JEA sm

Building Community sm

Solar and Demand Rate Workshop

April 7, 2016

AGENDA

- Balancing Priorities and Stakeholders as We Prepare for a Lower Carbon Future
- Utility Scale Solar Additions (Underway)
- Solar Rate and Other Tariff Recommendations (Proposed for Board Action)
- Net Metering Policy Recommendations (Proposed for Board Action)
- Understanding Capacity and Why it is an Important Factor in the Solar Discussion
- National Debate Resulting in Many State and Local Solutions
- Stakeholder Input
- Recommended Policy Changes
- Pricing Electricity in the 21st Century (aka Demand Rate)

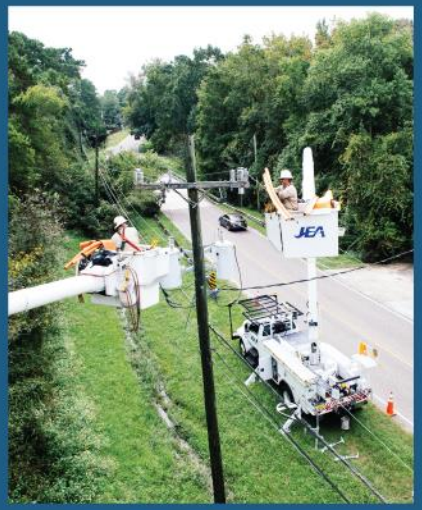
KEY DEFINITIONS

- **Rate**: The price for electricity and electric services
- **Fuel**: Commodity used to generate electricity
- **Demand**: The amount of electricity required from the system at a certain point in time, measured in kilowatts
- **Energy**: Energy made available by the flow of an electric charge through a conductor. *Demand (measured in kilowatts) multiplied by the time of operation (measured in hours) equals a kilowatt-hour which is the common unit of electric energy consumption.*
- **Capacity**: The amount of electric power for which a generating unit, generating station or other electrical apparatus is rated

BALANCING PRIORITIES AND STAKEHOLDERS AS WE PREPARE FOR A LOWER CARBON FUTURE

JEA MUST BALANCE KEY PRIORITIES

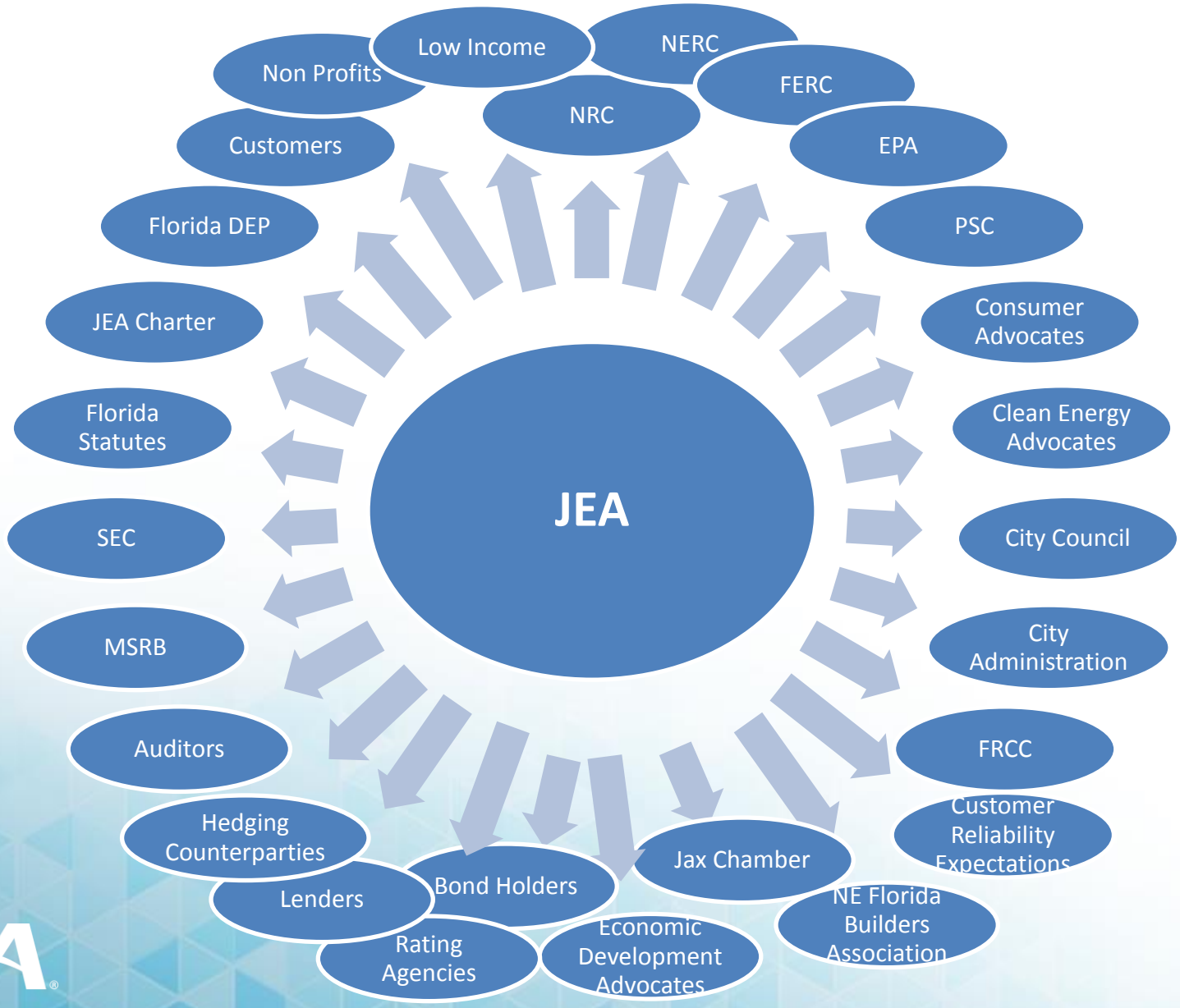
Environmental Responsibility



Reliability

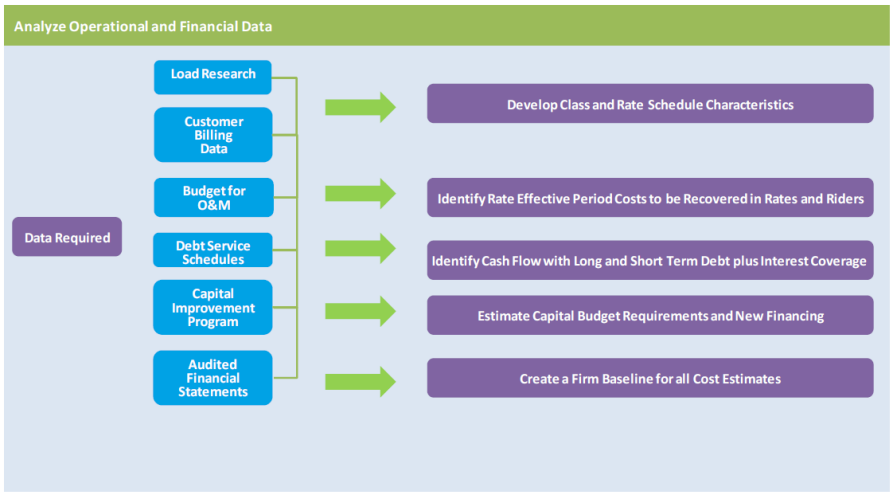
Affordability

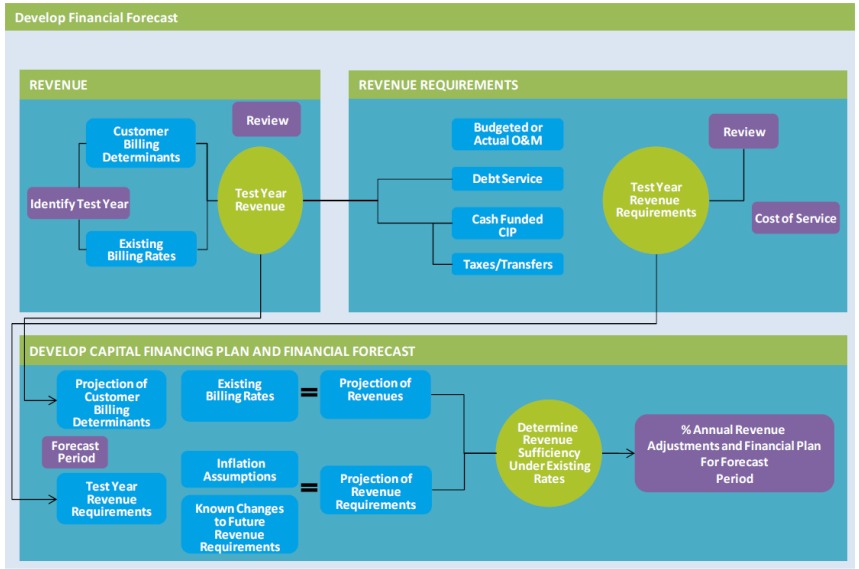
JEA MUST CONSIDER THE INTERESTS OF MANY STAKEHOLDERS

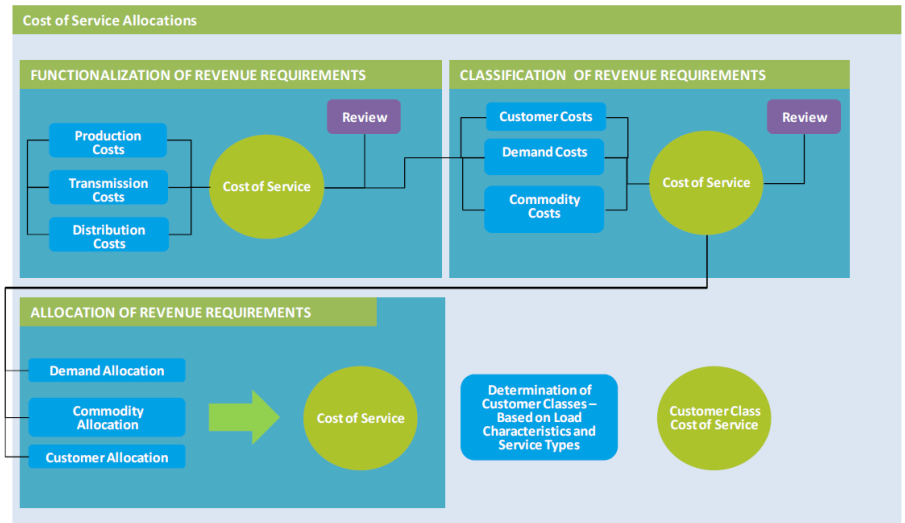


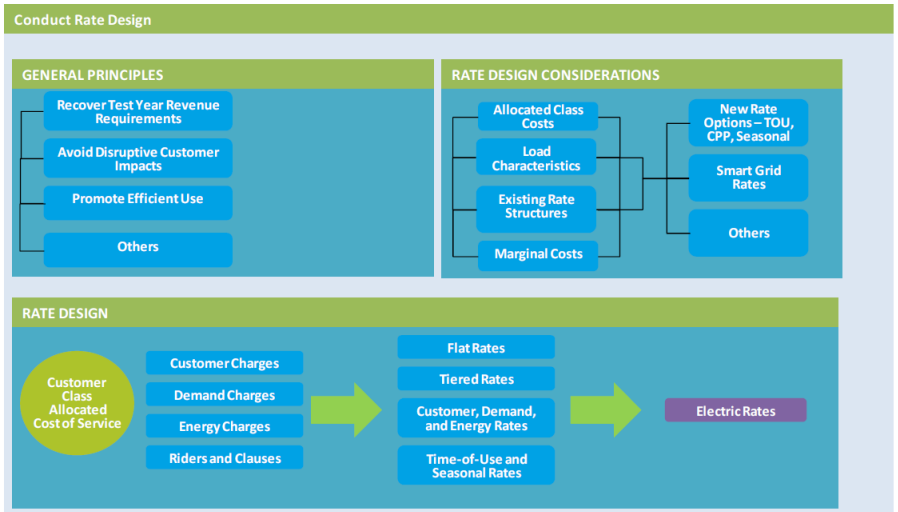
RATEMAKING IS A TECHNICAL PROCESS

*Upon the initiation of the ratemaking process, JEA establishes critical goals and objectives (such as **recovering cost** and **equitable rates**), and defines policy issues and strategy that must be addressed (such as **customer impacts**, **financial integrity** and **risk mitigation**). JEA then conducts a cost of service as mapped out below:*





