

Generation Attribute Tracking System Subscriber Meeting

Thursday, October 13
10:00 am - 12:00pm EDT

- Welcome and Introductions
- GATS Status Update
- Recent Enhancements
- Upcoming Enhancements
- Updates to Operating Rules and Terms of Use
- Clean Power Plan Update
- National Energy Efficiency Registry (NEER)
- State RPS Update
- Subscriber Roundtable Discussion

GATS Status Update

- 12,220 GATS subscribers
- 103,388 renewable generators registered in 23 States & DC
- Total Number of Generators:

AL	1	MO	7
AR	3	NC	206
DC	2,356	ND	2
DE	3,091	NJ	49,451
GA	6	NY	40
IA	28	OH	2,116
IL	753	PA	9,242
IN	549	TN	6
KY	275	TX	1
LA	1	VA	1,764
MD	32,972	WI	33
MI	110	WV	375

Solar Facilities Registered in GATS

- 101,462 solar PV facilities in 18 states & DC
- 1,190 solar Thermal facilities in 9 states & DC
- Total solar PV nameplate capability : 3,479.27 MW
- Total solar Thermal nameplate capability: 12.89 MW
- Many are residential facilities
- Largest solar PV project registered: 112.10 MW



- Generator Approvals per month(avg): 2,769
- Generator Approvals by State Certification

DC	61
DE	83
IL	2,656
MD	1,276
NJ	1,802
OH	62
PA	192
VA	2,622

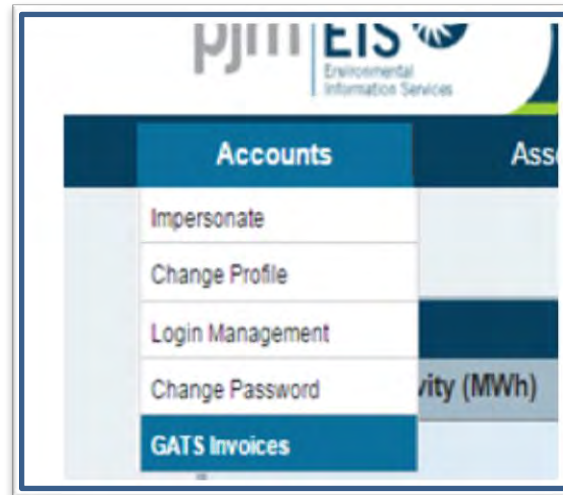
- Generator Updates Submitted (Avg): 321
- Generator Updates Approved (Avg): 289



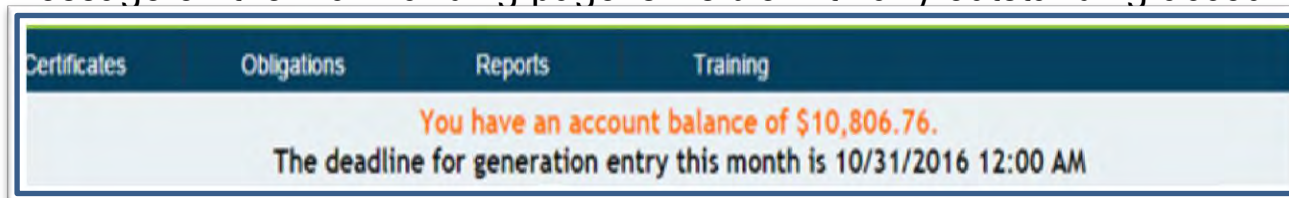
GATS Recent Enhancements

- GATS Invoices

- Invoices are available within your GATS Account back to June 2016
- Accounts >> Invoices



- A message on the main landing page is visible with any outstanding account balances



- **Trader Account Designation**

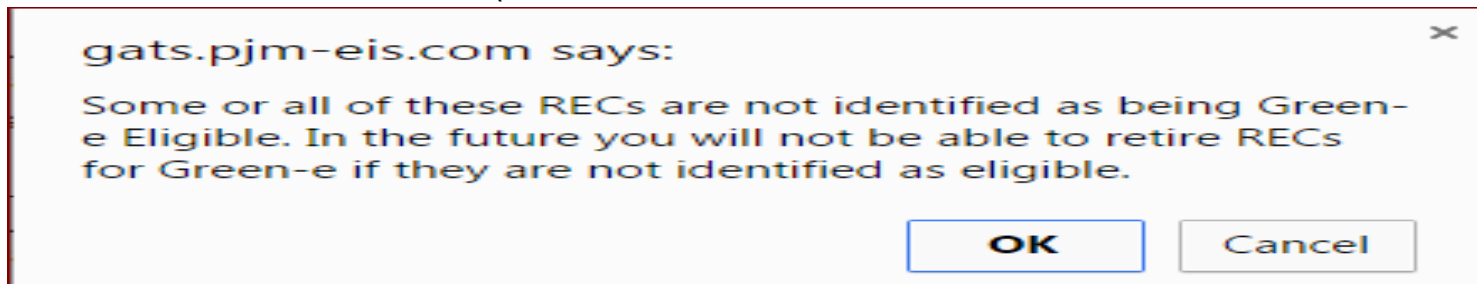
- Generator (only) Accounts can no longer receive RECs/SREC from other account holders
 - Ensures that account holders transacting RECs are not avoiding GATS fees by registering a generator(s)
 - Consistent with other registries where Project accounts cannot receive RECs
- To receive RECs the Trader Account Type would need to be added, and an annual subscription fee may apply if the account is not already paying one
 - Contact the GATS Administrators if there is a valid reason to make a one-time exception.

- Green-E Retirement Code

- Under Reason Code **SOLD** – a Green-e Check Box was added
- Required fields are still Confirmation of Sale, Purchaser and State and Reporting Year.

<input checked="" type="radio"/> Sold as a part of a retail certificate-only product to an end-use customer that does not have a GATS account	Confirmation of Sale <input type="radio"/> Yes <input type="radio"/> No	Green-e <input checked="" type="checkbox"/> Used by the Account Holder for a Green-e Energy Certified Voluntary Market Sale
	Purchaser	<input type="text"/>
	State	Select a State ▼
	Reporting Year	Select a Year ▼

- A notice will appear if RECs that are retire are not Green-e eligible but the retirement can still occur
- A future enhancement will be implemented to prevent this as the discretion of The Center for Resource Solutions (CRS)



- **NJ Interconnection 15 Year Rule**
 - The NJ SREC eligibility period (aka qualification life) is 15 years from Interconnection plus the remainder of the Energy Year.
 - An automated email will be sent to the subscriber outlining their specific eligibility change.
 - The eligibility will be changed from Solar RECs to Class I RECs as of June 1, 20XX

- **My Annual Solar Generation Report**

- Ability to toggle between All Generation, Unprocessed & Processed Generation

My Annual Solar Generation - Account Holder ID: 15835

Report Parameters

All
 Processed
 Unprocessed

Year

- Deposit Date on Reports
 - Deposit date column on Reserved subaccount tab for all retirement reason codes.
- My RPS Compliance Report
 - State Agency accounts now have additional information available to them with an additional “Weighted Average” tab.
- Remain on Transfer Obligation Screen after Transfer
 - Enhancement suggested by GATS user for ease of use.
- .NET Conversion Completed
 - All remaining Account Holder, State Agency and Admin reports have been converted to .NET

- API Updates
 - Schedule H (Consent of Application Programming Interface User) is now required
 - Upload documents (Schedule A; Interconnection Agreement) with the registration of new generators
 - Download their Outbox
 - Download their Transfer History

GATS Upcoming Enhancements

- New Program Type for IL
 - IL Call Utility Only; set up via the GATS Administrators
- Solar Array Characteristics
 - Characteristics will be required for all solar pv systems
 - This allows for more accurate production estimates for the Generation Entry reasonability checks
- MSET Load Adjustments
 - Load Adjustments (Reconciliations) will be included in the monthly data load from PJM Market Settlements
 - An implementation has not yet been determined
- Pike County
 - Pike County will be added as an EDC for PA
 - Pike County Subaccounts will be generated for those accounts that have PA as a billable state
 - PA Certified RECs can be retired into a Pike County Subaccount without obligations
 - Implementation has not yet been determined but will be in place in time to report for the 2017 RPS Compliance Period

Updates to Terms of Use and Operating Rules

- **Appendix A – Fees**

- Volumetric Fee for Small Load Serving Entities (LSEs) will be waived
 - Serving less than 100,000 MWhs of load annually
- Illinois LSEs will now be required to pay for load served
 - Effective with the January 2017 load data
- Small Trader versus Large Trader
 - Small Trader is charged \$500 annually
 - Receives less than 5000 RECs/SRECs into their account within the last 12 months
 - Large Trader is charged \$1000 annually
 - Receives 5000 RECs/SRECs into their account within the last 12 months

