

# TECHNICAL CONFERENCE PRESENTATION OF SOUTHERN COMPANIES

Alabama Power Company, *et al.*  
Docket Nos. ER10-2881-014, *et al.* and EL15-39-000

May 23, 2016

# Energy Auction Overview

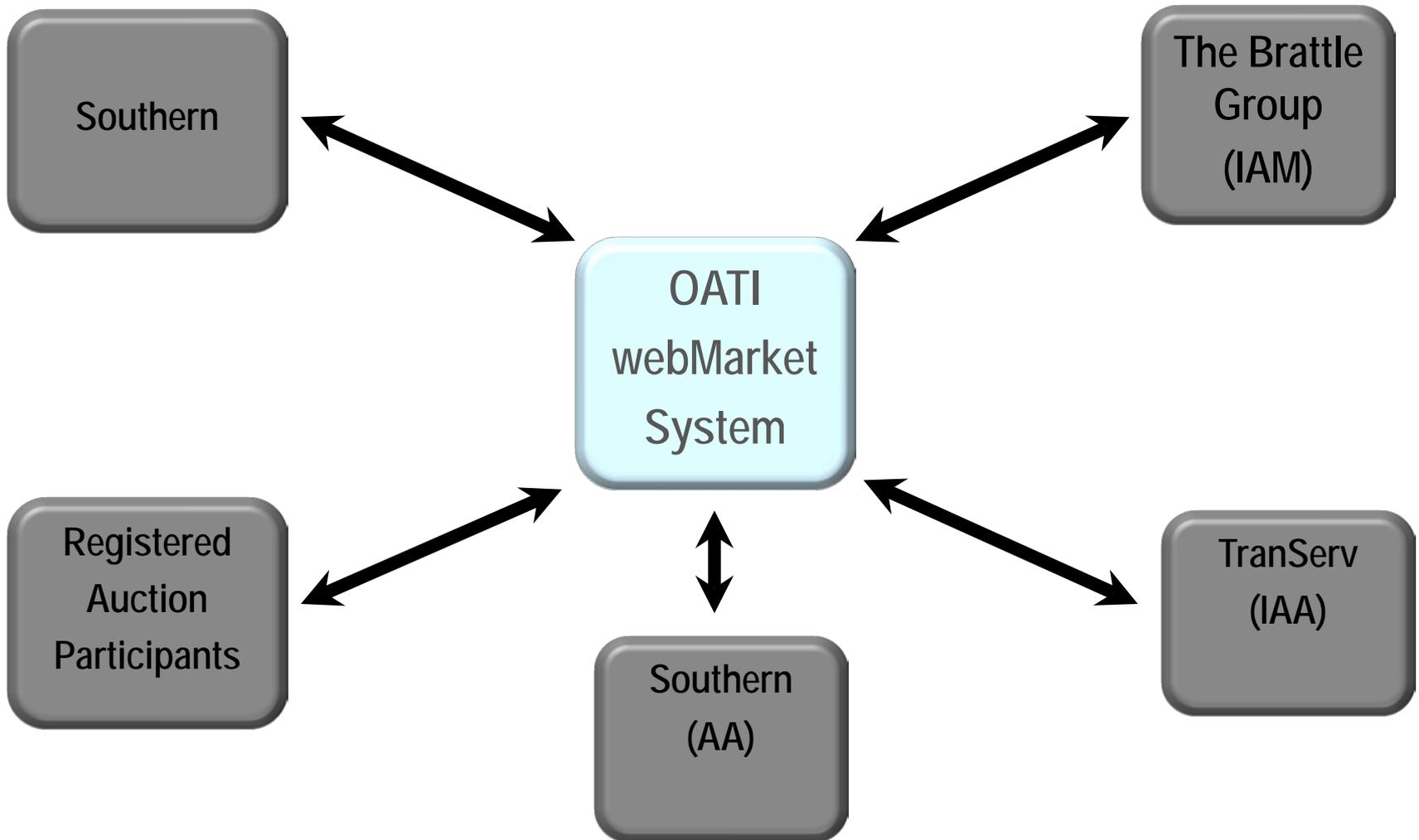
# The Energy Auction

- A bid-based and offer-based auction of electrical energy for delivery into the Southern Balancing Authority Area (Southern BAA)
  - It is a supplement to, not a replacement of, the existing bilateral market mechanisms for conducting shorter-term trading activities
  - The Energy Auction is a matching system – not an electronic trading platform
    - Once a bid and offer are matched, the counterparties proceed to execute a bilateral transaction under normal trading practices
- Auctions
  - Two Day-Ahead energy auctions (recallable and Firm LD)
  - Hour-Ahead energy auctions
- Auction participants can bid/offer in any of the energy auctions

