW THE LANDSCAPE OF CURRENT PRODUCTS & ALIGN ON THE NEAR-TERM PRODUCT ROADMAP

• SUMMARIZE PROCESS FOR NEW PRODUCTS

• DIVE DEEP ON NEW PRODUCTS THAT WE WILL DISCUSS IN AUGUST & SEPTEMBER
AGENDA

• PRODUCT PORTFOLIO & ROADMAP
• PROCESS FOR NEW PRODUCTS
• ELECTRIC VEHICLE (EV) PILOTS
• WHOLESALE DISTRIBUTION SERVICE (WDS)
• RESILIENCY SERVICE
• CLOSING REMARKS
PRODUCT PORTFOLIO & ROADMAP

Cory Kuchinsky
Interim V.P.,
Strategic Pricing &
Enterprise Risk Mgmt. & Solutions
## PRODUCT PORTFOLIO

Our robust product portfolio aligns to customer interest.

<table>
<thead>
<tr>
<th>Basic Energy Pricing</th>
<th>Conservation (STEP)</th>
<th>Renewable Energy</th>
<th>Resiliency</th>
<th>Electrification</th>
<th>Other</th>
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<td>• Electric</td>
<td>• Residential</td>
<td>• Windtricity</td>
<td>• Duplicate Feed</td>
<td>• Rapid Public Charging</td>
<td>• Streetlights</td>
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<td>• Residential Energy</td>
<td>• Commercial Energy Efficiency</td>
<td>• Rebates</td>
<td>• Resiliency Service</td>
<td>• Wholesale</td>
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<td>• Economic Development</td>
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<td>• Big Sun Solar</td>
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<td>• Advanced</td>
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<td>• Customer Assistance Programs</td>
<td>• Commercial Energy Efficiency</td>
<td>• Large Commercial Green Tariff</td>
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<td>Energy</td>
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<td>Programs</td>
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<td>Solutions</td>
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<td>• Other Solar</td>
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<td>• Home</td>
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<td>Emerging Needs</td>
<td>• New Technologies</td>
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<td>Charging</td>
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<td>• Other Solar</td>
<td>• Energy</td>
<td>• Workplace</td>
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<td>• Multi-site</td>
<td>Storage</td>
<td>• Fleet</td>
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- Rebates
- Net Metering
- SolarHostSA
- Roofless Solar
- Big Sun Solar
- Large Commercial Green Tariff
- Duplicate Feed
- Resiliency Service
- Rapid Public Charging
- Streetlights
- Wholesale
- Line Extension
- Small Cell
- Economic Development
- Advanced Energy Solutions (QSE)
- Home Charging
- Public Options
- Workplace
- Fleet
- Distribution Service
- Smart Streetlights
OUR NEWEST INNOVATIONS

New products are developed to meet evolving customer needs.

Customer Needs

- Easy & Low Cost
- No Cost, On-site
- Corporate Goals & Large Scale
- Large Business
- Small Business
- Residential

2000
2007
2015
2016 & 2019
2020
...
& Beyond

- 2000
- 2007
- 2015
- 2016 & 2019
- 2020

- Easy & Low Cost
- On-site
- Off-site

- Corporate Goals & Large Scale
- Large Scale
- Corporate

- 2000
- 2007
- 2015
- 2016 & 2019
- 2020

- Sustainability
- Price Certainty
- Low Income
- Multiple Solar Sites

- & Beyond

- 2000
- 2007
- 2015
- 2016 & 2019
- 2020

- Easy & Low Cost
- On-site
- Off-site

- Corporate Goals & Large Scale
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- 2020

- Sustainability
- Price Certainty
- Low Income
- Multiple Solar Sites

- & Beyond
# PRODUCT ROADMAP – FY2021

**ROOTED IN FINANCIAL STABILITY**

<table>
<thead>
<tr>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
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<td><strong>Environmental Responsibility</strong></td>
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<td><img src="#" alt="Green Tariff" /></td>
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<td><strong>Pilot Programs (Under New Service Options Tariff)</strong></td>
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<td><img src="#" alt="EV Pilots" /></td>
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**Aligned to the GUIDING PILLARS**

