



**AGENDA**  
**CITY OF LAKE WORTH BEACH**  
**ELECTRIC UTILITY ADVISORY BOARD MEETING**  
**BY TELECONFERENCE -YOUTUBE INFO BELOW**  
**WEDNESDAY, FEBRUARY 07, 2024 - 6:00 PM**

**ROLL CALL:**

**PLEDGE OF ALLEGIANCE:**

**AGENDA - Additions/Deletions/Reordering:**

**PRESENTATIONS: (there is no public comment on Presentation items)**

**PUBLIC PARTICIPATION OF NON-AGENDAED ITEMS:**

**APPROVAL OF MINUTES:**

EUAB Minutes 11.14.23

**UNFINISHED BUSINESS:**

A. Solar Renewable Energy Credits (SREC's)

**NEW BUSINESS:**

**BOARD COMMENTS:**

**BOARD LIAISON REPORTS AND COMMENTS:**

**ADJOURNMENT:**

If a person decides to appeal any decision made by the board, agency or commission with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. (F.S. 286.0105)

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**MINUTES  
CITY OF LAKE WORTH BEACH  
ELECTRIC UTILITY ADVISORY  
VIA TELECONFERENCE - YOUTUBE  
TUESDAY NOVEMBER 14, 2023 - 6:00 PM**

**ROLL CALL:**

Present members: Ryan Oblander, David Simms, Eric Jeffers, Matthew Portilla and Theodore Belloise were all in attendance. Ramsay Stevens was absent. Edward Liberty, the Board Liaison, was also in attendance.

**PLEDGE OF ALLEGIANCE:** led by Board Member Eric Jeffers. (1:29)

**AGENDA - Additions/Deletions/Reordering:**

No additions, deletions or reordering on the agenda. (1:53)

**PRESENTATIONS:** (there is no public comment on Presentation items)

There was no presentation. (2:02)

**PUBLIC PARTICIPATION:**

There was no public participation. (2:13)

**APPROVAL OF MINUTES:** (2:45)

EUAB Minutes 06.07.23

Action: The motion was made by Matthew Portilla to approve minutes in the agenda second by Eric Jeffers.

Vote: Unanimous

**UNFINISHED BUSINESS:** (3:14)

A. Solar Energy Subscription

In the last meeting Mr. Liberty spoke about a solar energy subscription program for the City of Lake Worth Beach customer. This follow up discussion touches on the challenges in modifying the current billing systems for net metering bills, and board emphasized concerns about energy subscription plan.

**NEW BUSINESS:** (2:37)

A. Solar Renewable Energy Credits (SREC's)

Mr. Liberty stresses the city's efforts to reduce fossil fuel, and expressed frustration over a lack of recognition for cost-saving options. Board Liaison touched on the city's financial stability, emphasizing the potential role of energy storage. The conversation

reviews the dynamics of solar renewable energy credits (SRECs), the challenges of the voluntary market in non-compliance states like Florida, and the strategic considerations for selling RECs. Board liaison delves into renewable portfolio standards (RPS), detailing the economic incentives they create for developers and the potential positive impact on consumers.

Board Liaison suggested FMPA member present the solar renewable energy credits SRECs in more detail. (1:25:05)

Board members look forward to getting a more in-depth information session of the solar renewable energy credits SRECs. (1:25:35)

Lengthy discussion ensued.

### **BOARD COMMENTS:**

Board Chair welcomed the new board member Theodore Belloise. (1:27:05)

### **BOARD LIAISON REPORTS AND COMMENTS:**

Board Liaison had an initial meeting with Theodore Belloise to welcome the new board member. (1:28:26)

Board Liaison provided an update on the vacant board member seat for the Village of Palm Springs. (1:28:59)

Mr. Liberty reported the City continues with many major infrastructure improvements, this to include the Gulfstream project. (1:33:51)

### **ADJOURNMENT:**

The meeting was adjourned at 8:45 pm.



# REC Market Opportunities And Risks

Lake Worth Beach Utility Board

February 7, 2024

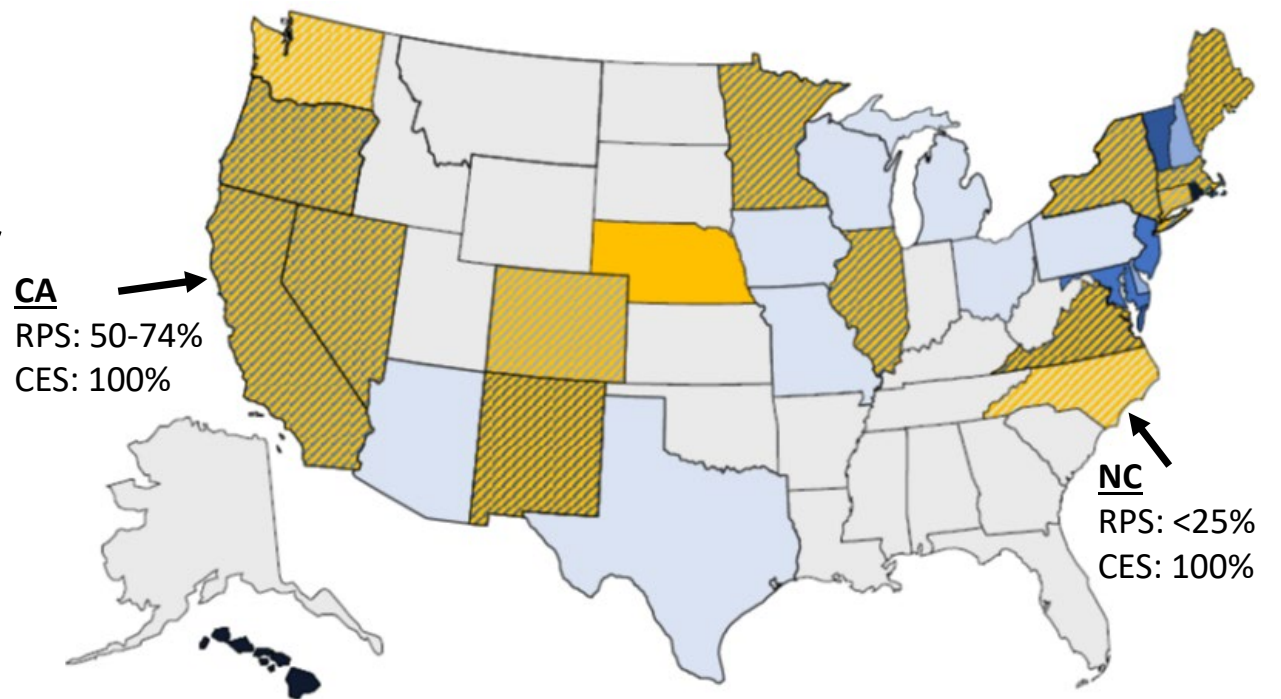


# What is a REC? A Renewable Energy Certificate

## *Strip Away Energy Delivered from Renewable Attribute*

- Renewable attribute of the generation
- Separate from the energy itself (states vary)
- Bundled – sell with energy; Unbundled – sell separate from energy
- Buyers “offset” emissions from actual energy consumption, Sellers generate revenue
- Can be certified to avoid double counting; Green-e, etc.
- Regions and states vary in specific requirements but generally align with:
  - Renewable Portfolio Standard (RPS) – physical source of electricity must be renewable
  - Clean Electricity Standard (CES) – broader clean definition & market-based credit trading allowed

