Over the last several months, Westar has heard many positive comments regarding our monthly newsletter. We continue to review and improve the content of the monthly newsletter and appreciate your feedback.

Leading the Charge: Evolving Communications for an Evolving Market.

Welcome to the July 2016 EMA newsletter. We hope everyone had a safe and fun 4th of July celebration. This summer has been hot and the heat continues. Be sure to check out the weather section below for our thoughts on the rest of the summer.

Thank you for your input on how we can improve this newsletter & our services. We value our customers and clients business and opinions.

We do appreciate your feedback to help modify any content you wish to see. Our customers are our most important asset. Please feel free to reach out to us at ema@westarenergy.com for any feedback or topics for future newsletters.

Wind

Westar Energy will purchase electricity produced from the 200 megawatt wind farm, Kingman I & II, which NextEra Energy Resources will develop and operate. Westar is providing some of

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August Price Outlook

Prices are mid-market as of 7/6/16 close:

SPP:
- South Hub Peak $35.75 and Wrap $22.75
- North Hub $33.75 and Wrap $19.75

MISO:
- Indiana Hub $39.20 and Wrap $23.80
- Arkansas Hub $35.75 and Wrap $22.75

SERC:
- SOC hub $34.25 and Wrap $21.38
- TVA hub $34.25 and Wrap $21.38
- GTC hub $36.25 and Wrap $22.88

PJM:
- PJM West $43.50 and Wrap $25.25
- AEP Dayton $39.50 and Wrap $24.55
- Henry Hub gas $2.79, Southern Star gas $2.76

Leading the Charge Spotlight

Brenden Mannell
Westar customers – wholesale and retail – are receiving green energy at some of the best prices available in the market. If you would like more information regarding how renewables could benefit your customers, please reach out to contact our origination team.

Our customers will also have access to a community solar. If this is a topic you would like to discuss we can help. Be sure to take a look at our website - https://www.westarenergy.com/communitysolar

**General Weather Information**

We’ve leveled off with the ocean temperature drops across the equatorial Pacific, and we’re within the normal range, or slightly cooler than normal. The expectation is that we’ll continue to cool toward a weak La Nina through the August and September period.

At the beginning of July, a fairly strong and persistent low pressure is over the Pacific Northwest and into the northern Rockies, and this feeds the higher pressure over the mid section of the country and above normal temperatures. In fact, a fairly broad high pressure will cover much of the country through much of the week of the 18th of July. As we get to the end of July, the pressure pattern returns closer to normal with the models continuing to show a normal, typical pressure pattern through August. Now, this doesn’t mean we can’t see periods of hot weather, but I believe we’ll see more thunderstorms.

Temperature expectations through the end of August will be normal to a little above normal over much of the East, Southeast and Southwest and closer to normal over the Rockies and Plains.

Above normal precipitation is expected through the remainder of July through the Plains, eastward toward the Ohio and Tennessee Valleys. A little drier than normal over the Southeast and much of the West in August, except a little above normal over Utah and Colorado.

A number of waves are coming across Africa and this activity will continue with these waves leading to more tropical activity across the Atlantic at the end of July, August and September.

The expectation of ocean conditions pushing to a weak La Nina favor above normal temperatures into September across much of the country, but especially east of the Rockies. Normal to above normal precipitation is expected across the northern and central Plains, Rockies and Great Lakes with drier than normal conditions over the Southeast.

**News from SPP**

**SPP Generation Mix (in MWH)**

<table>
<thead>
<tr>
<th>Source</th>
<th>MWH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear</td>
<td>1,750,000</td>
</tr>
<tr>
<td>Coal</td>
<td>11,850,000</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>6,900,000</td>
</tr>
<tr>
<td>Wind</td>
<td>900,000</td>
</tr>
<tr>
<td>Hydro</td>
<td>3,050,000</td>
</tr>
</tbody>
</table>

**TOTAL LOAD:** 25,150,000 MWH

*Total includes imports and exports*

**Manager, Real-Time Trading**

This month’s Employee Spotlight features our Mgr. of Real Time Trading, Brenden Mannell. The Hays, Kansas, native began his career with Westar approximately six years ago.

Brenden has held a variety of positions at Westar Energy. Before his current job, Brenden was a Market Resource Planner and previous to that a Real Time Trader. Throughout this time Brenden has always focused on leadership, and providing the best customer service he can while remaining safe.

Before coming to Westar Energy, Brenden lived in Des Moines, Iowa, and worked ten years for MidAmerican Energy primarily in their real time trading group but was also in their retail group.

Brenden enjoys spending time with his family when not at work. Brenna Mannell is the Director of Compensation and Employment at Westar Energy. Together they have Kevin age 13, and Haley age 9 as well as a dog Roxie.

Brenden and his family are active in the outdoors, these activities include baseball, hunting, fishing, horseback riding, camping and running.

**Natural Gas Fun Fact**

**Ever heard of Sour Gas?** Sour gas is natural gas that contains lethal amounts of hydrogen sulfide. Sour gas must be purified before being injected into the interstate system. Natural gas that does not contain significant amounts of hydrogen sulfide is called “sweet gas.”
For the week ending July 1st, the gas storage injection estimate, according to the EIA, was reported as 39 Bcf. Total working gas in storage is now 3,179 Bcf – still well above the five-year historical range.