- Appendix A – Fees
 - Certificate Fee Reduction
 - Effective January 2017

Code	Retirement Reason	Certificate Fee	New Certificate Fee
RPS	Used by the Account Holder for compliance with a state Renewable Portfolio Standard	\$0.10 ¹	\$0.05
ENV	Used by the Account Holder to make environmental claims or to take out of circulation for environmental benefits reasons	\$0.10	\$0.05
SOLD	Sold as part of a retail certificate-only product to an end-use customer that does not have a GATS Account (i.e., Voluntary Market)	\$0.01	\$0.01
EXPT	Exported off-system to a third party in a region that does not have a compatible tracking system (e.g., New York)	\$0.10	\$0.05
CTS	Exported to a compatible tracking system	\$0.10	\$0.05
EXP	Expired RECs removed from circulation (e.g., older RECs with no value)	No Fee	No Fee
OTH	Other	\$0.10	\$0.05

- Schedule H – Consent of Application Programming Interface User
 - Advanced functionality for the API will incur fees for development and support

API Functionality	Initial Setup Fee	Annual Maintenance Fee
Third Party Reporter Methods: Generation Upload Generation Deletion	Waived	Waived
Aggregator Methods: Generation Upload Generator Upload Generator Update Generator Retrieval Production Estimate Retrieval	Waived	Waived
REC Transfer Methods: Buyer Retrieval Inbox, Outbox, Transfer History Retrieval Available RECs Retrieval Initiate REC Transfer Process REC Transfer	\$2,500 (single account)	\$500 (single account)
	\$12,500 (multiple accounts)	\$2,500 (multiple accounts)

- **4.3.1 GATS Subscriber Group**
 - GATS Subscriber Group is open to all paying subscribers
 - Meetings will be held annually instead of semi-annually
 - Additional meetings will be scheduled as needed
- **5.2 Account Registration**
 - GATS Administrator will add a billable state on behalf of the account holder if there is load associated with the account
 - Historical load is not added to the GATS Account
- **10.2.3 Standing Order**
 - Standing Orders can now be initiated for non PJM Generators
- **11.1 Transfer to Reserve Subaccount**
 - Green-e retirements are now captured under the SOLD reserve reason

- 15.2 Message Board
 - This section has been removed since there is no longer a Message Board in GATS
- Appendix B
 - West Virginia Removed from State Programs table and Virginia was added
- Appendix E
 - GATS Reports were removed

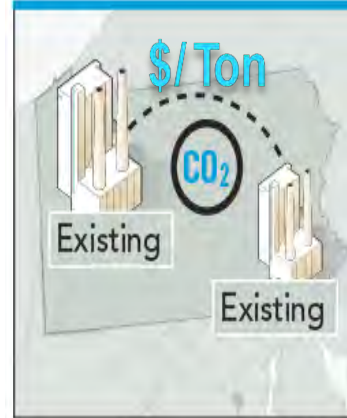
EPA's Clean Power Plan Update

Trade-Ready



Single CO₂ limit applied to the PJM region for 111(d) existing resources

State Mass



Each state applies a CO₂ limit covering all 111(d) existing resources

New Source Complement



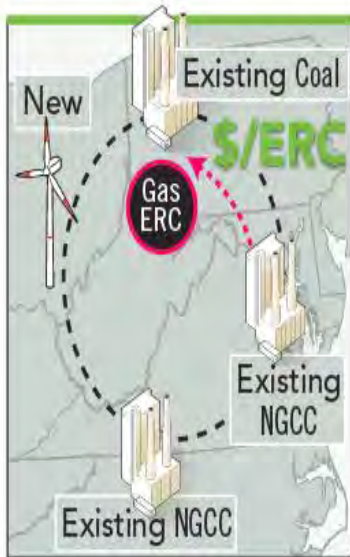
Single CO₂ limit applied to the PJM region for 111(d) existing and 111(b) new sources

State Mass New Source Complement



Each state applies a CO₂ limit covering all 111(d) existing resources and 111(b) new sources

Trade-Ready Rate



- Emissions performance measured against the sub-category CO₂ emission rate targets for combined cycle and steam turbine resources

Regional Blended Rate



- Emissions performance measured against a weighted average of PJM states' CO₂ emissions rate targets

State Blended Rate



- Emissions performance measured against the state CO₂ emissions rate target

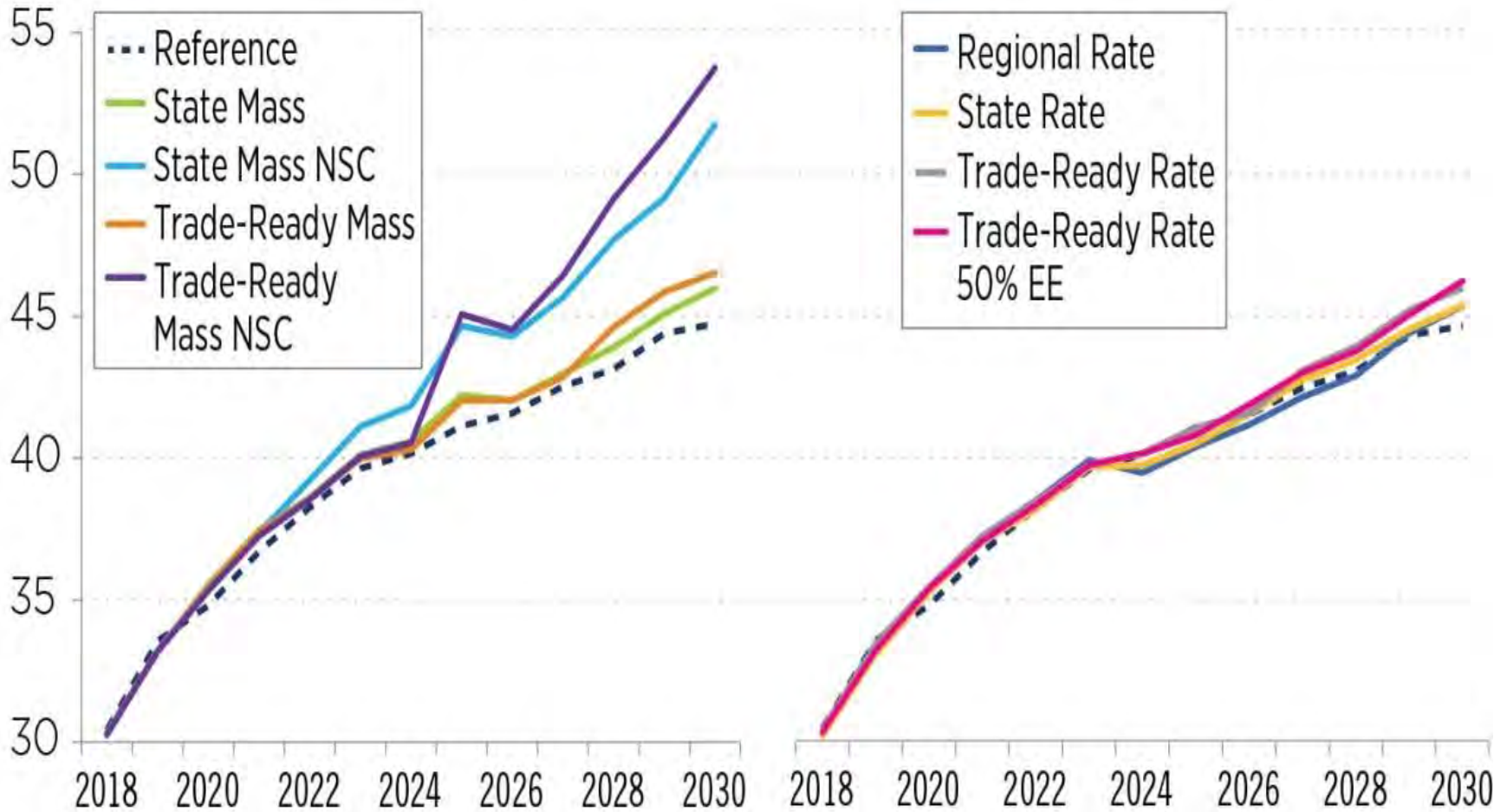
•[1] [Proposed Federal Plan for the Clean Power Plan \(PDF\)](http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22848.pdf) - <http://www.gpo.gov/fdsys/pkg/FR-2015-10-23/pdf/2015-22848.pdf>

Energy Market Prices Increase Over-Time in Response to Higher Fuel Cost, Load and Emissions Market Participation