**States with RPS and CES Targets\***



Nominal RPS Target		CES Target
100%+	25-49%	100% CES
75-99%	<25%	
50-74%		

\*Source: Berkley National Laboratory US State Renewables Portfolio & Clean Electricity Standards: 2023 Status Update

# Solar Projects Fulfill Key Member Objectives

## *Selling RECs Elsewhere Reflects Transfer of Rights*

- Solar Projects
  - (i) meet customer desires for lower cost solar,
  - (ii) support CO<sub>2</sub> emissions reductions goals
  - (iii) enable retail customer subscription programs,
  - (iv) provide diversity to natural gas price volatility
- REC sales would bring revenue but would preclude ***items (i), (ii), & (iii) for MWh sold\*\****
- ***Solar subscription sales preclude REC sales***
- ***Would impact historical metrics/reporting and could impact customer expectations***
- ***Revenue potential should be carefully weighed against rights being given up***





# RECs Being Generated Likely Have Market Value

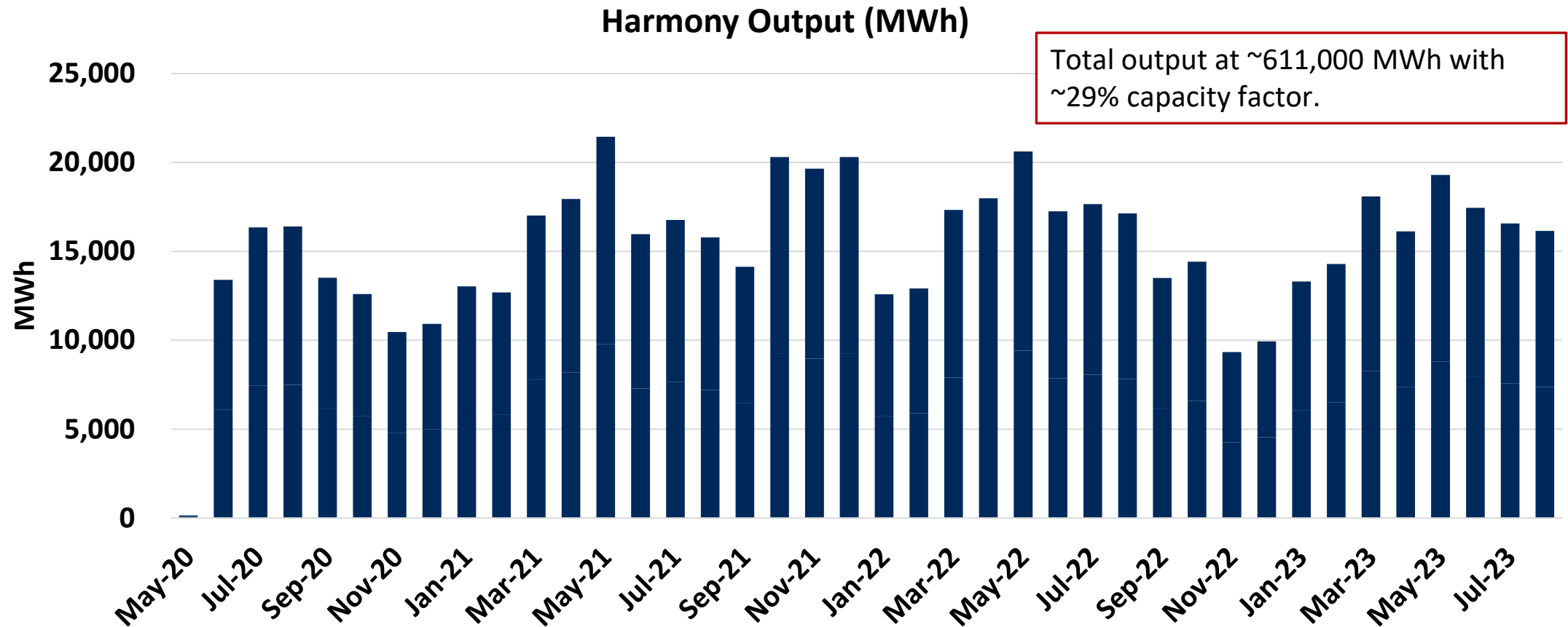
## *Voluntary Market Has Mechanisms to Monetize*

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- Harmony now online and generating renewable energy, including Renewable Energy Certificates (RECs)
- RECs distinguished from the actual energy delivered to serve load (“renewable attributes”)
- FMPA seeking feedback on pursuing REC revenue, which needs to be Member/Customer driven and include carve-outs if desired to support subscription programs/avoid double counting
  - Brokerages exist to support finding buyers and sellers in voluntary market, with admin/transaction fees per REC/MWh
  - Certification process exists to support avoidance of double counting - increases complexity, costs and potentially value
- Certain Risks and Management Issues Suggest Tempered Approach to Sales If Desired– 12-month Blocks For Prior Period MWhs
  - Limits on term help avoid excessive sale of attributes that may be needed for climate/regulatory compliance
  - Solar subscription energy can be removed from “bank” of MWhs available for sale

# Harmony Generated ~611,000 MWh Through Aug '23

*Additional Revenue Possible Through Sale of PV "Attributes"*





# Currently Three Groups of REC Holders

*Only Two Groups w/ Operational Solar, Additional Online Soon*

## Existing Solar – Phase I Harmony

**Non-  
ARP**

- OUC

**Individual  
ARP**

- Fort Pierce
- Jacksonville Beach
- Keys
- KUA
- Ocala

## Future Solar – Phases II & III

**Non- ARP**

- OUC
- Homestead
- JEA
- Lake Worth Beach
- Mt. Dora
- New Smyrna Beach
- Winter Park