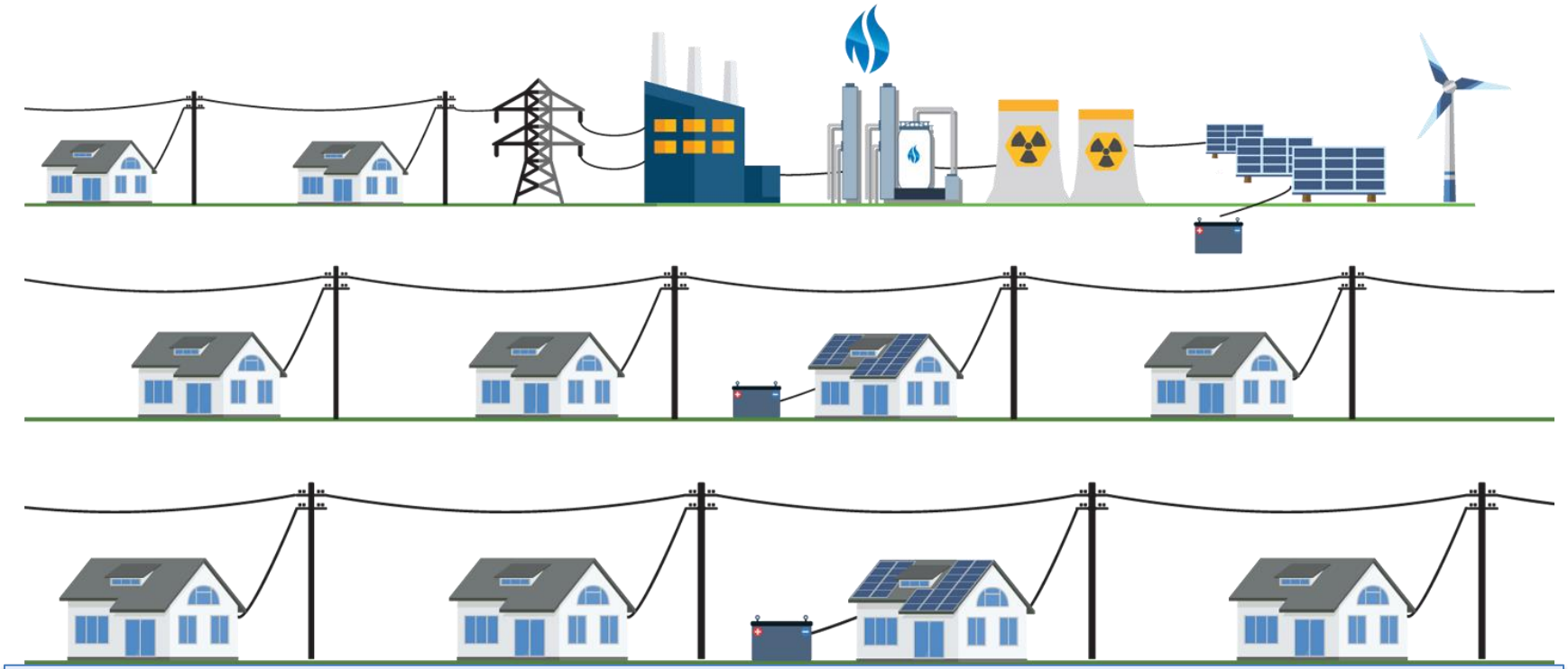




JEA'S LONG TERM SOLAR VISION

Create an environment that <u>embraces</u> and <u>encourages</u> the development of solar energy and renewable technology as part of a lower carbon future while ensuring <u>all rates are fair</u>, <u>transparent and reflect the cost of providing service</u> to all customers.

What could our future look like?



- *JEA's Integrated Resource Plan develops a reliable, environmentally responsible, affordable electric plan*
- *The IRP study evaluates*
  - *Existing supply resources*
  - *Energy and demand forecasts*
  - *Fuel price and availability projections*
  - *Future environmental regulations*

JEA HAS WORKED TOWARD THIS VISION SINCE 1999

- In 1999 JEA pioneered distributed solar energy in Florida by piloting photovoltaic (PV) panel deployments at:
  - 22 Duval County public schools
  - Jacksonville Zoo
  - Jax Chamber of Commerce
  - Jacksonville International Airport
  - Jacksonville University
  - FSCJ
  - COJ Fire Rescue Station
  - JEA downtown parking
- The 12MW Jacksonville Solar project will provide power to JEA through 2040

WE INCREASED OUR COMMITMENT IN 2009 TO EMBRACE ROOFTOP AND UTILITY SCALE SOLAR

In 2009, JEA adopted a ***net metering policy*** to support customer installations and further study and analyze solar PV. JEA also contracted for one of the larger ***utility scale installations*** in Florida, a 12 megawatt solar PV farm, where JEA purchases all the solar generation from the facility.

- JEA has implemented two solar models
  - Utility scale solar
  - Net metering
- This has allowed us to
  - Observe both models
  - Evaluate impacts
- JEAs equivalent clean power capacity was more than 15% in 2015, significantly exceeding Community Commitment goals.*

JEA can now make informed recommendations on the best path forward to ***achieve JEA's solar vision***

*In 1999 JEA entered into a memorandum of understanding between JEA, the Sierra Club and the American Lung Association regarding a commitment to the addition of clean power resources. In 2004, JEA's Board established a Clean Power Program Action Plan which superseded and replaced the 1999 MOU and required JEA to achieve 7.5% clean power capacity by 2015.
*Clean power capacity includes the Waste Heat Recovery at Brandy Branch and cumulative conservation and efficiency gains

HOW DO WE TAKE ADDITIONAL STEPS TODAY TO ACHIEVE THE SOLAR VISION?

- Invest in cost effective utility scale solar resources
- Provide green energy choices for customers to “go green”
- Provide equitable policies for rooftop solar owners
- Encourage energy storage technologies
- Provide a rate structure for future energy technologies to thrive while providing value and reliability to customers and the community

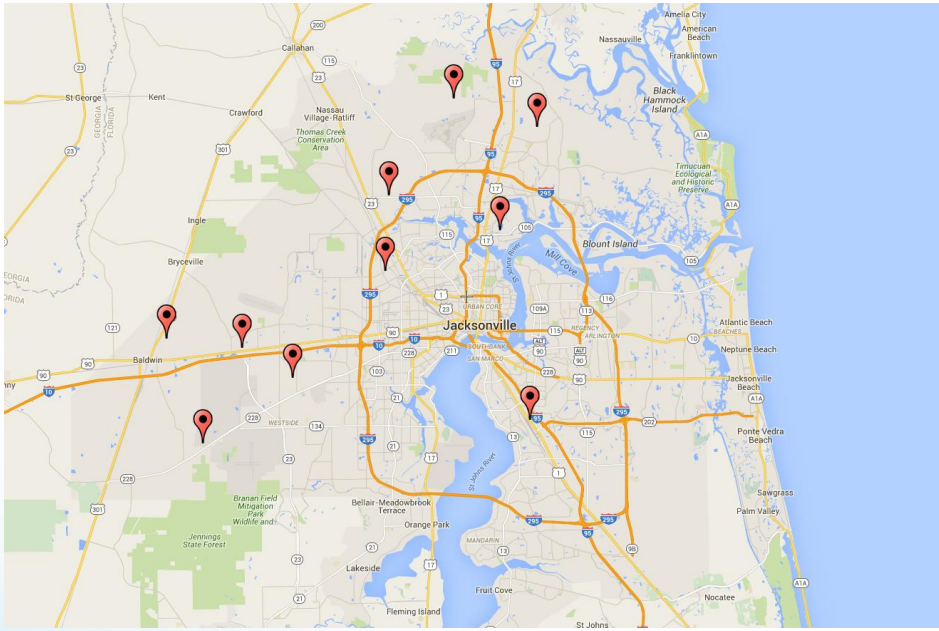
Under some Clean Power Plan compliance scenarios,
JEA could add as much as 400 MW of solar to comply

UTILITY SCALE SOLAR ADDITIONS (UNDERWAY)

2014 SOLAR POLICY AUTHORIZED ADDITIONAL SOLAR FACILITIES

JEA has already signed agreements for seven new solar installations to be installed in Jacksonville with a generation capacity of 30.5 MW, and is negotiating agreements for 6 MW of additional solar generation.

- The EPA's Clean Power Plan may necessitate the addition of several hundred MWs of new renewable energy facilities
- The first new solar projects are expected to start producing energy by July 2016
- Projects are geographically distributed to mitigate negative system impacts and increase visibility



The additional solar will cost JEA approximately $5 Million and will produce 65,000 MWh of energy in the first year.
It will provide enough energy to power **5,000** homes annually.

SOLAR RATE AND OTHER TARIFF RECOMMENDATIONS (PROPOSED FOR BOARD ACTION)

JEA SolarSmart

Administrative Changes

- Distributed Generation Application fee
- Modifications to the Economic Development Program Rider

Street Lighting

TARIFF CHANGES PROPOSED FOR APRIL PUBLIC HEARING

JEA SolarSmart – JEA is proposing a new product to provide customers the rights to the energy produced by JEA's new solar arrays.

Administrative Changes –

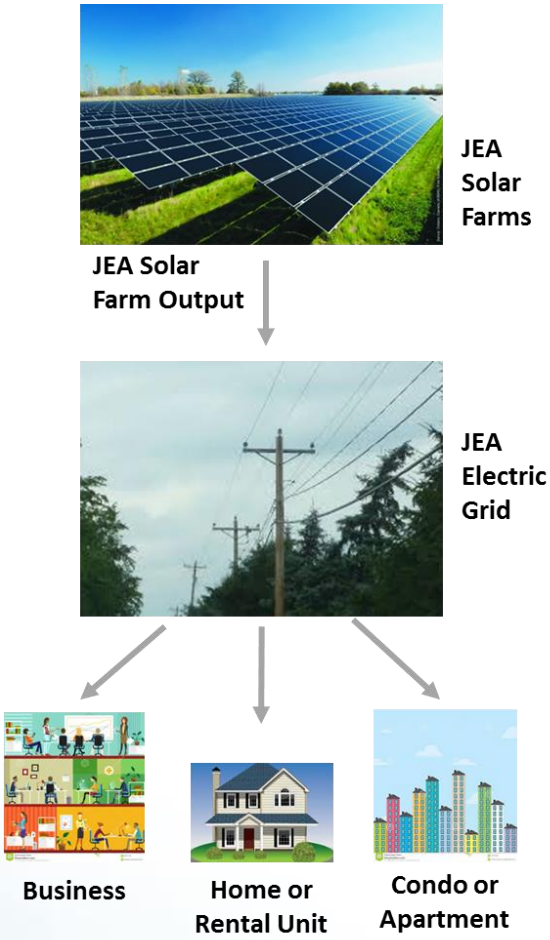
- Distributed Generation Application fee to recover the cost of engineering to evaluate and approve the installation of large customer owned generation systems. This fee applies to systems larger than 50kW (8 times larger than the average residential roof-top solar system).

- Modifications to the Economic Development Program Rider to allow these customers to participate in JEA SolarSmart.

Street Lighting – Staff recommends two additional standard decorative lighting options, two new LED lighting options, as well as an edit and a removal of an existing street light rate.

THE PROPOSED JEA SOLARSMART RATE PROVIDES CUSTOMERS WITH AN ABILITY TO SUPPORT GREEN ENERGY

- JEA is proposing a new product that will provide customers with the opportunity to invest in increasing solar energy in Jacksonville; This new product will be branded as **JEA SolarSmart**
- Customers who have an interest in demonstrating their commitment to improving the environment can elect to get up to 100% of their energy from JEA's solar projects
- It is an alternative for residential or business customers who can't afford the upfront and long-term cost of a solar system, or for whom rooftop solar is not viable or desired
- JEA will be selling the solar energy "at cost," as it does for the fuel used to generate electricity
- The new JEA SolarSmart charge is a replacement for only the fuel component of a customer's bill



U.S. UTILITIES WITH SOLAR RATE PROGRAMS

Data Source: USDOE http://apps3.eere.energy.gov/greenpower/markets/pricing.shtml

JEA SOLARSMART CUSTOMERS RECEIVE A CREDIT FOR THE FUEL CHARGE AND PAY FOR SOLAR ENERGY AT JEA'S COST

Example: Customer elects 50% of electricity from solar

Usage = 1,000 kWh

Bill Items	Standard Bill	JEA SolarSmart Bill
Basic Monthly Charge	$5.50	$5.50
Energy Charge (1,000 kWh @ 6.624 cents)	$66.24	$66.24
Fuel Charge (1,000 kWh @ 3.675 cents)	$36.75	$36.75
Fuel Charge Savings @ 50%		($18.38)
JEA SolarSmart Charge @ 50% (500 kWh @ 7.5 cents)		$37.50
Environmental Charge @ 50%	$0.62	$0.31
COJ Franchise Fee	$3.27	$3.84
Gross Receipts Tax	$2.88	$3.38
Public Service Tax	$8.36	$8.44
Total Bill	**$123.62**	**$143.59**

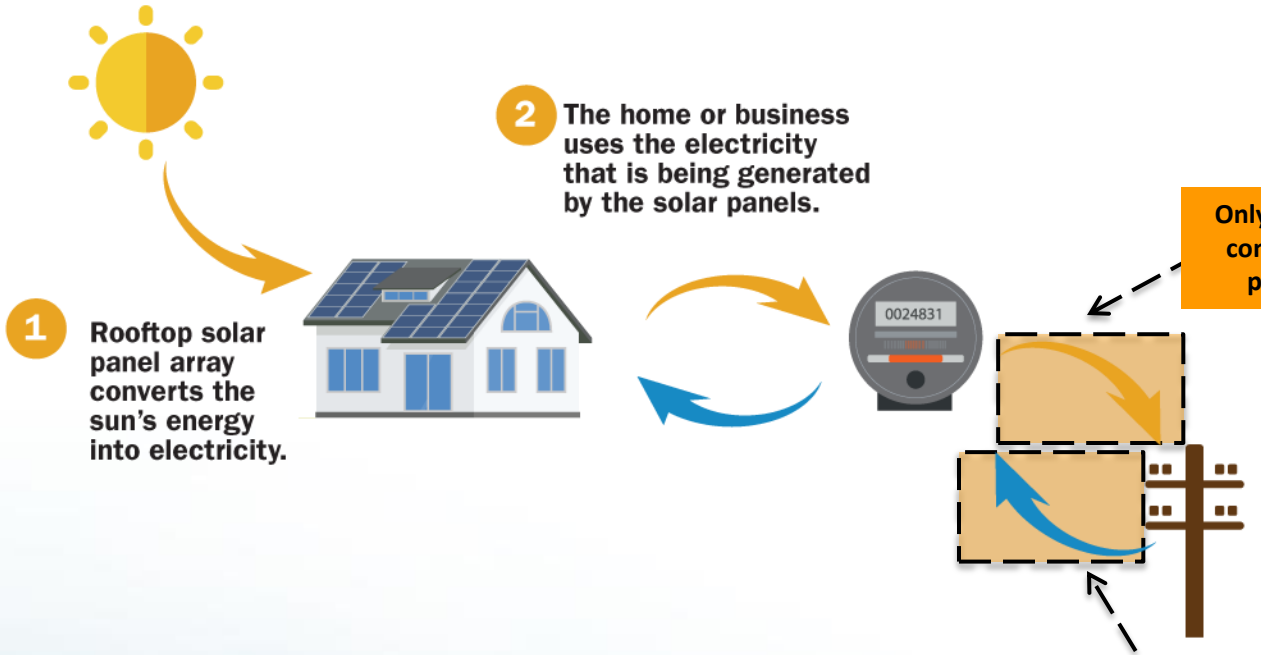
Notes:
This is for illustrative purposes only
Customer can choose up to 100% of energy to be SolarSmart

NET METERING POLICY RECOMMENDATIONS

(PROPOSED FOR BOARD ACTION)

JEA HAS OFFERED NET METERING FOR ROOFTOP SOLAR CUSTOMERS SINCE 2009

Understanding Net Metering



Per Florida Statutes 366.91, "Net metering" means a metering and billing methodology whereby customer-owned renewable generation is allowed to offset the customer's electricity consumption on site.