Energy Price
\$2018/MWh

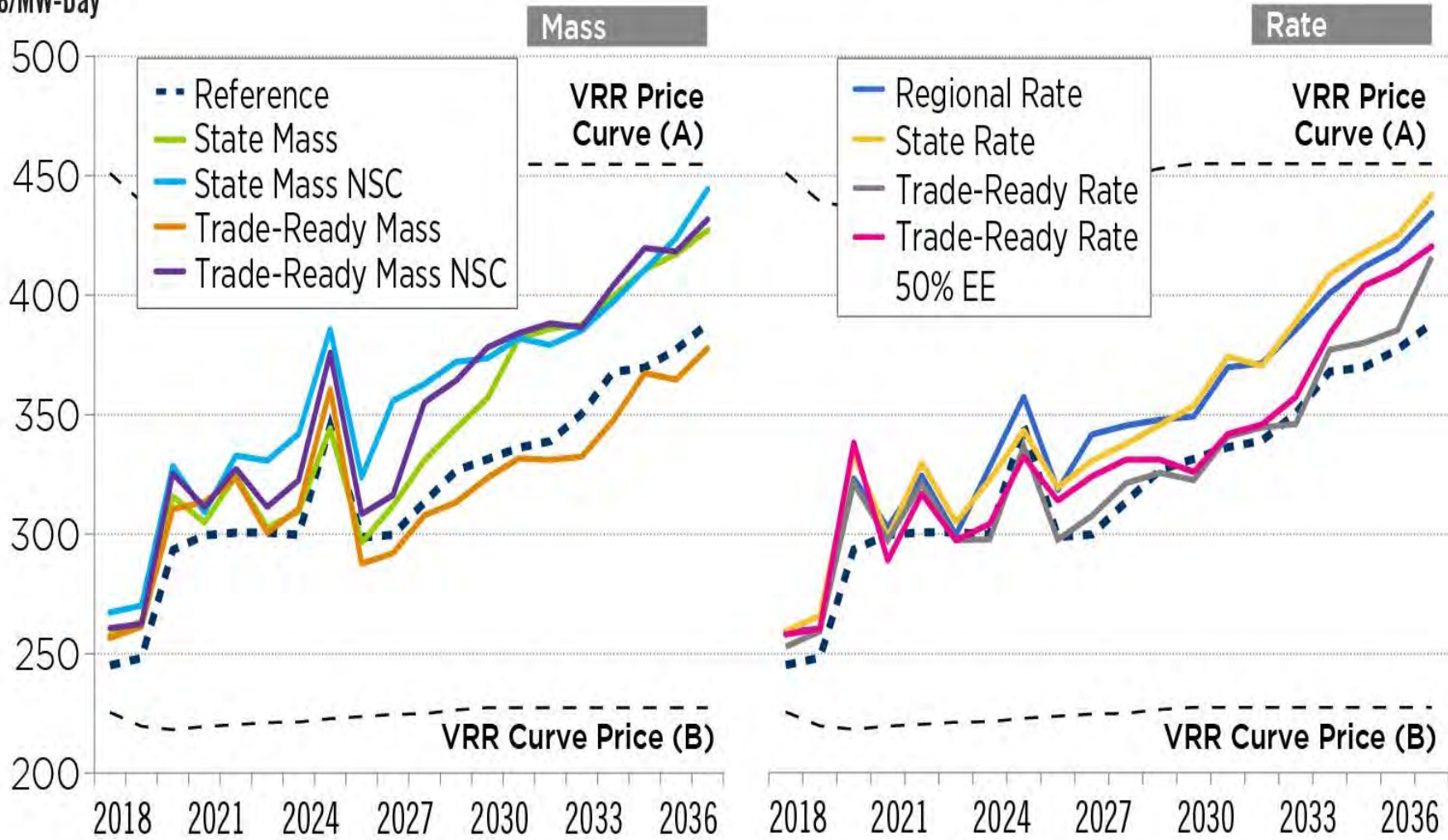
Mass

Rate

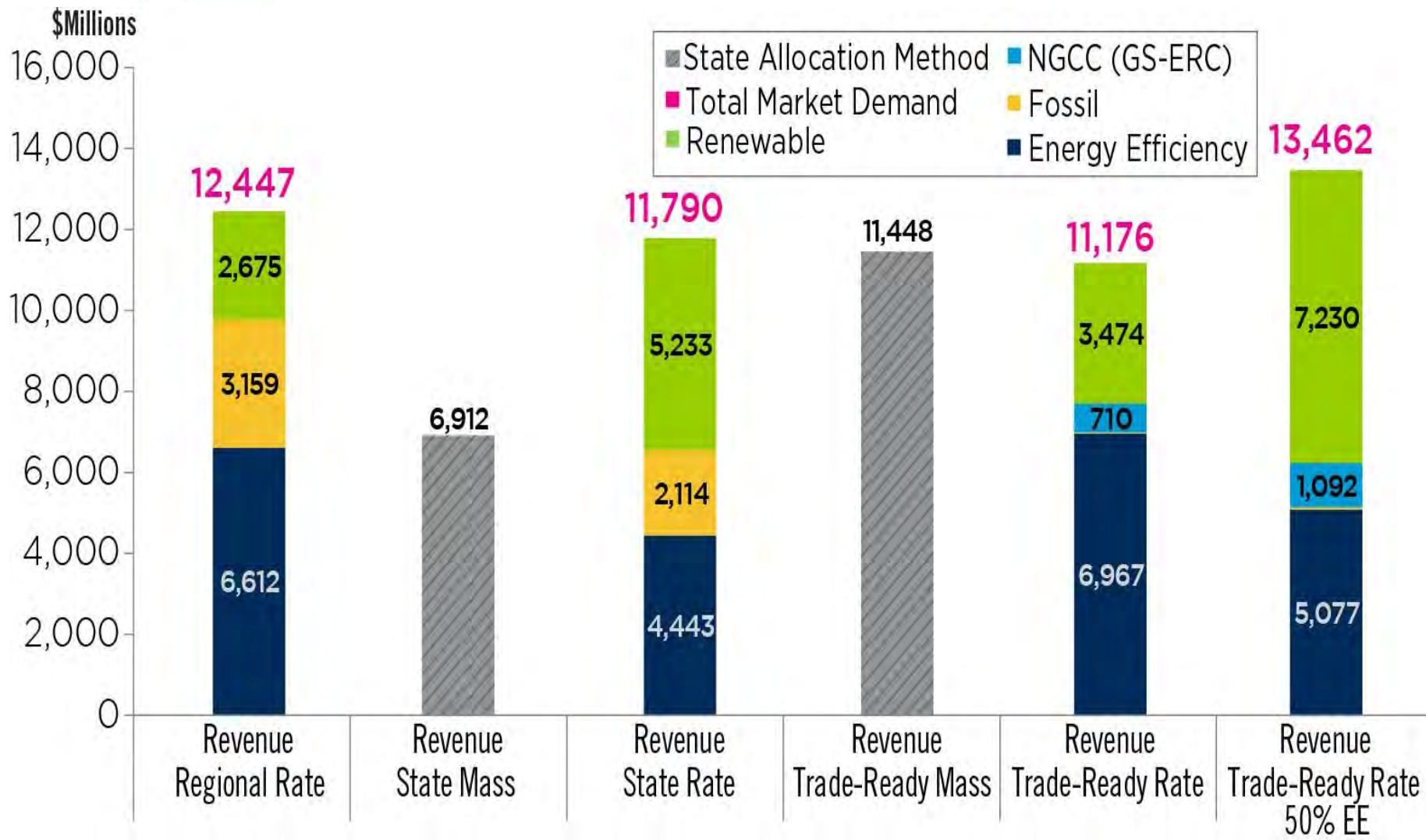


Capacity Market Prices Increase to Attract New Investment to Offset Resource Retirements and Load Growth