**Individual  
ARP**

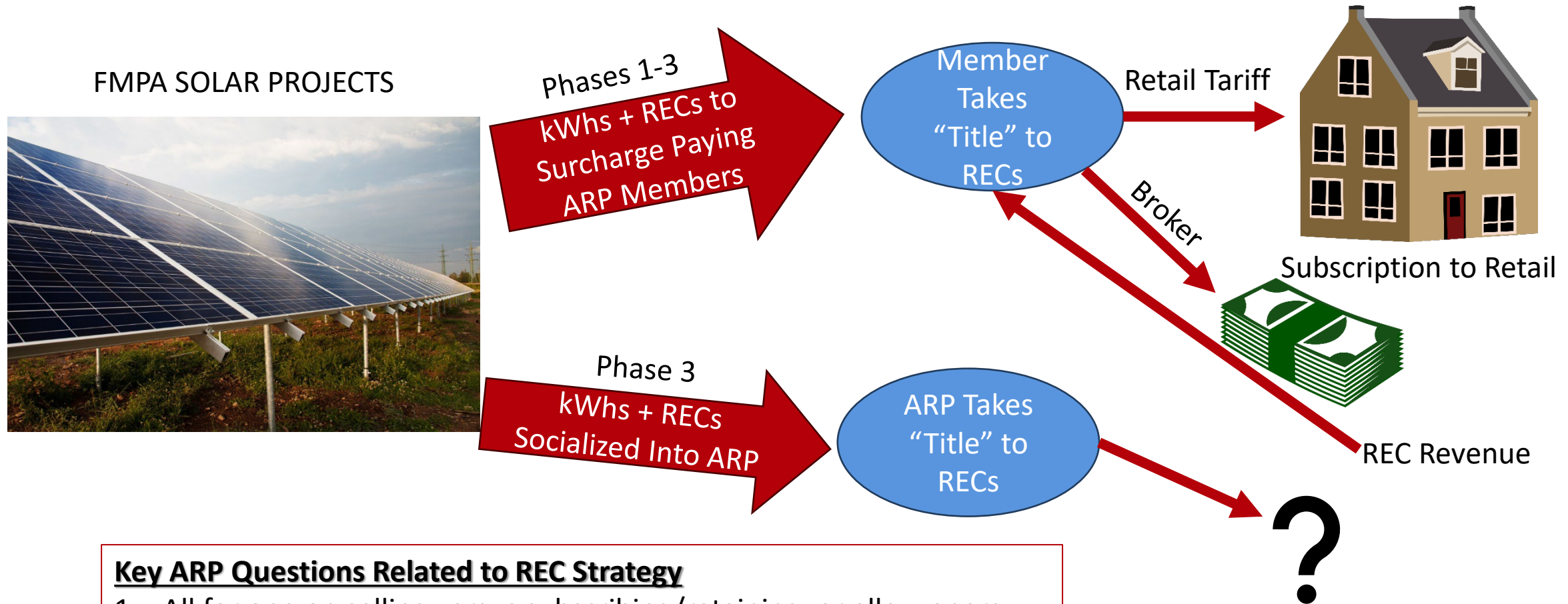
- Fort Pierce
- Jacksonville Beach
- Havana
- Keys
- KUA
- Leesburg
- Newberry
- Ocala

**ARP as  
Whole**

- Seeking feedback on allocation approach for REC strategy

# ARP Socialized RECs Require Resolution Path

## *Solar Surcharge RECs Already Being Subscribed At Retail*



### **Key ARP Questions Related to REC Strategy**

1. All for one on selling versus subscribing/retaining, or allow energy-ratio share by Participant to flow as Participant wants?
2. How to manage/broker RECs and paperwork ("REC retirement").

# FMPA Solar RECs Viable in Voluntary Market

## *Localized Requirements Limit Participation Outside Region<sup>1</sup>*

- RECs were developed to spur renewable development within a state; most states require RECs from local development
- Some states allow RECs from adjacent states or within interconnection region or regional REC tracking system
- Tiers vary state to state based on renewable goals and current availability of resources.
- Prices determined by:
  - Alternative Compliance Payment prices
  - Quantity of credits required for compliance vs. current credits available
  - Tier – level of cleanliness of generation

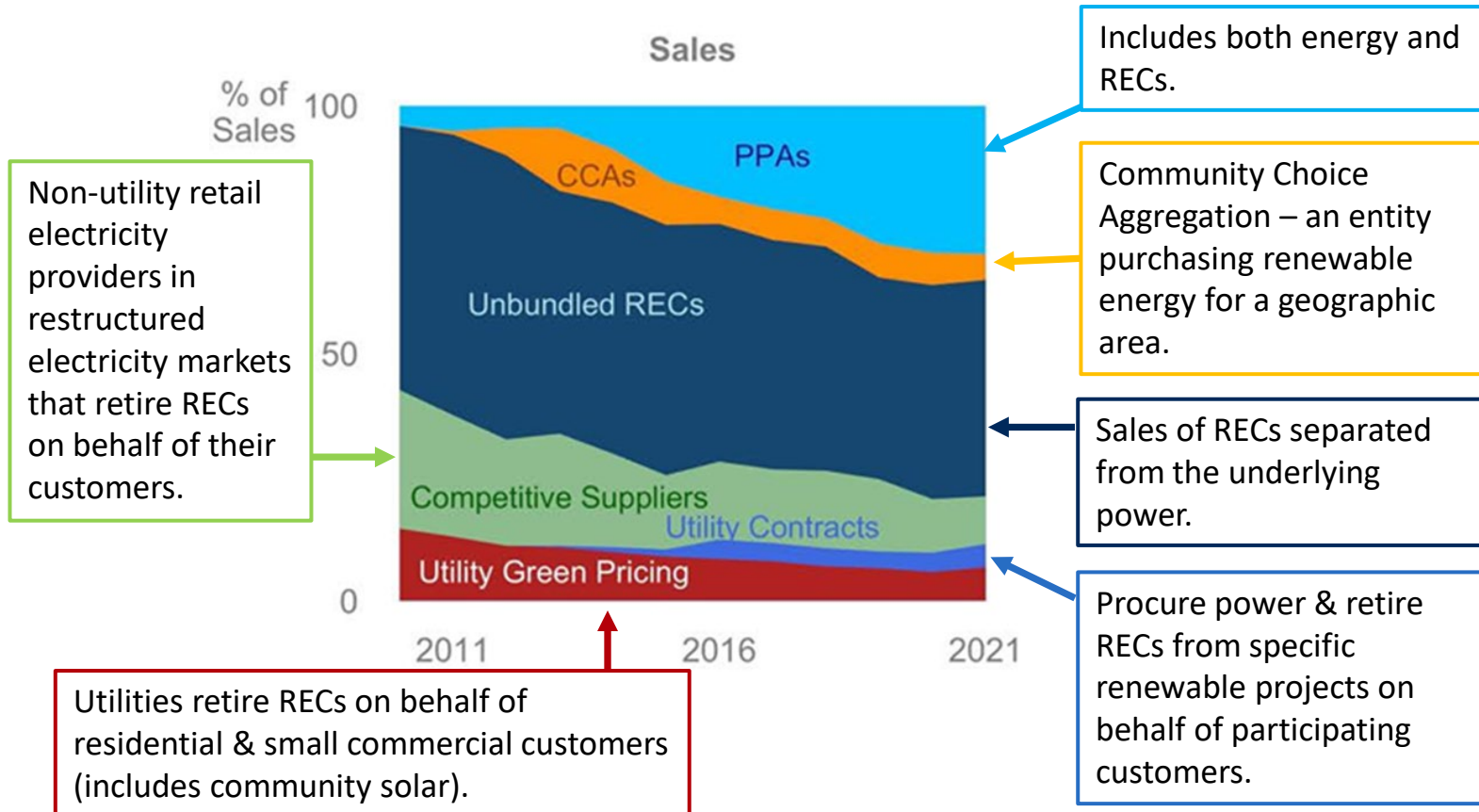
### High Level Sampling of REC Classes <sup>2</sup>

