



Control Number: 49737



Item Number: 172

Addendum StartPage: 0

SOAH DOCKET NO. 473-19-6862  
PUC DOCKET NO. 49737

APPLICATION OF SOUTHWESTERN § BEFORE THE STATE OFFICE  
ELECTRIC POWER COMPANY FOR §  
CERTIFICATE OF CONVENIENCE §  
AND NECESSITY AUTHORIZATION § OF  
AND RELATED RELIEF FOR THE §  
ACQUISITION OF WIND §  
GENERATION FACILITIES § ADMINISTRATIVE HEARINGS

**SOUTHWESTERN ELECTRIC POWER COMPANY'S SUPPLEMENTAL RESPONSE  
TO TEXAS INDUSTRIAL ENERGY CONSUMERS' SEVENTH  
REQUEST FOR INFORMATION**

**SUPPLEMENTAL RESPONSE NO. TIEC 7-16**

**NOVEMBER 5, 2019**

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**SOAH DOCKET NO. 473-19-6862  
PUC DOCKET NO. 49737**

**SOUTHWESTERN ELECTRIC POWER COMPANY'S SUPPLEMENTAL RESPONSE  
TO TEXAS INDUSTRIAL ENERGY CONSUMERS' SEVENTH  
REQUEST FOR INFORMATION**

**Question No. TIEC 7-16:**

Please provide all communications, including internal communications and communications with the Brattle Group, sent or received by AEP or SWEPCO regarding the economics of the North Central Energy Facilities.

**Response No. TIEC 7-16:**

This request is subject to pending objection because SWEPCO has determined that some information responsive to this request may be protected by the attorney-client and/or work product privilege. TIEC has extended the time for the Company to provide any non-privileged responsive documents and/or privilege index.

**Supplemental Response No. TIEC 7-16:**

Supplemental Confidential Attachment 2 responsive to this request is CONFIDENTIAL under the terms of the Protective Order. The Confidential information is available for review at the Austin offices of American Electric Power Company (AEP), 400 West 15th Street, Suite 1520, Austin, Texas, 78701, (512) 481-4562, during normal business hours.

See TIEC 7-16 Supplemental Attachment 1 and TIEC 7-16 Supplemental Confidential Attachment 2.

Prepared By: Christen M. Blend

Title: Senior Counsel

Prepared By: Melissa A. Gage

Title: Senior Counsel

Prepared By: Jessica A. Cano

Title: Senior Counsel

Sponsored by: Counsel

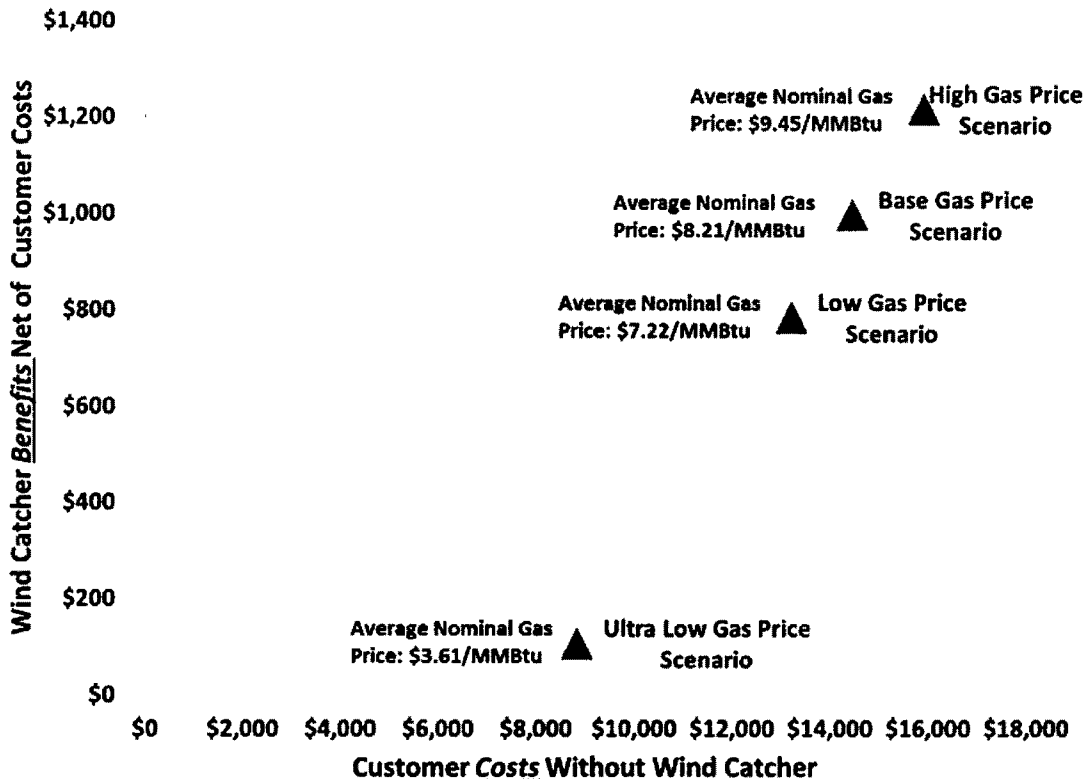
**From:** Pfeifenberger, Hannes <Hannes.Pfeifenberger@brattle.com>  
**Sent:** Friday, June 21, 2019 5:54 PM EDT  
**To:** Brian D Weber <bdweber@aep.com>; Adam J Hickman <ajhickman@aep.com>  
**CC:** Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**Subject:** [EXTERNAL] illustrating the hedge value of CSP?

