COST ALLOCATION WORKING GROUP
Byway Facility Cost Allocation Review Process White Paper
I. Summary

In March 2018, the SPP Board of Directors (Board) and Members Committee created the Holistic Integrated Tariff Team (HITT) to comprehensively review SPP’s cost allocation model, transmission planning processes, Integrated Marketplace services, and disconnects or synergies between planning and real-time reliability and economic operations. The Board appointed 15 stakeholders to the HITT, including two Board members, two state regulators from the Regional State Committee (RSC), and members representing diverse sectors. After 17 meetings and vigorous debate and discussion, the HITT agreed on 21 high-level recommendations in its final report for the Board’s consideration. In July 2019, the SPP Board approved the package of recommendations.

Following the Board’s approval of the HITT’s recommendations, the recommendations were assigned to SPP’s committees and working groups for implementation. The Cost Allocation Working Group (CAWG) and the RSC are assigned as the lead working groups on three recommendations and as secondary working groups on four of the 21 recommendations.

This White Paper focuses on HITT Cost Allocation Recommendation 2, which is to evaluate a byway facility cost allocation review process through which costs for specific projects between 100 kV and 300 kV (byway facilities) can be fully allocated prospectively on a region-wide basis.

The CAWG recommends:

(1) the establishment of a narrow byway facility cost allocation review
process through which future revenue requirements for specific qualifying facilities, with voltage levels between 100kV and 300kV, can be fully allocated on a region-wide basis;

(2) projects eligible for the narrow byway facility cost allocation review process should include new and existing Schedule 11 facilities\(^1\); and

(3) the review process criteria will be based on the utilization or anticipated utilization of the transmission facility, which is further detailed in Section IV of this White Paper.

\(^1\) The portions of cost for facilities that were or will be directly assigned shall not be eligible for this review process.
II. Background

A. Cost Allocation History

The SPP Bylaws grant the RSC with primary authority over four specific areas, one of which is cost allocation with respect to the application of license plate and postage stamp rates for regional access. The CAWG and the RSC have a long history of analyzing and implementing cost allocation methodologies for transmission facilities within the SPP region and the RSC has exercised this authority multiple times since 2004.

In terms of financial impact, the most significant change to SPP’s cost allocation to date has been the development of the Highway/Byway (HWBW) cost allocation methodology. Similar to the HITT process, the SPP Board established the Synergistic Planning Project Team (SPPT) in 2009 to recommend improvements to SPP’s regional transmission planning process and cost allocation methodology. Among the SPPT recommendations was the establishment of a HWBW cost allocation methodology. On October 26, 2009, the RSC approved the CAWG’s recommendation for the new Base Plan Funding methodology – HWBW – with one Member voting no.3

On June 17, 2010, the FERC approved the HWBW cost allocation methodology for all Base Plan Upgrades for which SPP issues a Notification to Construct (NTC), with an effective date on or after June 19, 2010. Pursuant to the HWBW cost allocation methodology, SPP allocates the costs for reliability and economic projects identified in SPP’s transmission planning processes among individual SPP pricing zones and to the entire SPP region based on the voltage level and location of the specific facility, as provided in Table A below.4

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2 Southwest Power Pool, Inc. Bylaws, First Revised Volume No. 4 Section 7.2.
3 The one “no” vote was the Nebraska RSC member.
4 The HWBW methodology does not apply to upgrades identified in SPP’s generator interconnection process or the
Table A: Highway Byway Cost Allocation Methodology

<table>
<thead>
<tr>
<th>Voltage</th>
<th>SPP Region Pays Based on Member Utilities' Load Ratio Share</th>
<th>Local Zone Where the Transmission Facility is Located Pays</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 kV and above</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>above 100 kV and below</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>300 kV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 kV and below</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

In developing the HWBW proposal, SPP conducted a number of studies to evaluate the proposed voltage-based cost allocation methodology. SPP undertook a Transmission Distribution Analysis to determine which facilities were used primarily for regional flows and, therefore, fulfilled more of a highway function on an integrated transmission network and which facilities are used more in the local zone or “byway” level. SPP conducted a second study, the Injection Withdrawal Transmission Utilization Analysis, to estimate the portion of transmission line flow that is the result of local utilities serving local load with local generation versus the portion of the transmission line flow that is the result of regional, non-local utilization.