REC Class/Tier	Description / Generation Applicability
SREC	Only Solar Resources
Class I or Tier I Renewable Energy Sources	Cleaner forms of energy: Solar, Wind, Fuel cells powered by renewable sources, geothermal technology, wave/tidal action, landfill gas or biomass, instate hydro, etc.
Class II or Tier II Sources	Not as clean energy: Some thermal resources, resource recovery facilities, Small hydro, biomass
<b>Voluntary</b>	<b><i>For states without organized markets and/or to support CES (RPS is physical). Opportunities include selling to private companies.</i></b>

# Overall Voluntary Market Sales Continue to Increase

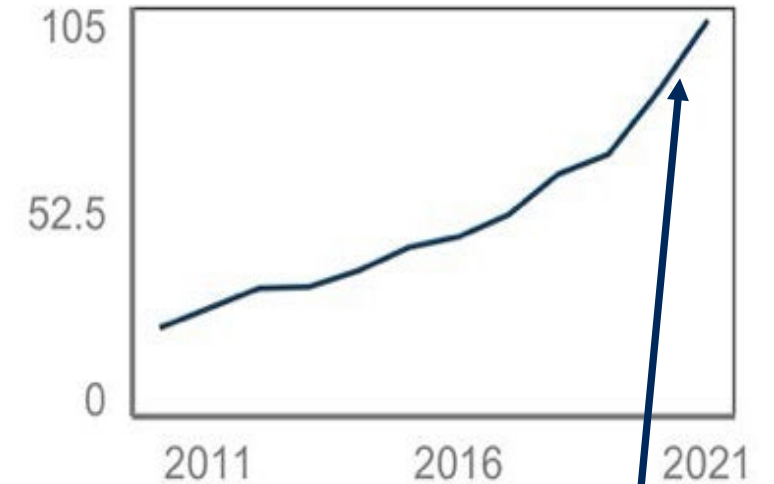
## Unbundled RECs Are ~40% Market Sales, 23% Growth '20-'21

All Green Power Sales (6 Products) by Type<sup>1</sup>



FMPA Can Sell Unbundled RECs

Sales of Unbundled RECs (million MWh)<sup>1</sup>



**23% Growth 2020 – 2021**

# OUC's Current Approach Reflects Cycle of Approvals

## *Sequencing Based on 12-Month Cycle of Tracking & Sales*

### Initial Setup and Fees

- Certify Site and Register w/ North American Renewables Registry (NAR)
- Designation of Responsible Party required, ensures PPA off-taker has title to RECs
- NAR Setup Fee \$1,000 (asset >10 MW)
- Registration Fee \$250/account
- Center for Resource Solutions (CRS) \$150 /asset (supplemental registration for buyer comfort)

### Beginning of Cycle - 12 Mo.

- Generation Period Total
- Pay annual subscription fees \$2,000\*\*

### REC Sale

- Broker matches REC to a buyer
- Broker transfers RECs to buyer
- Exchange of money

### Broker(s) Interaction

- Determines Market Price / REC
- Broker Fee ~2% (OUC not charged)
- NAR issuance fee (3 ¢ / REC)