- Environmental Responsibility
- Resiliency
- Reliability

**August 17, 2020 Special Board Meeting - REGULAR AGENDA**
PROCESSES FOR NEW PRODUCTS

Cory Kuchinsky
Interim V.P., Strategic Pricing & Enterprise Risk Mgmt. & Solutions
WE ARE EVOLVING
INNOVATION & TRANSFORMATION JOURNEY

**Flexible Path:**
Traditional + Renewables +
Energy Storage + Smart Grid +
“Fifth Fuel”*  

**Transformation & Innovation:**
Flexible Path + New Products & Services

Transitioning to Innovation
Present
Future

* “Fifth Fuel” is composed of energy efficiency gains & demand response
OUR GUIDING PILLARS & FOUNDATION

Our product & rates strategy is supported by our Guiding Pillars.

Reliability  Customer Affordability  Security  Safety  Environmental Responsibility  Resiliency

FINANCIALLY RESPONSIBLE

Our product & rates strategy is supported by our Guiding Pillars.
WHAT IS A PRODUCT?

We offer a wide variety of products that provide our customers convenience, help them save energy & money, & promote new technology

Rebates
- Cool Roof
- Solar Rebates
- HVAC
- Mow Down Smog

Programs
- Weatherization
- Budget Payment Plan
- Thermostats

Tariffs
- Residential Rate
- Affordability Discount Rider
- Line Extension Policy

A “product” is anything that impacts the energy relationship we have with our customers.
DEFINING A TARIFF

• A tariff is a pricing structure or policy that governs how a utility provides services & generates revenue from those services
• Rates, riders & policies are all considered tariffs
• Tariffs are approved by our Board of Trustees & San Antonio City Council
• We have dozens of tariffs that support all of our customers; examples include:
  - Residential Electric Rate
  - Commercial Electric Rate
  - Retail Gas Rate
  - Line Extension Policy
  - Residential Affordability Discount Rider
  - Policy for Miscellaneous Customer Charges

In 2020, management will bring forward several tariff recommendations as part of a series of presentations & requests to stay current with customer trends & interests.
The prices in our tariffs are designed to deliver revenue that covers the cost of running the business.
DEFINING A PILOT

• Our industry is undergoing significant change, creating opportunities for us to serve customers in new & exciting ways
• To optimize these opportunities, the Board of Trustees & City Council approved the New Service Options (NSO) tariff in 2018
• The NSO tariff grants us the ability to test products & services in order to ensure that we are meeting customer expectations & recovering our costs
• Because these tests, or “pilots”, are not fully approved tariffs, they have very strict operational guidelines including:
  o A “Term Sheet” that defines each pilot must be written according to a defined template
  o The pilot has limited participation & duration (usually 1-2 years)
  o Each pilot is approved by the City of San Antonio’s Office of Public Utilities

For a pilot to become a permanent tariff, it must be approved by our Trustees & City Council (i.e., it must become a tariff).
CHOOSING THE RIGHT PATH

Go Straight to a Tariff if...
• Cost to serve is known
• Not possible to limit the scope (i.e., number of customers or length)
• Significant strategic implications to our business exist

Conduct a Pilot First if...
• Cost to provide new offering is not fully known
• Unpredictable customer response
• Technologies rapidly evolving
ELECTRIC VEHICLE (EV) PILOTS
(Review & Update Only / Not Yet Finalized for Separate Tariff Approval)

Chad Hoopingarner
Sr. Director, Strategic Pricing
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.

**EV PROGRAM STRATEGY**

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

**Operations & Infrastructure**
Provide infrastructure solutions to support customer initiatives, facilitate EV adoption & minimize impacts to the electrical grid.