THE CURRENT NET METERING POLICY PAYS THE FULL RETAIL RATE FOR EXCESS GENERATION FROM SOLAR

- Under JEA's current net metering policy, customer bill credits for solar generation sent to the grid are equal to the retail rate that the customer pays the utility for energy consumption
  - This retail rate includes generation capacity, distribution, and transmission components … the cost of the grid itself … that the customer still uses
  - The cost of energy itself that the solar power is displacing, "avoided cost", is substantially lower
- This structure was originally put in place over 25 years ago due to the metering technology constraints at that time
- As markets transform, we align policies with the industry advancements

With the solar industry advancing greatly it is time to align the credit for excess solar with newer market conditions

NET METERING POLICY RECOMMENDATIONS

	Current	Starting Point	Recommendation
Grandfather	N/A	No	Yes
Credit - Residential	Retail { 2011 - $0.12 Today - $0.10	Avoided Cost ($0.03)	Market ($0.075)
Credit - Commercial	Avoided Cost ($0.03)	Avoided Cost ($0.03)	Market ($0.075)
Demand Charge	-	Residential – $16-38/month	Not at this time[1]
Inverter Requirement	-	Yes	Not at this time[2]
Capacity Limit	10 MW	10 MW	20 MW
Implementation	N/A	60 Days	*

[1] Not required unless demand rates become JEA's default rate for all residential customers in the future.
[2] Inverter may be required in the future based on substantial penetration of rooftop solar; requires board approval of policy modification at that time.

UNDERSTANDING CAPACITY AND WHY IT IS AN IMPORTANT FACTOR IN THE SOLAR DISCUSSION

JEA'S RATE STRUCTURE RECOVERS THE COSTS OF ENERGY AND CAPACITY

- JEA's rates per kWh are sized to recover the cost of energy and capacity
- Each year JEA evaluates the total system costs and estimates the expected kWh sales to determine the appropriate rate needed to recover all costs

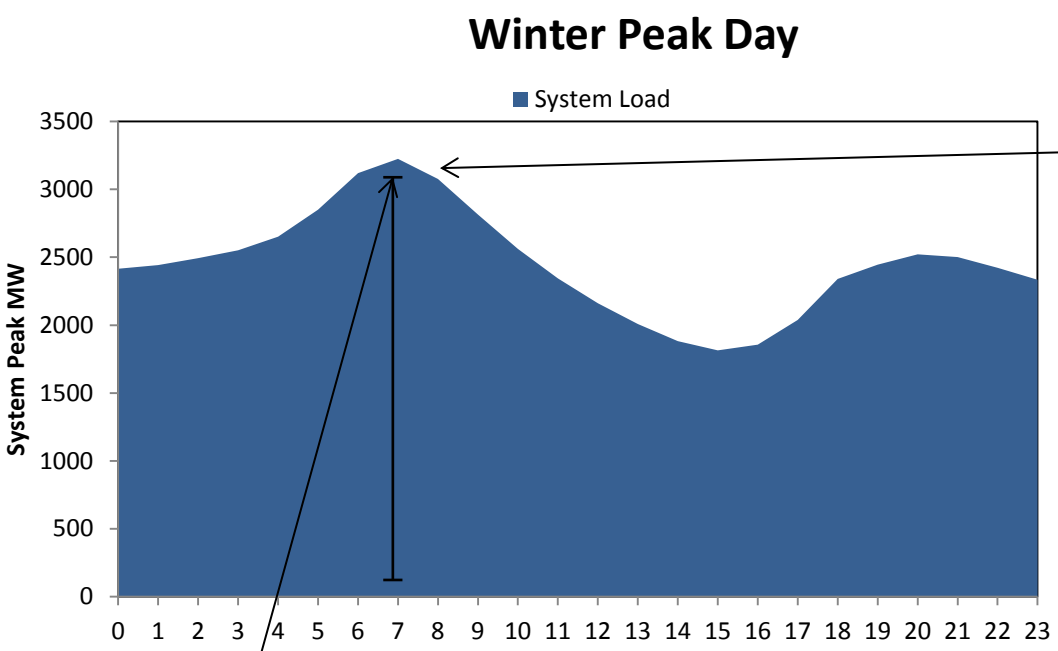
JEA is a community owned utility and does not have a profit component to rates

Fuel
The total amount needed **over time**

Capacity (Basic Monthly Charge/Energy Charge)
The electric production, transmission, distribution capability/capacity needed to serve all customers as much power as they want **at the same time**

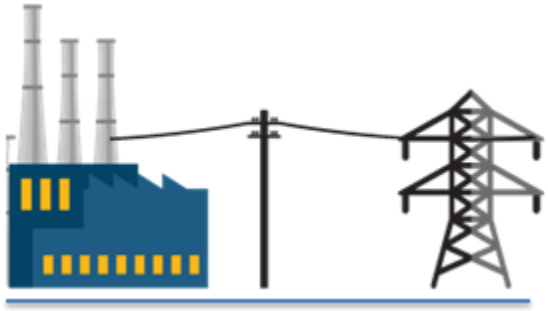
Energy cost/kWh + Capacity cost/kWh = Rate/kWh

WHAT IS THE COST TO SERVE A TYPICAL RESIDENTIAL CUSTOMER?

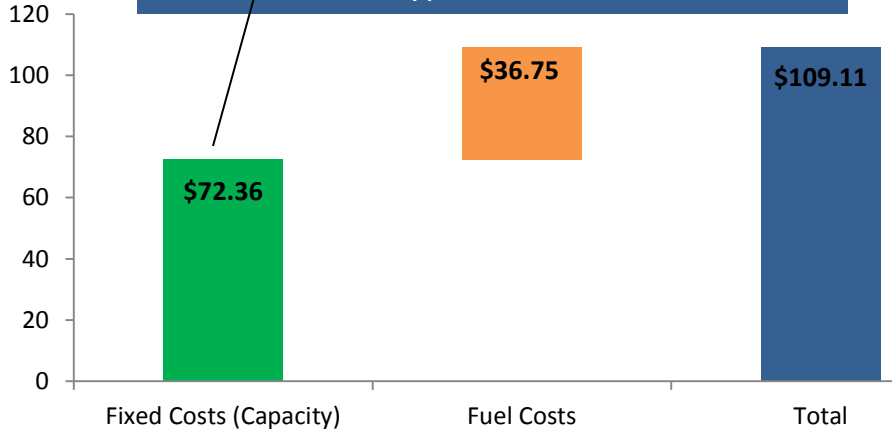


Capacity Requirement

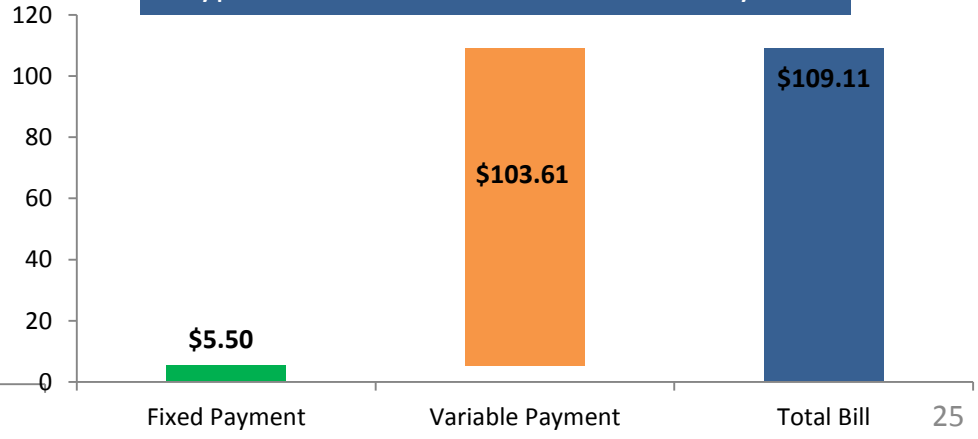
Cost to serve is set by the maximum electricity used at a point in time: "peak demand"



EXPENSE:
Cost to Serve a Typical Residential Customer

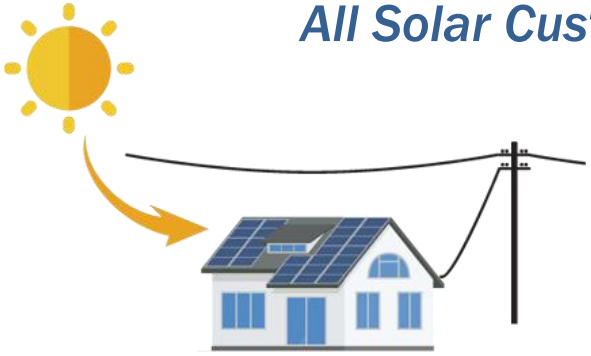


REVENUE:
Typical Residential Customer Monthly Bill

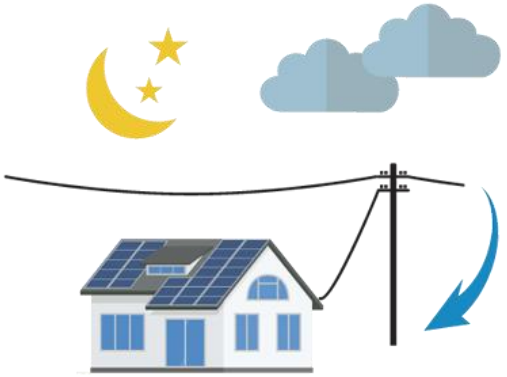


HOW SOLAR WORKS

All Solar Customers Need the Grid



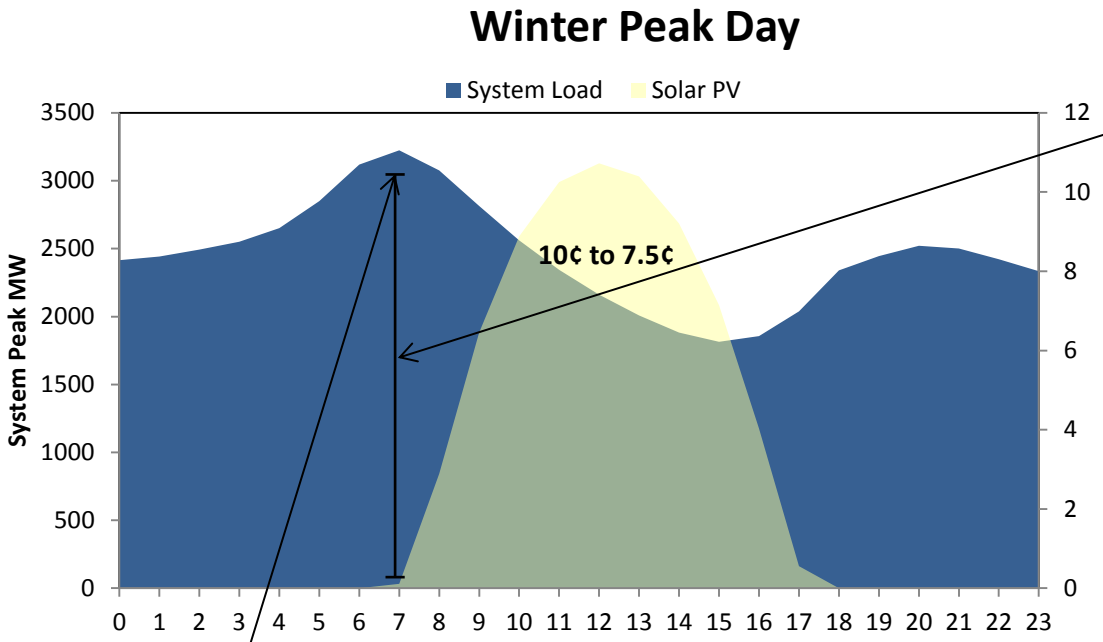
Rooftop solar panel array converts the sun's energy into electricity and supplies energy needs during sunny hours