### Approval of Sale

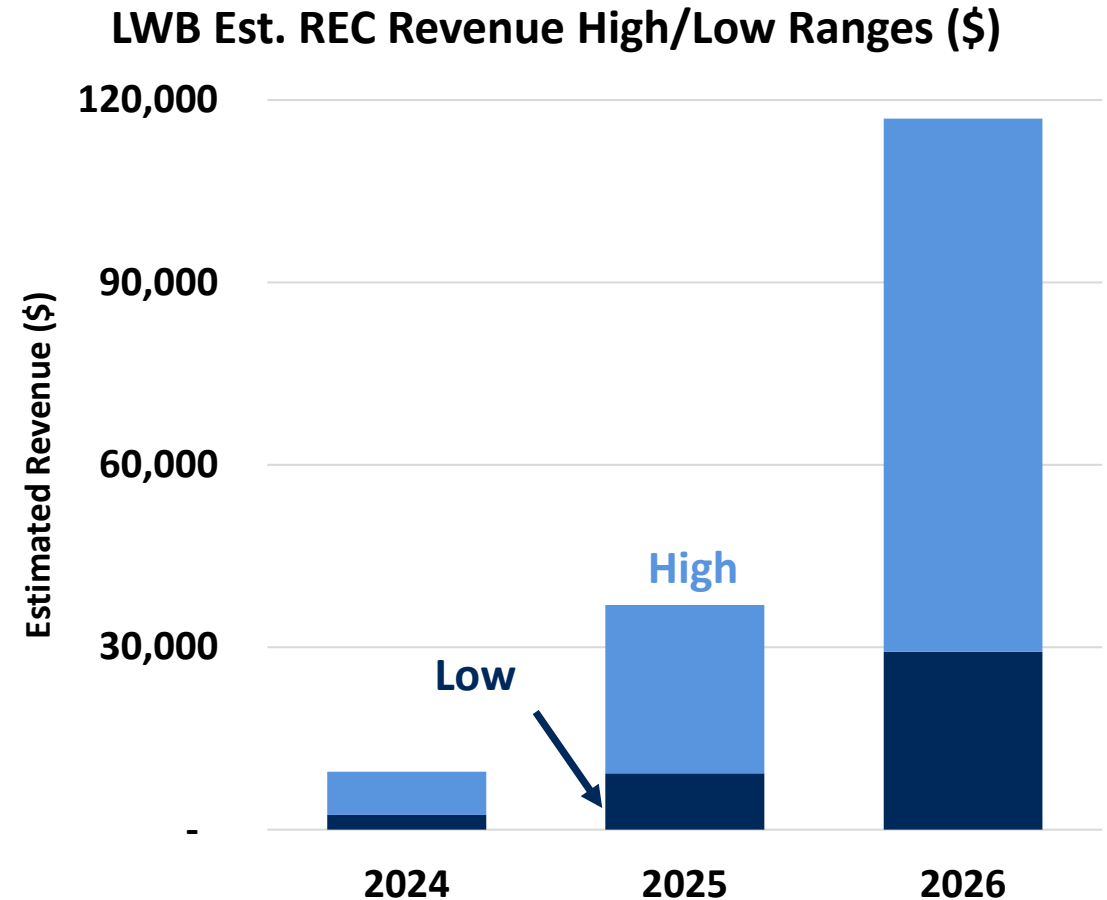
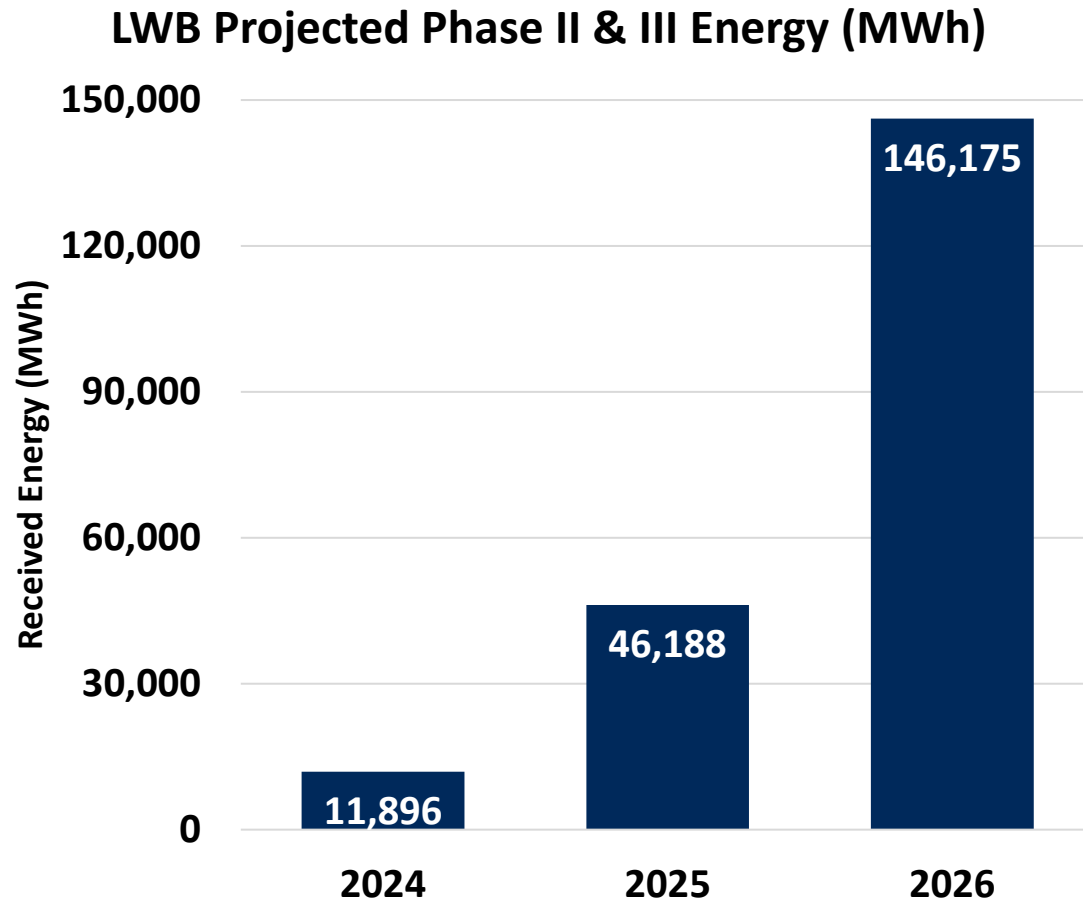
- Member's Committee approves RECs to sell

### Green-e Certification

- OUC does not currently do
- REC owner or Purchaser could do
- Prevent double count, allow retiring

# Historical REC Price Range ~\$0.20 - \$4/MWh

*Voluntary Market Possible Conversion of ~146 GWh per Year<sup>1</sup>*



1 – Prices have ranged from \$0.20 to \$4.00 /REC in the voluntary market over the last 3 – 4 years. (Sources: OUC feedback and S&P Global, Dec. 2022, “US Renewable Energy Credit Market Size to Double to \$26 Billion by 2030”)

# Fees for North American Renewables Registry Limited

## *Applicable Registration, Annual and Transactions Fees*

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- **Registration Fee** - A one-time fee (per asset) at the time that user registers a generating asset, energy efficiency asset and/or opens an Account in the registry. Fee will be based upon the size of the asset and the type of account(s) opened. (**Asset: \$1,000 for >10 MW, Account: \$250**)
- **Subscription Fee** – An annual fee, payable at the time that user registers in the registry and in January of each subsequent calendar year. Based upon the size of the asset registered and the type of account maintained. User pays for each asset registered (not pro-rated). (**\$2,000/year for >10 MW**)
- **Volumetric Fees:**
  - **Issuance Fee** – A fee for each Certificate issued in the registry for each project. (**\$0.03/REC**)
  - **Transfer Fee** – A fee for each Certificate transferred to one of account holder’s accounts. This includes Certificate transfers from other REC registries. (**\$0.01/REC**)<sup>1</sup>
  - **Retirement Fee** – A Fee for each Certificate retired in one of account holder’s accounts in the registry. (**\$0.03/REC**)<sup>1</sup>
  - **Export Fee** – A fee for each Certificate exported to another REC registry. (**\$0.03/REC**)<sup>1</sup>



# FMPA Can Manage Solar Projects RECs If Desired\*

## *Strategy Can Evolve with Additions of Phase II & III Solar*

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- FMPA can pursue revenue for REC sales of Phase II & III MWhs
  - Need feedback on all participants approach vs. individual Member preferences
  - Generally, follow the NAR/OUC sequence with broker-driven engagements
  - Will require master agreements with brokers
  - Higher-end certification (e.g., Green-e) currently not a hindrance to sales
  - Retail customer preferences for REC retirement and tracking can be managed at the Participant level as customer desires dictate
- ***Any potential sales would reflect significant rights transfer that may be at odds with original Solar Project key objectives as discussed earlier***

# Limit Term of REC Sale to 12-Mo. Blocks

## *Limiting Term of Sale Best Strategy to Reduce Potential Risk*

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- Limiting term of sale to 12-month blocks reduces risk exposure to regulatory uncertainty (e.g., renewable portfolio standard, clean energy standard, or other unforeseen federal mandates)
  - Markets have varying time windows for when RECs can be sold for others to retire – requires further exploration with viable buy-side alternatives in voluntary market
- Can allow for evolving approach if desire exists to pursue assignment of RECs in solar subscription program to avoid double counting
- No market clarity on whether generation portfolio “mix” calculations are impacted by REC sales\* – limiting term allows for quick adjustments if needed to support definitional changes (since RECs are sold for prior periods with records/tracking of energy generated)

\*Recent FMPA broker discussion reinforced concept of full rights transfer, which includes title to the zero carbon emitting components of energy physically delivered in prior periods.