\$2018/MW-Day

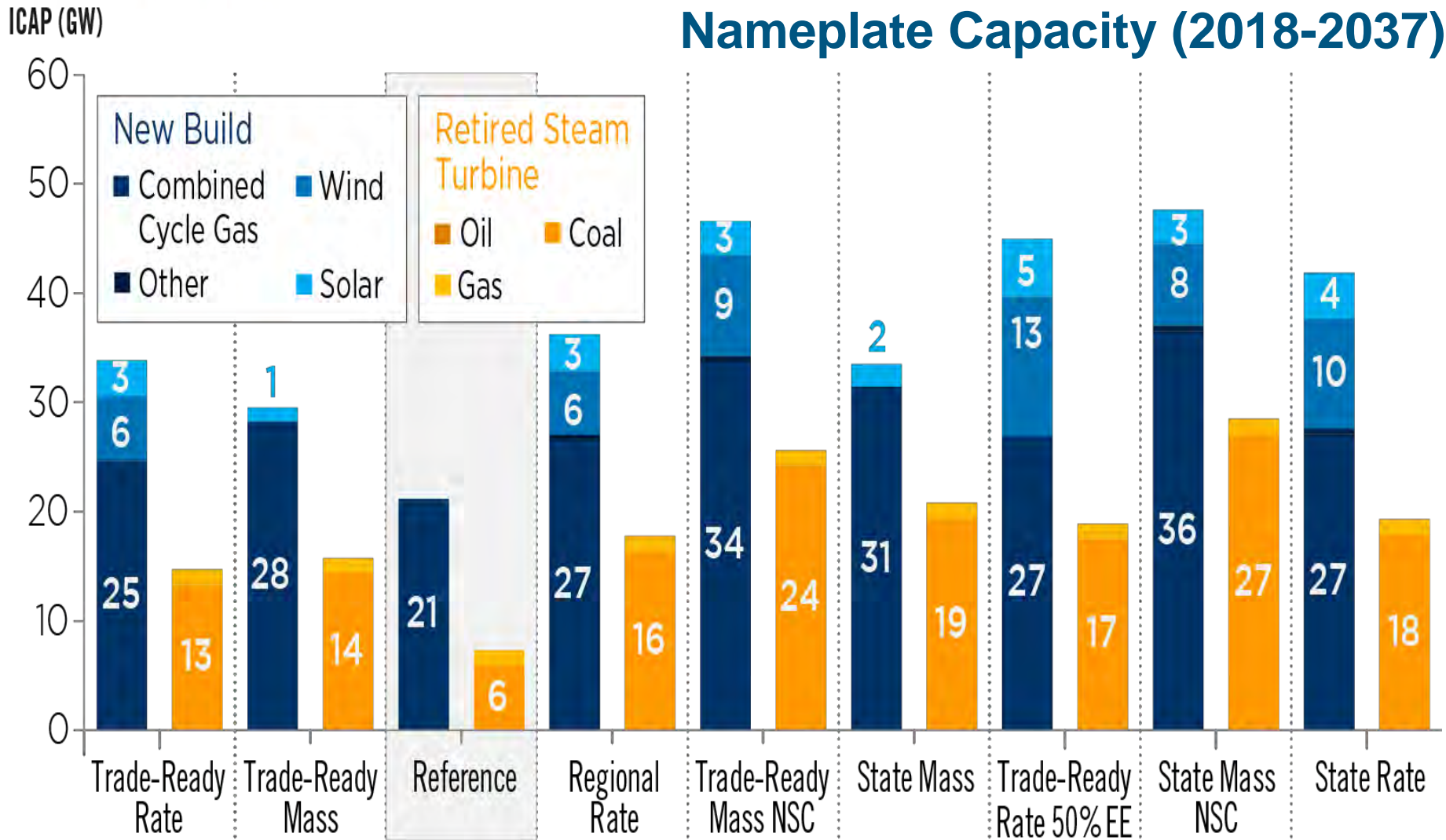


Emissions Trading Markets Provide Different Incentives for Resource Development

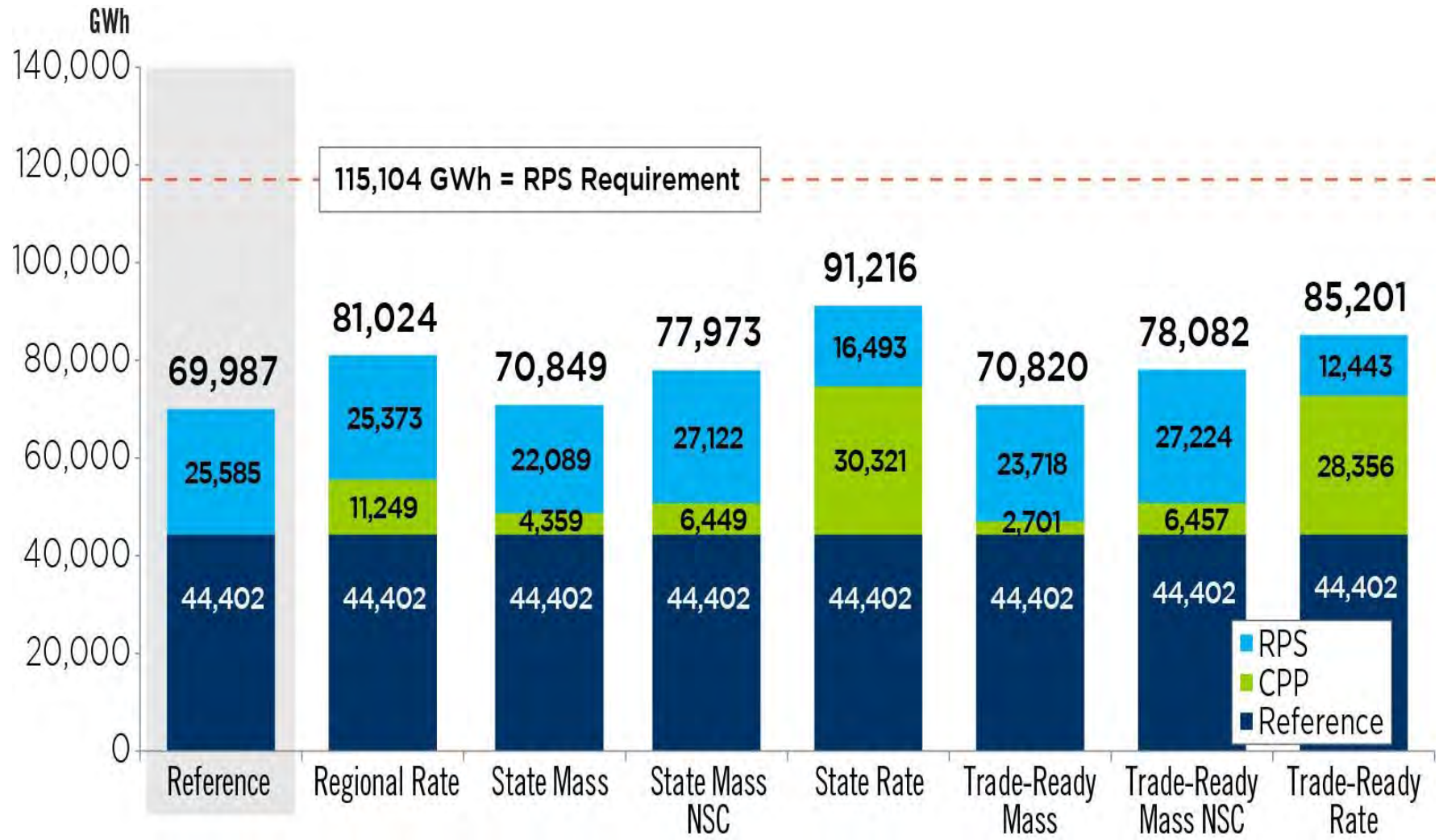


PJM Markets and Emissions Markets Drive Varied Resource Outcomes

Nameplate Capacity (2018-2037)



Clean Power Plan Emissions Targets Make it Easier to Achieve PJM State Renewable Portfolio Standards by 2030



1

**MISO/PJM
Analysis**
End of Year

2

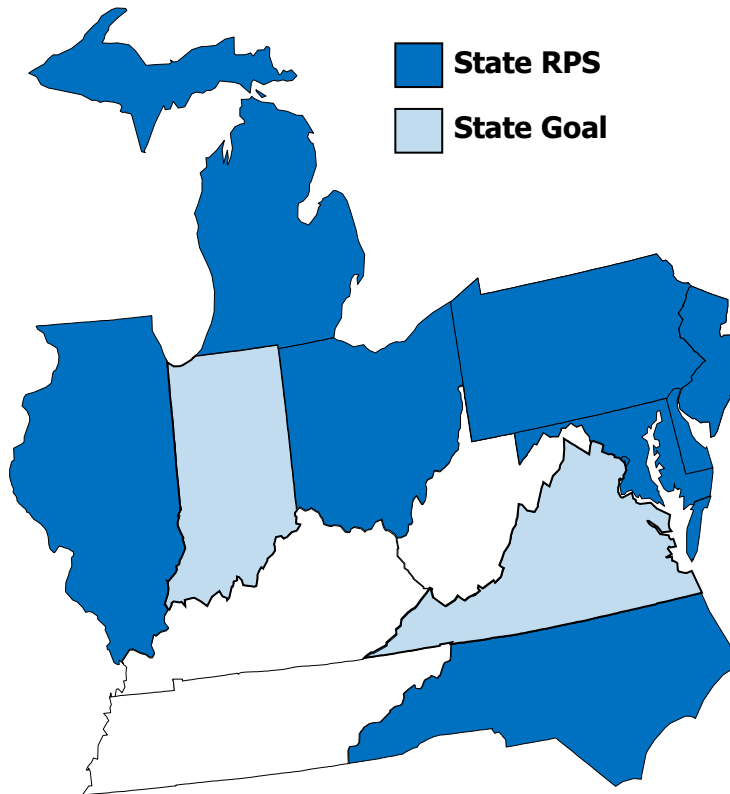
**Planning
Reliability
Analysis**
End of Year

3

?????
**Wait for
Courts**
?????