When clouds show up or as soon as the sun goes down, the home begins to take energy from the grid

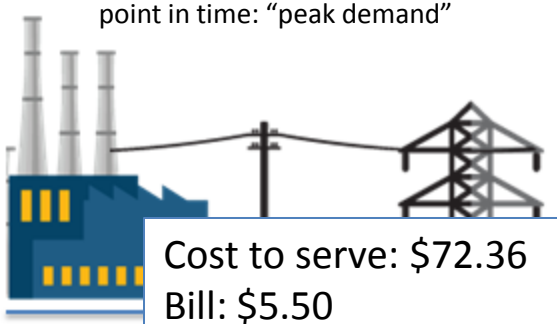
On a sunny day when more energy is produced than the household needs, the energy is sent back to the grid

SOLAR DOES NOT CHANGE THE AMOUNT OF CAPACITY REQUIRED



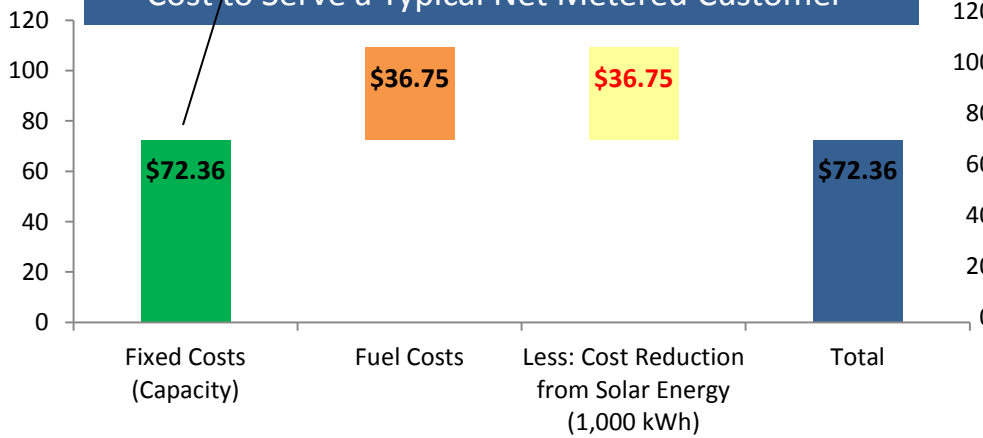
Capacity Requirement

Cost to serve is set by the maximum electricity used at a point in time: "peak demand"

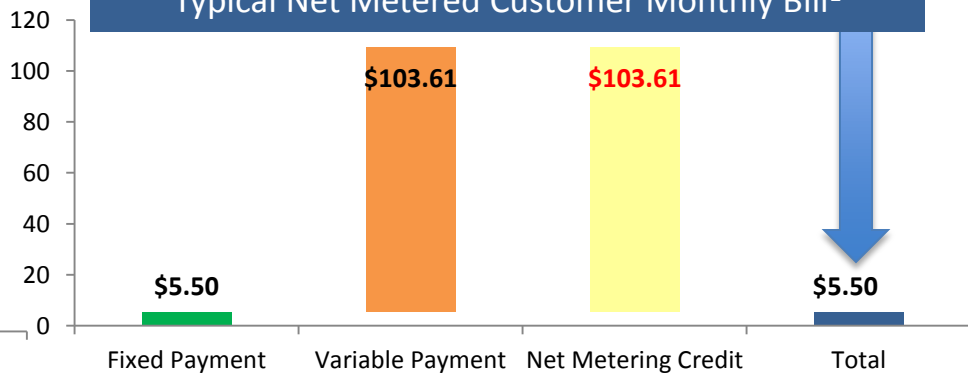


Cost to serve: $72.36
Bill: $5.50
Net under recovery: $66.86

EXPENSE:
Cost to Serve a Typical Net Metered Customer[1]



REVENUE:
Typical Net Metered Customer Monthly Bill[1]



[1] Median sized residential system is 6 kW

UNDER THE CURRENT PRICING STRUCTURE, EVERYONE PAYS THEIR SHARE

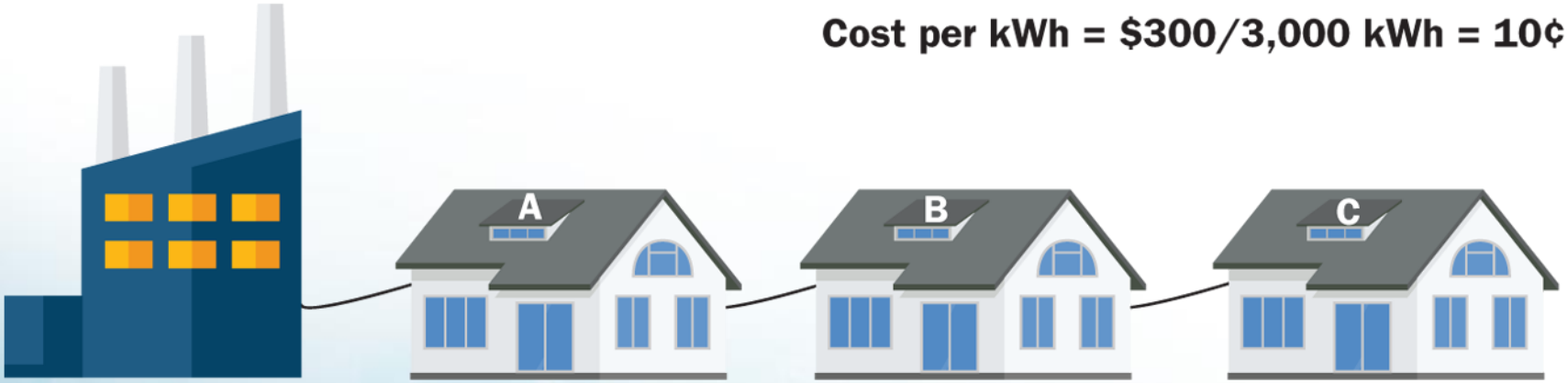
COST
Generation: $100 per month
Wires: $100 per month
Fuel: 3.3¢ per kWh

Community System produced 3,000 kWh this month

Total Community System Cost is:

Generation	$100
Wires	$100
Fuel $100 (3.3¢ x 3,000)	
	$300

Cost per kWh = $300/3,000 kWh = 10¢



A	B	C
1,000 kWh Monthly Bill: 10¢ x 1,000 kWh = $100	1,000 kWh Monthly Bill: 10¢ x 1,000 kWh = $100	1,000 kWh Monthly Bill: 10¢ x 1,000 kWh = $100

PLACING EMERGING TECHNOLOGY IN A FIXED LEGACY PRICING FRAMEWORK CAUSES UNINTENDED CONSEQUENSES

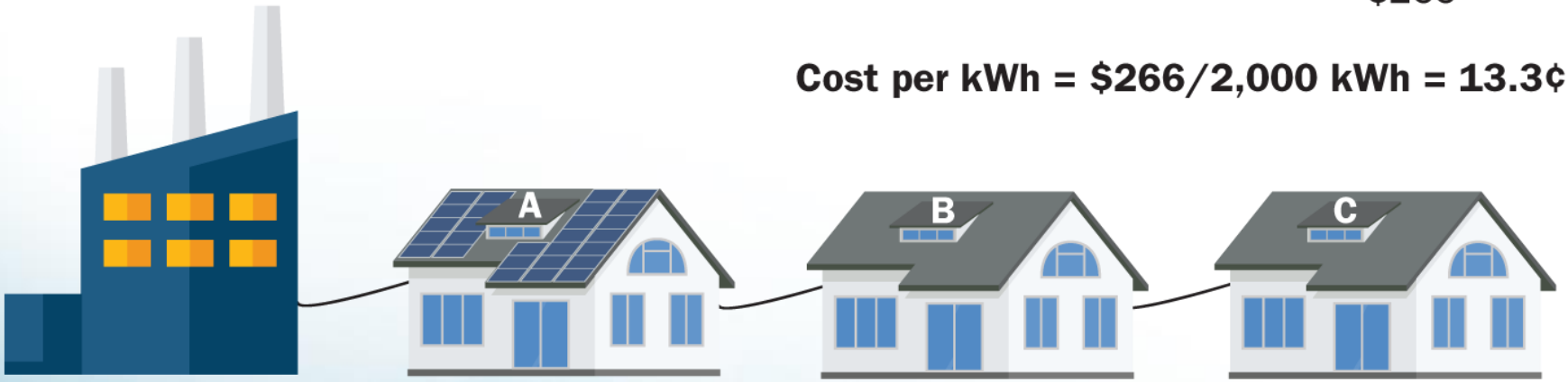
COST
Generation: $100 per month
Wires: $100 per month
Fuel: 3.3¢ per kWh

Community System produced 2,000 kWh this month
Customer A produced 1,000kWh with solar

Total Community System Cost is:

Generation	$100
Wires	$100
Fuel	$66 (3.3¢ x 2,000)
	$266

Cost per kWh = $266/2,000 kWh = 13.3¢



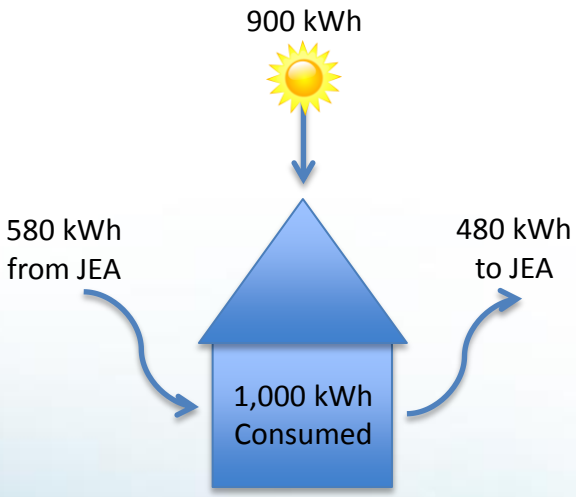
A	B	C
0 kWh No Monthly Bill*: 13.3¢ x 0 kWh = $0	1,000 kWh Monthly Bill: 13.3¢ x 1,000 kWh = $133	1,000 kWh Monthly Bill: 13.3¢ x 1,000 kWh = $133

When solar customers have excess generation and sell back to the grid, that further increases costs for the remaining customers

*This example is for illustrative purposes only and is intentionally over-simplified

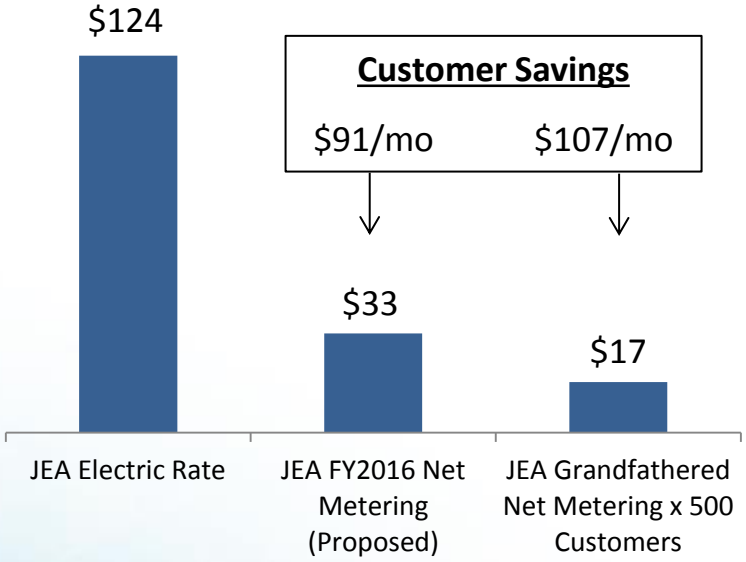
THE IMPACT ON NEW NET METERING CUSTOMERS WILL BE $16 PER MONTH

Typical 6KW Solar PV Customer



Example Monthly Bills

Including taxes and fees
@ 1,000 kWh/Month Usage



WILL THIS CHANGE IMPACT THE VIABILITY OF CONTINUED INVESTMENT IN ROOFTOP SOLAR WITHIN JEA'S SERVICE TERRITORY?

