



# **SREC**Trade

## ***SREC Market Update***

NREL Webinar

Brad Bowery | CEO | SRECTrade, Inc.

January 18, 2011





*Launched in 2008*

## **Online SREC Marketplace**

- Monthly auctions
- 7 state SREC markets
- 20k visitors per month

## **Asset Management**

- 35 MW aggregated
- Facilities across 15 states
- Growing 2 MW per month

## **Voice Brokerage**

- Institutional clients
- Spot/Forward contracts
- Direct w/ energy companies

Turnkey solutions for...

250  
Installers

Installer Portal Profile About Join Username Password Sign in

## Get to know your customers

As an SRECTrade Installer Partner you have access to our SREC revenue sharing program, customer tracking services, research, equipment purchasing channels and more!

[Signup now](#) [Login »](#)

**Get on the Map**  
Manage your SRECTrade.com public profile and advertise your company

**Customer Analytics**  
Track where customers are registered, which customers are selling their SRECs and see how much money you've made through referral commissions

**Be Competitive**  
Buy solar components at wholesale prices and access SRECTrade resources. All for free!

[Signup now »](#) [Signup now »](#) [Signup now »](#)

**SREC Dashboard**  
Key stats on your SREC account with SRECTrade.com

- 513 Total enrolled facilities
- 1,359 SRECs currently for sale
- 13 New facilities pending state registry approval
- 3,820 Total SRECs traded to date
- 500 Active facilities generating SRECs
- 273 Average number of SRECs traded per auction
- \$50,724.73 My total commission earned
- \$3,623.20 Average commission earned per auction

**All Transactions**  
SRECs Sold

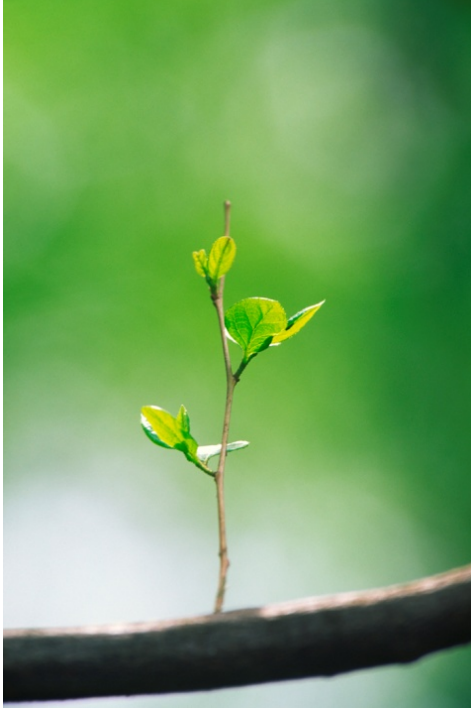
Showing 10 of 2160 EasyREC transactions

Customer	Auction	Facility	Energy Year	Quantity	Net Sales	Your Commission
Allgeyer, JoAnn	6th Jan 2012	NON37411	NJ2012	1	\$232.75	\$7.35
Allgeyer, JoAnn	6th Jan 2012	NON37412	NJ2012	1	\$232.75	\$7.35
Baltard, Reginald	6th Jan 2012	NON45948	NJ2012	4	\$960.40	\$0.00
Barnes, Christopher	6th Jan 2012	NON40780	NJ2012	1	\$232.75	\$7.35
Bengson, Alfredo	6th Jan 2012	NON37503	NJ2012	3	\$698.25	\$22.05
Borguet, Yves	6th Jan 2012	NON37489	NJ2012	1	\$232.75	\$7.35
Bunting, John	6th Jan 2012	NON37464	NJ2012	1	\$232.75	\$7.35
Caruso, John	6th Jan 2012	NON37573	NJ2012	1	\$232.75	\$7.35

# Key Benefits to SRECs



1. **Efficient Subsidy:** SREC values decrease over time as solar costs decline
2. **Minimal Taxpayer Impact:** Cost distributed across ratepayers, shifting taxpayer funds away from grants or rebates
3. **Industry Stability:** Established long-term RPS targets create a stable demand for solar in the long run



1. **Solar carve-out:** RPS with a specific solar requirement creates demand
2. **Unbundled SRECs:** Sold separately from the electricity allows for trading
3. **High Enough SACP:** Penalties for non-compliance drive demand and guide market prices

# SREC Market Pitfalls

- No solar specific carve-out (CA, TX)
- Regulated markets = limited buyers, contracting restrictions (CA, NC)
- SACP set too low for market to impact economics (NC, NH)
- Large projects collapse market (DE, OH)
- SRECs or rebates, not both (PA)
- Timing of minting SRECs create cash flow issues (MA)
- SREC compliance due 15 months after year begins (All)...