Leveraging Existing Registries for Clean Power Plan Compliance

PJM-EIS continues to work with state agencies as programs evolve and additional states implement RPS programs.



■ State RPS
■ State Goal

GATS certificates required for RPS compliance:

- ☀ NJ: 20.38% by 2021
- ☀ MD: 20% by 2022
- ☀ DE: 25% by 2026
- ☀ DC: 20% by 2020
- ☀ PA: 18%** by 2020
- ☀ OH: 12.5% by 2026
- VA: 15% by 2025 (voluntary goal)

GATS certificates accepted for RPS compliance:

- ☀ IL: 25% by 2025
- IN: 10%** by 2025 (voluntary goal)

GATS certificates must be imported into the state's tracking system for RPS compliance:

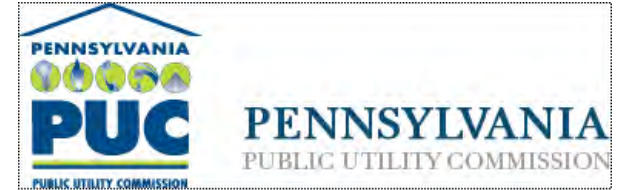
- ☀ NC: 12.5% by 2021 (IOUs)
- MI : 10% + 1,100 MW by 2015

DSIRE: www.dsireusa.org March 2016

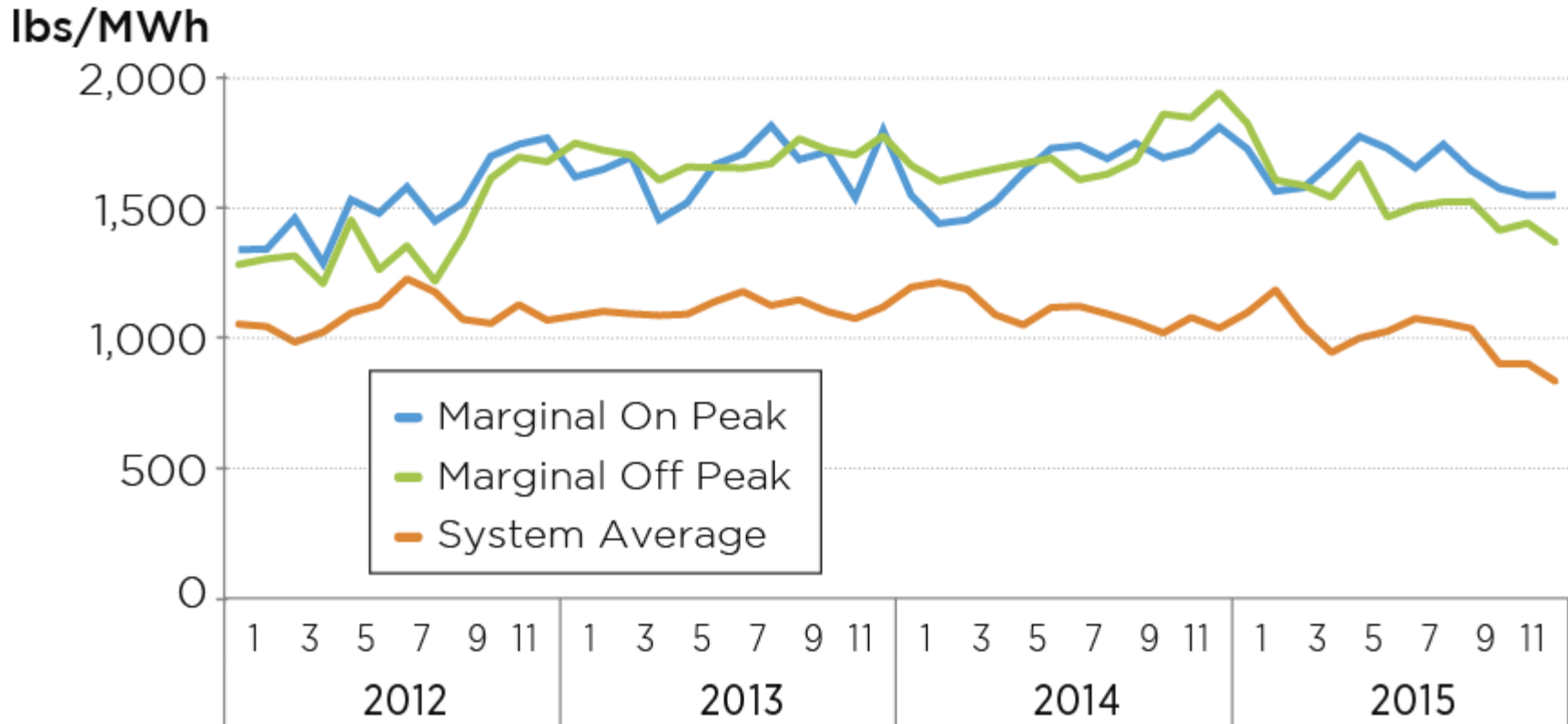
☀ Minimum solar requirement

** Includes non-renewable "alternative" energy resources

Regulatory Agencies with Accounts in GATS



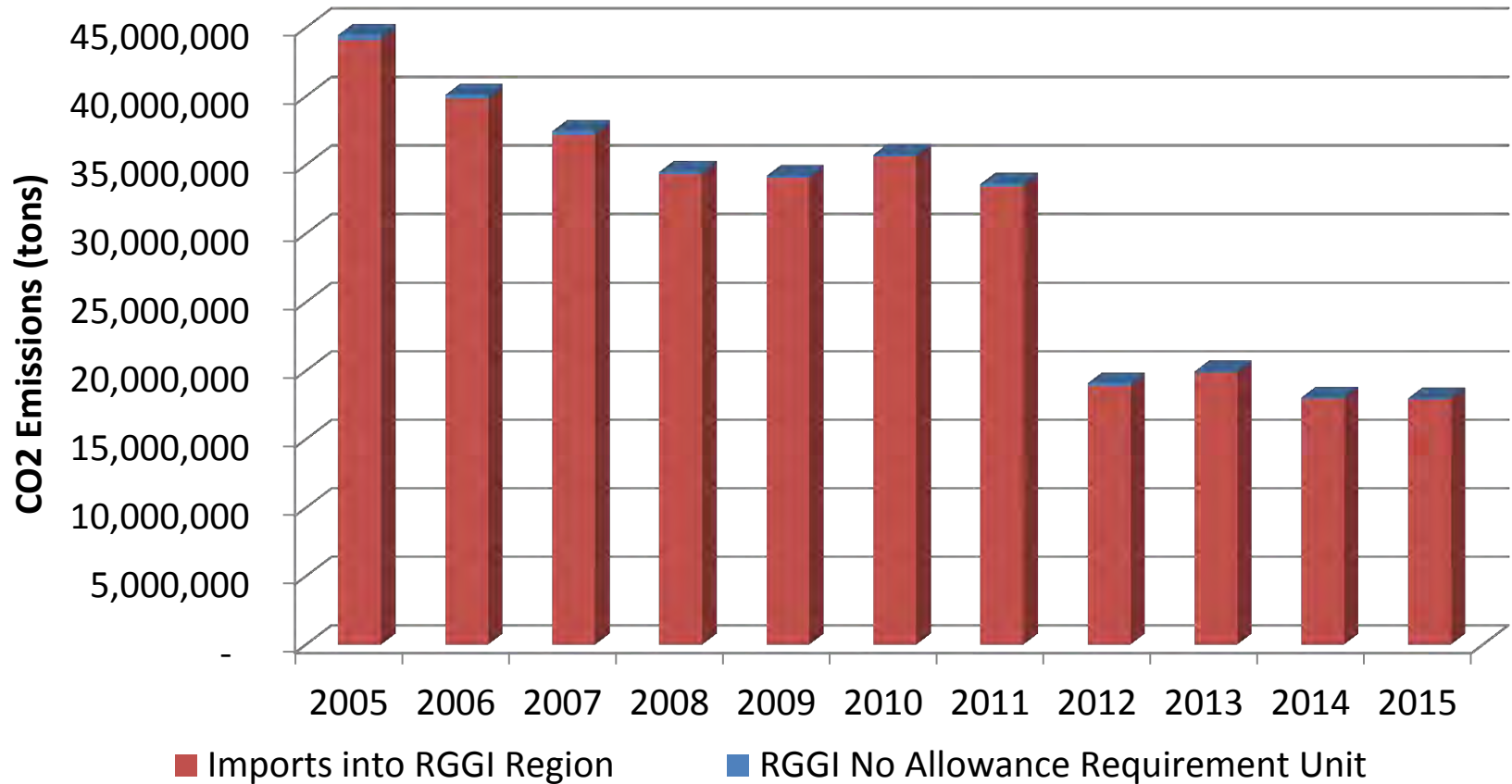
- All MWhs of PJM generation are tracked.
- A certificate market separate from energy is enabled for renewable generation.
 - Certificates (i.e., credits) traded separate from energy
 - Certificates can have different value depending on their attributes (e.g., fuel type, location, date of generation, etc).
- It is a *single information system* that will support a range of reporting, verification, and compliance requirements (e.g., disclosure, RPS, voluntary retail markets, etc).
- It is a *regional* system that will enable PJM states and market participants to support varying needs and priorities.
- A system that is flexible enough to meet evolving state requirements.