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6 The Transmission Distribution Analysis assesses the responsiveness of different facilities to power that transfers among SPP zones as indicated by the impact of the illustrative transactions on the facilities included in the analysis. The Transmission Distribution Analysis indicated that extra-high voltage (EHV) facilities (300 kV or above) were far more responsive to inter-zonal flows (98 percent for the Balanced Portfolio EHV facilities and 77 percent for the existing SPP EHV facilities) than were lower voltage facilities (38 percent for the 115 – 138 kV facilities and 14 percent for the existing 69 kV facilities). SPP found similar results when analyzing a series of through transactions. SPP concluded that the Transmission Distribution Analysis demonstrated that higher voltage facilities contributed more to transmission transactions that cross one or more zonal boundaries, and therefore have a greater role in supporting regional use of the integrated transmission system than lower voltage facilities.
7 The Injection Withdrawal Transmission Utilization Analysis simulated market-based economic dispatch of generating units using the SPP system topology as committed through 2019 for the summer, spring and winter peak hours of 2019, and assessed the degree to which EHV transmission facilities facilitate regional flows during the three dispatch hours. The Injection Withdrawal Transmission Utilization Analysis demonstrated that the total average percentage of regional usage of the EHV facilities studied was 78 percent. Thus, SPP concluded that these studies demonstrated that EHV facilities support regional service primarily and lower voltage facilities support local transmission services.
The HWBW cost allocation methodology proposal included an exception for Base Plan Upgrades that operate at less than 300 kV and are associated with a wind generation Designated Resource that serves load in a zone where the necessary Base Plan Upgrade(s) is not located. This provision was created to help ensure that the costs for Byway line upgrades in areas anticipated to have substantial wind development but that were being designated as Network resources by load in other zones would not be assigned to the zones where the upgrades were constructed.

Specifically, 67 percent of the costs associated with those Base Plan Upgrades are allocated to the entire SPP region and the remaining 33 percent of the costs are directly assigned to the transmission customer requesting service from that Designated Resource. However, the HWBW cost allocation methodology continues to apply to: (1) Base Plan Upgrades that are located within the same zone as the transmission customer’s Point of Delivery; and (2) Base Plan Upgrades that operate at 300kV and above. The exception described above, sometimes referred to as the “wind allocation rule” is shown in Table B below:

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Upgrade in Same Zone as Transmission Customer's POD</th>
<th>Upgrade in a Zone other than Transmission Customer's POD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regional</td>
<td>Zonal</td>
</tr>
<tr>
<td>300 kV and above</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>above 100 kV and below 300 kV</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>100 kV and below</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

* The remaining one-third for less than 300 kV for an upgrade in a Zone other than the Transmission Customer's POD is allocated to the Transmission Customer.

B. Recent Events

In recent years, there has been a significant increase in renewable generation,
predominantly wind, throughout the SPP region. While most zones have seen some wind generation additions, a few zones have been disproportionately affected, primarily because of the high quality of wind resources in those zones. Unlike traditional generation sources, renewable generation is not necessarily located close to the load it serves, but rather, is remotely located where the renewable energy resource is abundant. This has resulted in some generation-rich zones having nameplate generation capacity in excess of 500% of the peak demand for load inside the zone. There is evidence that this can contribute to increased loading on both highway and byway facilities inside these zones.

In addition, the Integrated Marketplace, launched in 2014, coupled with abundant wind resources, attracted a significant amount of wind generation investment in SPP. Most of these generation resources that have been interconnected using Energy Resource Interconnection Service (ERIS). The upgrades needed to interconnect are based upon the SPP criteria for interconnection. A significant number of these resources have not been designated as network resources under network transmission service nor in the alternative affiliated Point-to-Point Transmission Service. The modeling of needed upgrades for transmission service in Aggregate Transmission Service studies is different from the modeling done for generation interconnection. Additionally, the models used in the Integrated Transmission Planning studies are different from both GI and Transmission Service studies. The modeling differences can result in identified transmission

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9 The rules for interconnection of ERIS and Network Resource Interconnection Service (NRIS) are currently under review in the NED Task Force. The ERIS study is designed to determine the upgrades needed to reliably dispatch these resources on an as available basis. The NRIS studies are intended to ensure that a resource is deliverable within a region or subregion on a reliable basis. The upgrades needed in an NRIS study would generally be more robust than that in ERIS.

10 The Network Transmission Service Study is a reliability-based model that dispatches resources that have affiliated transmission service. The study is designed to determine whether upgrades are needed to ensure the firm delivery of power.
projects from each model that are different. Historically, the ITP process generated much larger amounts of new transmission than the other two processes especially in zones with high renewable resources penetration.