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Would it make sense to put together something like this (which we did for windcatcher at the time, but wasn't used)? Shows that the benefits are higher in futures where customer costs are higher.

With the breakeven gas prices being below all forecasts, the project is basically a free hedge.

Does the benefit calculations have total customer costs for the case without the project? If not, one can use gas prices and/or power prices for the x-axis. Or do it with bar graphs (where the bars are space approximately in proportion to gas or power price differentials).



\*\*\*\*\*

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**From:** Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**Sent:** Thursday, May 30, 2019 3:10 PM EDT  
**To:** Jay F Godfrey <jfgodfrey@aep.com>  
**CC:** Brian D Weber <bdweber@aep.com>; Kamran Ali <kali@aep.com>  
**Subject:** [EXTERNAL] RE: 2018 PSO/SWEPCO Wind Farm Congestion Rates

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Thanks

**From:** Jay F Godfrey  
**Sent:** Thursday, May 30, 2019 12:39 PM  
**To:** Sheilendranath, Akarsh  
**Cc:** Brian D Weber ; Kamran Ali  
**Subject:** RE: 2018 PSO/SWEPCO Wind Farm Congestion Rates

The later.....It was calculated at the POI / wind project locations

**From:** Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**Sent:** Thursday, May 30, 2019 1:10 PM  
**To:** Jay F Godfrey <jfgodfrey@aep.com>  
**Cc:** Brian D Weber <bdweber@aep.com>; Kamran Ali <kali@aep.com>  
**Subject:** [EXTERNAL] 2018 PSO/SWEPCO Wind Farm Congestion Rates

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Jay,

We have a question about the 2018 congestion rate for PSO and SWEPCO wind farms you showed us when we met in Columbus a few weeks ago. Are those 2018 congestion rates the actual congestion costs incurred when delivering from the wind location to AEP load zone or are they the congestion components of the LMP at the wind locations? I think it is the former, but can you please confirm?

Thanks,  
Akarsh

**AKARSH SHEILENDRANATH**  
Senior Associate  
The Brattle Group  
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**From:** Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**Sent:** Thursday, June 20, 2019 11:01 AM EDT  
**To:** Jim Martin <jfmartin@aep.com>; Levin, Simon <Simon.Levin@brattle.com>; Bourbonnais, Cecile <Cecile.Bourbonnais@brattle.com>  
**CC:** John F Torpey <jftorpey@aep.com>; Jon R Maclean <jrmaclean@aep.com>; Brian D Weber <bdweber@aep.com>; Paul N Demmy <pndemmy@aep.com>  
**Subject:** [EXTERNAL] RE: Congestion confirmation

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---

Jim – We'll check and get back to you Quick question: Do the congestion/loss cost shown in your spreadsheet reflect a 25% assumed TCR hedge on congestion?

The leveled estimates for congestion and losses we were all discussing a few weeks ago were for Base with Low No Carbon and Base with Base No Carbon scenanos. Those cases will have slightly lower congestion and losses Anyway, we'll compare the NPVs and get back to you.