•From PJM Report “2012-2015 CO₂, SO₂, and NO_x Emission Rates,” March 18, 2016, available at:

<http://www.pjm.com/~media/documents/reports/20160318-2015-emissions-report.ashx>

CO2 Leakage into PJM RGGI Region



- GATS supports the creation of Energy Efficiency Credits (over 94,000 created to date)
- GATS Operating Rules can be amended to incorporate additional rules governing the creation of energy efficiency credits
- Operating Rules would reflect Evaluation, Measurement, and Verification (EM&V) guidance developed by U.S. EPA and the States.
- As an all-generation tracking system, GATS is uniquely positioned to translate energy savings into avoided emissions
- Leveraging the existing regional registry is the most efficient and cost-effective solution

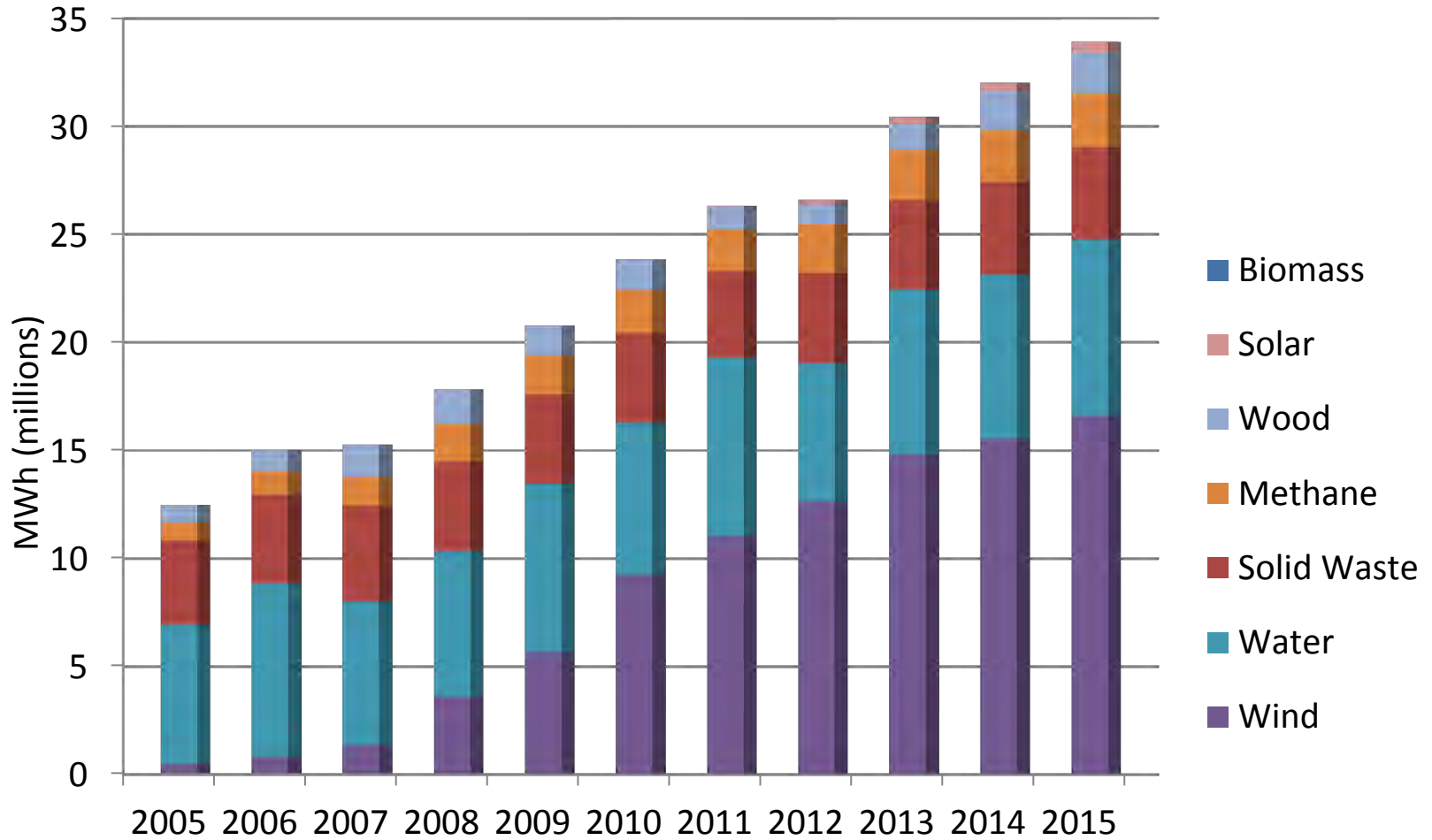
- For rate-based plans, an RPS can help a state satisfy its CPP goals by producing more renewable energy that is eligible for Emission Rate Credits (ERCs).
- Tracking systems like GATS developed to support verification of state RPS compliance could also be used to create and track ownership of ERCs.
- States should be given the option to use existing registries because:
 1. States can use the same system for tracking both ERCs and RECs
 2. Generation data need only be submitted and verified to one tracking system, the same system that will be issuing RECs
 3. Maintaining and managing accounts in two systems will impose an extra cost on generators and market participant such as utilities and LSEs that want both ERCs and RECs, not to mention voluntary RE purchasers

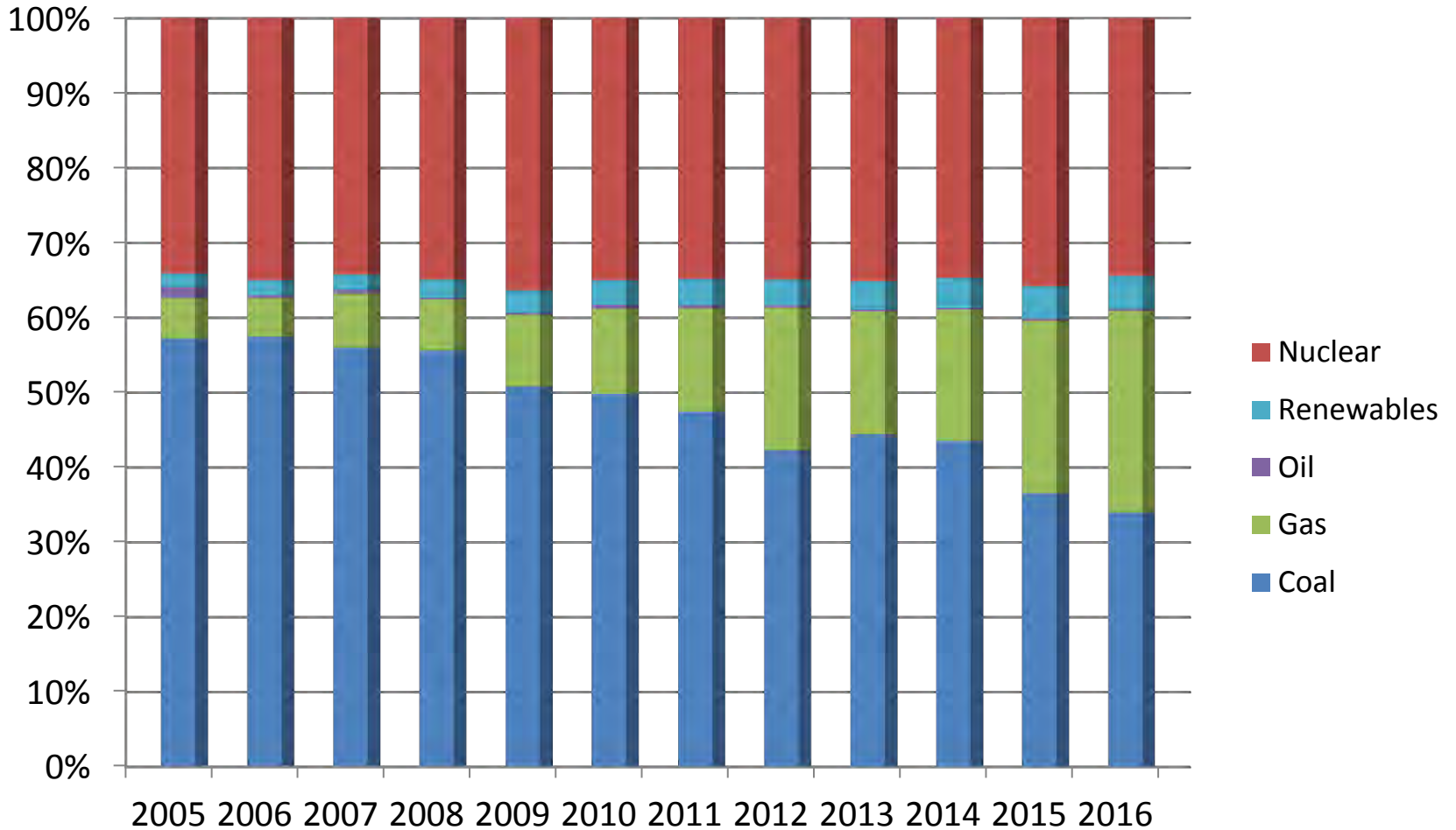
- Changes will be needed to be made within the existing tracking systems to create ERCs.
 - Accommodate affected EGU plant efficiencies, gas-shift ERCs, incremental nuclear, energy efficiency, and any other ERC-eligible technologies
 - Allow for the transfer of ERCs to and from other EPA approved ERC tracking systems
- Over the years PJM EIS has implemented many enhancements and changes to accommodate the evolving needs of the States and can also accommodate the changes needed to support 111(d) compliance.