**Education & Marketing**
Drive adoption of EV’s by educating employees, consumers, businesses & partners.

**Expand**
customer value to increase EV utilization & adoption

**Understand**
customer needs through analytics & focus groups to eliminate barriers

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

**Collaborate**
& partner with industry, customers & other utilities

**Facilitate**
the development of EV infrastructure into our community
EV MARKET RESEARCH INSIGHTS

- Many utilities are in the testing & piloting phase new EV pricing
- Time-based Pricing Structures
  - Are common,
  - Vary greatly from utility to utility & state-to-state
- Pricing programs designed to meet customer charging behaviors
  - @ home, @ work, OR on the go

Our team evaluates market best practices & then improves upon these ideas to deliver the best fit for our community.
EV PRICING STRATEGY

• We want to enable the positive impacts of EVs on S.A.’s air quality & electric system

• Our strategy is to use time-based pricing to encourage & incentivize “off-peak” usage of our system

“Off-peak” load optimizes existing assets & reduces capital investment.
HOW THE PILOTS WORK

Our portfolio of EV pilots seeks to encourage adoption & charging infrastructure deployment while protecting the grid.

4 Time-based Pricing Pilots
Seek to Meet Customers Where They Charge

- Large Commercial (Existing Pilot)
- Small Commercial
- Residential
- Our Public Network

“Time of Use” Pricing

Off-peak
On-peak

9pm
4pm

EV Pilots

New Pilot
## EV PILOT RATES

<table>
<thead>
<tr>
<th>Large Commercial Fast Charging (Existing Pilot)</th>
<th>Small Commercial</th>
<th>Residential</th>
<th>CPS Energy Public Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Service Availability Charge: $175</td>
<td>• Service Availability Charge: $25</td>
<td>• Service Availability Charge: $25</td>
<td>• PAYG On-peak: $2.00/hr ($3 min.)</td>
</tr>
<tr>
<td>• Demand: $7/kW</td>
<td>• Demand: $3/kW</td>
<td>• On-peak: 22¢/kWh</td>
<td>• PAYG Off-peak: $1.50/hr ($3 min.)</td>
</tr>
<tr>
<td>• On-peak: 20¢/kWh</td>
<td>• On-peak: 20¢/kWh</td>
<td>• Off-Peak: 4¢/kWh</td>
<td>• Flat Rate: $96/year</td>
</tr>
<tr>
<td>• Off-Peak: 6¢/kWh</td>
<td>• Off-Peak: 6¢/kWh</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**On-peak: 4pm-9pm weekdays**

**Off-peak: All other times**

Our EV pilots are simple & easy to understand.
The pilot EV TOU rates are expected to deliver revenue in line with the cost of serving these customers.
WHOLESALE DISTRIBUTION SERVICE

Chad Hoopingarner
Sr. Director, Strategic Pricing
MEETING OUR CUSTOMERS’ NEEDS

- NEW TYPES OF CUSTOMERS, SUCH AS ENERGY STORAGE OPERATORS, ARE SEEKING TO USE OUR DISTRIBUTION GRID

- WILL ENHANCE the resiliency & reliability of our community’s electric infrastructure
  - Utilities must allow 3rd parties to use their distribution grid to access the wholesale market

We are modernizing our existing WDS tariff to enable new technologies, provide flexibility to our customers & benefit our community.
STRATEGIC BENEFITS

- **ENABLES** new technologies
- **ENHANCES** resiliency & reliability of our system
- **PROTECTS** our community’s investment with modernized pricing, ensuring the cost of assets is fully covered
MARKET RESEARCH OBSERVATIONS

Our proposed tariff uses an enhanced tiered approach.

- Utilities in Texas have “distribution wheeling” rates to recover the cost of distribution assets used by these 3rd parties

- Historically, these rates have been “one-size fits all,” but we are seeing a trend toward a more tailored approach

Our proposed tariff uses an enhanced tiered approach.
HOW THE PRODUCT WORKS

The WDS tariff recovers costs based on how much of our distribution system the customer uses.
## WDS TARIFF UPDATES

The WDS Tariff (Rider E-14) is being modernized to recover costs at different service levels.