SPP Coal Generation Declining

The latest SPP Market Monitor spring report shows coal generation accounted for 41% of energy production between March and May. This is a 31% decrease from spring 2014 when coal provided 59% of SPP’s energy.

What factors are influencing the amount of coal generation? Low natural gas prices and increased wind generation. Natural gas prices at Panhandle have dropped from $2.46/MMBtu to $1.68/MMBtu, a decrease of 31.7% since spring 2015 and down 63.8% since 2014 when prices were $4.66/MMBtu. Wind generation accounted for 21.5% of energy produced, compared to 15% last spring.

The development of additional wind resources combined with low gas prices lead experts to believe that coal generation will continue to decline.

Natural Gas Plant Explosion

A natural gas processing plant in southern Mississippi remains shut down after a fire and an explosion on June 27 damaged the facility. The Pascagoula plant, owned by Enterprise Products Partners, LP, has about 1.5 Bcf/day of capacity. The plant owners are actively working with their producers and other midstream companies to facilitate the diversion of the affected production to other facilities. At this time, Enterprise is unable to project the date the plant will resume operations.

SPP MOPC & MWG Agenda

SPP Z2 Crediting June Workshop: SPP creditable upgrade cost charges and distributions. In general, Z2 credit charges can be assessed onto either new or incremental:

i) Network Integrated Transmission Service (NITS) & Point-to-Point (PTP) Customers,
ii) Generator Interconnection (GI) customers,
   which impact & benefit from new/incremental upgrades funded by the following project types;
   a) GI Customers
   b) NITS and PTP Service Customers
   c) Project Sponsors.

Project sponsors are directly assigned upgrade costs (DAUC) by SPP for any costs not rolled into the SPP Base Plan Funding bucket. The DAUC, GI, and project sponsored upgrade costs can be reimbursable if the project satisfies an SPP “But For” test linking the service need for the upgrade. This is the basis that forms Z2 Gross Credit Payment Obligation (CPO) for service. The Z2 process is complicated having many tentacles reaching into new Transmission Service Requests (TSRs) payment obligations.

Some workshop attendees voiced questions and frustration regarding the lack of Z2 cost transparency, both when i) new/incremental service was first granted and ii) ongoing uncertainty of other unseen service Z2 cost exposure obligations. SPP has finished reviewing DAUC cost allocations for long-term “network NITS/Generator Interconnection (GI) capacity” historical CPO service cost components.

However, SPP is now finalizing other/additional unseen service Z2 cost exposure obligations;
1. Short-term & new/incremental long-term Point-to-Point (PTP) Service,

Elimination of the SPP Day-Ahead (DA) Must Offer Requirement: RR 125, removal of the SPP DA Must Offer requirement, will be voted on at the July SPP MOPC meeting in Rapid City, SD. MWG had originally placed the submittal of this Revision Request on hold, until such time as a companion revision request could be developed that would continue to provide a requirement to have resources offered into the DA market. So far the only suggested replacements have centered around full must offer provisions with very tight thresholds and incorporate automated Physical Withholding penalties applied in both the Day-Ahead and Real-Time markets.

Westar is not supporting the passage of this RR 125 until such time as SPP can recommend an alternative provision assuring adequacy of the DA supply offers. Westar is concerned that lacking a must offer provision in the market, SPP may be forced into an alternative must offer provision that is not vetted through the SPP stakeholder process.

Non-Dispatchable SPP Wind Farms: MWG is having some difficulty gaining stakeholder consensus regarding various proposals presented to get some Non-Dispatchable wind Variable Energy Resources (NDVERs) to re-register to a dispatchable (DVERs) unit type. SPP staff believes NDVER re-registrations necessary based upon concerns regarding output uncertainty of some price following NDVERs and overall market dispatch inefficiency caused by SPPs inability to dispatch NDVERs.

MWG is somewhat gridlocked between some members favoring
1) the “stick” approach (creation of penalties de-incenting continued NDVER registration)
Capacity Margin Requirement: The April MOPC approved a change requiring Load Serving Member’s Minimum Required Capacity Margin to be 12%, reduced from the current 13.6%. Accredited Capacity is required to be tested at least once every 3 years (including both registered and non-registered Behind-the-Meter (BTM) generating units.

Scarcity Pricing during Operating Reserve (OR)/Ramp Shortage periods: A recent FERC Order on AD14-14 Price Formation Rule Making will possibly force SPP to change OR Scarcity pricing methodology to include transient (5-minute) intervals having capacity/ramp shortages. The 4 diagrams shown below were lifted from the MMU MWG June update “06.2016 06 MWG MMU Market Update.pdf”. The diagrams (created/authored by the SPP MMU) illustrated both May shortage events and DA/RT frequently binding constraints.

MISO DC Circuit Appeals on MISO uplift: FERC denied several Requests for Rehearing filed by multiple Market Participants regarding resettlements of Revenue Sufficiency Guarantee Uplifts (RSG) invoices. An RSG 206 complaint was filed at FERC in 2006 that spanned disputed RSG uplift transaction allocations between 4/1/2005 (startup) and 11/4/2008. The total market resettlement can be potentially sizable $1.0B+ cost shift between MISO Market Participants which transacted financially and physically. Multiple parties filed appeals to the DC Circuit Court.
May On-Peak LMPs

May Off-Peak LMPs

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