# Origin of the Energy Auction

- To address market power concerns about Southern's participation in the Southern BAA and certain first-tier BAAs
  - Mitigates physical withholding by requiring Southern to offer all of its available capacity
  - Mitigates economic withholding by placing a cost-based price cap on Southern's mandatory offers
- These mitigation requirements only apply to Southern

# Energy Auction Overview



# Independent Auction Monitor

- Validates that Southern offers energy into every Hour-Ahead and Day-Ahead Auction in compliance with the Tariff:
  - Southern's Available Capacity calculations or inputs used in those calculations
  - Southern's Seller Offer Prices did not exceed the Cost Cap (with confirmation of Southern's continued suspension of the demand charge)
- Validates the clearing price for each Auction that cleared
- Investigates any issues involving the availability or the terms of transmission service needed to accommodate an Energy Auction purchase
- Investigates and reports to the Commission any complaint received
- Investigates any suspected Energy Auction manipulation or other questionable behavior related to the Energy Auction by any Auction Participant
- Confirms that Southern properly complied with requirements for the handling of Auction Participant confidential information
- Confirms that the Energy Auction is being properly administered
- Files annual report with FERC
- Reports to FERC at any time for any reason

# Southern's Participation

- Must-Offer Obligation (Offers)
  - Southern must offer all “Available Capacity” that can be committed and offered into the market after taking into account native load and third-party sales obligations, load forecast uncertainty, and reliability obligations
- Opportunity Purchases (Bids)
  - Southern may submit bids to purchase, but is not required to do so