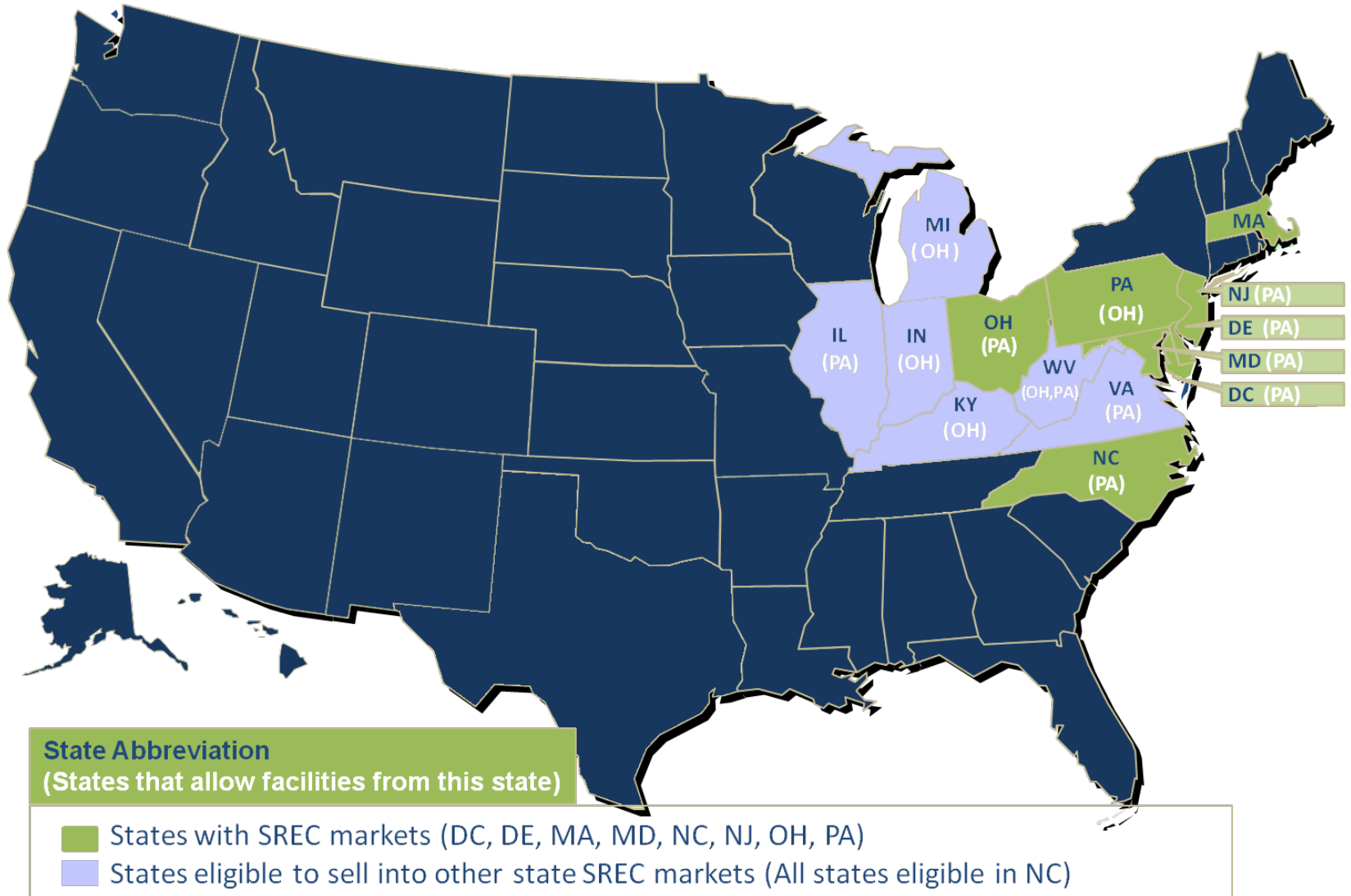
State	Eligibility
Ohio	Adjacent States
Pennsylvania	PJM Region States
West Virginia	No RPS

**Example:** West Virginia has no SREC market, but facilities are eligible in OH and PA

## You should be asking the following two questions:

1. Does my state have an SREC market in place?
2. Is my facility eligible in another state?

## SREC States

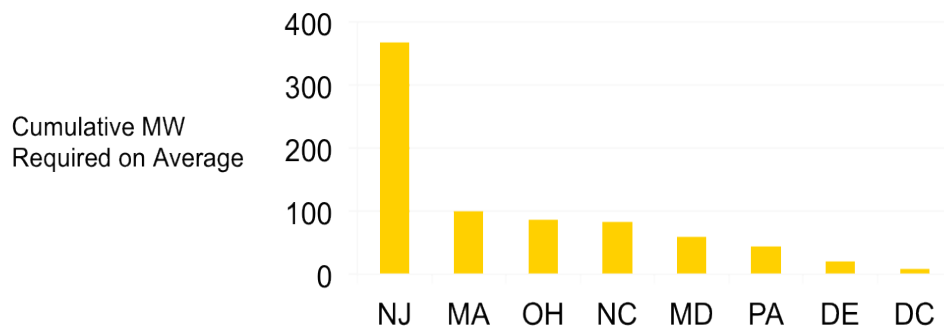


\* NC, only Dominion Electric Customers eligible to sell into PA

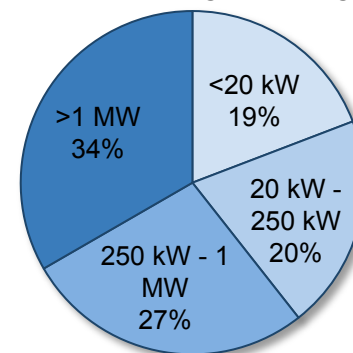
\*\* IL, only Comm Ed Customers eligible to sell into PA



## 2011-12 Solar RPS Requirement



## SREC market by facility size



## Calculating Demand:

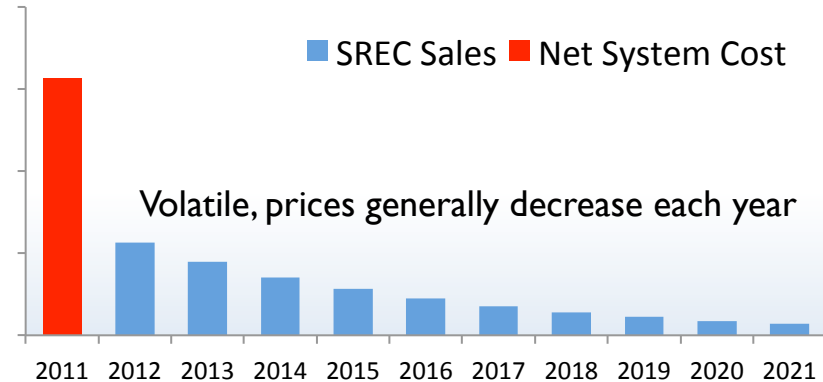
- Most states set RPS based on % of electricity usage in MWh
- NJ and MA set a fixed MWh requirement

