

**Southwest Power Pool**  
**PRICE FORMATION TASK FORCE MEETING**  
**March 31, 2016**  
**Conference Call**  
**• S U M M A R Y O F M O T I O N S •**

**Agenda Item 2 — Review draft definition of “Market Efficiency”**

Valerie Weigel (BEPC) motioned to approve the document as modified, and Cliff Franklin (Westar) seconded. The motion passed with no opposition and no abstentions.

## Southwest Power Pool

### PRICE FORMATION TASK FORCE MEETING

March 31, 2016

Conference Call

• M I N U T E S •

#### **Agenda Item 1 — Call to Order**

Matt Moore (GSEC) called the meeting to order at 9:00 a.m. The attendance was recorded (*Attachment 1 - PFTF Attendance March 10 2016*). Matt Moore announced that there were no proxies. The group reviewed the agenda (*Attachment 2 - PFTF Agenda for March 31 2016*).

#### **Agenda Item 2 — Review draft definition of “Market Efficiency”**

Members completed their review of the definition of “market efficiency”. Serhat Guney (MMU) suggested some metrics for an efficient market noting that “efficiency” is not a static goal but an ideal to be approached (*Attachment 3 - Suggested Metrics.docx*). There was concern from some of the PFTF members that these metrics were for a perfectly competitive market. Serhat explained that these metrics would work regardless of existing market power or reasonable competition. There was further discussion about whether the last available generator in a short market should offer at short-run marginal cost or whether extra markup on the offer should be allowed. Serhat stated that the last available generator in this situation should offer at short-run marginal cost and that scarcity pricing should provide the appropriate incentives and cost recovery to the market. The group adopted suggested metrics as noted in the attached definition and metrics for “market efficiency” (*Attachment 4 - Definition of Market Efficiency.docx*). **Valerie Weigel (BEPC) motioned to approve the document as modified, and Cliff Franklin (Westar) seconded. The motion passed with no opposition and no abstentions.**

#### **Agenda Item 3 — Review template for receiving issues**

The group reviewed the template that will be used to gather pricing concerns in the Marketplace and agreed to send it to MOPC and MWG requesting feedback (*Attachment 5 - PFTF Issue Template.docx*). Responses will be emailed to Matt Moore ([mmoore@gsec.coop](mailto:mmoore@gsec.coop)) and Jared Greenwalt ([jgreenwalt@spp.org](mailto:jgreenwalt@spp.org)) by close of business April 12.

#### **Agenda Item 4 — PFTF Action Item 5: Uplift as a percentage of production cost**

This agenda item was postponed until the next meeting.

#### **Agenda Item 5 — PFTF Action Item 6: Scarcity pricing caused by ramp shortage**

This agenda item was postponed until the next meeting.

#### **Agenda Item 6 – Review Action Items**

Time did not allow review of action items.



**Agenda Item 7 – Adjournment**

Matt Moore (GSEC) adjourned the meeting at 12:10 p.m.

**Action Items:**

- **Agenda Item 3:** SPP Staff will email the template to MOPC and MWG and request that members identify areas where the PFTF can possibly improve market efficiency. SPP staff will also include information in the MWG report to MOPC.

**Future Meetings:**

April 18, 2016 (1:00 p.m. – 5:00 p.m.)