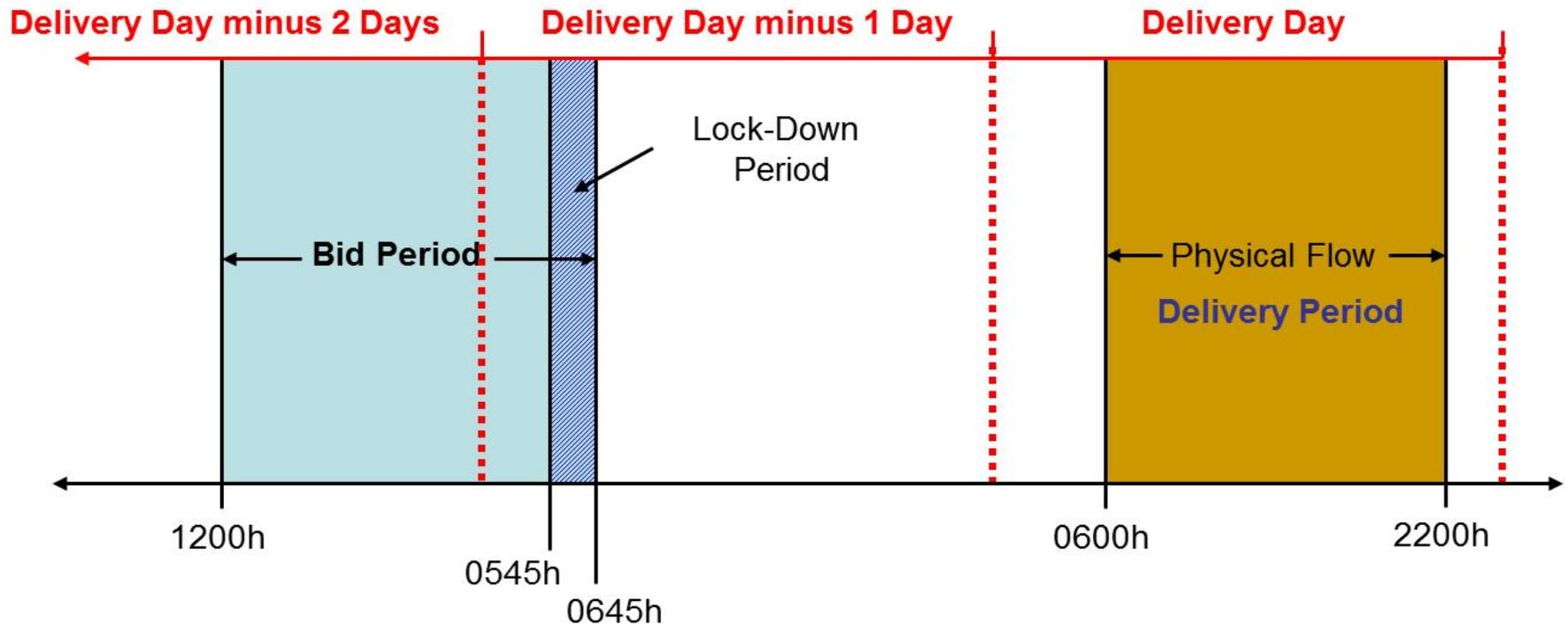
# Southern's Seller Offer Price Cap

- Southern's offers cannot exceed specified cost-based price caps
- Day-Ahead
  - Committed Capacity
    - 110% of the incremental cost of "Available Capacity"
    - A demand charge of \$21.43/MWH
  - Uncommitted Capacity
    - 110% of the expected average cost (including startup and no load costs)
    - A demand charge of \$21.43/MWH
- Hour-Ahead
  - 110% of the expected incremental cost (including startup and no load costs for CTs) to serve the sale
  - A demand charge of \$21.43/MWH