Cheers,  
Akarsh

**From:** Jim Martin  
**Sent:** Thursday, June 20, 2019 9:02 AM  
**To:** Sheilendranath, Akarsh  
**Cc:** John F Torpey ; Jon R Maclean ; Brian D Weber ; Paul N Demmy  
**Subject:** Congestion confirmation

Akarsh,  
I wanted to double check the dollars of congestion and losses that we are running through these cases to make sure they are correct and that they match Brattle testimony. There are other dollars in other gas cases but confirming these should give comfort that the rest of them are accurate. Attached are the wind GWh and dollars of combined C&L in both Brattle congestion cases at both P50 and P95. I also did leveled calculations which seem higher than numbers people were throwing out back during screening.

Can you please reply that these numbers make sense to you.



JIM MARTIN | REGULATORY CASE MGR  
[JFMARTIN@AEP.COM](mailto:JFMARTIN@AEP.COM) | D:614.716.6014 | A:8.200.6014  
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

\*\*\*\*\*

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**From:** Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**Sent:** Friday, June 21, 2019 1:46 PM EDT  
**To:** Jim Martin <jfmartin@aep.com>  
**Subject:** [EXTERNAL] RE: Congestion confirmation

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Will do, after this call. Sorry, been in meetings all morning, so didn't get a chance to call.

**From:** Jim Martin  
**Sent:** Friday, June 21, 2019 7:58 AM  
**To:** Sheilendranath, Akarsh  
**Subject:** RE: Congestion confirmation

Can you give me a buzz when you have a sec



**JIM MARTIN | REGULATORY CASE MGR**  
[jfmartin@aep.com](mailto:jfmartin@aep.com) | D:614.716.6014 | A:8 200 6014  
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

**From:** Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**Sent:** Thursday, June 20, 2019 3:54 PM  
**To:** Jim Martin <jfmartin@aep.com>  
**Cc:** John F Torpey <jforpev@aep.com>; Jon R Maclean <jrmaclean@aep.com>; Brian D Weber <bdweber@aep.com>; Paul N Demmy <pndemmy@aep.com>; Levin, Simon <Simon.Levin@brattle.com>  
**Subject:** [EXTERNAL] RE: Congestion confirmation

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Jim,

These look fine. We were able to arrive at \$8.82/MWh levelized for Base PROMOD, with Base Gas/No Carbon scenario (P50). Your annual congestion and loss costs also look fine. The slight difference is due to levelization approach, but that is not material to worry about for now. We also checked for Base PROMOD, with Low Gas/No Carbon, and for Base PROMOD, with Base Gas/No Carbon. Levelized congestion and loss costs come to about \$6.31/MWh and \$7.38/MWh, respectively.

Let me know if you have questions.

Cheers,  
Akarsh

**From:** Jim Martin <jfmartin@aep.com>  
**Sent:** Thursday, June 20, 2019 9:02 AM  
**To:** Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**Cc:** John F Torpey <jforpev@aep.com>; Jon R Maclean <jrmaclean@aep.com>; Brian D Weber <bdweber@aep.com>; Paul N Demmy <pndemmy@aep.com>  
**Subject:** Congestion confirmation

Akarsh,

I wanted to double check the dollars of congestion and losses that we are running through these cases to make sure they are correct and that they match Brattle testimony. There are other dollars in other gas cases but confirming these should give comfort that the rest of them are accurate. Attached are the wind GWh and dollars of combined C&L in both Brattle congestion cases at both P50 and P95. I also did levelized calculations which seem higher than numbers people were throwing out back during screening.

Can you please reply that these numbers make sense to you.



**JIM MARTIN | REGULATORY CASE MGR**  
[jfmartin@aep.com](mailto:jfmartin@aep.com) | D:614.716.6014 | A:8 200.6014  
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**From:** Levin, Simon <Simon.Levin@brattle.com>  
**Sent:** Monday, June 24, 2019 2:45 PM EDT  
**To:** Anita A Sharma <asharma@aep.com>  
**Subject:** [EXTERNAL] RE: Gas Prices

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---

I think that makes more sense as well. I will email Hannes and likely replace. Thanks for the HH prices!