<table>
<thead>
<tr>
<th>Current Rider E-14</th>
<th>Modernized E-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>A “one size fits all” approach that is $0.50/kW of demand, regardless of where the Customer interconnects</td>
<td>• A tiered rate, ranging from $0.50 to $1.78, which recognizes that costs differs by where a Customer interconnects</td>
</tr>
<tr>
<td></td>
<td>• Requires additional payments for non-standard infrastructure</td>
</tr>
<tr>
<td></td>
<td>• Includes a monthly charge for customer-related &amp; billing costs</td>
</tr>
</tbody>
</table>
FINANCIAL ASSESSMENT

Allocation exercise that is validated by a 3rd party expert

Monthly bill for a 10 MW interconnection at extended primary voltage will deliver revenue in line with the cost of serving the customer

Wholesale Distribution Service
Monthly Bill Sample

- Cost to Serve
  - $12.1k
- Customer Bill
  - $12.1k

The WDS tiered rate is designed to cover the fixed cost of the distribution infrastructure used by the customer.

Note: Cost of Service consists of O&M, A&G, debt service, internal funds and city payment
RESILIENCY SERVICE

Rick Luna
Director, Technology & Product Innovation
MEETING OUR CUSTOMERS’ NEEDS

• Commercial customers want a solution for dependable power during critical weather events

• For a monthly fee, we will provide access to onsite generation

• Pilot was launched in mid-2019 & we are ready to finalize the rate for broader customer use
MARKET INSIGHTS

The Resiliency Service model makes it economically feasible to locate generators at customer sites.

On-site Back-up Generation

Multiple revenue streams make distributed projects economically feasible.
HOW THE PRODUCT WORKS

3rd Party Solution Provider

- Builds & maintains back-up generators at customer sites
- Builds & maintains facilities to interconnect generators
- Buys energy produced by generators
- Recovers cost through monthly Resiliency Service fee

Large Retail Customer

- Pays monthly Resiliency Service fee ($1.04/kW)
- Receives enhanced reliability

In exchange for a monthly Resiliency Service fee, the customer is guaranteed to experience minimal disruption of service.
RESILIENCY PILOT

- Pilot customer has agreement for resiliency at 31 sites, 34.8 MW total capacity

- As of August 3, 19 sites (22.8 MW) are live & 6 sites (5.2 MW) are under construction

- Resiliency Service pilot ensured continued operations during the heavy storms over Memorial Day weekend
## PILOT ASSESSMENT

<table>
<thead>
<tr>
<th>Customer</th>
<th>CPS Energy</th>
<th>3rd Party Solution Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Shorter, less frequent outages</td>
<td>✓ New strategic product offering</td>
<td>✓ Adequate return on its invested capital</td>
</tr>
<tr>
<td>✓ Ability to operate during disruptive events</td>
<td>✓ Improved customer satisfaction</td>
<td></td>
</tr>
<tr>
<td>✓ Resiliency at an acceptable price point</td>
<td>✓ Resiliency fee recovers cost of providing this service</td>
<td></td>
</tr>
</tbody>
</table>

The pilot has been highly successful for all parties & we recommend transitioning to a permanent offering to accommodate additional customers.
The Resiliency Service fee is designed to recover the cost of:
- Infrastructure & system costs
- Operations & maintenance expenses
- Energy from back-up generation

Monthly bill for 1 MW of Resiliency Service will deliver revenue in line with the cost of serving the customer.

The Resiliency Service rate is designed to cover the fixed cost of interconnecting with our distribution grid.
CLOSING REMARKS

Cory Kuchinsky
Interim V.P.,
Strategic Pricing
&
Enterprise Risk
Mgmt. &
Solutions
CLOSING REMARKS

• We continue to meet our customers’ emerging needs by enhancing our product portfolio

• Our roadmap of new products has strategic benefits to the community

• We remain focused on optimizing infrastructure investments by ensuring fixed costs are fully covered

• At the August 31 Board of Trustees meeting, we will respectfully request your approval on 2 tariffs:
  o Wholesale Distribution Service Tariff updates
  o Resiliency Service Tariff following successful pilot
Thank You
Appendix
## GLOSSARY