The proposed changes still provide greater economic incentive for rooftop solar within JEA's service territory than within FPL's territory

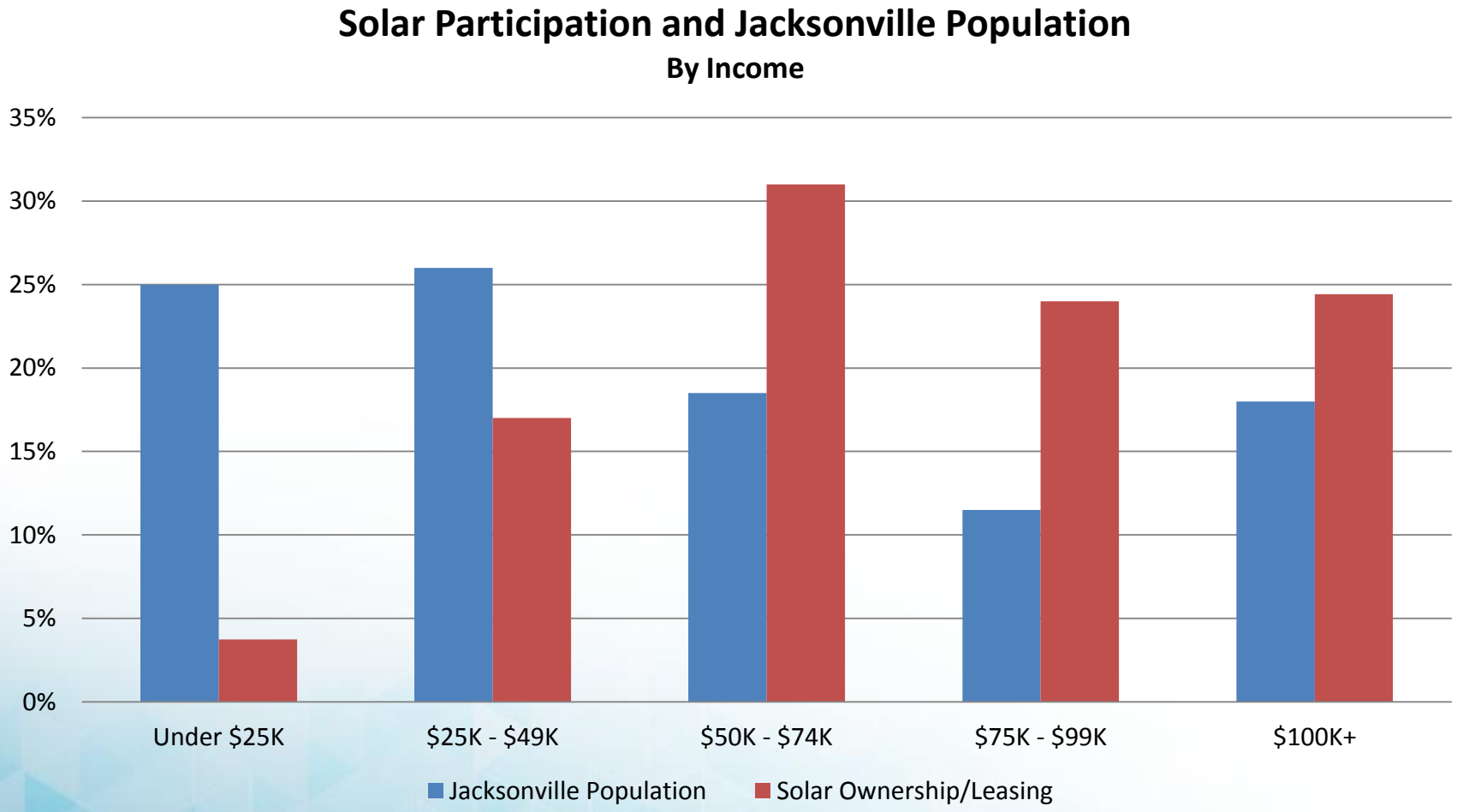
A typical bill comparison illustrating a residential customer bill vs. a net metering customer bill in JEA's service territory and FPL's service territory:

JEA	Bill per Month	Difference
Residential, No Solar	$123.62	
Residential, Existing Solar Policy	$16.60	$107.02
Residential, Proposed Solar Policy	$32.55	**$91.07**

FPL	Bill per Month	Difference
Residential, No Solar	$107.83	
Residential, Existing Solar Policy	$18.08	**$89.75**

Notes:
Illustrates an approximate 1,000 kWh typical residential customer
Solar example assumes a 6KW system
Illustrates a typical off peak month
Bills shown after taxes and fees
In practice, FPL banks excess kWh each month instead of crediting the bill

WHY IS THIS A COMMUNITY ISSUE?



Rooftop solar is disproportionately installed in higher income households

THE FLORIDA PUBLIC SERVICE COMMISSION AND THE BOARD'S PRICING POLICY REQUIRE VIGILANCE IN COST OF SERVICE MATTERS

Through the Board approved Pricing Policy, JEA has committed to a price structure that is based on cost of service and allocates costs to appropriate customer classes based on the cost to serve each class. ***Pricing shall be fair, equitable, and non-discriminatory.***

Although JEA is a non-jurisdictional entity, Tariffs approved by the Board of Directors are filed with the Public Service Commission for information and review. The Florida Public Service Commission (FPSC) does not regulate the revenue requirement of municipal utilities, yet pursuant to Section 366.04 (2), Florida Statues, the FPSC has jurisdiction to review a rate structure for municipal utilities.

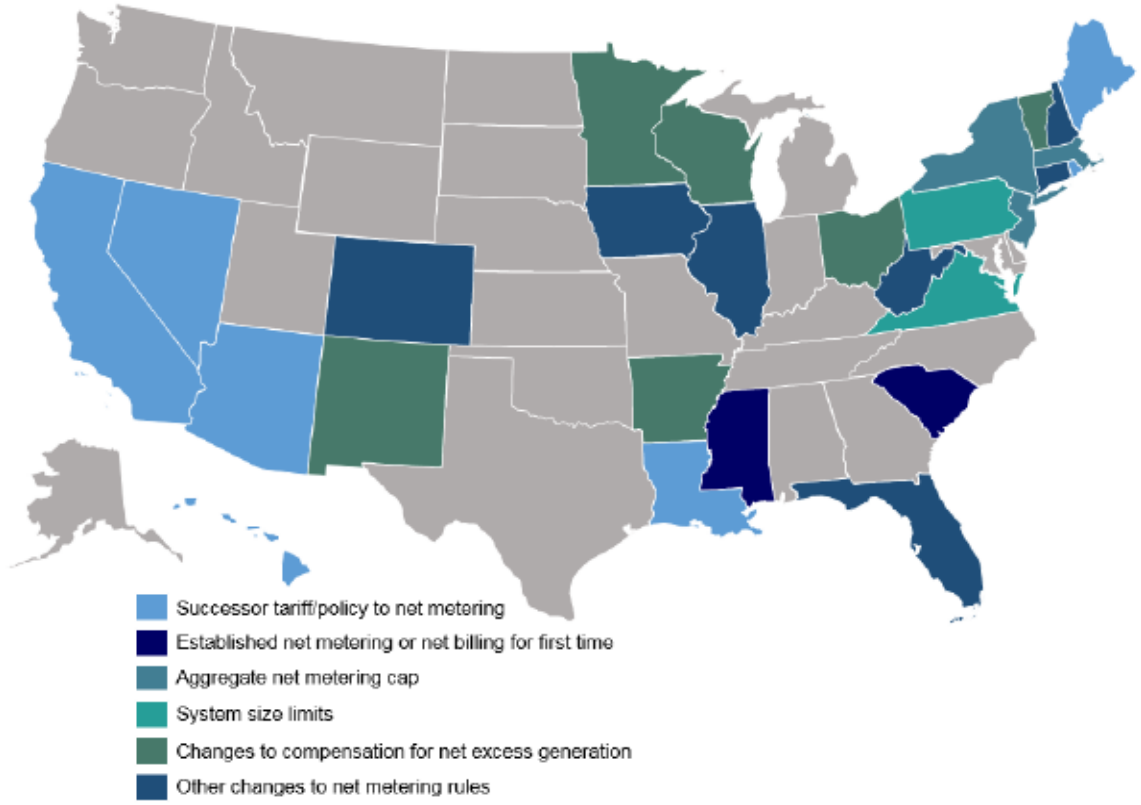
The Commission sees that electric rates, terms, and conditions for the provision of electric service are fair, just, and reasonable and that they are collected fairly from all customer classes.

FLORIDA PUBLIC SERVICE COMMISSION

NATIONAL DEBATE RESULTING IN MANY STATE AND LOCAL SOLUTIONS

HOW OTHER UTILITIES DEALING WITH THIS COST MISMATCH

Figure 4. Proposed or Enacted Changes to Net Metering Policies in 2015



Note: Many states considered multiple types of changes to their net policies in 2015. This map depicts the variation in net metering issues considered, but is not comprehensive in showing all the types of changes a specific state considered in 2015. For details, please refer to the tables in the quarterly editions of *The 50 States of Solar*.

NC CLEAN ENERGY TECHNOLOGY CENTER

MEISTER CONSULTANTS GROUP

TOP RECENT DISTRIBUTED SOLAR POLICY DEVELOPMENTS

1. **Net Metering** - Hawaii and Nevada ended net metering, customers will be compensated at the avoided cost rate. California, Colorado and Iowa kept their net metering policies.

2. **Fixed Charges** - 61 utilities in 30 states proposed increasing fixed service charges on all customers. 21 were approved with a median charge of $17.55.

3. **Cost Studies** – Mississippi completed cost and benefit study of solar, its utilities will pay about 2.5 cents above avoided cost for net metering.

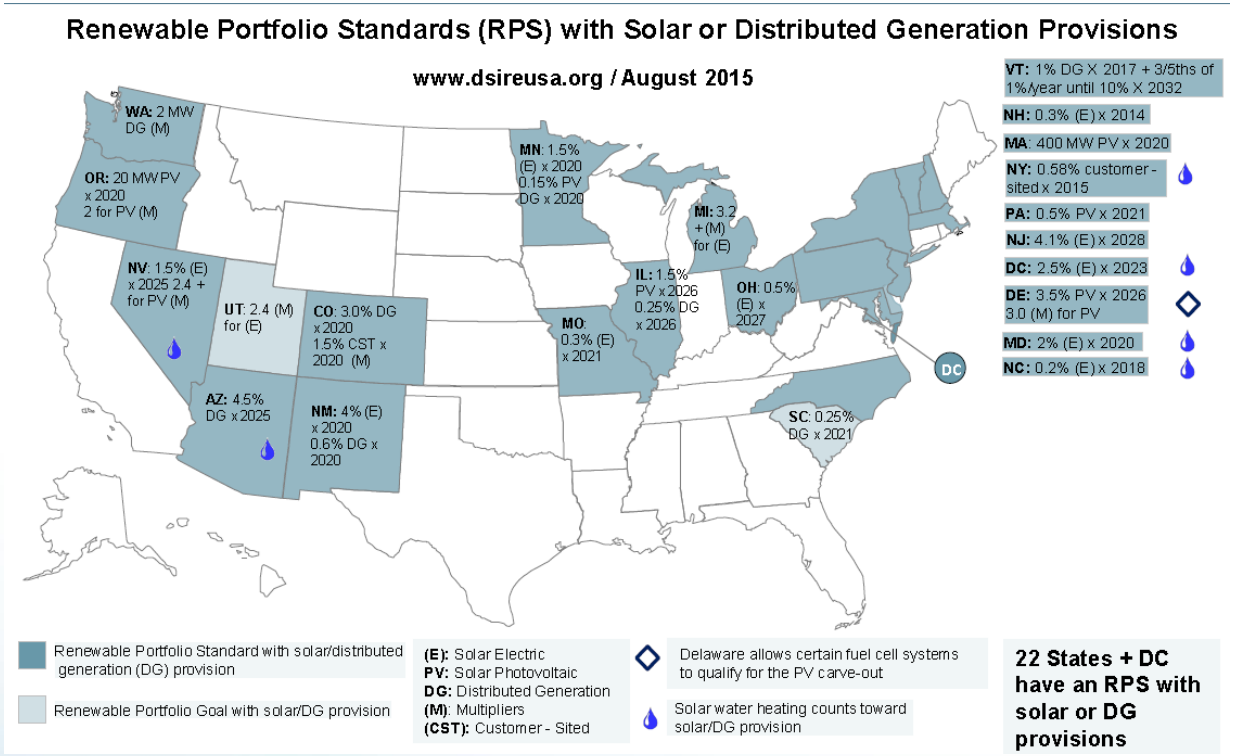
4. **Third Party PPAs** - Georgia cleared path for third-party PPAs. Florida ballot initiative to legalize third-party PPAs failed to get enough signatures.

5. **"Rights of Electricity Consumers Regarding Solar Energy Choice" -** Florida approved a proposed state constitutional amendment on solar power for the 2016 ballot that establishes a right for consumers to own or lease solar equipment installed on their property to generate electricity for their own use.

6. **Other policy changes** - The Vermont PSD filed a report in October 2014 and started the required stakeholder process to come up with new rules governing net metered systems by January 1, 2017.