**From:** Anita A Sharma  
**Sent:** Monday, June 24, 2019 2:17 PM  
**To:** Levin, Simon  
**Subject:** RE: Gas Prices

The prices in the spreadsheet are natural gas burner tip forecasts I thought we should be adding the henry hub price in the testimony but you may want to check with Hannes.

I will be in meetings for the remainder of the day but I'll try to call you if I find sometime. I've attached a file with henry hub gas prices in second and third tabs.

Regards  
Anita

**From:** Levin, Simon <Simon.Levin@brattle.com>  
**Sent:** Monday, June 24, 2019 2:05 PM  
**To:** Anita A Sharma <asharma@aep.com>  
**Subject:** [EXTERNAL] RE: Gas Prices

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---

Hi Anita,

Just wanted to see if we were all set with this or if you still want to talk.

Simon

**From:** Levin, Simon  
**Sent:** Friday, June 21, 2019 5:57 PM  
**To:** Anita A Sharma <asharma@aep.com>  
**Subject:** Gas Prices

Hi Anita,

I received your message. The gas prices we used came from the attached file. This was uploaded along with other PROMOD data on 5/13/2019.

Let's touch base Monday.

Simon

**SIMON LEVIN**  
Research Analyst  
The Brattle Group

Direct +1.617 234 5234

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\*\*\*\*\*

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**From:** Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**Sent:** Friday, May 03, 2019 9:33 AM EDT  
**To:** Jon R Maclean <jrmaclean@aep.com>  
**Subject:** [EXTERNAL] Re: SPP\_Central Hourly Prices  
**Attachment(s):** "image001.png"

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---

Thank you Jon.

On May 3, 2019, at 8:09 AM, Jon R Maclean <[jrmaclean@aep.com](mailto:jrmaclean@aep.com)> wrote:

Akarsh  
Here are 2024 & 2029 hourly prices for Base (with carbon), No CO2 (Base w/o carbon), No CO2 Low (Low - No Carbon)

**From:** Connie S Trecuzzi <[cstrecuzzi@aep.com](mailto:cstrecuzzi@aep.com)>  
**Sent:** Friday, May 3, 2019 8:37 AM  
**To:** Jon R Maclean <[jrmaclean@aep.com](mailto:jrmaclean@aep.com)>  
**Cc:** Karl R Bletzacker <[krbletzacker@aep.com](mailto:krbletzacker@aep.com)>  
**Subject:** SPP\_Central Hourly Prices

Jon,

Attached are the requested hourly prices for SPP\_Central for years 2024 and 2029. Please let me know if you have questions.

Regards,  
Connie

**CONNIE S TRECAZZI | ECONOMIC FORECAST ANALYST STAFF**

[CSTRECAZZI@AEP.COM](mailto:CSTRECAZZI@AEP.COM) | A 8 200 2816  
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**From:** Levin, Simon <Simon.Levin@brattle.com>  
**Sent:** Monday, May 13, 2019 5:18 PM EDT  
**To:** Jon R Maclean <jrmaclean@aep.com>; Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**CC:** Connie S Trecuzzi <cstrecuzzi@aep.com>  
**Subject:** [EXTERNAL] RE: Updated file

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Thanks Jon.

**From:** Jon R Maclean  
**Sent:** Monday, May 13, 2019 5:18 PM  
**To:** Sheilendranath, Akarsh ; Levin, Simon  
**Cc:** Connie S Trecuzzi  
**Subject:** FW: Updated file

Akarsh and Simon  
I uploaded Connie's file 'SPP\_Central Plants-Demand\_v2.xlsx' to your ftp site



**JON R MACLEAN | RESOURCE PLANNING MGR**  
[JRMACLEAN@AEP.COM](mailto:jrmaclean@aep.com) | D:614.716.2313 | A:8.200.2313  
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

**From:** Connie S Trecuzzi <[cs:trecuzzi@aep.com](mailto:cs:trecuzzi@aep.com)>  
**Sent:** Monday, May 13, 2019 4:47 PM  
**To:** Jon R Maclean <[jrmaclean@aep.com](mailto:jrmaclean@aep.com)>  
**Subject:** FW: Updated file

Jon,

Attached is a detailed list of the units included in SPP\_Central in Aurora. The units identified in my previous email should be excluded from the ProMod analysis. Please let me know if you have further questions.