# **Appendix A – Additional REC Market Reference Materials**

# Fees for North American Renewables Registry

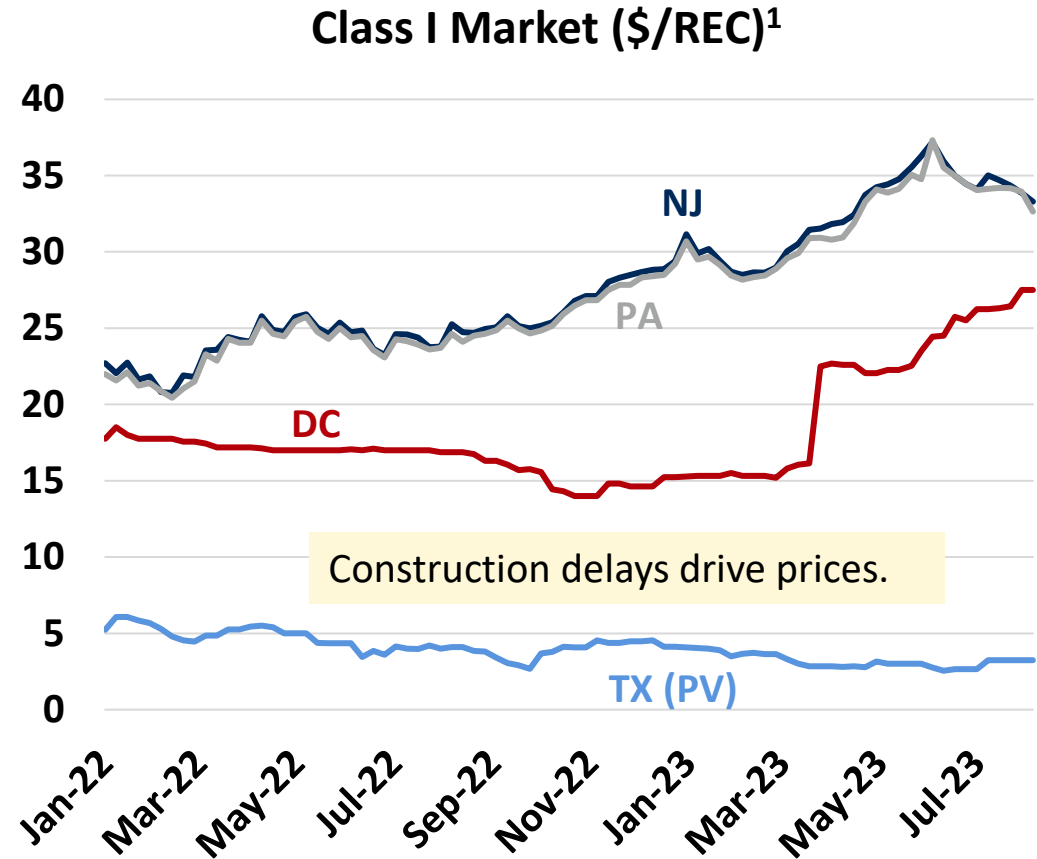
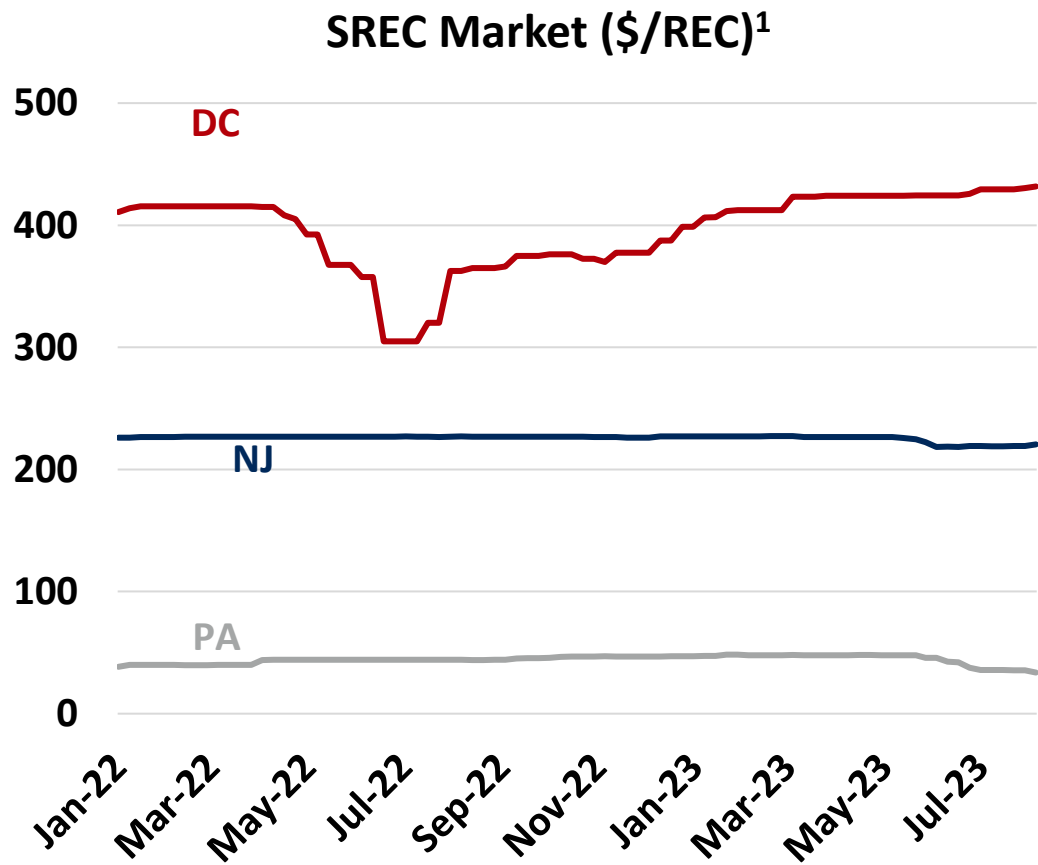
Fee Schedule: Type	Size	Registration (\$)	Subscription (\$)	Volumetric Fee	\$ / Certificate
Account: Project		250	0	Issuance	0.03
Account: General		750	2,000	Transfer	0.01
Account: Retail Purchaser		0	1,000	Retirement	0.03
Account: Qualified Reporting Entity		0	0	Export	0.03
Asset: Micro Generator	<40 kW	0	50	Import	0.01
Asset: Small Generator	40 kW to < 1 MW	250	500		
Asset: Medium Generator	1 MW to < 10 MW	500	1,000		
Asset: Large Generator	> 10 MW	1,000	2,000		
Asset: Energy Efficiency Project	Any	500	1,000		