<table>
<thead>
<tr>
<th>Acronym or Word</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Extension</td>
<td>An extension and/or addition of existing distribution lines for the purpose of providing electric/gas service</td>
</tr>
<tr>
<td>Tariff</td>
<td>A pricing structure or policy that governs how a utility provides services &amp; generates revenue from those services</td>
</tr>
<tr>
<td>Pilot</td>
<td>A program with very strict operational guidelines including that allows for data collection</td>
</tr>
<tr>
<td>MW</td>
<td>A megawatt (MW) is 1,000,000 watts of instantaneous power.</td>
</tr>
</tbody>
</table>
EXISTING RENEWABLE PRODUCTS

We offer a robust portfolio of renewable energy products.

**Windtricity**
- Easy, low cost way to designate a portion of energy usage as renewable

**Solar Rebate**
- Improves affordability of solar on a home or business

**SolarHostSA**
- Customer hosts solar at no cost in return for bill credits

**Roofless Solar**
- Customer with limited roof availability can purchase panels in a community solar array & earn bill credits

**Big Sun Community Solar**
- Community solar located on parking structures around the city
- Revenue from shaded parking reduces cost
**SAMPLE WDS BILL CALCULATION**

**Sample Monthly Bill For a 10 MW Battery**

<table>
<thead>
<tr>
<th>Extended Primary Voltage Service Level</th>
<th>Monthly Charge ¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid Share</td>
<td>$19.00</td>
</tr>
<tr>
<td>Demand Charge</td>
<td>$1.21 x 10,000 kW</td>
</tr>
<tr>
<td></td>
<td>$12,100</td>
</tr>
</tbody>
</table>

**Monthly Bill for Grid Share & Demand Charges**

$12,119

A single 10 MW battery could produce ~$150K in WDS revenue each year with the revised pricing.

¹ The monthly charge is per kW of contracted demand or capacity
While market prices vary greatly, we are positioned well due to our favorable cost structure.
SOLAR ENERGY
GLOBAL TRANSITION / LANDSCAPE UPDATE

PRESENTED BY:

Frank Almaraz
Chief Administrative & Development Officer (CABDO)

August 17, 2020

Informational Update
OBJECTIVES & TAKEWAYS

• COVER HISTORICAL CONTEXT

• BUILD A COMMON GENERAL VIEW OF THE GLOBAL LANDSCAPE

• CONNECT THAT KNOWLEDGE TO OUR PRUDENT INTEREST IN SECURING UP TO 900MW MORE OF SOLAR CAPACITY
AGENDA

• SOLAR PRODUCT JOURNEY
• THERE HAVE BEEN STRUGGLES
• SOLAR STANDARDIZATION
• CHANGE SOLAR LANDSCAPE – GLOBAL PRICES
• OUR VISION 2020
• OUR ENERGY PROFILE IMPROVING
• REGIONAL DIVERSIFICATION
• MORE SOLAR – IT IS TIME FOR AN INCREASE
• SOLAR RISK MITIGATION
• A MEANING STEP FORWARD
• FLEX POWER BUNDLE
Realizing the inherent potential of harnessing energy from the Sun, the road to evolve solar power extends back to 1839.
SOLAR PRODUCTS
PRODUCT VARIATION

N-TYPE, built on a negative charge:
• More Expensive
• More Efficient

P-TYPE, built on a positive charge:
• More Common
• Less Efficient

BI-FACIAL, Reflects on the front & back of panel:
• Less Common
• More Efficient

MONO FACIAL, Front only:
• Less Expensive
• More Common

DUAL-AXIS, Panels Rotates:
• More Expensive
• More Effective

SINGLE-AXIS, No Rotation:
• Less Expensive

INITIAL VIEW OF VALUE DRIVERS

ACTUAL COMMON CUSTOMER PREFERENCES TODAY
The important goal is to learn from others.