Regards,  
Connie



**CONNIE S TRECAZZI | ECONOMIC FORECAST ANALYST STAFF**  
[CSTRECAZZI@AEP.COM](mailto:cstrecuzzi@aep.com) | A:8.200.2816  
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

**From:** Connie S Trecuzzi  
**Sent:** Wednesday, May 1, 2019 4:22 PM  
**To:** Anita A Sharma <[asharma@aep.com](mailto:asharma@aep.com)>  
**Subject:** Updated file

Anita,

I added some additional descriptive information to assist you with matching units between Aurora and ProMod. As I noted in my previous email, there are 25 units that should be in ERCOT that were misclassified as being in SPP, 12 of which are IC units at one plant. Several are wind units, so the overall impact is minimal, ~3 MW of nameplate capacity. You can see those plants by filtering by 'Transmission Area Name'. I hope this helps!

Regards,  
Connie



**CONNIE S TRECAZZI | ECONOMIC FORECAST ANALYST STAFF**  
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**From:** Adam J Hickman <ajhickman@aep.com>  
**Sent:** Wednesday, June 26, 2019 10:35 AM EDT  
**To:** Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**Subject:** Congestion/loss value - delta between Wind Facilities and market

Hi Akarsh,

In a simple table, can you please send me the full strip of values for the congestion and loss delta between the Selected Wind Facilities and SPP Central?

**From:** Jon R Maclean <jrmaclean@aep.com>  
**Sent:** Tuesday, May 14, 2019 5:11 PM EDT  
**To:** Sheilendranath, Akarsh (Akarsh.Sheilendranath@brattle.com) <Akarsh.Sheilendranath@brattle.com>; Levin, Simon (Simon.Levin@brattle.com) <Simon.Levin@brattle.com>  
**Subject:** FW: SPP\_Central Hourly Prices - 30 Years.xlsx

Akarsh & Simon

I uploaded Connie's file (SPP\_Central Hourly Prices - 30 Years\_ALL.xlsx) that contains all the Fundamentals Scenarios

**From:** Connie S Trecuzzi  
**Sent:** Tuesday, May 14, 2019 8:50 AM  
**To:** Jon R Maclean  
**Subject:** SPP\_Central Hourly Prices - 30 Years.xlsx

Jon,

The attached file contains hourly prices for all of the cases. It includes a tab for each case and a tab with all of the cases. I also modified the base case, which previously had the month and day columns in the wrong order. Please let me know if you have questions.

Connie



CONNIE S TRECAZZI | ECONOMIC FORECAST ANALYST STAFF

[CSTRECAZZI@AEP.COM](mailto:CSTRECAZZI@AEP.COM) | A-8.21.02216  
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

**From:** Jon R Maclean <jrmaclean@aep.com>  
**Sent:** Monday, May 20, 2019 12:10 PM EDT  
**To:** Sheilendranath, Akarsh (Akarsh.Sheilendranath@brattle.com) <Akarsh.Sheilendranath@brattle.com>  
**Subject:** FW: SPP\_Central Hourly Prices - 30 Years.xlsx

**From:** Jon R Maclean  
**Sent:** Friday, May 17, 2019 11:31 AM  
**To:** Sheilendranath, Akarsh (Akarsh.Sheilendranath@brattle.com); Levin, Simon (Simon.Levin@brattle.com)  
**Cc:** William S Robinson (wsrobinson@aep.com); Connie S Trecuzzi; Xuejin Zheng  
**Subject:** RE: SPP\_Central Hourly Prices - 30 Years.xlsx

Akarsh & Simon

It now looks like we will need hourly prices for all five fundamentals forecasts for 2021-2052

- 1) Base (i.e., with carbon)
- 2) No CO2 (i.e., Base Without Carbon)
- 3) No CO2 Low (i.e., Low No Carbon)
- 4) High (i.e., High With Carbon)
- 5) Low (i.e., Low With Carbon)

Thanks



**JON R MACLEAN | RESOURCE PLANNING MGR**  
JRMACLEAN@AEP.COM | D.614.716.2313 | A.8.200.2313  
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