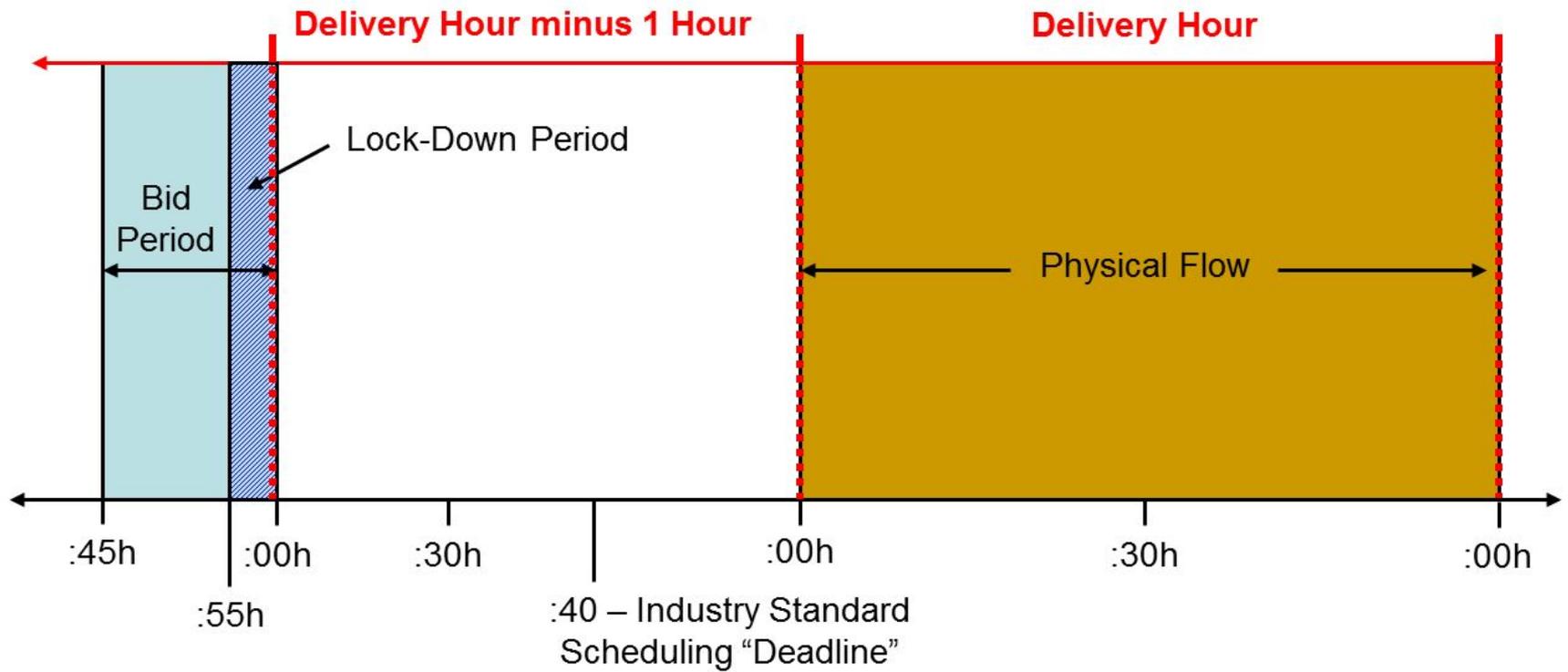
# Auction Participation

- Mitigation Requirements
  - Applicable only to Southern
  - Participation by others is voluntary
- Seller Administrative Considerations
  - Counterparty credit limits
  - Enabling contracts
  - Statutory limitations (if any)
- Transmission and Scheduling Considerations
  - Assumes physical delivery
    - Seller must identify point of receipt
      - Point of receipt must satisfy deliverability requirements consistent with the product sold
    - Buyer is responsible for all other transmission-related requirements

# Day-Ahead Timeline



# Hour-Ahead Timeline



# Day-Ahead Energy Auctions

- Administered every business day excluding weekends and NERC holidays
- Products include:
  - Day-Ahead Firm-LD Energy
  - Day-Ahead Recallable Energy
- Each Day-Ahead Auction consists of:
  - 50 MW block increments
  - Delivery “into Southern”
  - 16-hour period from 6 a.m. to 10 p.m.

# Hour-Ahead Energy Auctions

- Administered every hour of every day (365 days per year)
- Product is non-firm energy
- Each Hour-Ahead Auction consists of:
  - 1 MW block increments
  - Delivery “into Southern”

# Registered Auction Participants

Associated Electric Cooperative

Duke Energy Carolinas

Rainbow Energy Marketing

ArcLight

EDF Trading North America

South Carolina Electric & Gas

BNP Paribas

JP Morgan Ventures

Southern Company Services

Brookfield

Merrill Lynch

The Energy Authority

Calpine

Oglethorpe Power

Tenaska Power Services

Cargill

PowerSouth Energy Cooperative

Tennessee Valley Authority

Constellation

PPL EnergyPlus

Union Power Partners

Cooperative Energy

Progress Energy Carolinas

Westar Energy

ConocoPhillips

Progress Energy Florida

# Recent Outreach and Actions

## Outreach

- 2014 OATI Energy Conference
- 2015 Auction Emphasis Week
- 2015 OATI Energy Conference
- 2015 Southern Company Energy Auction Fall Forum

## Actions

- Voluntary suspension (as of September 2014) of the demand charge
- Queuing and multiple hour-ahead bid/offer entry
- Bid/offer spread posting process
- Additional controls around access to third-party bid and offer information
- Continued suspension of Administrative Charge

# Session I

## “Organizational Structure and Interrelationships of the Southern Companies”

# Organizational Structure and Interrelationships of the Southern Companies

**I-A.** Do the retail regulators require that the revenues from off-system wholesale sales be credited to retail customers? If so, identify all of the Southern Companies to which this requirement applies.

## **Answer:**

Each of the four state regulatory commissions has approved retail ratemaking mechanisms to address the treatment of wholesale sales made from the assets of its jurisdictional operating company (i.e., Alabama Power, Georgia Power, Gulf Power and Mississippi Power)

Mechanisms include:

- Credit revenues from the sales
- Exclude costs attributable to the sales

Both approaches benefit retail customers

# Organizational Structure and Interrelationships of the Southern Companies

I-B(1). Explain briefly how the \$21.43/MWh demand charge in Southern Companies' cost-based rate tariff was calculated, including identifying the units used in that calculation.

## Answer:

- Demand charge calculated using "most likely to participate" stacking methodology
- Applied to resources committed to the Southern Company Pool
- CBR Tariff Filing Exhibit 1 identifies the resources used to compute \$21.43/MWh demand charge

# Organizational Structure and Interrelationships of the Southern Companies

I-B(2). What percentage of Southern Companies' short-term (less than one year) market-based rate sales were made by those units in 2012, 2013, 2014, and 2015?

**Answer:**

Table A (see "CBR Exhibit 1 Resources")

- 2012 = 30.20%
- 2013 = 36.11%
- 2014 = 37.60%
- 2015 = 33.23%

# Organizational Structure and Interrelationships of the Southern Companies

I-B(3). What other units were used to make short-term market-based rates sales during those same time periods?