**\*\*\* 1MW produces approx. 1200 MWh (SRECs) per year \*\*\***

# How Are SRECs Sold?

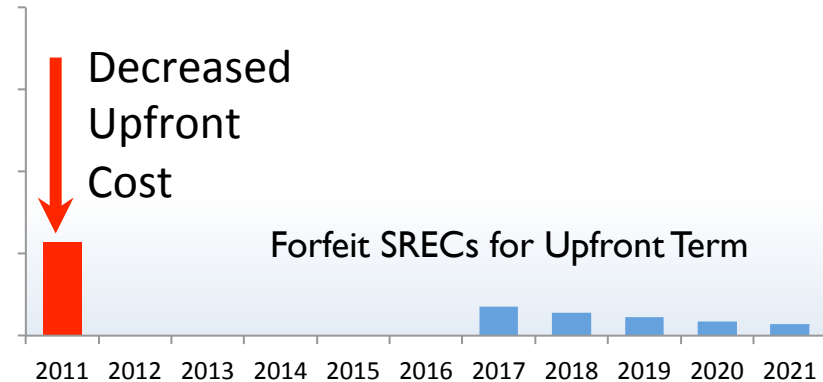
## Spot Market Sales:

- Sell in competitive auctions or negotiate directly with buyers



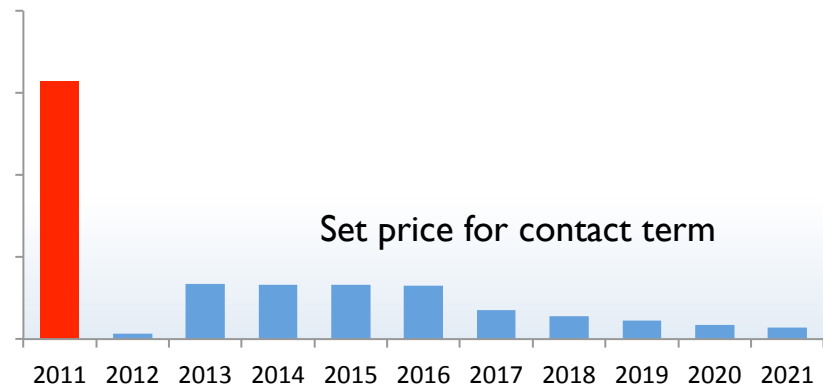
## Upfront Payment:

- Receive a lump sum payment upfront for SREC delivery over a set term



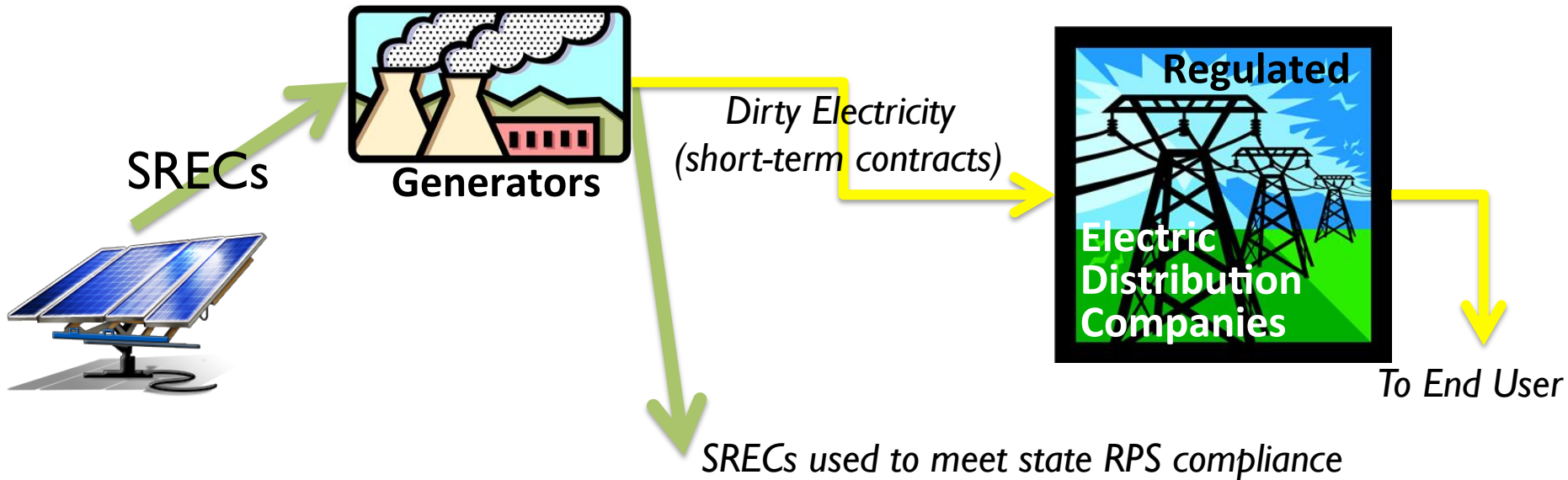
## Forward Contract:

- Sell SRECs at a fixed price for a set term (e.g., 3 years)



# Why Long-Term Contracts are Scarce

## Competitive Electricity Generators Buy SRECs



### Most SREC Buyers are Deregulated Suppliers

- Competitive Electricity supply contracts are 1-3 years in length
- They do not want to have obligations to purchase SRECs beyond existing electricity contracts
- 5 year SREC contracts max and heavily discounted

### Financial intermediaries are rare

- Some address this void on small scale
- Markets aren't large enough to garner attention (yet)

## Requests for Proposals (RFPs)

- Limited availability in some states – get them if you can!