References:

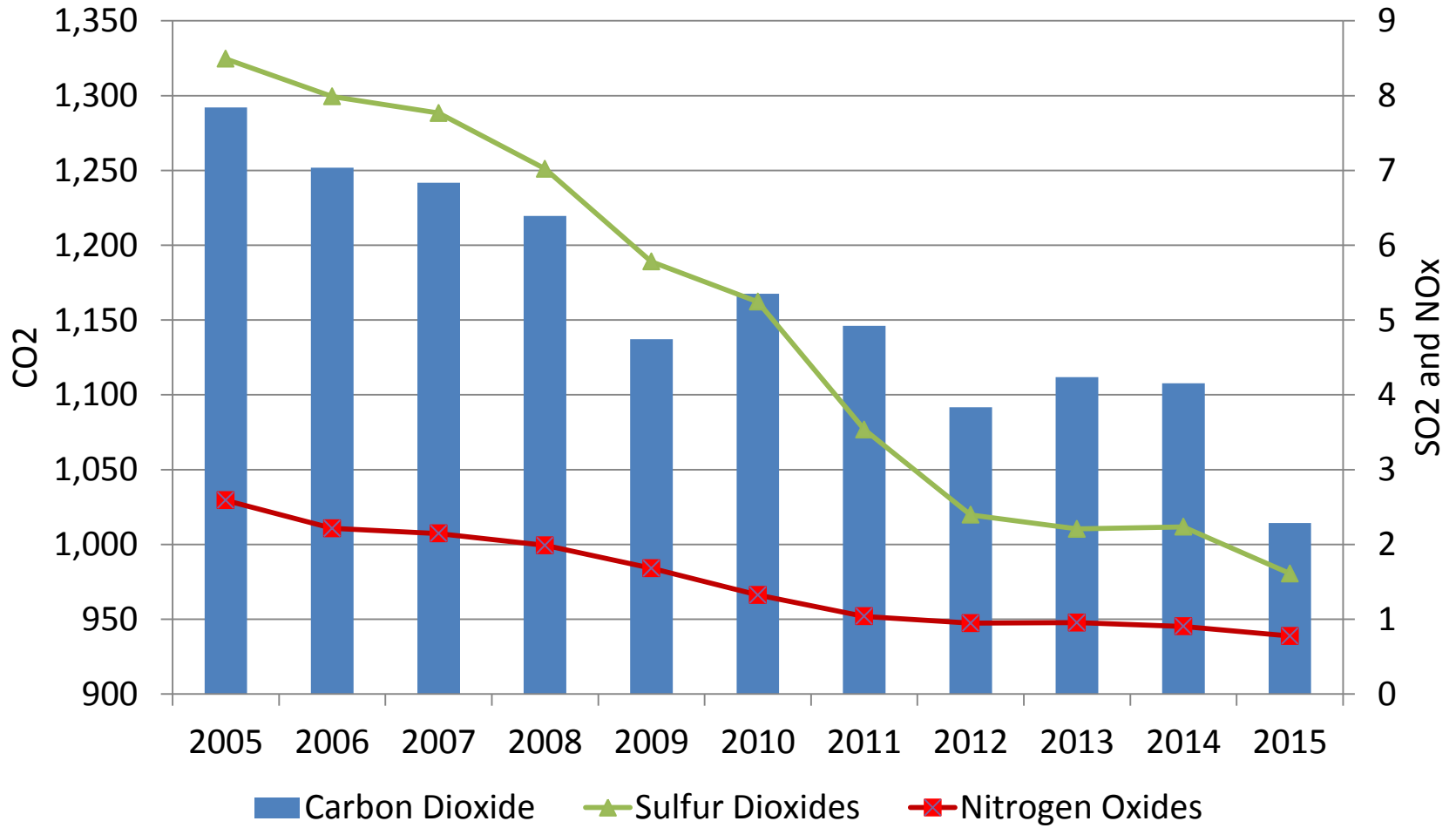
- [Comments of PJM EIS on the EPA CPP Final Rule](https://www.pjm-eis.com/~media/pjm-eis/documents/comments-of-pjm-eis-final-rule-jan-2016.ashx), January 22, 2016.
<https://www.pjm-eis.com/~media/pjm-eis/documents/comments-of-pjm-eis-final-rule-jan-2016.ashx>
- [EPA's Final Clean Power Plan: Compliance Pathways Economic and Reliability Analysis](http://www.pjm.com/~media/documents/reports/20160901-cpp-compliance-assessment.ashx), PJM Interconnection, September 1, 2016.
<http://www.pjm.com/~media/documents/reports/20160901-cpp-compliance-assessment.ashx>
- [The EPA Clean Power Plan and State RPS Programs](http://cesa.org/assets/Uploads/CESA-RPS-CPP-report-May-2016.pdf), Ed Holt, President, Ed Holt & Associates, May 2016.
<http://cesa.org/assets/Uploads/CESA-RPS-CPP-report-May-2016.pdf>

EXAMPLES – GATS PUBLIC REPORTS



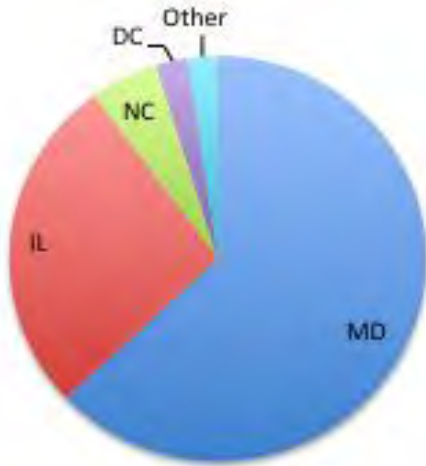


PJM Average Emissions (lbs/MWh)