**Answer:**

Table A (see “Additional Contributing Resources”)

- Additional Contributing Resources also committed to the Southern Company Pool
- Factors influencing relative participation of Pool resources contributing to such sales
  - Unit additions
  - Unit retirements
  - Unit outages
  - Comparative economics of differing fuels (particularly coal and natural gas)
  - System load

# Organizational Structure and Interrelationships of the Southern Companies

I-B(4). How do the incremental costs of the units used in the calculation of the \$21.43/MWh demand charge compare to the incremental costs of the other units making short-term market-based rate sales during those time periods?

**Answer:**

Table A (see "Incremental Cost" columns)

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>CBR Exhibit 1 Resources (\$/MWh)</b>	26.60	30.90	33.66	22.85
<b>Additional Contributing Resources (\$/MWh)</b>	30.57	30.91	37.19	24.91

# Organizational Structure and Interrelationships of the Southern Companies

I-C. Do all four operating companies and Southern Power Company make market-based rate sales under their market-based rate tariffs? If so, which one makes the most, and what is Southern Power Company's percentage share of that total?

## Answer:

- All five operating companies make market-based rate sales in the Southern Balancing Authority Area and its adjacent balancing authority areas under the Market Based Rate Tariff, Southern's Tariff Volume No. 4
- The relative volume of sales by operating company depends on the term of the sale
  - Shorter term (up to two weeks)
  - Less than one year (excluding shorter term)
  - Long term (one year or greater)

# Organizational Structure and Interrelationships of the Southern Companies

## I-C Answer (continued):

All shorter-term sales are made by the Pool and the associated revenues and costs are allocated to the operating companies on basis of peak period load ratios

		2013	2014	2015
Pool	Number of Sales	1,146	1,834	1,896
	Total Volume (MWh)	681,006	1,252,671	614,821

# Organizational Structure and Interrelationships of the Southern Companies

I-C Answer (continued):

Sales of less than a year can be made by the Pool on behalf of all the operating companies or by any operating company individually

		2013	2014	2015
Pool	Number of Sales	0	29	12
	Total Volume (MWh)	0	1,371,962	149,345
SPC	Number of Sales	27	41	46
	Total Volume (MWh)	739,100	1,254,328	1,375,068

# Organizational Structure and Interrelationships of the Southern Companies

I-C Answer (continued):

Long Term Sales can be made by all five operating companies using their Pool-committed resources

			2013	2014	2015
<b>Retail Operating Companies</b>		<b>Number of Sales</b>	19	19	20
		<b>Capacity Sold (MW)</b>	2,393	2,339	2,089
<b>SPC</b>	<b>Resources Committed to the Pool</b>	<b>Number of Sales</b>	18	19	17
		<b>Capacity Sold (MW)</b>	3,760	3,818	3,946
<b>SPC</b>	<b>Other Fossil Resources (non-Southern BAA)</b>	<b>Number of Sales</b>	5	5	5
		<b>Capacity Sold (MW)</b>	1,206	1,203	1,204

# Organizational Structure and Interrelationships of the Southern Companies

I-C Answer (continued):

Long Term SPC sales (non-Southern BAA)

Type	Project	Location	Customer	Capacity Sold (MW)		
				2013	2014	2015
Biomass	Nacogdoches	Texas	City of Austin PPA	100	100	100
Solar	Cimarron Solar	New Mexico	Tri-State PPA	28	28	28
Solar	Apex Solar	Nevada	Nevada Power	18	18	18
Solar	Spectrum Solar	Nevada	Nevada Power	27	27	27
Solar	Granville Solar	North Carolina	Progress Energy Carolina	2	2	2
Solar	Campo Verde	California	San Diego Gas & Electric		125	125
Solar	Adobe	California	San Diego Gas & Electric			18
Solar	Macho Springs	New Mexico	El Paso Electric			45
Solar	SolarGen2	California	San Diego Gas & Electric			77

# Organizational Structure and Interrelationships of the Southern Companies

I-D. Of Southern Companies' overall wholesale sales, what percentage were cost-based rate sales and what percentage were market-based rate sales for each year: 2013, 2014, and 2015?