## Credit of Parties and Contract

- Commit to firm delivery of SRECs
  - i.e. fixed # of SRECs in each delivery period
- Signed PPA with credit-worthy off-take
- Strong credit of seller guaranteeing contract
  - Letter of credit or cash collateral may be required
  - Difference between SACP and contract price

## Demonstrate Likelihood of Construction

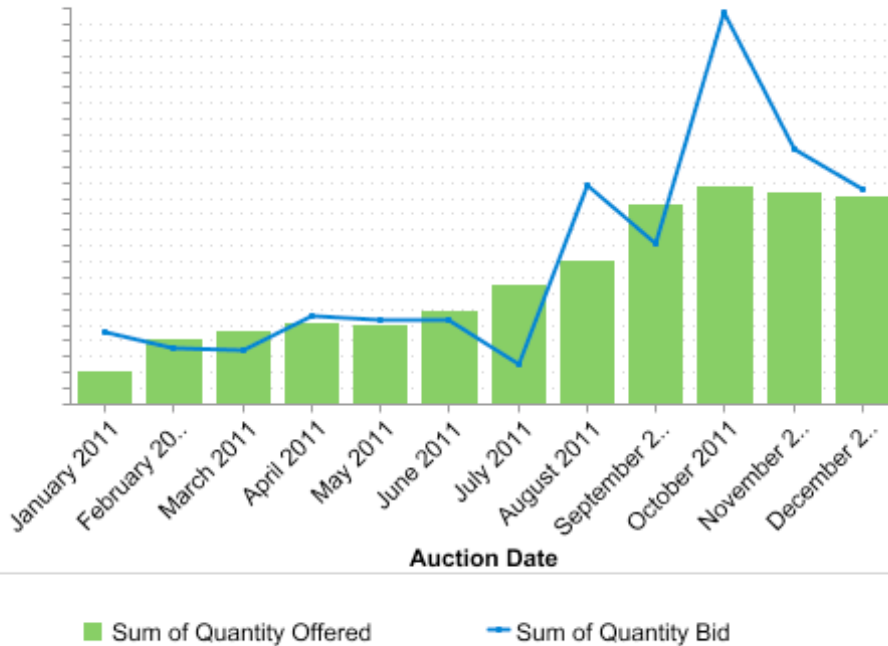
- EPC can demonstrate financial commitment through LOI
- Permitting and interconnection details are complete

# Status of the SREC Market

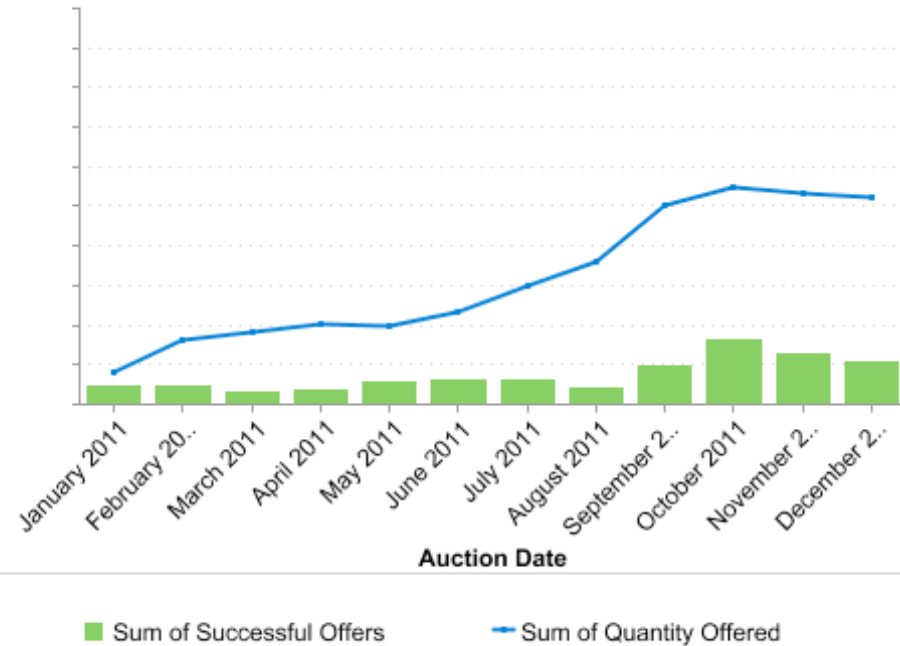
Prices are coming down, but demand for SRECs is still strong and growing...

A gap exists in expectations between buyers and sellers...

**Bids vs Offers**



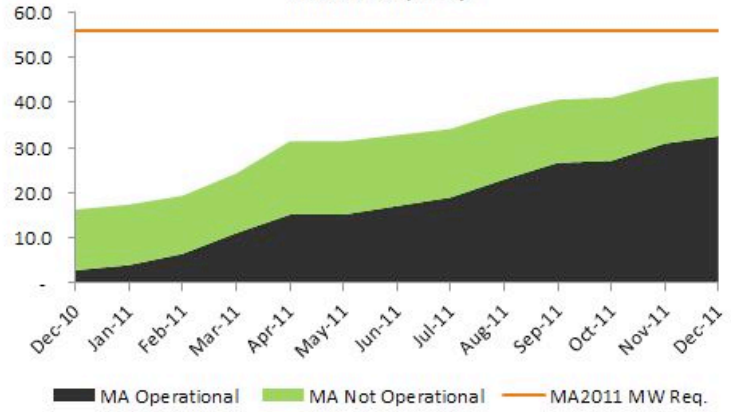
**SRECs Offered vs SRECs Sold**



# State Market Snapshot

SRECTrade

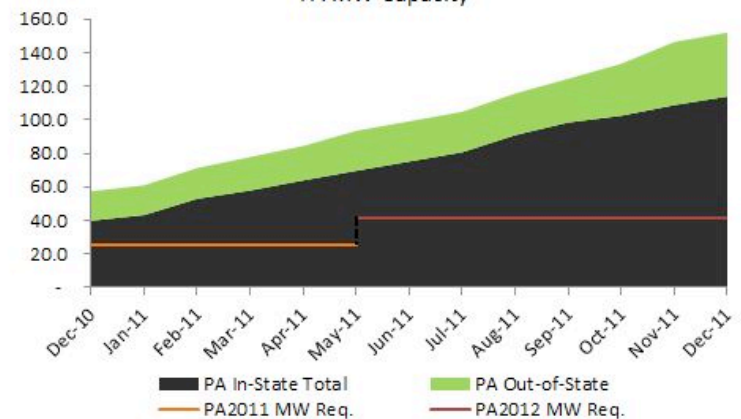
MA MW Capacity



Source: MA Eligible MW Capacity from MA DOER report - "RPS Solar Carve-Out Qualified Units" as of 12/22/11 and prior period.