U.S. solar power plant backed by over $700 mln in govt loans goes bust - filing

Nichola Groom
July 30, 2020, 1:16 PM

By Nichola Groom

July 30 (Reuters) - The owner of a big Nevada solar-thermal power plant that received $737 million in loans from the U.S. Department of Energy filed for bankruptcy on Thursday, according to a court filing, potentially leaving U.S. taxpayers with a whopping bill.
SOLAR

THERE HAVE BEEN STRUGGLES – 2 OF 2

The important goal is to learn from others.

Tonopah's 110-megawatt plant in the Nevada desert was billed as the first to be able to store solar energy. But its technology, which uses more than 10,000 mirrors to focus the sun's heat on a tower to create steam, was both unreliable and expensive.

Soon after it began operating in 2015, the facility suffered a string of leaks in its hot salt tank, a key component of its energy storage system. It has not operated since April of 2019.

The plant had been selling power at $139 per megawatt-hour, the company said. Solar energy contracts for large photovoltaic projects today are generally below $30 per MWh.
**CHANGED SOLAR LANDSCAPE**

**GLOBAL - PRICES**

- Solar prices have declined **88%** since 2006!
- Low cost panels from China dominate the market.

<table>
<thead>
<tr>
<th>Year</th>
<th>Price ($/kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>$.23</td>
</tr>
<tr>
<td>2011</td>
<td>$.11</td>
</tr>
<tr>
<td>2018</td>
<td>$.3</td>
</tr>
<tr>
<td>2020 &amp; Beyond</td>
<td>?</td>
</tr>
</tbody>
</table>

- **U.S. MARKET** was new:
  - Installed Capacity was about 9MWs
  - Performance & reliability of systems unproven.

- **Broad product diversification**

- **CHINA** becomes the market maker for the globe:
  - Focus shifts to be a low cost commodity
  - Minimal Product Diversification

- **U.S. TARIFFS**

- **COVID-19**
  - Global Economic downturn
While their efficiency has not risen significantly over time, standardization & investment from China’s government have driven solar prices down attractively.

Note: Source is Utility Scale Solar, 2019 Edition, Lawrence Berkley National Laboratory; prices are levelized from 290 contracts, in 32 states, totaling 18.6 GW-ac of capacity.
Global interest has driven increased solar penetration nationally.

U.S. Utility Scale Solar PV - Installed Capacity

Note: Source is Utility Scale Solar, 2019 Edition, Lawrence Berkley National Laboratory
Before 2010, we established VISION 2020, which was our commitment to add more low-to non-emitting capacity.

- **20% RENEWABLE ENERGY CAPACITY**
- **65% LOW-TO NO-CARBON GENERATION**
- **771 MW ENERGY EFFICIENCY & CONSERVATION**

**BY 2019, WE HIT ALL OUR TARGETS!**
OUR GENERATION PROFILE
IMPROVING CAPACITY MIX (MW)

Now, approximately 80% of the capacity is low-to non-emitting!

**CY 2010**
- Nuclear: 14.7%
- Coal: 30.2%
- Natural Gas: 42.9%
- Wind: 11.9%
- Solar: 0.2%
- Landfill Gas: 0.1%

**CY 2019**
- Nuclear: 14.1%
- Coal: 18.3%
- Gas: 45.3%
- Landfill Gas: 0.2%
- Solar: 7.5%
- Battery: 0.1%
- Wind: 14.5%

**LOW-EMITTING**
- Gas

**NON-EMITTING**
- Nuclear
- Wind
- Solar
- Landfill Gas
- Battery
Over 20% of our capacity comes from solar & wind across Texas.
MORE SOLAR
ITS TIME IS TIME FOR AN INCREASE

• Solar comprises 7.5% of our capacity

• In light of our new RFI → RFP...

• ... a substantial increase will benefit S.A. & TX
# Solar Risk Mitigation

## Solar Generation

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Zero Emissions</th>
<th>Favorable Pricing</th>
<th>Experience with Managing Asset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenges</td>
<td>Weather &amp; Time Dependent Resource</td>
<td>Requires Back Up Generation</td>
<td>Panel Performance &amp; Efficiency</td>
</tr>
</tbody>
</table>

These risks can be mitigated with firming capacity.
MEANINGFUL STEP FORWARD

Aug. 2019 Board of Trustees Resolution of Support for CAAP

FlexPOWER Bundle envisions adding Solar, Storage & Firming Capacity, which aligns with Board of Trustees’ Resolution supporting lower emissions.