# Voluntary Market Products

Green Market Power Market Products	Description
Power purchase agreements (PPA)	Sales through direct contracts between renewable energy projects and buyers which include both power and RECs.
Community choice aggregation (CCA)	A legal entity formed to procure power on behalf of a defined geographic area (some on behalf of their customers).
Unbundled RECs	Sales of RECs separated from the underlying power.
Competitive suppliers	Non-utility retail electricity suppliers in restructured electricity markets that retire RECs on behalf of their customers
Utility renewable contracts	Utilities procure power and retire RECs from specific renewable energy projects on behalf of customers who participate on a contractual basis
Utility Green Pricing	Utilities retire RECs on behalf of residential & small commercial customers (incl. community solar)

# Cleanest Resources & Higher Demand Drive Prices

*All Organized Markets Have Interconnection Requirements*

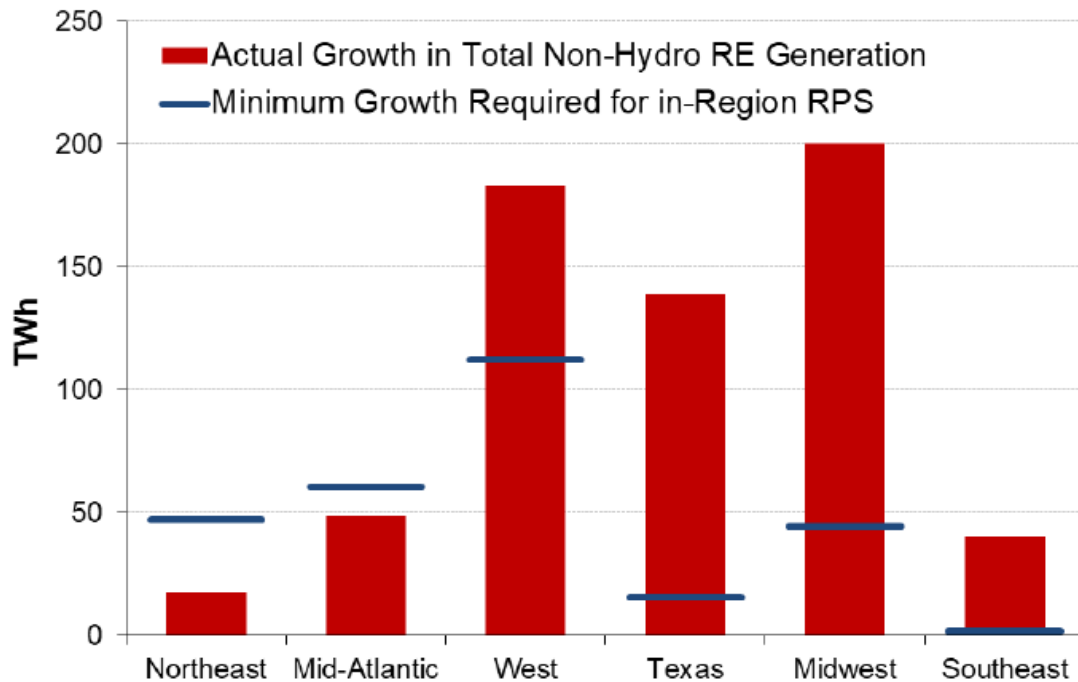


# State Policy Changes May Impact Future Prices

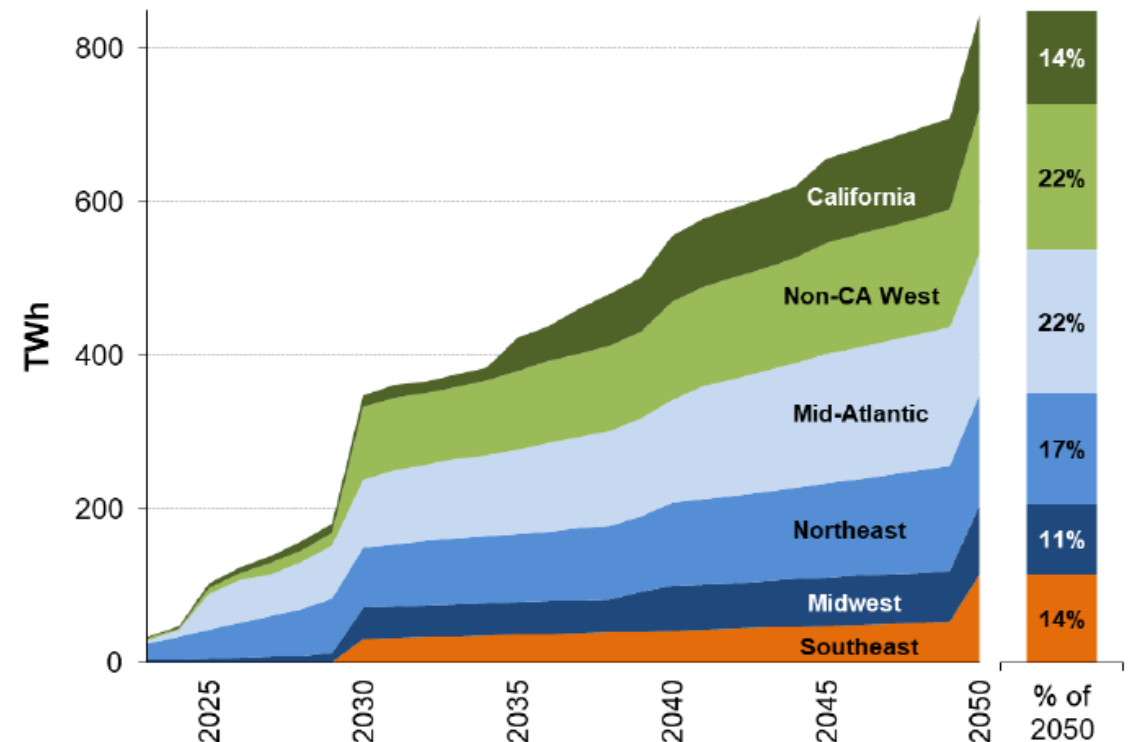
## *Some States Have Made Changes to RPS & CES Policy<sup>1</sup>*

Interconnectivity (state & regional siting/source requirements) drive REC pricing & participation eligibility.