**Location:** AEP Office – Dallas, TX

**Room:** 8<sup>th</sup> Floor

Respectfully Submitted,

Debbie James  
Secretary

*Attachments*

*Attachment 1 - PFTF Attendance March 10 2016*

*Attachment 2 - PFTF Agenda for March 31 2016*

*Attachment 3 - Suggested Metrics.docx*

*Attachment 4 - Definition of Market Efficiency.docx*

*Attachment 5 - PFTF Issue Template.docx*

X = In Person		PFTF March 31, 2016 Conference Call			
P = By Phone					
* = By Proxy					
Day 1	Full Name	Company	E-mail	Business Phone	Other Phone
P	Matt Moore (Chair)	Golden Spread Electric Coop	<a href="mailto:mmoore@gsec.coop">mmoore@gsec.coop</a>	(806) 379-7766	
P	Carrie Dixon	Xcel Energy	<a href="mailto:carrie.e.dixon@xcelenergy.com">carrie.e.dixon@xcelenergy.com</a>		
P	Cliff Franklin	Westar	<a href="mailto:clifford.franklin@westarenergy.com">clifford.franklin@westarenergy.com</a>	(443) 226-7787	
P	Jim Flucke	KCPL	<a href="mailto:jim.flucke@kcpl.com">jim.flucke@kcpl.com</a>	(816) 701-7836	
P	Valerie Weigel	Basin Electric Power Co.	<a href="mailto:vweigel@becp.com">vweigel@becp.com</a>	(701) 557-5430	
P	Alan McQueen	SPP MMU	<a href="mailto:amcqueen@spp.org">amcqueen@spp.org</a>	(501) 614-3306	
P	Alberto Ciganda	Kelson Energy	<a href="mailto:alberto.ciganda@kelsonenergy.com">alberto.ciganda@kelsonenergy.com</a>		
P	Barbara Stroope	SPP MMU	<a href="mailto:bstroope@spp.org">bstroope@spp.org</a>	(501) 688-1791	
P	Chandler Brown	SECI	<a href="mailto:cwbrown@sunflower.net">cwbrown@sunflower.net</a>		
P	Chris Winburn	INDN	<a href="mailto:cwinbrun@indepmo.org">cwinbrun@indepmo.org</a>		
P	Curt Wilwerding	OPPD	<a href="mailto:cawilwerding@oppd.com">cawilwerding@oppd.com</a>		
P	David Daniels	SPP	<a href="mailto:ddaniels@spp.org">ddaniels@spp.org</a>		
P	David Hurtado	SPP MMU	<a href="mailto:dhurtado@spp.org">dhurtado@spp.org</a>		
P	Debbie James	SPP	<a href="mailto:djames@spp.org">djames@spp.org</a>		
P	Esat Guney	SPP	<a href="mailto:eguney@spp.org">eguney@spp.org</a>		
P	Jack Madden	GDS Associates	<a href="mailto:jack.madden@gdsassociates.com">jack.madden@gdsassociates.com</a>		
P	Jared Greenwalt	SPP	<a href="mailto:jgreenwalt@spp.org">jgreenwalt@spp.org</a>	(501) 688-8314	
P	Jason Bulloch	SPP MMU	<a href="mailto:jbulloch@spp.org">jbulloch@spp.org</a>		
P	Jason Robison	SPP MMU	<a href="mailto:jrobison@spp.org">jrobison@spp.org</a>		
P	Jim Heibel	LES	<a href="mailto:jheibel@les.com">jheibel@les.com</a>		
P	Jodi Woods	SPP	<a href="mailto:jwoods@spp.org">jwoods@spp.org</a>		
P	John Luallen	SPP	<a href="mailto:jluallen@spp.org">jluallen@spp.org</a>		
P	John Tennyson	City Utilities	<a href="mailto:john.tennyson@cityutilities.net">john.tennyson@cityutilities.net</a>		
P	Kevin Bates	SPP MMU	<a href="mailto:kbates@spp.org">kbates@spp.org</a>		
P	Kevin Warren	SPP MMU	<a href="mailto:kwarren@spp.org">kwarren@spp.org</a>		
P	Lee Anderson	LES	<a href="mailto:landerson@les.com">landerson@les.com</a>	(402) 467-7591	
P	Marisa Choate	SPP	<a href="mailto:mchoate@spp.org">mchoate@spp.org</a>	(501) 688-1707	
P	Nick Parker	SPP	<a href="mailto:nparker@spp.org">nparker@spp.org</a>	(501) 614-3574	
P	Patti Kelly	SPP	<a href="mailto:pkelly@spp.org">pkelly@spp.org</a>	(501) 614-3381	
P	Ray Kershaw	ITC Transco	<a href="mailto:rkershaw@itctransco.com">rkershaw@itctransco.com</a>		
P	Ricky Finkbiner	SPP	<a href="mailto:rfinkbeiner@spp.org">rfinkbeiner@spp.org</a>		
P	Roy True	Aces Power Marketing (APM)	<a href="mailto:royt@acespower.com">royt@acespower.com</a>	(317) 695-4146	(317) 695-4146
P	Ryan Headley	OPPD	<a href="mailto:rrheadley@oppd.com">rrheadley@oppd.com</a>		
P	Shawn Geil	KEPCo	<a href="mailto:sgeil@kepco.org">sgeil@kepco.org</a>		
P	Shawn McBroom	OGE	<a href="mailto:mcbroosr@oge.com">mcbroosr@oge.com</a>	(405) 239-0255	(405) 553-3267
P	Sherry Hamilton	SPP	<a href="mailto:shamilton@spp.org">shamilton@spp.org</a>		
P	Temper Williams	SPP	<a href="mailto:trwilliams@spp.org">trwilliams@spp.org</a>		
P	Terry Wright	EDE	<a href="mailto:twright@empiredistrict.com">twright@empiredistrict.com</a>		