**From:** Jon R Maclean  
**Sent:** Tuesday, May 14, 2019 5:12 PM  
**To:** Sheilendranath, Akarsh (Akarsh.Sheilendranath@brattle.com) <Akarsh.Sheilendranath@brattle.com>; Levin, Simon (Simon.Levin@brattle.com) <Simon.Levin@brattle.com>  
**Subject:** FW: SPP\_Central Hourly Prices - 30 Years.xlsx

Akarsh & Simon

I uploaded Connie's file (SPP\_Central Hourly Prices - 30 Years\_ALL.xlsx) that contains all the Fundamentals Scenarios

**From:** Connie S Trecuzzi <ctrecuzzi@aep.com>  
**Sent:** Tuesday, May 14, 2019 8:50 AM  
**To:** Jon R Maclean <jrmaclean@aep.com>  
**Subject:** SPP\_Central Hourly Prices - 30 Years.xlsx

Jon,

The attached file contains hourly prices for all of the cases. It includes a tab for each case and a tab with all of the cases. I also modified the base case, which previously had the month and day columns in the wrong order. Please let me know if you have questions.

Connie



**CONNIE S TRECZZI | ECONOMIC FORECAST ANALYST STAFF**  
CTRECAZZI@AEP.COM | A.8.200.2816  
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215



**From:** Jay F Godfrey <jfgodfrey@aep.com>  
**Sent:** Thursday, May 30, 2019 1:38 PM EDT  
**To:** Sheilendranath, Akarsh <Akarsh.Sheilendranath@brattle.com>  
**CC:** Brian D Weber <bdweber@aep.com>; Kamran Ali <kali@aep.com>  
**Subject:** RE: 2018 PSO/SWEPCO Wind Farm Congestion Rates

The later ....It was calculated at the POI / wind project locations

**From:** Sheilendranath, Akarsh  
**Sent:** Thursday, May 30, 2019 1:10 PM  
**To:** Jay F Godfrey  
**Cc:** Brian D Weber ; Kamran Ali  
**Subject:** [EXTERNAL] 2018 PSO/SWEPCO Wind Farm Congestion Rates

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Jay,

We have a question about the 2018 congestion rate for PSO and SWEPCO wind farms you showed us when we met in Columbus a few weeks ago. Are those 2018 congestion rates the actual congestion costs incurred when delivering from the wind location to AEP load zone or are they the congestion components of the LMP at the wind locations? I think it is the former, but can you please confirm?

Thanks,  
Akarsh

**AKARSH SHEILENDRANATH**  
Senior Associate  
The Brattle Group  
One Beacon Street, Suite 2600 | Boston, MA 02108

**Direct** +1 617.234 5798  
**Main** +1 617 864 7900  
**Fax** +1 617.864 1576

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\*\*\*\*\*

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**From:** William S Robinson <wsrobinson@aep.com>  
**Sent:** Sunday, June 30, 2019 8:28 AM EDT  
**To:** Jim Martin <jfmartin@aep.com>; Jon R Maclean <jrmaclean@aep.com>; John F Torpey <jftorpey@aep.com>  
**Subject:** RE: CSP Plexos Interface Files, Case: LowNoC\_P50\_wRFP\_062819 Available for Download

Jim,  
Regarding the SWEPCo the timings of CC, added a CT, and IRP Solar & Wind changed

Thank you,



**WILLIAM (SCOTT) ROBINSON | RESOURCE PLANNING ANALYST STAFF**  
[WSROBINSON@AEP.COM](mailto:WSROBINSON@AEP.COM) | D 614.716.2327 | A 8.200.2327  
1 RIVERSIDE PLAZA, 28TH FL, COLUMBUS, OH 43215

**From:** Jim Martin  
**Sent:** Saturday, June 29, 2019 3:51 PM  
**To:** William S Robinson; Jon R Maclean; John F Torpey  
**Subject:** RE: CSP Plexos Interface Files, Case: LowNoC\_P50\_wRFP\_062819 Available for Download

Was there anything about the GWH output of the wind assets themselves or market prices or Off system revenues impacted by whatever you fixed in this case? It matters for breakeven gas case



**JIM MARTIN | REGULATORY CASE MGR**  
[JFMARTIN@AEP.COM](mailto:JFMARTIN@AEP.COM) | D 614.716.6014 | A 8.200.6014  
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