SRECTrade

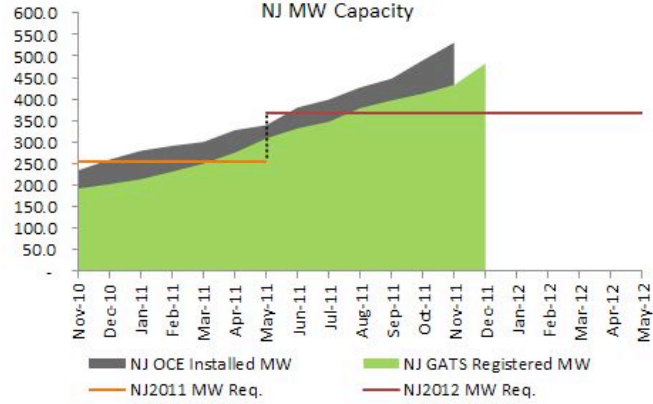
PA MW Capacity



Source: PA Eligible MW Capacity from PJM GATS Public Reports - "Renewable Generators Registered in GATS" as of 12/27/11 and prior periods.

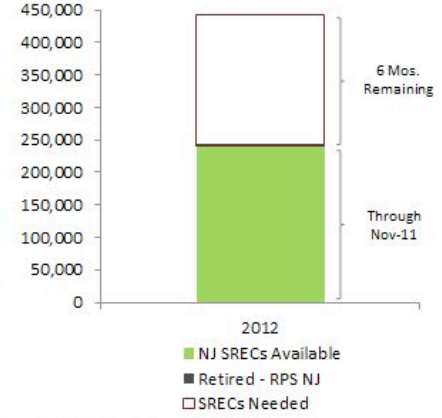
SRECTrade

NJ MW Capacity

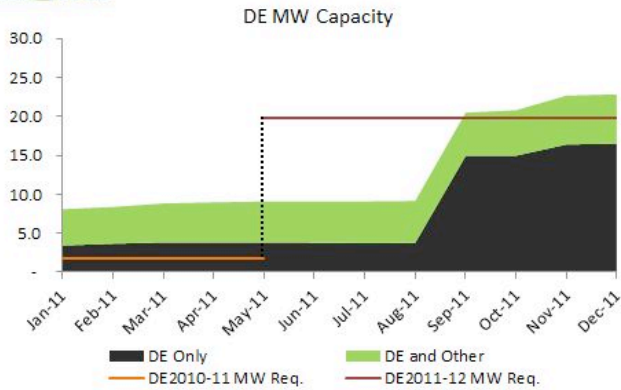


Sources: NJ GATS Registered MW from PJM GATS Public Reports - "Renewable Generators Registered in GATS" as of 12/27/11 and prior periods.  
 NJ OCE Installed MW from New Jersey Office of Clean Energy Installation Summary by Technology Report.  
 NJ SRECs Issued from PJM GATS Reports "NJ - RPS Eligible Certificates By Status for Reporting Year 2011 and 2012" as of 1/3/12.

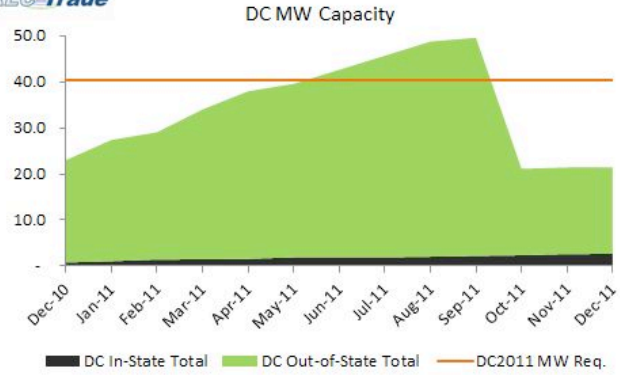
NJ SRECs Issued



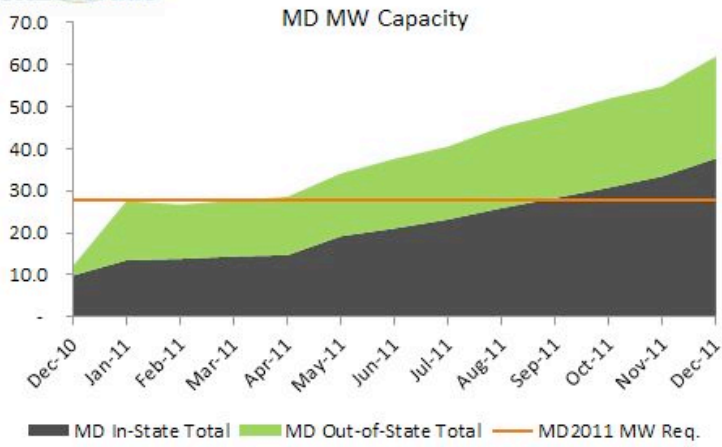
# State Market Snapshot



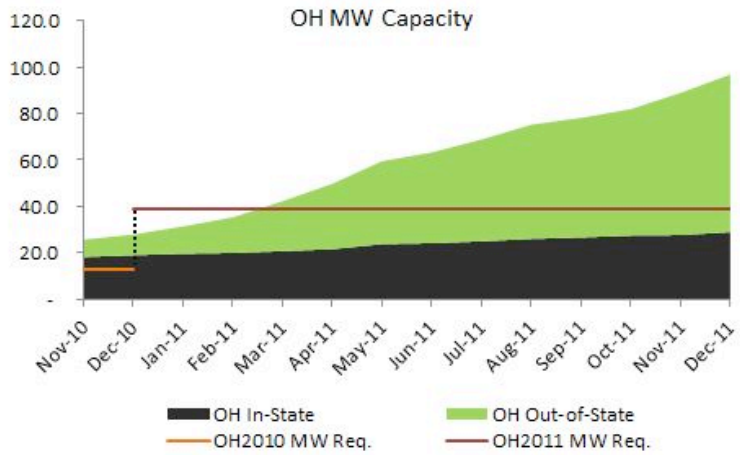
Source:  
 DE Eligible MW Capacity from PJM GATS Public Reports - "Renewable Generators Registered in GATS" as of 12/27/11 and prior periods.  
 Note: DE Only represents systems only eligible for the DE SREC market. DE and Other represents systems eligible in DE and other SREC markets.