OTHER MARKET CONSTRUCTS TREAT SOLAR DIFFERENTLY THAN SOUTHEAST MARKET

Specific Renewable Portfolio Requirements:



Organized vs. bilateral markets

- Valuation of transmission, capacity, and RECS

FPL, Florida's largest electric utility approximately 10 times the size of JEA, has publicly committed to less than 5 times JEA's solar commitment. Yet, FPL's parent Nextera is the largest solar provider in the country with over 1 GW

STAKEHOLDER INPUT

OVERVIEW OF PROCESS

Three phase approach over 18 plus months
Formal & Informal
Solar and Non-solar

Stakeholder engagement consisted of ***200+ interactions*** over ***18 months***

- 500 Customer Surveys
- 7 Group meetings
- 28 telephone discussions
- 110 written correspondences
- 150 + attendees at solar forum

Phase 1 – Concepts & Philosophies on Solar Expansion, Net Metering

- Quarterly Environmental Stakeholder Meetings
- Customer Research

Phase 2 -- Input on initial draft program proposal

- Proactive outreach and discussions

Phase 3 – Input following initial proposal

-Participation in community forum

-e-mail and letter correspondence

- One-on-one discussions

INITIAL PROPOSAL EVOLVED BASED ON STAKEHOLDER FEEDBACK

JEA developed an initial starting point using cost of service principles

- JEA pays avoided cost for solar energy to the grid
- Policy changes apply to all customers, including those who have already installed solar under the prior rules
- Any demand rate offering – including the pilot program – would apply to all solar customers
- Connection fee and more restrictive inverter policy

Benefits

- Cost distribution which results in the least subsidy from other customers
- Clear and transparent pricing
- Strong price signal for storage, which creates value for all customers
- Grid protection

Considerations

- Pays less for rooftop solar customers than for utility scale creating an inequity
- Changes amount paid to customers who elected to invest in rooftop solar under the “old” net metering rules

JEA communicated with stakeholders and modified the proposal significantly to incorporate stakeholder feedback

INPUT THEMES IDENTIFIED - SUPPORTIVE

- Supportive of JEA's expansion of solar generating resources
- Supportive of JEA's expansion of customer energy options (JEA SolarSmart program)
- Supportive of keeping rates as low as possible
- Supportive that non-solar customers (including low income & business) should not be subsidizing solar customers

INPUT THEMES IDENTIFIED - CONCERNS

- Concern with a reduction in retail credit levels of energy sent to the grid
- Concern with lower bill credit levels for larger solar systems (Tier 3) and solar systems not qualified for Net Metering
- Concern with not taking more time for more public engagement
- Concern that Jacksonville's image will be harmed (solar un-friendly)
- Concern that rooftop solar retail credits are seen by JEA as a subsidy to rooftop solar owners
- Concern that the change in Net Metering credit levels do not reflect the "value of solar"
- Concern with the impacts on solar jobs
- Concern with a demand rate being placed on solar customers only

JEA HAS RECEIVED CONSIDERABLE FEEDBACK FROM STAKEHOLDERS

Stakeholder Comment	Response
Supportive of JEA's expansion of solar generating resources	• The environmental benefits associated with the expansion of solar resources to 50MW, a 300% increase, was well received by stakeholders.
Supportive of JEA's expansion of customer energy options (JEA SmartSolar program)	• Customer research indicated that additional energy options such as solar rates are important to consumers. • Programs similar to JEA SmartSolar are available at many electric utilities across the nation.
Supportive of keeping rates as low as possible	• Maintain low and competitive rates and maintain cost-of-service methodology. Minimize subsidy. • Businesses and Low Income advocacy associations were supportive of the proposal as it reduced the upward pressure on rates and subsidization.
Supportive that non-solar customers (including low income) should not be subsidizing solar customers	• The proposed policy changes will reduce solar subsidization levels that ultimately get paid by all customers, notably low income customers and business.

JEA HAS RECEIVED CONSIDERABLE FEEDBACK FROM STAKEHOLDERS

Stakeholder Comment	Response
Concern with a reduction in retail credit levels	• JEA staff originally identified avoided costs as the appropriate revised credit level thereby adhering to a cost of service approach and thereby not resulting in subsidization. • Based on solicited stakeholder feedback, and prior to proposal development, JEA staff sought alternative pricing mechanisms that were both cost based and resulted in a moderate change in credit levels. • The result is included in JEA staff's proposal where credit levels are based on market pricing, providing a credit of $0.075/kWh (solar rate) versus the originally identified $0.037/kWh reflecting JEA's avoided energy cost. • Based on stakeholder feedback, distributed generation customers will be credited at the market value of solar rather than avoided cost.
Concern with lower bill credit levels for larger solar systems and solar systems not qualified for Net Metering	• New proposal increases the incentive paid to large scale, Tier 3 Net Metered and distributed generation customers from avoided cost to market price, a 200+% increase. This change provides the same level of credit regardless of system size.

JEA HAS RECEIVED CONSIDERABLE FEEDBACK FROM STAKEHOLDERS

Stakeholder Comment	Response
Concern with not taking more time for more public engagement	• JEA staff conducted outreach for over 18 months, formally and informally, to gather input and perspectives from customers and stakeholders prior to finalizing the proposal. • By making policy changes before rooftop solar penetration becomes more significant, we are able to "grandfather" existing net metering customers. • JEA Board's vote on policy changes and rate hearing was moved to April to accommodate further meetings with stakeholders, a community forum, and a Board Workshop.
Concern that Jacksonville's image will be harmed	• JEA's planned 300% increase in solar generation capacity in combination with offering customers a choice in their energy source positions JEA as a "solar friendly" city and has resulted in positive feedback at stakeholder meetings. • JEA's proposal can be viewed as a middle of the road, positive solution that balances the needs of the environment, contractors and customers.

JEA HAS RECEIVED CONSIDERABLE FEEDBACK FROM STAKEHOLDERS

Stakeholder Comment	Response
Concern that rooftop solar retail credits are seen by JEA as a subsidy to rooftop solar owners.	• JEA's cost of providing non-solar energy and solar energy is $0.037/kWh and $0.075/kWh respectively. The current credit level is set at the retail level of $0.104/kWh. Any credit levels above JEA's costs result in payments to solar customers which are paid for by non-solar customers, a subsidy, and results in solar customers not paying for their use of and availability of the grid (used to receive energy when Solar Power is not generating; used to put excess power back on the Grid).
The true "value of solar" is not being recognized.	• JEA uses established utility financial practices when determining the costs and rates associated with serving customers. • JEA staff reviewed the "value of solar" approach to pricing solar bill credits and concluded that actual market based pricing is the appropriate approach. • Solar energy is valued based upon a competitively bid marketplace.

JEA HAS RECEIVED CONSIDERABLE FEEDBACK FROM STAKEHOLDERS

Stakeholder Comment	Response
Concern with the impacts on solar jobs	• Solar systems will continue to result in electric bill reductions for customers who install appropriately sized systems. • Solar systems, coupled with battery storage systems and a demand based rate structure will provide the opportunity for long term, sustainable economic growth in distributed generation products and services, including solar.
Concern with a demand rate being required for solar rooftop customers only	• JEA staff originally identified the implementation of a demand rate for solar customers to ensure the costs incurred by JEA to serve solar customers' specific needs are recovered, preventing further subsidization. • Based on solicited stakeholder feedback, and prior to proposal development, JEA staff modified their proposal to not require rooftop solar customers to take service under a demand rate pilot until a demand rate is required for all customers.
Concern that the proposed bill credit rate is not legally defensible.	• JEA and the OGC have analyzed the legality of the proposed changes in the net metering policy and concluded that all proposed changes are legally permissible.

STRIKING THE BALANCE

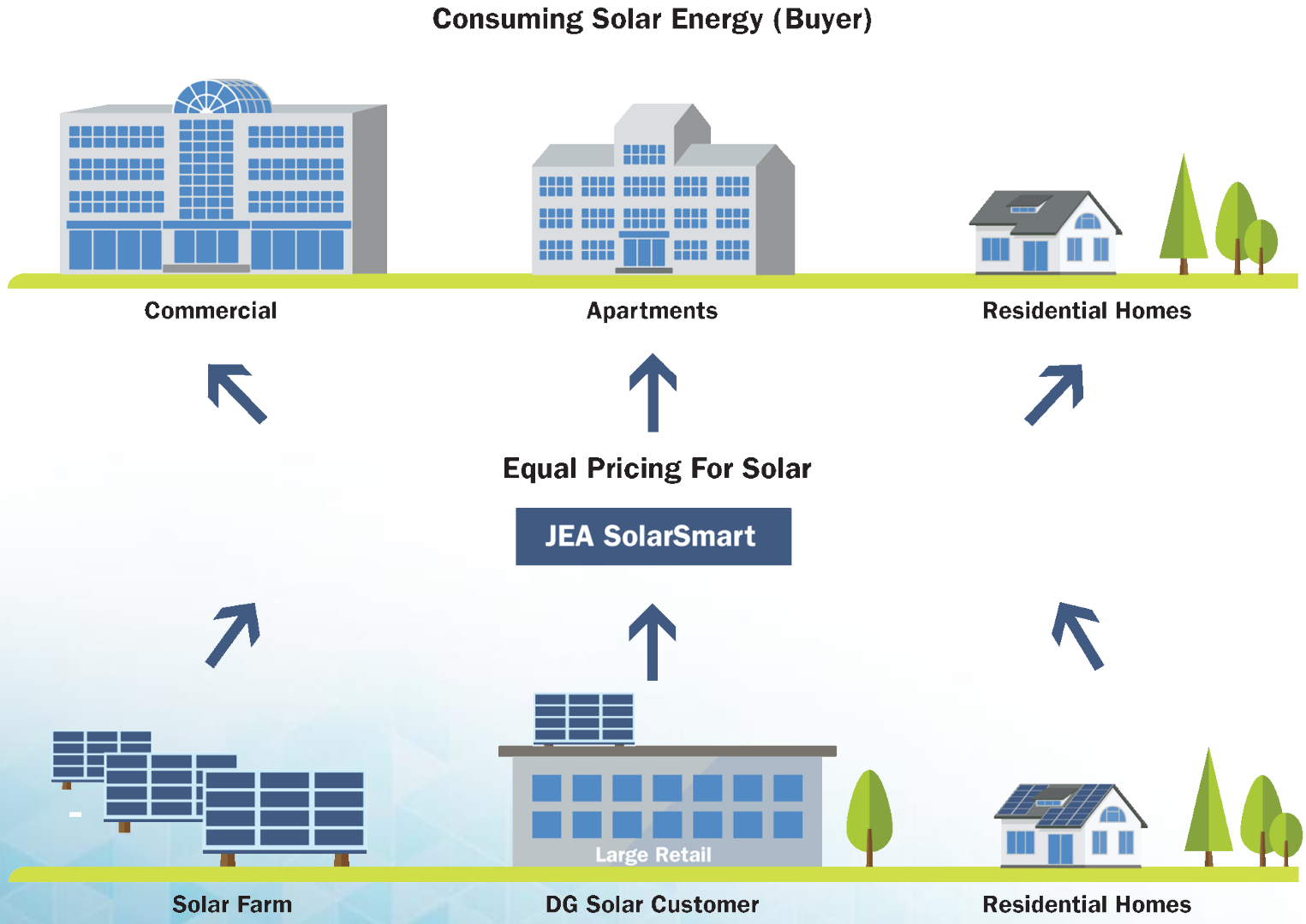
- Robust input process
  - Three phase approach over 18 plus months
    - Formal & Informal
    - Solar and Non-solar
- ***200+ interactions*** over ***18 months***
  - 500 Customer Surveys
  - 7 Group meetings
  - 28 Telephone discussions
  - 110 Written correspondences
  - 150 + Attendees at solar forum
- Stakeholder input significantly transformed JEA staff's initial proposal
- Final proposal balances the ***economic, environmental and reliability*** interests of ***all*** stakeholders

RECOMMENDED POLICY CHANGES

THIS FEEDBACK HAS BEEN CONSIDERED IN OUR RECOMMENDED CHANGES TO THE NET METERING POLICY

Initial Starting Point	Recommendation
Avoided cost to all solar customers	Treat all solar energy the same, regardless of source. • Modify the rate which JEA pays for excess electricity from full retail for Tier 1 & 2 customers and avoided cost for Tier 3 customers to JEA's cost to acquire solar energy, $0.075/kWh for 2016 (to be updated annually)
Applies to all customers	These changes are applicable only to customers who purchase a solar PV system after the implementation date, grandfathering existing customers*
Avoided cost to distributed generation customers, different rate to utility scale providers	Price paid for solar is the same regardless of the type of solar installation
JEA SolarSmart only based on utility scale solar	JEA's proposed JEA SolarSmart rate will match JEA's cost to acquire solar, ensuring that all solar energy purchased and sold is market-based
All solar on demand rate pilot	JEA is evaluating retail rate structures, including demand rates and/or monthly customer charges. If adopted for all residential customers, this will apply to roof-top solar customers as well.
Impose connection fee and inverter requirements	No connection fees or inverter requirements
Total Net Metered cap to remain at 10 MW	Expanded Net Metered cap to 20 MW*

THE PROPOSED POLICY TREATS ALL SOLAR ENERGY EQUALLY REGARDLESS OF WHERE OR HOW IT IS PRODUCED



WHY CHANGE NOW?

- Planning for the future is a foundation of the utility industry
- Taking action today allows us to capitalize on lessons learned by other utilities and implement a fair and transparent solution for our customers
- This is the next step in our vision that we have been executing over the past 16 years

NEXT STEPS

April Public Hearing:

Board to consider:

- JEA SolarSmart
- Street light changes
- Administrative changes
  - Distributed Generation application fee
  - Modify the Economic Development Program Rider to allow these customers to participate in SolarSmart.