**From:** William S Robinson  
**Sent:** Friday, June 28, 2019 10:03 PM  
**To:** Jim Martin  
**Cc:** RP-East  
**Subject:** CSP Plexos Interface Files, Case: LowNoC\_P50\_wRFP\_062819 Available for Download

\\oh0co013\intrespl\external\jimMartin\_WEST\_CSP\LowNoC\_P50\_wRFP\_062819

**From:** Jay F Godfrey <jfgodfrey@aep.com>  
**Sent:** Saturday, June 01, 2019 11:52 AM EDT  
**To:** Jim Martin <jfmartin@aep.com>  
**Subject:** Fwd: [EXTERNAL] Combined P-values

**From:** Rich Simon <rich@simonwind.com>  
**Date:** June 1, 2019 at 11:50:13 AM EDT  
**To:** Jay F Godfrey <jfgodfrey@aep.com>  
**Subject:** Re: [EXTERNAL] Combined P-values

Capacity factors don't really change with leap years, that would be extremely minor. And no, for energy I assume no extra leap day.

Sent from my iPhone

On Jun 1, 2019, at 3:38 AM, Jay F Godfrey <jfgodfrey@aep.com> wrote:

Sent from my iPhone

Begin forwarded message:

**From:** Jim Martin <jfmartin@aep.com>  
**Date:** June 1, 2019 at 9:31:32 AM EDT  
**To:** Jay F Godfrey <jfgodfrey@aep.com>  
**Cc:** Jon R Maclean <jrmaclean@aep.com>, John F Torpey <jftorpey@aep.com>, William S Robinson <wsrobinson@aep.com>, Paul N Demmy <pndemmy@aep.com>  
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Do you happen to know if Simon made an adjustment in his capacity factors and GWh to average in leap years every 4<sup>th</sup> year? The PLEXOS guys and I will add 24 hours of output and PTC every leap year if not.

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1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

**From:** Jim Martin  
**Sent:** Friday, May 31, 2019 10:46 PM  
**To:** Jay F Godfrey <jfgodfrey@aep.com>; Antonio P Smyth <apsmyth@aep.com>; John F Torpey <jftorpey@aep.com>; Jon R Maclean <jrmaclean@aep.com>; Matthew D Vermilion <mdvermilion@aep.com>; Adam J Hickman <ajhickman@aep.com>; Paul N Demmy <pndemmy@aep.com>; William S Robinson <wsrobinson@aep.com>; Brian D Weber <bdweber@aep.com>  
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I did that math on the second tab in this revised one.

Jon/Scott – per the note below the GWh at the facility level for the PLEXOS P95 cases are on the second tab of this file in the 5 year column, prior to you guys adding the leap year adders. To the extent this is going out in the filing in someone's testimony workpapers I suggest we use this version. P50 is the same in all columns.

This is what I will be computing PTC volume from for P50 and P95 cases.

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**To:** Jay F Godfrey <jfgodfrey@aep.com>; Antonio P Smyth <apsmyth@aep.com>; John F Torpey <jftorpey@aep.com>; Jon R Maclean <jrmaclean@aep.com>; Matthew D Vermilion <mdvermilion@aep.com>; Adam J Hickman <ajhickman@aep.com>; Paul N Demmy <pndemmy@aep.com>; William S Robinson <wsrobinson@aep.com>; Brian D Weber <bdweber@aep.com>  
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**Subject:** Fwd: [EXTERNAL] Combined P-values  
Simon 5 yr p95

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**From:** Jay F Godfrey <jfgodfrey@aep.com>  
**Date:** May 31, 2019 at 7:28:26 PM EDT  
**To:** Brian D Weber <bdweber@aep.com>  
**Subject:** Fwd: [EXTERNAL] Combined P-values

Sent from my iPhone

Begin forwarded message:

**From:** Rich Simon <rich@simonwind.com>  
**Date:** May 31, 2019 at 7:06:43 PM EDT  
**To:** Jay F Godfrey <jfgodfrey@aep.com>, Joseph A Karrasch <jakarrasch@aep.com>, Zachary M Yetzer <zymetzer@aep.com>  
**Subject:** [EXTERNAL] Combined P-values

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Jay, this is what you requested earlier today.  
Let me know if any questions.  
Rich

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