**PRICE FORMATION TASK FORCE**

**March 31, 2016**

**Conference Call**

**• A G E N D A •**

**9:00 a.m. – 12:00 p.m.**

1. Call to Order, Proxies, Agenda Discussion..... Matt Moore
2. Review draft definition of “Market Efficiency” ..... Matt Moore
3. Review template for receiving issues ..... Matt Moore
4. PFTF Action Item 5: Uplift as a percentage of production cost..... Yasser Bahbaz
5. PFTF Action Item 6: Scarcity pricing caused by ramp shortage..... Yasser Bahbaz
6. Review Action Items .....Jared Greenwalt
7. Adjournment ..... Matt Moore

- Pricing rules to reflect the guiding principle of short-run marginal cost (SRMC) owing to the fact that RTOs/ISOs are spot power exchanges primarily pricing for the short-run timeframe
- Market power mitigation based on various indicators such as SRMC, pivotal supplier and market share analyses
- Improvements in trend of overall implied heat rates<sup>1</sup> versus average production cost
- Degree of convergence of day ahead (DA) and real-time (RT) prices
- Percentage of total load scheduled/cleared in DA versus RT markets
- Share of uplift payments in “all-in price” of one MWh of energy
- Percentage allocation of uplift payments by reason (e.g., local reliability or others)
- Number of price corrections in a certain time period (usually in a month)
- The energy market price cost markup<sup>2</sup>
- Barriers to entry and the ease with which market participants can transact in the market
- Liquidity in the market that may be measured by volume of transactions

Efficient/transparent congestion price formulation and ARR/TCR allocation will both i) reasonably fund the TCRs awarded in the TCR auctions and ii) reasonably provide opportunity for ARR path allocations needed to hedge load.

- Are administrative rules forcing market behavior or is behavior driven by economic benefit to buyers and sellers?
- Improved trend in number of manual commitments or RUC commitments

---

<sup>1</sup> Heat rates are one indicator of optimal dispatch decisions.

<sup>2</sup> The price cost markup in a competitive market is expected to be small as the market participants are incented to offer their products at their SRMC.

# Whitepaper: SPP Market Efficiency Definition

## SPP Price Formulation Task Force (PFTF)

~~February 26~~March 31, 2016

### I. ~~The recommendation for a~~ definition of SPP market efficiency

#### ~~Definition of Efficient Competitive Market Design~~

~~Maximize market surplus for consumers and suppliers; and (153FERC61,226 at 2)~~

~~Provide transparency so that market participants understand how prices reflect the actual marginal cost of serving load and the operational constraints of reliably operating the system; (153FERC61,226 at 2) and~~

~~Transparent M~~market prices should reasonably reflect the actual ~~full~~ marginal unit costs to operate the network reliably without un-necessary, ~~uneconomic headroom capacity~~ cushion.

It is important ~~for~~ market design to have market monitoring and mitigation plans to ensure market prices are reasonably efficient ~~and to~~ deter and detect manipulation of the market through the exercise of market power. It is critical the marginal prices are not skewed by factors such as; exercise of market power, or ~~market~~ over-mitigation that reduces the transparency of ~~true-total~~ marginal cost of production to buyers/investors.

~~Provide correct incentives for market participants to follow commitment and dispatch instructions, make efficient investments in facilities and equipment, and maintain reliability; (153FERC61,226 at 2)~~

~~Market products should be designed to be a reasonable balance between short-run market competition and long-run competitive equilibrium. Under perfect competitive conditions (e.g., balanced capacity/load) market prices reflect marginal system costs (maximizing consumer benefit) and establishes zero marginal supplier benefit (maximization of supplier benefit), resulting in supplier and buyer acting as price takers. All barriers to market entry and exit should be eliminated, unless absolutely necessary.~~

~~Meeting NERC reliability standards is an absolute requirement. However, operational transparency and controls may be required to avoid over-commitment of capacity that is not required to meet reliability standards.~~

~~Provide transparency so that market participants understand how prices reflect the actual marginal cost of serving load and the operational constraints of reliably operating the system; and~~

~~Ensure that all suppliers have an opportunity to recover their costs (153FERC61,226 at 2)~~

Meeting NERC operating reliability standards is an absolute requirement. However, operational transparency and controls may be required to avoid over-commitment of capacity that is not required to meet reliability standards.

Market products should be designed to be a reasonable balance between short-run market competition and long-run competitive equilibrium. Under perfect competitive conditions (e.g., balanced capacity/load) market prices reflect full marginal system costs (maximizing consumer benefit) and establishes zero marginal supplier profit benefit (maximization of supplier profit benefit), resulting in supplier and buyer acting as price takers. All barriers to market entry and exit should be eliminated, unless absolutely necessary.