April Board of Directors Meeting:

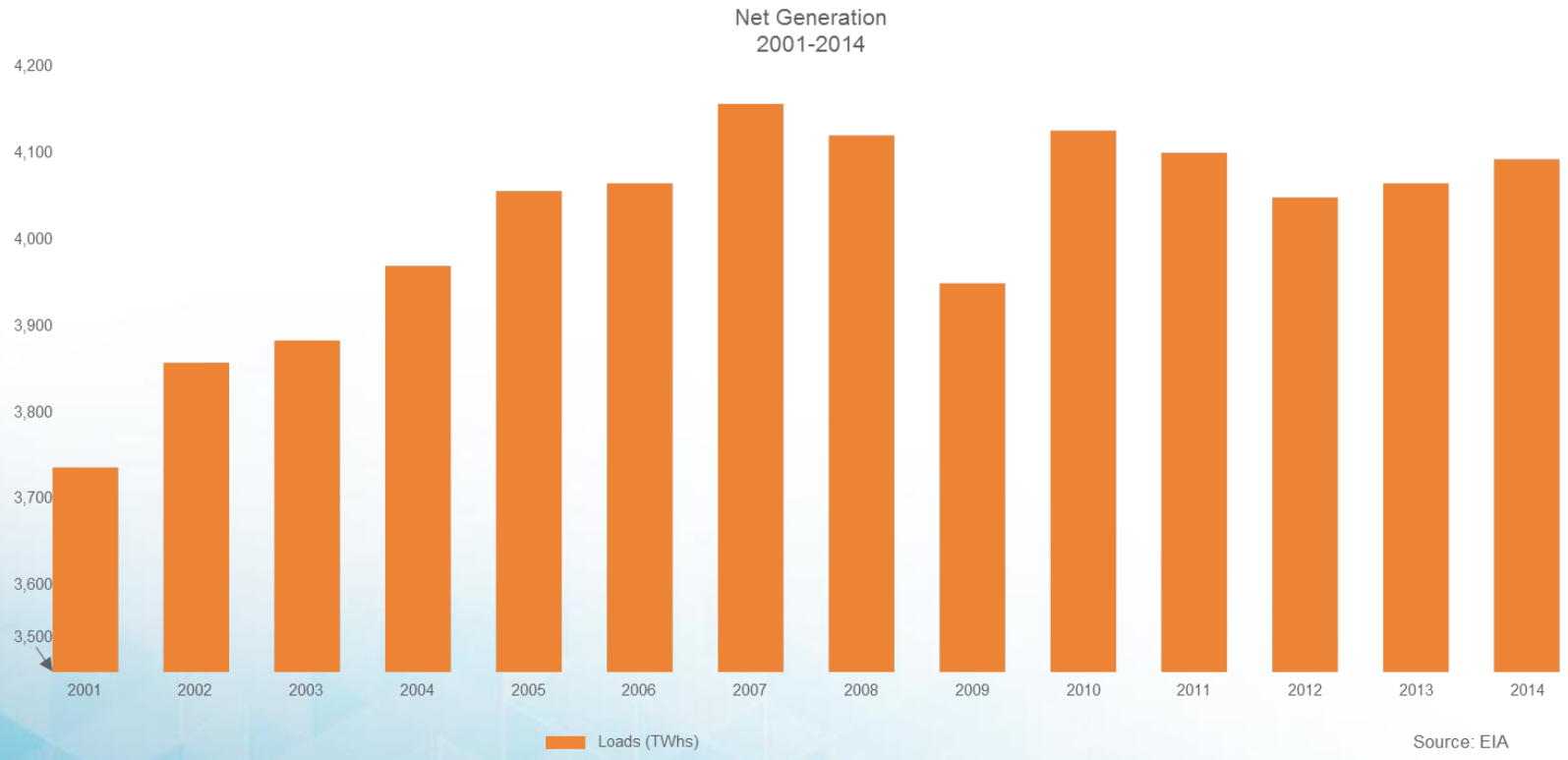
Board to consider policy changes around net metering

PRICING ELECTRICITY IN THE 21ST CENTURY (AKA DEMAND RATE)

THE NEXT STEP FORWARD

Electricity sales

- In the 57 years leading up to 2008, only 3 years resulted in year over year sales declines
- Since 2008, sales have fallen in 5 of 7 years…the business is changing



Carbon reduction requirements are transformative to the entire utility industry

THE CHALLENGE

- Driven by lower per capita consumption, future electric unit sales are expected to be flat or decline.
- Electric unit sales have decoupled from economic growth.
- Electric industry is perhaps the most capital intensive industry. Cost structure is generally fixed with infrastructure built to serve the highest momentary customer demand.
- Electric industry pricing models are volume based, thus revenue is generally variable.
- A capital intensive, high fixed cost business, caught in a flat to declining unit sales market cannot be sustained with a volumetric, variable pricing structure.

THE QUESTION

How does JEA best change its pricing structure to achieve revenue stability and long-term sustainability while remaining revenue neutral, as well as agnostic or supportive of Distributive Energy Resources (DER)?

THE ANSWER

- Simple Solution: Shift more revenue to fixed by increasing or implementing a set fixed monthly charge….Revenue Stability ✓
- Elegant Solution: Work towards a demand rate structure which more directly charges for demand versus volume….Revenue Stability ✓ and supportive of DER ✓

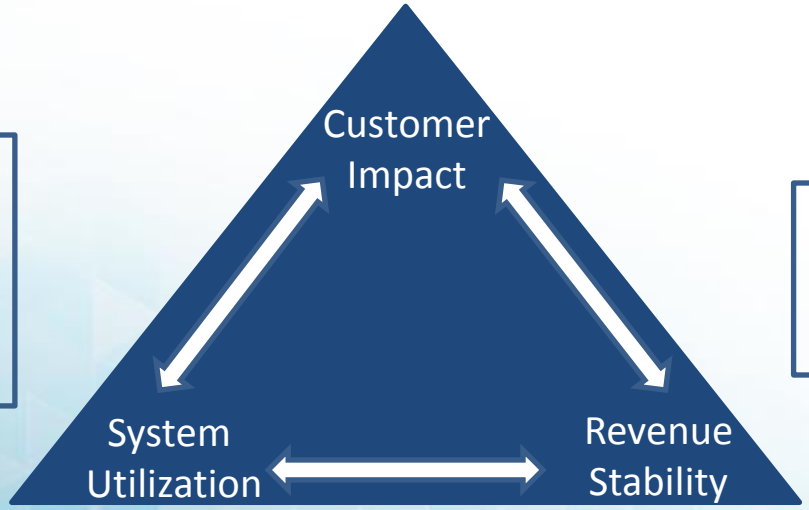
THE NEXT STEP FORWARD

- Electric utility rate structures, in place for more than 100 years, recover most fixed infrastructure costs through a variable, volumetric rate
  - Utilities across the country are grappling with rate design in the face of this shift
- Shifting to a new rate design can
  - Better align revenue with cost structure
  - Fairly and equitably apportion fixed costs among customers
  - Send pricing signals to customers to improve utilization efficiency of the system
  - Ultimately result in lower cost to serve all customers
- Rate restructuring concepts are being designed to be revenue neutral
- Customer understanding and acceptance will be critical to success
  - If accepted, new rate structure is a clear win-win opportunity with JEA customers

RATE RESTRUCTURING REQUIRES A HOLISTIC APPROACH TO ACCOMPLISH MULTIPLE OBJECTIVES

- Over the past 18 months a cross-functional rate restructuring team has been working toward a solution which balances these three goals:

Create a better alignment to cost structure to provide customers with better bill control and greater rate stability over time



Encourage efficient use of electric generation resources that reduces costs for customers and improves total system utilization and cost effectiveness for JEA

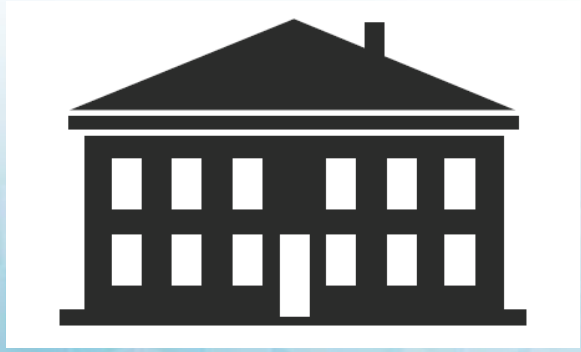
Shift revenue to better align with costs while minimizing the impact on customer bills

WHY NOT JUST RAISE THE BASIC MONTHLY CHARGE?

- Demand rates provide fixed cost recovery for the electric infrastructure in a fair and equitable way while allowing customers to control their individual bill impact

- To achieve the same level of fixed cost recovery through a customer charge would require a $75 basic monthly charge and would give customers no control over bill impacts

Bill impacts under the demand rate are driven by customer choice while bill impacts under an increased fixed charge are forced on customers regardless of use



29kW Customer A

10kW Customer B

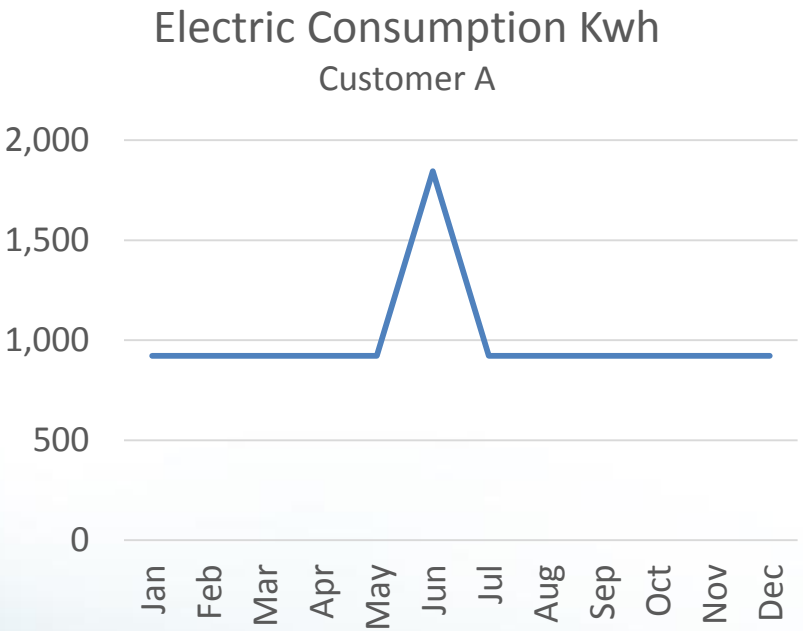
3kW Customer C

DEMAND RATES COULD RESULT IN A WIN-WIN FOR JEA CUSTOMERS

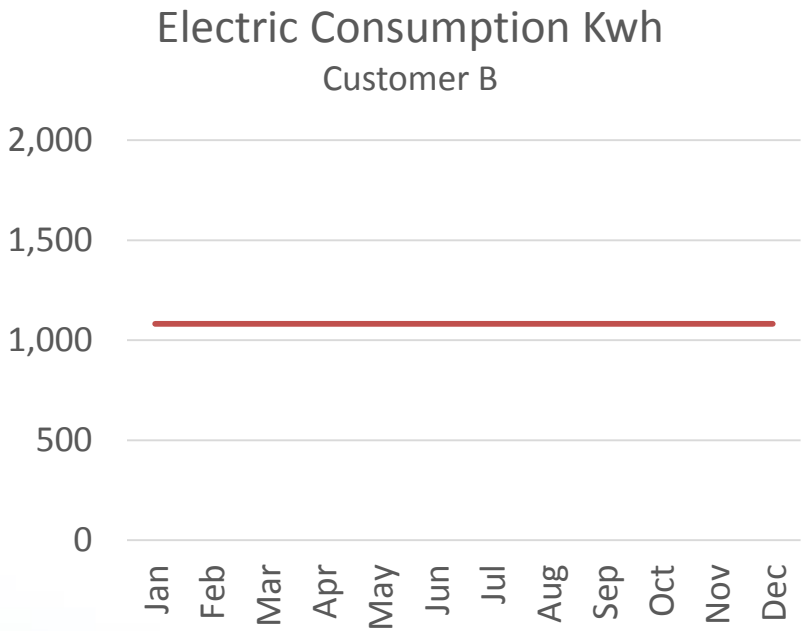
- Demand rates allow for better alignment of utility costs and revenues
- Demand rates have been used for cost recovery and to drive system efficiency from Commercial and Industrial customers for decades
- Better metering technology now allows demand rates for residential customers to become viable
- Staff is developing a pilot program to test residential demand charges, engaging leading experts in the rate and pilot design
  - U.S. Department of Energy has provided funding for technical support through the Lawrence Berkley Laboratory

Residential demand rates have the ability to provide substantially more fixed revenue recovery while empowering ALL customers with greater control over their bill based on how and when they use electricity

WHICH CUSTOMER COSTS MORE TO SERVE?