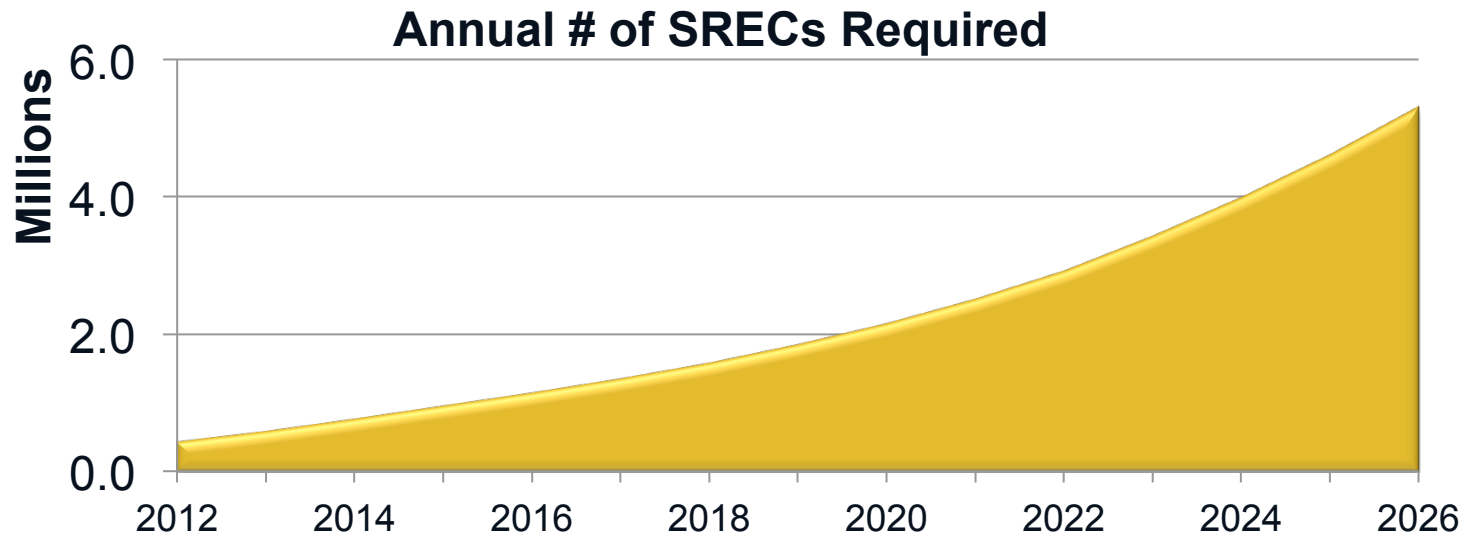
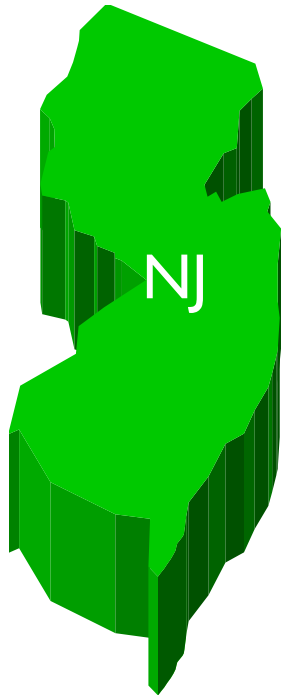
Source:  
 DC Eligible MW Capacity from PJM GATS Public Reports - "Renewable Generators Registered in GATS" as of 12/27/11 and prior periods.  
 Note: Decline in capacity is due to decertification of systems in GATS that did not meet the Distributed Generation Amendment Act deadline. All SRECs from decertified systems had their DC certification removed from any already issued SRECs.



Source:  
 MD Eligible MW Capacity from PJM GATS Public Reports - "Renewable Generators Registered in GATS" as of 12/27/11



Source:  
 OH Eligible MW Capacity from PJM GATS Public Reports - "Renewable Generators Registered in GATS" as of 12/27/11 and prior periods.



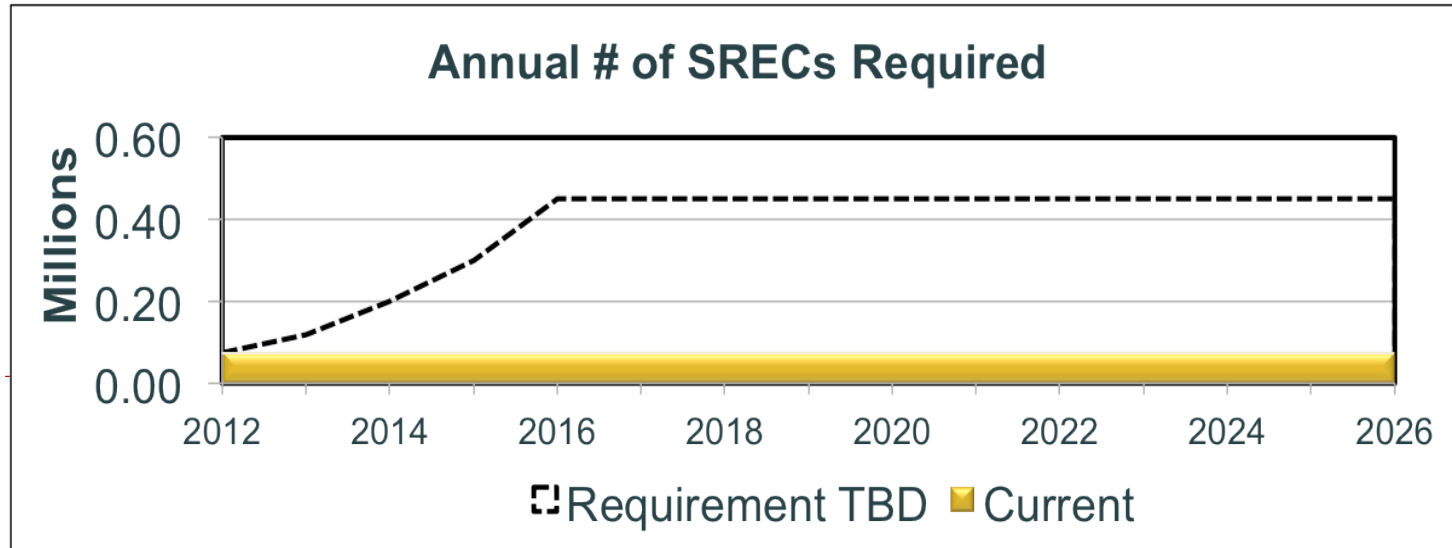
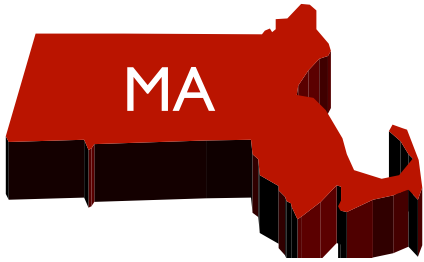
### Key Features