**Growth in Non-Hydro Renewable Generation:  
2000-2022 (TWh)**



**New Renewable Portfolio Standard (RPS) + Clean Energy Standard (CES) Supply Needs (TWh)**





# Phase II & III Projected Revenue w/Voluntary Market

## *Annual Revenue Assuming a Projected 28% Capacity Factor*

Member	Single Year Phase II & III Output (MWh)	Single Year Low Range Revenue (\$0.20/REC) (\$)	Single Year High Range Revenue (\$4.00/REC) (\$)
Beaches	36,792	\$7,358	\$147,168
FPUA	36,792	\$7,358	\$147,168
Havana	613	\$123	\$2,453
Homestead	36,792	\$7,358	\$147,168
JEA	342,901	\$68,580	\$1,371,606
KEYS	92,225	\$18,445	\$368,901
KUA	49,056	\$9,811	\$196,224
Leesburg	24,528	\$4,906	\$98,112
<b>Lake Worth</b>	<b>146,923</b>	<b>\$29,385</b>	<b>\$587,691</b>
Mount Dora	4,906	\$981	\$19,622
New Smyrna	24,528	\$4,906	\$98,112
Newberry	2,453	\$491	\$9,811
Ocala	56,414	\$11,283	\$225,658
Winter Park	73,584	\$14,717	\$294,336
ARP Whole	173,781	\$34,756	\$695,124



# Appendix B – PJM REC Market Sample Requirements

# RPS States In PJM Have Relatively Mature REC Market

## *Northeast Subregion is Highly Diverse*

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- PJM states are an interconnected area that coordinates the movement of electricity through all or parts of:
  - Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey
  - North Carolina, Ohio, Pennsylvania, Tennessee
  - Virginia, West Virginia, District of Columbia
- Within a given state, REC exchange and requirements highly diverse in terms of eligibility and mechanics

# Renewable Portfolio Standards (RPS) Programs

## *A Comparison of a Subset of the PJM Interconnection*

Criterion	New Jersey	Maryland	District of Columbia	Delaware
Renewable Energy Targets (RPS Percentages)	End Year 2032 Solar: 1.1% Tier 1 (includes Solar): 50% Tier 2: 2.5% Total: 52.5%	End Year 2030 Solar: 14.5% Tier 1 (includes Solar): 50% Tier 2: 2.5% Total: 52.5%	End Year 2041 Solar: 10.0% Tier 1 (includes Solar): 100% Tier 2: phased out in 2020 Total: 100%	End Year 2035 Solar: 10% Tier 1 (includes Solar): 40% Tier 2: N/A Total: 40%
Geographic Eligibility	Energy shall be generated within or delivered into the PJM region. If the latter, the Energy must have been generated at a facility that commenced construction on or after January 1, 2003. Solar resources must be connected with distribution grid serving NJ.	Source must be (1) located in the PJM Region or (2) in a control area that is adjacent to the PJM Region, if the electricity is delivered into the PJM Region. Solar resources must be connected with distribution grid serving MD.	Source must be located within the PJM Interconnection region or within a state that is adjacent to the PJM Interconnection region. Effective 3/22/2019, new facilities must be located in PJM. Solar systems approved after 2/1/2011 must be connected to the DC distribution grid.	“Eligible Energy Resources” include energy resources located within or imported into the PJM region. Customer-sited resources must be located in DE.

# Renewable Portfolio Standards (RPS) Programs

## *A Comparison of a Subset of the PJM Interconnection*

Criterion	New Jersey	Maryland	District of Columbia	Delaware
Class I or Tier I Renewable Energy Sources	Solar, PV, Wind, Fuel cells powered by renewable sources, geothermal technology, wave/tidal action, landfill gas or biomass, instate hydro	Solar, wind, qualifying biomass, landfill gas, geothermal, ocean, fuel cell powered by methane or biomass, small hydro, poultry litter incineration w/in MD, waste to heat w/in MD	Solar, wind, qualifying biomass, landfill gas, geothermal, ocean, fuel cell from landfill gas or biomass	Solar, wind, ocean, geothermal fuel cell capable of being powered by renewables, landfill gas, small hydro, sustainable biomass
Class II or Tier II Sources	Resource recovery facility, Small hydro	Hydroelectric power other than pump storage generation	Ended at the end of 2019	“New Renewable Generation Resources” are those in commercial operation after 12/31/1997. No more than 1% of each year’s sales may come from resources that aren’t new.

# Renewable Portfolio Standards (RPS) Programs

## *A Comparison of a Subset of the PJM Interconnection*

Criterion	New Jersey	Maryland	District of Columbia	Delaware
Banking REC	Class I RECs can be banked for compliance in either of the following two energy years. SRECs can be banked for compliance in either of the following four energy years. Class II RECs cannot be banked.	A Renewable Energy Credit shall exist for 3 years from the date created.	A Renewable Energy Credit shall exist for 3 years from the date created. Effective April 2019, Solar RECs have a lifespan of 5 years.	An unused renewable energy credit shall exist for 3 years from the date created.
Alternative Compliance Payment (ACP)	<b>Class I &amp; II (ACP)</b> - \$50/MWh <b>Solar (SACP)</b> – \$308/MWh in 2018, \$268/MWh in 2019, declining by \$10/MWh each year thereafter.	<b>Tier 1</b> - \$40/MWh <= 2016, \$37.50 in 2017-18, \$30 in 2019-23, declining to \$22.35 in 2030 <b>Tier 2</b> - \$15/MWh <b>Solar</b> – \$350/MWh in 2015, declining until 2030, \$22.50 thereafter	<b>Tier 1</b> - \$50/MWh <b>Tier 2</b> - \$10/MWh <b>Solar</b> - \$500/MWh in 2011 thru 2023, \$400 in 2024-28, \$300 in 2029-41, and \$100 in 2042 and thereafter	<b>Non-solar ACP</b> is \$25/MWh. <b>Solar ACP</b> is \$150/MWh.
Beneficiary of ACP	ACPs fund renewable energy projects through the Clean Energy Program. SACPs will be refunded to ratepayers as a result of A.B. 3520.	MD Strategic Energy Investment Fund, to be used to support the creation of Tier 1 and solar resources in the state.	DC Renewable Energy Development Fund, to be used to support the creation of new solar sources in the District.	Delaware Green Energy Fund