12,000 kWh = $1,250 in revenue



13,000 kWh = $1,350 in revenue

Answer: Customer A, because JEA had to provide double the electric generating, transmission and distribution capacity for Customer A's peak demand requirement

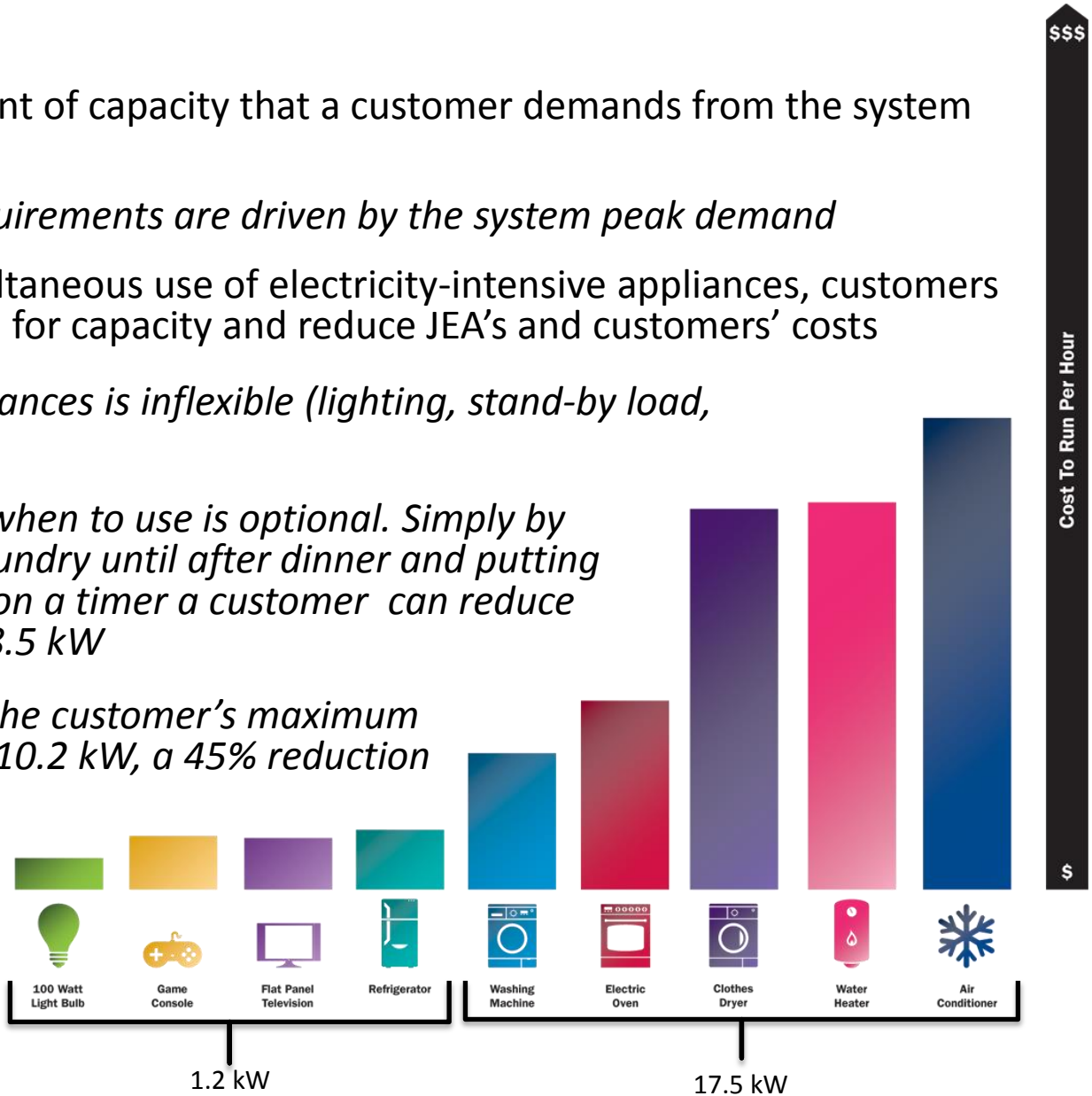
STAGGERING THE USE OF A FEW KEY APPLIANCES LEADS TO SIGNIFICANT DEMAND REDUCTIONS AND INCREASED SYSTEM UTIIZATION

Demand is the amount of capacity that a customer demands from the system at any given time

- *JEA's capacity requirements are driven by the system peak demand*

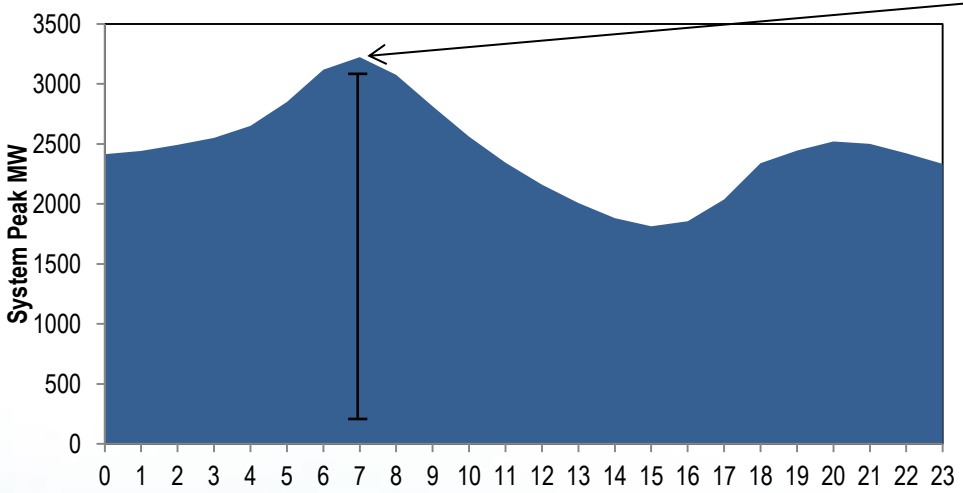
By avoiding the simultaneous use of electricity-intensive appliances, customers reduce their demand for capacity and reduce JEA's and customers' costs

- *Use of some appliances is inflexible (lighting, stand-by load, refrigerator)*
- *For other things, when to use is optional. Simply by postponing the laundry until after dinner and putting the water heater on a timer a customer can reduce total demand by 8.5 kW*
- *This would bring the customer's maximum demand down to 10.2 kW, a 45% reduction in demand*



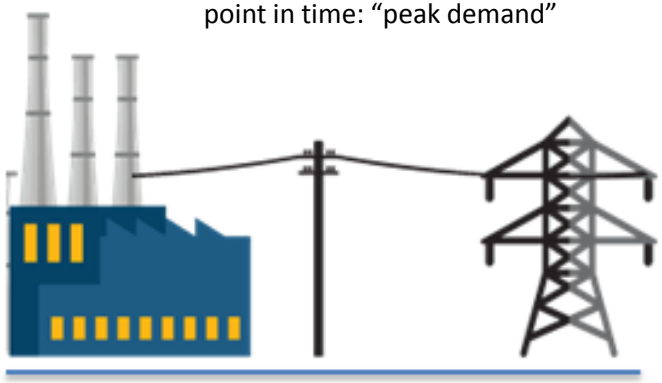
HOW CUSTOMER BEHAVIOR CHANGE IS CRITICAL TO MEETING CPP REQUIREMENTS

Total System Load, Winter Peak Day



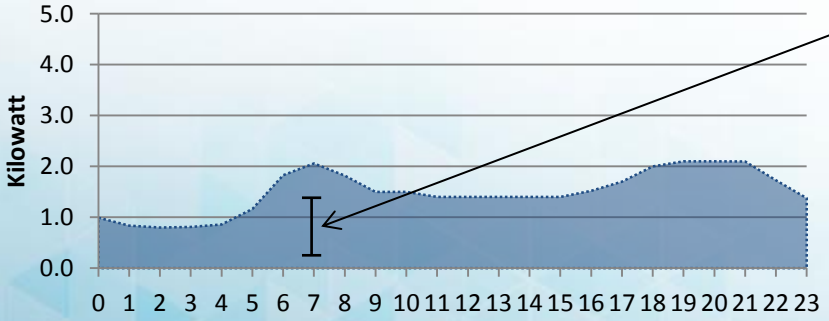
Capacity Requirement

Cost to serve is set by the maximum electricity used at a point in time: "peak demand"



Future with changed customer behavior

Residential Load, Future Winter Day



Capacity Requirement

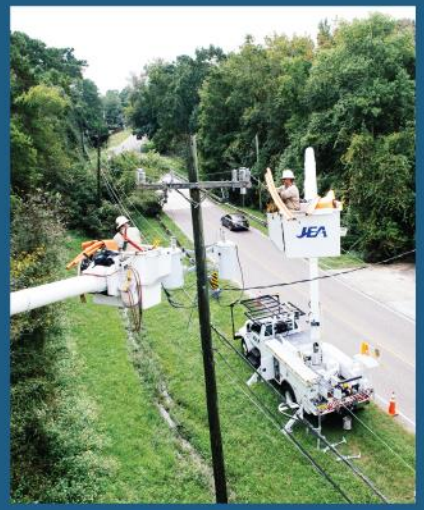
- Cost to serve is set by the maximum electricity used at a point in time: "peak demand"
- Lower peak demand means less capacity required

Lower fixed costs means lower customer bill

THESE CHANGES HELP JEA DRIVE TOWARD AN ENVIRONMENTALLY RESPONSIBLE FUTURE

Creates an environment that embraces and encourages the development of renewable technologies as part of a lower carbon future while ensuring all rates are fair, transparent and reflect the cost of providing service to all customers in our community.

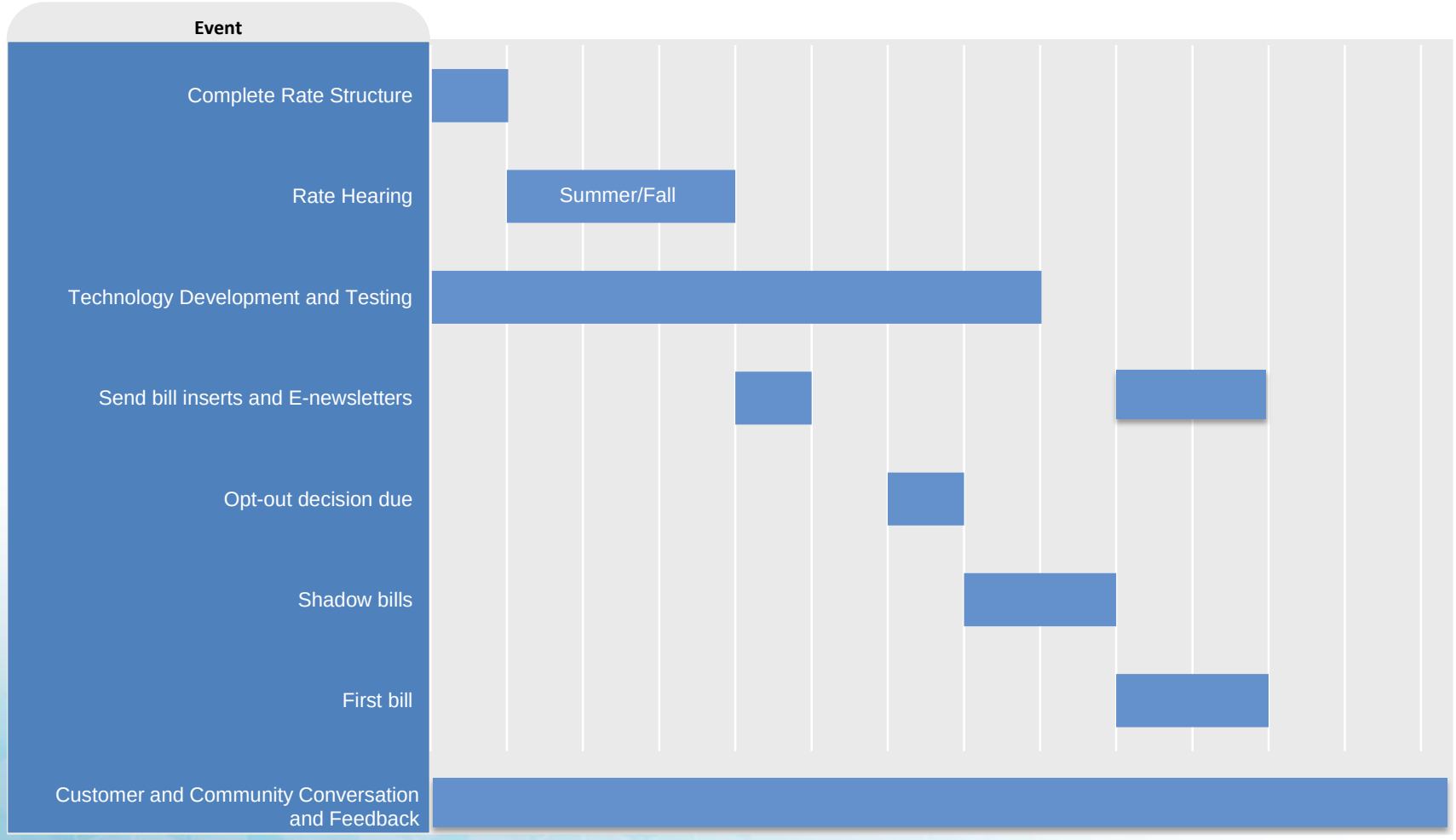
Environmental Responsibility



Reliability

Affordability

IN THE COMING MONTHS, STAFF WILL CONTINUE TO BRIEF THE BOARD ON THE DEVELOPMENT OF A DEMAND RATE PILOT



SUMMARY OF RECOMMENDED TARIFF AND POLICY CHANGES FOR CONSIDERATION

Tariff Changes
JEA SolarSmart new rate offering
Street lighting tariff changes to accommodate additional LED lights
Administrative • Include JEA SolarSmart in the Economic Development Rider • Distributed Generation Application Fee

	Current	Starting Point	Recommendation
Grandfather	N/A	No	Yes*
Credit - Residential	Retail { 2011 - $0.12; Today - $0.10 }	Avoided Cost ($0.03)	Market ($0.075)
Credit - Commercial	Avoided Cost ($0.03)	Avoided Cost ($0.03)	Market ($0.075)
Demand Charge	-	Residential – $16-38/month	Not at this time[1]
Inverter Requirement	-	Yes	Not at this time[2]
Capacity Limit	10 MW	10 MW	20 MW*
Implementation	N/A	60 Days	*

[1] Not required unless demand rates become JEA's default rate for all residential customers in the future.
[2] Inverter may be required in the future based on substantial penetration of rooftop solar; requires board approval of policy modification at that time.