- Pure market
- Diverse pool of buyers
- Long-term, fixed requirements

### Challenges

- Limited long-term contracts
- Buyer-Seller mismatch
- Limited price support



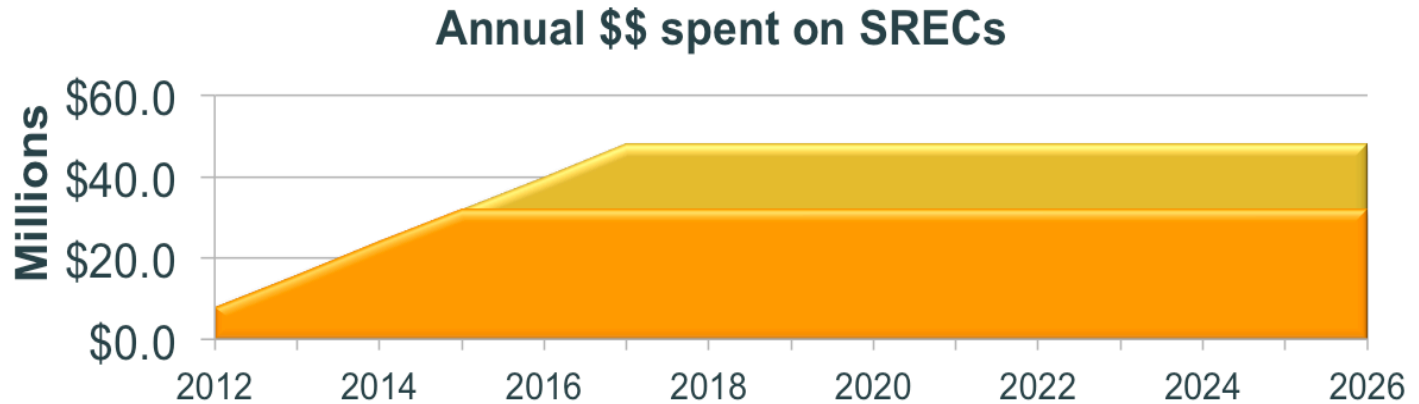
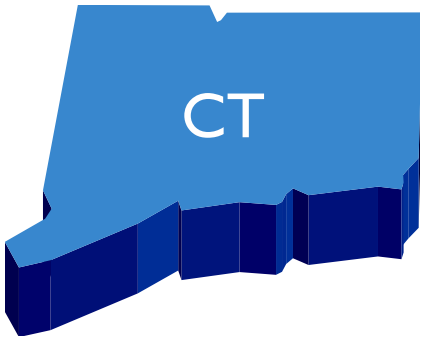


### Key Features

- 400 MW overall target
- Formula-based requirements
- 10-yr price-support mechanism

### Challenges

- Uncertain SACP (to change)
- SREC creation timing
- Bankability of price support



### Key Features

Competitive solicitations  
15-year contracts below \$350  
Dollars spent vs MW installed

### Challenges

Accessibility  
Rule-making still in progress...



## Long-Term SREC Procurement Program

*Scheduled to launch Q2 2011... Program to be developed and managed by SRECTrade, Inc.*

Tier	Size (kW)	# SRECs	% of Total	Years 1-10	Years 11-20
1	<50	2,972	13.4%	\$260 base, \$235 alt+	\$50
2a	50 – 250	2,000	9.1%	\$240 base, \$175 alt+	\$50
2b	250 – 500	2,000	9.1%	Lowest Bid Price*	\$50
3	500 – 2,000	4,500	20.4%	Lowest Bid Price*	\$50
4	>2,000	10,600	48%	Lowest Bid Price*	\$50

+Alternative pricing for projects that received a GEP grant before December 10 2010.