## Answer:

- Mississippi Power had three pre-existing long-term, cost-based rate sales
- Capacity varied between 627 MW and 848 MW
- All new wholesale transactions entered into during the period were made under Southern's market-based rate authority

## Session II

# “Potential Improvements to Southern Companies’ Tailored Mitigation and Other Forms of Mitigation”

# Potential Improvements to Southern Companies' Tailored Mitigation and Other Forms of Mitigation

II-A. Explain whether and to what extent the incremental cost data for the capacity offered into the energy auction differs from the Southern Companies' system lambda data.

Answer:

- The Energy Auction uses the same data that Southern Companies use in operating their integrated system for joint commitment and economic dispatch

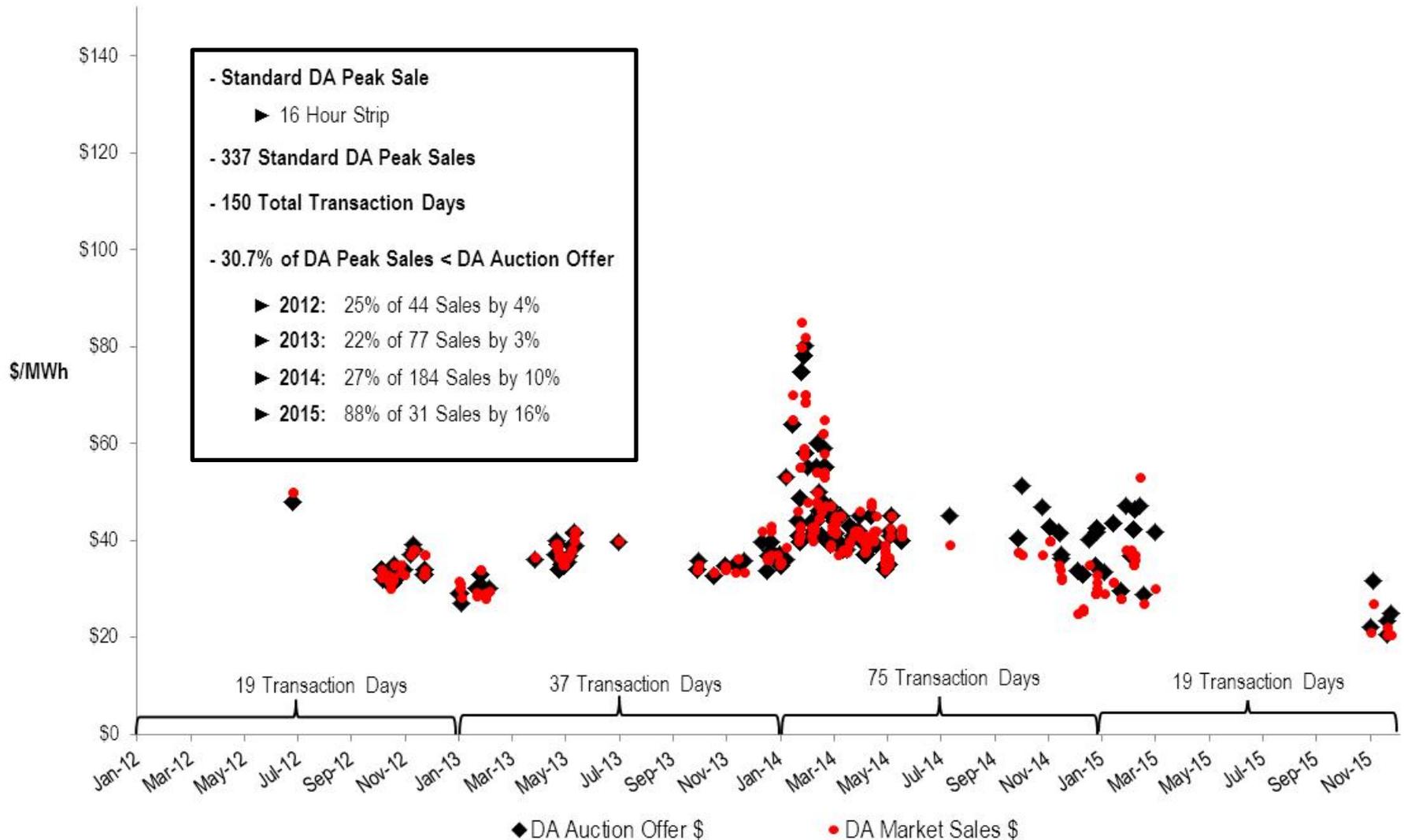
# Potential Improvements to Southern Companies' Tailored Mitigation and Other Forms of Mitigation

II-B. What percentage of day-ahead and hour-ahead bilateral sales are priced below comparable auction offers?