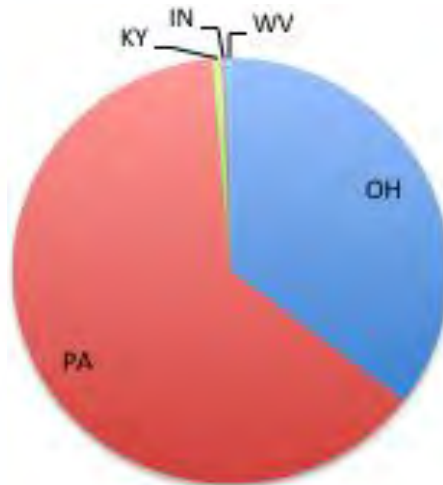


Slide credited to Lori Bird (NREL), *SREC Markets: Status and Trends*, 1/18/2012

•Source of SRECs retired for 2010 compliance



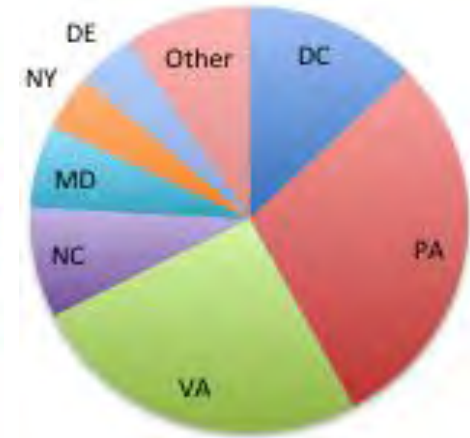
Maryland:
68% in-state



•Ohio:
•35% in-state



•Pennsylvania:
•32% in-state

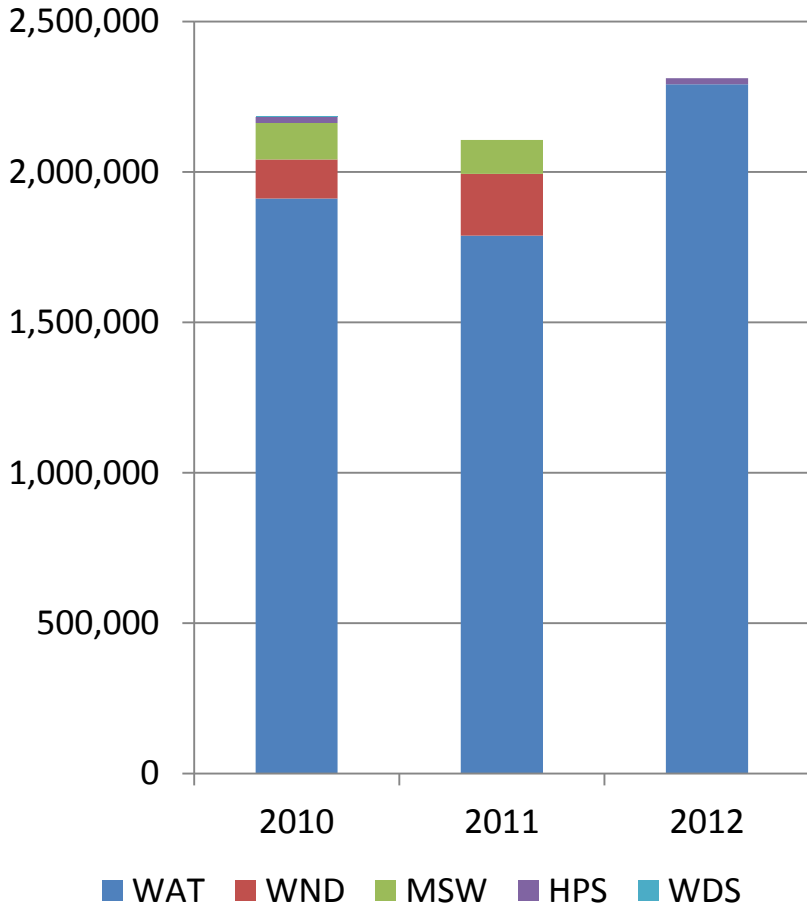


•DC:
•13% in-state

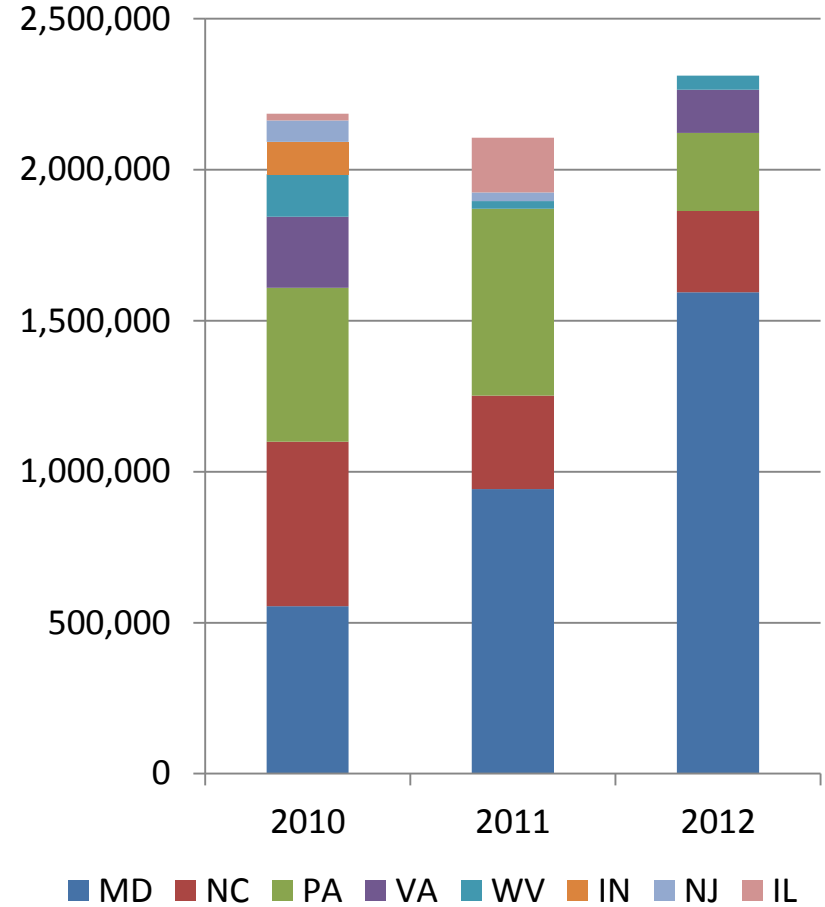


Several States Are Sourcing SRECs Primarily from In-State Systems, While Others Are Sourcing More Broadly
Rules changing in Maryland and DC

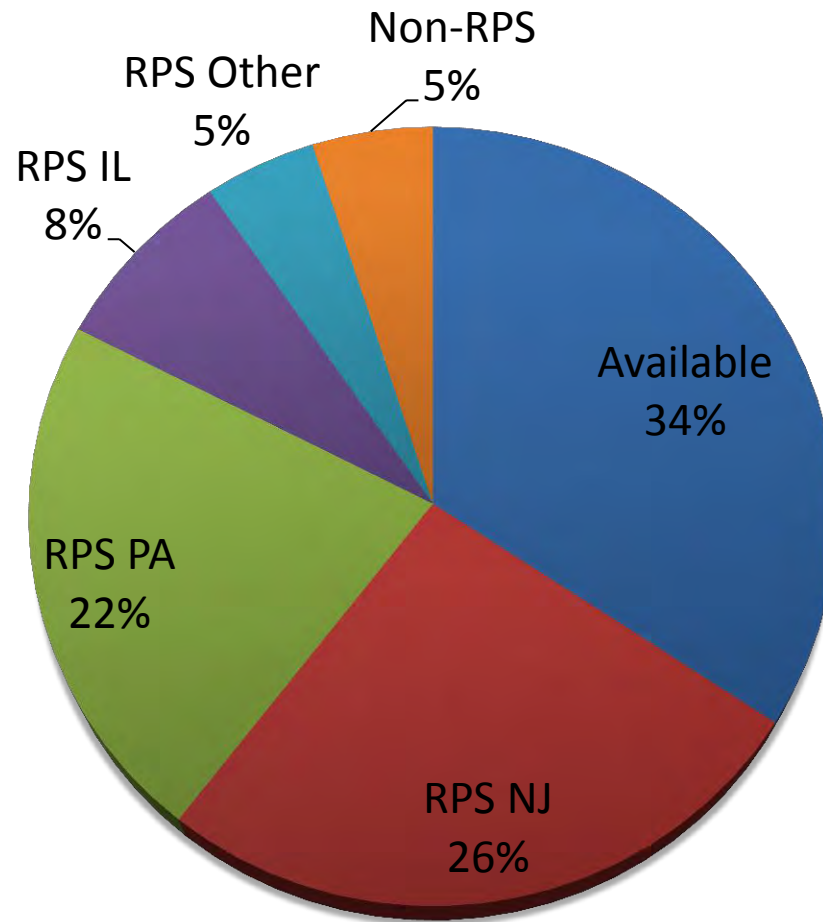
**RECs Retired for VA RPS by Fuel Type
 (2010 to 2012)**



**RECs Retired for VA RPS by State
 (2010 to 2012)**



Example: RPS-Eligible REC Status NJ Class I - EY 2015



National Energy Efficiency Registry (NEER)

- A national web-based platform that will allow states to transparently track energy efficiency
- Policy neutral
- Built on best practice
 - Registry design
 - EE accounting and reporting protocols
- Intended to be compatible with existing registries
- Will support both state energy and environmental programs and compliance with U.S. EPA's Clean Power Plan

- Two-year initiative to define:
 1. NEER principles and operating rules
 2. Roadmap for state adoption and implementation
 3. Key functional platform components
- Funded through U.S. DOE 2015 State Energy Program Award to Tennessee

National Energy Efficiency Registry (NEER)

State Initiative on Principles and Governance

→ Project partners:



→ Supporting project partners:



The Climate Registry



→ Additional project support provided by:



- **March 9, 2016**
 - Webinar for potential stakeholders
- **Mar 2016 – Jan 2017**
 - Stakeholder working group to draft principles and operating rules
- **Apr - May 2017**
 - Public comment period for draft principles and rules
- **Sep 2017**
 - Final Roadmap for state adoption and implementation
- **Oct 2017**
 - Key functional platform requirements

State RPS Update

Subscriber Roundtable Discussion

GATS Technical & Customer Service / Administrative Support

GATS Administrators

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