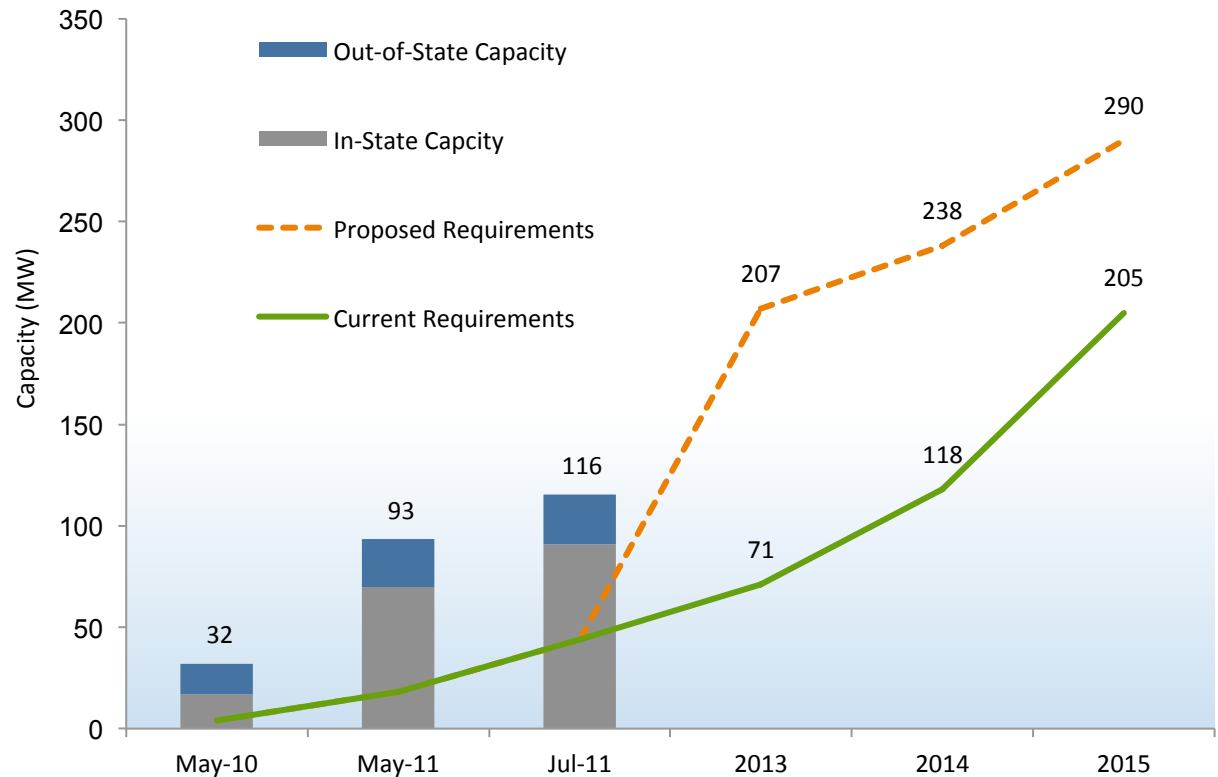
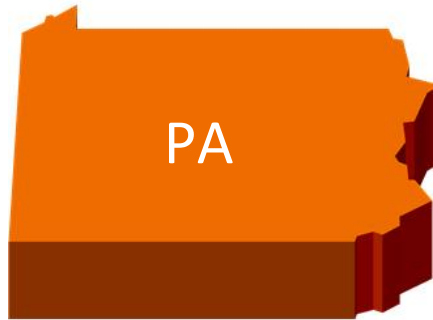
\* Prices for tiers 2b, 3 and 4 will be decided by competitive bidding amongst the applicants.

### Key Features

Standard offer for small projects  
Competitive solicitations for large  
20-year contracts

### Challenges

Pilot program  
Limited availability  
Only projects built after 12/2010

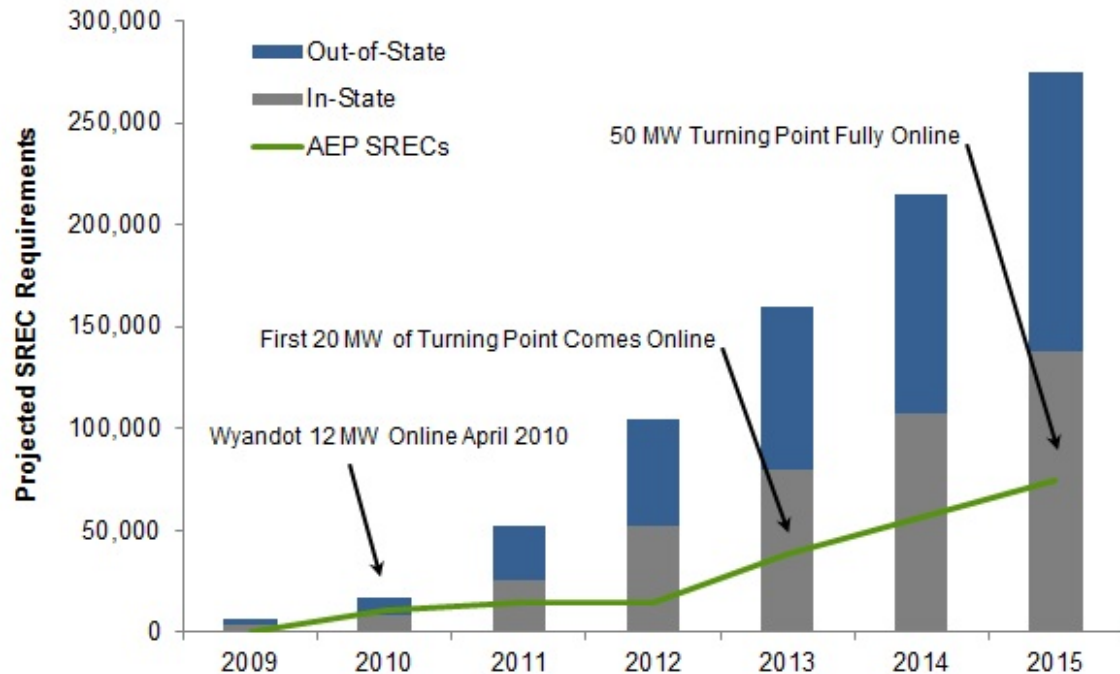


## What caused the Pennsylvania SREC oversupply?

Open borders allowing SRECs from out-of-state?

**OR**

Overweighted upfront incentives drove too much solar into the state?



### A tale of two buyers:

FirstEnergy: Source from the market

AEP: Build it yourself

### Key challenge:

Is there enough support in Ohio to develop a local solar industry?

- **Maryland**
  - Solar thermal is eligible
  - Closed borders beginning in 2012
- **North Carolina**
  - 25% of SRECs sourced from anywhere in the U.S.
  - Regulated market with only a few buyers
- **Washington, DC**
  - Recently closed market to outside participants
  - Good potential for DC-sited projects

- **Regulatory Risk**
  - Law vs Regulation vs Rule
  - Political posturing alone can affect the market
- **Market Inefficiencies**
  - Volatility caused by supply-demand imbalances
  - Irrational behavior due to mismatched buyer-seller needs
- **Limited Access to Long-Term Financing**
  - Competitive electricity markets = short term SREC contracts



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