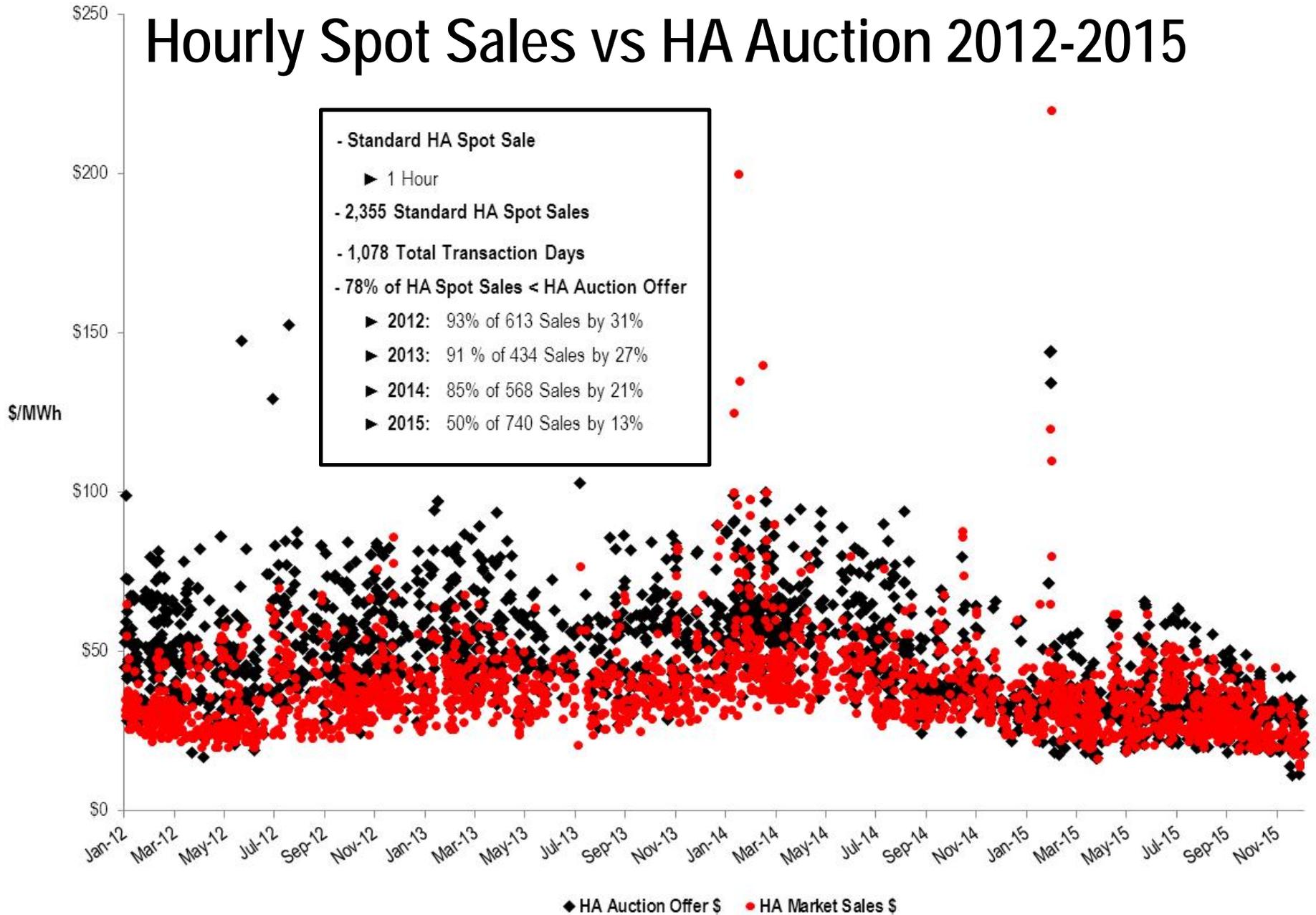
**Answer:**

Reference is made to the following graphs

# Standard DA Peak Sales vs DA Auction 2012-2015



# Hourly Spot Sales vs HA Auction 2012-2015



# Potential Improvements to Southern Companies' Tailored Mitigation and Other Forms of Mitigation

II-C. How many cleared day-ahead and hour-ahead energy auctions (where Southern Companies was the offeror) did not result in a consummated trade for energy? What were the reasons why those transactions did not occur?