900MW Solar

50MW Storage

FIRMING CAPACITY
Searching For Open / All-Source Solutions
Thank You
NEW ENERGY ECONOMY (NEE) UPDATE

PRESENTED BY:

Frank Almaraz
Chief Administrative & Business Development Officer (CABDO)

August 17, 2020

Informational Update
OBJECTIVES & TAKEAWAYS

- PROVIDE BACKGROUND ON NEE
- CREATE FOUNDATION TO POTENTIALLY EVOLVE THE PROFILE OF THE NEE
AGENDA

• OUR BROAD PILLARS
• STRATEGIC EVOLUTION
• NEE: APPROACH, PARTNERS, & JOURNEY
• STRATEGIC ENHANCER
OUR BROAD PILLARS ARE BALANCED

As we continue to evolve our business with new energy solutions, our team will balance all of our VALUE PILLARS.

Reliability  Customer Affordability  Security  Safety  Environmental Responsibility  Resiliency

FINANCIALLY RESPONSIBLE
STRATEGIC EVOLUTION

VISION 2020

(Started Prior To 2010)

Strategic Enhancer
NEE

FLEXIBLE PATH

(Started in 2017)

QUESTION: How should we update the NEE going forward, especially as we are launching the FLEXPOWER BUNDLE?
NEE APPROACH
LAUNCHED IN 2011

STRATEGIC ENHANCER DRIVERS:

• THE NEE ENHANCED OUR PATHWAY TO VISION 2020 GOALS, VIA RENEWABLE GENERATION & ENERGY EFFICIENCY

• **Fostering NEE Ecosystem Growth**: To bring additional value to our local community & establish SA as a hub for clean energy innovation

• **Support Economic Development**  To create jobs, economic development & educational opportunities in community
NEE PARTNERS

PROVEN PRODUCTS & SERVICES: We have a wide range of international & national companies in our ecosystem.
OCISP successfully delivered 500MW of Solar to S.A. & TX! We are now a recognized National Solar Leader!! This capacity has helped us reduce our emissions!!!
GreenStar has delivered 100k streetlights! LED’s greatly improve our community’s energy efficiency!!

**A PLUS:** GreenStar has shared its innovation with us & created a helpful Solar Security Light product for our REAP-funded & other customers!!!
We successfully built a new technical communication network that is helping us to be more efficient!

System reliability performance has been excellent!!!
STRATEGIC ENHANCER NEE COMPONENTS

PRIMARY SOLUTIONS:
- Embraced Changes in New Technology
- To Reduce Emissions
- Promoted Energy Conservation
- Pilot Projects

SECONDARY BENEFITS:
- Start SA Reputation as a Evolving Energy Hub
- S.A. Manufacturing
- Long-term jobs
- Scholarships
STRATEGIC ENHANCER
ADDITIONAL CONSIDERATIONS

SECONDARY BENEFITS:
• Start SA Reputation as a Evolving Energy Hub
• S.A. Manufacturing
• Long-term jobs
• Scholarships

+ 

TECHNOLOGY PILOTS
SKILLS TRAINING
OTHERS
In light of our new RFI → RFP:

We will re-visit the **SECONDARY**
asks for the partners.

More to come …
Thank You
Appendix
## Glossary / Definitions

<table>
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<tr>
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<tbody>
<tr>
<td>NEE</td>
<td>New Energy Economy</td>
</tr>
<tr>
<td>Distributed Solar</td>
<td>Small grid solar connected devices to our electrical system</td>
</tr>
<tr>
<td>VISION 2020</td>
<td>Pre-2010 strategic vision to reduce emissions and achieve energy efficiency</td>
</tr>
</tbody>
</table>
While we peaked at $1.4 Billion in 2018, as reported in the June 2019 report, our NEE partners are generating a direct annual impact of $432 million into our local economy.