Zones with an abundance of generation in comparison to that which is needed to serve load can have a significant risk of this misalignment of costs and benefits. If the generation is dispatched because of its low cost in comparison to other resource types in the SPP region, this can result in much of the energy being used in other zones. Hourly load and energy production data presented to the CAWG demonstrated the extent to which energy produced in some zones are being used in other zones. In some generation-rich zones, byway facilities have been identified as needed through the ITP even though native load within these zones has remained stable or decreased.\footnote{See September 6, 2018 presentation by Sunflower and October 2, 2018 presentation by SPP Staff, which are included as Appendices B and C, respectively, in the Cost Allocation Working Group’s Cost Allocation in Wind-Rich Areas Report, \url{https://www.spp.org/documents/61424/cost%20allocation%20in%20wind%20rich%20areas%20report.pdf}} In the ITP, 67% of the byway facility cost is allocated to the local zone. This cost allocation percentage is intended to be roughly commensurate to the benefit of these upgrades to that zone. However, the CAWG believes that in some zones with high levels of generation as compared to load, upgrades identified in the ITP are being used regularly on a more regional basis. In such cases, allocating 67 percent of the cost of an upgrade may not be roughly commensurate with the benefits received and thus it may be more appropriate that such lines be regionally cost allocated.

C. CAWG’s Wind-Rich Areas Report and Review

From November 2017 through January 2018, the CAWG and RSC were presented with information related to load flows in wind-rich areas. At the January 2018 RSC meeting, the RSC directed the CAWG to prepare an analysis of cost allocation in wind-rich areas to
determine if changes to HWBW cost allocation are needed.

In March 2018, the SPP Board created the HITT to conduct a comprehensive yearlong review of SPP’s processes and recommend high-level solutions to the region’s challenges, including cost allocation impacts on transmission pricing zones with significant wind resources. The CAWG and HITT evaluated these issues concurrently.

The CAWG reviewed several analyses and presentations prepared by SPP staff, stakeholders and CAWG members between May 2018 and January 2019.12 In February 2019, the CAWG adopted the following motion:

The Cost Allocation Working Group has determined that the current cost allocation methodology and/or rate recovery mechanism in zones with a high proportion of generation relative to zonal load is not reflective of cost causation principles.13

In July 2019, the CAWG approved its Wind Rich Areas Cost Allocation Report that included an overview of the issues, a summary of the work performed, analyses of the various solutions and recommendations to the RSC. In coordination with recommendations by the HITT, the CAWG approved three recommendations to the RSC. These recommendations were as follows:

1. Decouple Schedule 9 and Schedule 11 transmission pricing zones, allowing for potentially larger Schedule 11 pricing zones (HITT recommendation C1);
2. Evaluate byway facility cost allocation review process (HITT recommendation C2); and

The RSC approved the Cost Allocation in Wind-Rich Areas Report, including the

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13 The motion was approved during the February 12, 2019 CAWG meeting.
recommendations, on August 5, 2019. The Board approved the HITT report on July 30, 2019.

D. HITT C2 Recommendation

The second recommendation in the Cost Allocation in Wind-Rich Areas Report is also referred to as HITT Recommendation C2. The HITT C2 recommendation states:

SPP should evaluate creating a narrow process through which costs for specific projects between 100 kV and 300 kV can be fully allocated prospectively on a region-wide basis. The process should take into consideration regional benefits resulting from the facilities, including energy exports from the transmission pricing zone where each project is located.

Under this recommendation, costs for a byway-funded transmission upgrade could be funded using a region-wide allocation after meeting certain criteria under a narrow review process. Projects eligible for this narrow process must be base plan upgrade costs eligible for cost allocation under the SPP tariff. This could include new or existing Schedule 11 facilities and costs that are directly assigned shall not be eligible for this review.

This process could be administered through a request for waiver of the cost allocation that otherwise would be applicable. Information concerning the specific upgrade(s) must be submitted to SPP for such costs to be considered for full region-wide allocation. The process for review and approval of the requests could conceptually follow the current processes for addressing waiver requests related to upgrades for transmission service and for transformers, as described in Section III of Attachment J.

The HITT Report assigns the CAWG and RSC as the lead working groups for this recommendation. The Economic Studies Working Group (ESWG) and the Regional Tariff Working Group (RTWG) are listed as secondary working groups. The stated goal is for the CAWG to complete a recommendation to the RSC by the July 2020 stakeholder meetings.