**Answer:**

- Only instance occurred in the hour-ahead auction on April 29, 2016
- Buyer failed to properly tag the transaction

# Potential Improvements to Southern Companies' Tailored Mitigation and Other Forms of Mitigation

II-D. Why is it necessary to include up to 110 percent of commitment costs for uncommitted units into the seller price, as opposed to 100 percent?

**Answer:**

- A ten percent adder is commonly applied in cost-based calculations to account for difficult-to-quantify costs, including variable costs
- Commitment costs (sometimes referred to as start-up costs) are a recognized variable cost component and are typically included in variable cost definitions
- Variable commitment costs are not included as a variable cost component in the Energy Auction if the resource is otherwise committed

# Potential Improvements to Southern Companies' Tailored Mitigation and Other Forms of Mitigation

II-D(a). Why is it appropriate to include an adder associated with maintenance costs associated with incurred start-ups for a combustion turbine or combined-cycle unit?

**Answer:**

- Starts-based maintenance agreements are commonplace for newer combustion turbine and combined cycle resources
- Maintenance cost typically increases after a specified number of starts

# Potential Improvements to Southern Companies' Tailored Mitigation and Other Forms of Mitigation

II-D(b). How are commitment costs spread across energy "blocks?"

Answer:

Day-Ahead Offers

- Commitment cost spread across energy blocks by dividing the total startup cost by the minimum load of the unit being committed and by an assumed 16 hours of operation

Hour-Ahead Offers

- Commitment cost determined by dividing the total commitment cost by the full load output of the unit being committed

# Potential Improvements to Southern Companies' Tailored Mitigation and Other Forms of Mitigation

II-E. The discussion will include an opportunity for non-Southern Companies conference attendees to explain their experiences with the auction, including reasons for participating or not participating.

II-F. Alternative Forms of Mitigation – What additional types of mitigation could be used to address any market power Southern Companies may have?

## Answer:

- Energy Auction continues to serve as effective tailored mitigation, regardless of the participation by others or the number of matches
- Energy Auction resolves any concerns regarding the potential for Southern Companies to exercise market power in the Southern Balancing Authority and adjacent balancing authority areas

# Potential Improvements to Southern Companies' Tailored Mitigation and Other Forms of Mitigation

## II-E/II-F Answer (continued):

- Energy Auction also serves as a supplement to the Southeast bilateral market
- Southern Companies work with market participants to explore ideas for feasible enhancements to the Energy Auction
- **Outreach**
  - 2014 OATI Energy Conference
  - 2015 Auction Emphasis Week
  - 2015 OATI Energy Conference
  - 2015 Southern Company Energy Auction Fall Forum
- **Actions**
  - Voluntary suspension (as of September 2014) of the demand charge
  - Queuing and multiple hour-ahead bid/offer entry
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# Potential Improvements to Southern Companies' Tailored Mitigation and Other Forms of Mitigation

II-E/II-F Answer (continued):

## Additional commitments

- Upon confirmation of the Energy Auction as continuing tailored mitigation for Southern Companies and dismissal of the § 206 proceeding, Southern will:
  1. Conform its tariff (through a § 205 filing) within 30 days to reflect voluntary actions to date
    - Demand charge suspension
    - Additional information access controls
    - Mandatory annual reporting by the IAM
  2. Commence posting, within 30 days, the weighted-average hourly price for all of Southern Companies' hourly transactions from the prior day to enhance transparency

# Potential Improvements to Southern Companies' Tailored Mitigation and Other Forms of Mitigation

II-E/II-F Answer (continued):

## Additional commitments

3. Schedule meetings within 30 days with market/auction participants (to be held over a six-month period) for the purpose of exploring the introduction of additional Energy Auction features, such as:
  - Auctions for additional delivery points (e.g., into GTC)
  - Modified deadlines for bid/offer submittals and auction closings
  - Day-ahead off-peak product
  - Balance of day product
4. Report results of meetings to Commission within 30 days of their completion
5. Thereafter conform its tariff (through a § 205 filing) to reflect additional features identified as feasible

# CLOSING COMMENTS AND QUESTIONS