As previously stated, short-run completion competition needs to be balanced with long-run equilibrium capacity investment. Short-run market prices will continually move markets to long-run equilibrium by; i) allowing marginal cost plus premium in capacity short markets to incent appropriate capacity expansion, ii) allowing marginal cost ~~minus~~ with a loss premium in long capacity markets incenting appropriate capacity retirements or investment delays, or iii) marginal ~~price-cost~~ with no premium in perfectly balanced competition. ~~All barriers to market entry and exit should be eliminated, unless absolutely necessary.~~

Thus, efficient markets are structured;

- For time frames of **capacity shortages**  
When LMP or MCP includes short-run marginal unit cost + premium → incents appropriate capacity investment
- ~~f~~For time frames of **capacity / load equilibrium**  
When LMP or MCP includes short-run marginal unit cost + 0 profit premium → incents appropriate capacity expansion ~~no changes in future capacity~~
- ~~f~~For time periods of **capacity gluts or over-supply**  
When LMP or MCP includes short-run ~~completion~~ marginal unit cost - ~~t~~ loss-negative premium → incents capacity retirements

## II. ~~Possible~~ SPP metrics for measuring SPP Market efficiency

### ~~Possible Market Design Efficiency measuring metrics;~~

These metrics are in the context of a continuum of enhancements rather than a target to reach a predetermined absolute efficiency level.

— Day ahead mMarket (DAMKT) and Real-time Balancing mMarket (RTBM) LMPs and MCP formulations will achieve encompass a minimum of 95% of the transparent long-run equilibrium marginal cost recovery to induce right transmission/generation investments in productive capacity, with Day Ahead Market, RT-RUC, and RNU uplifts making up a maximum of 5% of the total market production cost.

**Commented [JMG1]:** PFTF will determine these percentages in the future.

**Commented [JMG2]:** PFTF will determine these percentages in the future.



~~Real time Time Balancing mMarkets and Day Ahead Market price formulation will be reasonably designed for price transparency enabling suppliers to both evaluate market marginal cost recovery required to startup, run, and produce energy and operating reserve for future SPP markets and creates stable long term market rules from which investors can have confidence.~~

Formatted

~~1. <NERC Standards metric.>SPP Reliability Coordination and Operations will, at a minimum, operate all markets meeting all NERC reliability standards but will refrain from unnecessary/uneconomic intrusive actions that prevents transparent/efficient clearing of supply.~~

Formatted: Font: Not Italic

Formatted: Font: Not Italic

Formatted: Font: Italic

~~2. Real time markets price formulation will be reasonably designed for price transparency enabling suppliers to both evaluate market marginal cost recovery required to startup, run, and produce energy and operating reserve for future SPP markets and creates stable long term market rules from which investors can have confidence.~~

~~Scarcity pricing is reasonably designed should reflect price/volume metrics at which load is willing to be curtailed to recover most of the marginal generator's fixed costs in a competitive market.~~

~~3. Metric:~~

Formatted

~~1. Efficient/transparent congestion price formulation and ARR/TCR allocation will both i) reasonably fund the TCRs awarded in the TCR auctions and ii) reasonably provide opportunity for ARR path allocations needed to hedge load.~~

Formatted: Indent: Left: 0.75"

~~Metric:~~

Formatted

~~4. <Members are working on a similar metric as number 1 for TCR market.>~~

~~5. <NERC Standards metric.>SPP Reliability Coordination and Operations will, at a minimum, operate all markets meeting all NERC operating standards but will refrain from unnecessary/uneconomic intrusive actions that prevents transparent/efficient clearing of supply.~~

Formatted: Font: Not Italic

2. Improvements in trend of overall implied heat rates versus average production cost.

3. Degree of convergence of day ahead (DA) and real-time (RT) prices.

4. Percentage of total load scheduled/cleared in DA versus RT markets.

5. Share of uplift payments in "all-in price" of one MWh of energy.

6. Percentage allocation of uplift payments by reason (e.g., local reliability or others).

7. Number of price corrections in a certain time period (usually in a month).

8. Barriers to entry and the ease with which market participants can transact in the market.

9. Liquidity in the market that may be measured by volume of transactions.

10. Are administrative rules forcing market behavior or is behavior driven by economic benefit to buyers and sellers?

11. Improved trend in number of manual commitments or RUC commitments.

### Issue to Be Addressed by the Price Formation Task Force

<b>Title</b>			
<b>Submitter Name:</b>			<b>Company:</b>
<b>Email:</b>			<b>Phone:</b>
<i>Describe in detail the price formation issue that you would like the PFTF to address. It may be helpful to provide examples.</i>			
<i>Explain how the issue relates to price formation.</i>			
<i>(Optional) Describe a proposed solution(s) that is acceptable or that is unacceptable and explain why. It may be helpful to provide examples.</i>			