E. CAWG Review of the C2 Recommendation

Although the CAWG discussed the byway cost allocation waiver process prior to the Board’s approval of the HITT Report in July 2019, the more thorough evaluation of this

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14 Commissioner Dennis Grennan (NPRB) moved to approve the Report and Commissioner Shari Albrecht (KCC) seconded. The motion was approved with one abstention (OCC) and one no vote (PUCT).
particular recommendation at CAWG began in August 2019.

During the August 2019 CAWG meeting, the CAWG reviewed the transformer waiver language (Attachment J, Section III in the SPP Open Access Transmission Tariff), discussed utilizing this process as a model for the byway cost allocation waiver process, and brainstormed potential modifications that could be made to the transformer waiver process for potential byway cost allocation waiver process purposes.\(^{15}\) In addition, the CAWG determined it would solicit presentations from any stakeholder that desires to present educational materials to the CAWG on this or any other HITT recommendation assigned to the CAWG during the September 2019 through January 2020 CAWG meetings.

During the September 2019 CAWG meeting, Sunflower Electric Power Cooperative (Sunflower) presented to the CAWG a proposal that it developed in conjunction with Midwest Energy, Inc. regarding a potential process to apply for a waiver of cost allocation for specific byway projects.\(^ {16}\) Following the presentation, the CAWG discussed the various components of the proposal and determined that it would solicit feedback from interested entities regarding the August and September presentations and related discussion questions. CAWG sent its request for comments to the Market and Operations Policy Committee (MOPC) and CAWG Exploders (and the RSC) on September 17, 2019.\(^ {17}\)

The CAWG received comments from six entities: Arkansas Electric Cooperatives, Inc. (AECC), American Electric Power (AEP), Lincoln Electric System (LES), Nebraska Public Power District (NPPD), Southwestern Public Service (SPS) and ACES/Sunflower (Sunflower).

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\(^{15}\) The CAWG Initial Brainstorming of HITT Recommendation C2: Evaluate Byway Facility Cost Allocation Review Process, August 2019 presentation may be found in Appendix A.

\(^{16}\) The Sunflower Presentation on Possible Criteria/Process for HITT Recommendation C2, September 2019, may be found in Appendix B.

\(^{17}\) CAWG’s September 17, 2019, Request for Comments may be found in Appendix C.
The CAWG prepared a summary matrix of the filed comments; the matrix and individual comments were reviewed and discussed during the October 2019 CAWG meeting.

During the November 2019 CAWG meeting, the CAWG received a presentation from AECC that addressed the C1 and C2 HITT recommendations. The CAWG also reviewed the summary matrix, and voted on two motions to frame its work on the issues going forward. The two motions passed, each with a 10-0 vote and one abstention (Louisiana Public Service Commission). The motions are as follows:

(1) The CAWG recommends the establishment of a narrow byway facility cost allocation review process through which future revenue requirements for specific qualifying facilities, with voltage levels between 100kV and 300kV, can be fully allocated on a region-wide basis.

(2) The CAWG recommends that projects eligible for the narrow byway facility cost allocation review process should include new and existing Schedule 11 facilities. The portions of costs for facilities that were or will be directly assigned shall not be eligible for this review process.

During the December 2019 CAWG meeting, the CAWG received a presentation from Oklahoma Gas & Electric (OG&E) regarding its views of possible options for establishing a byway cost allocation waiver process. The CAWG discussed additional comments and proposals received since the last meeting. The CAWG continued its discussion during its January 2020 meeting, including the OG&E presentation.

III. Analysis

A. Transformer Waiver Criteria, Attachment J, Section III

The HITT Report suggests that the byway facility cost allocation waiver process could conceptually be modeled after the waiver process currently utilized by entities seeking to utilize

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18 The AECC Presentation to CAWG HITT C1 and C2, November 2019, may be found in Appendix D.
19 The Recommendations for Byway Facilities Waiver Process December 2019 presentation by OG&E may be found in Appendix E.
20 The December 2019 CAWG C2 discussion document may be found in Appendix F.
21 The January 2020 CAWG C2 discussion document may be found in Appendix G.
the transformer’s higher voltage instead of the lower voltage level for purposes of cost allocation. Similar to the waiver process proposed in this White Paper, the transformer waiver process provides an avenue for entities to request that dual-voltage facilities (i.e., transformers) be cost allocated based on the usage of the transformer.

Pursuant to the HWBW cost allocation methodology, regional and zonal costs are based upon the nominal operating voltage of the Base Plan Upgrade and transformers are cost allocated using the lower voltage level. SPP, however, recognized that it needed to provide flexibility because sometimes a waiver from the determined cost allocation may be necessary based on the anticipated utilization of the transformer. In its request to FERC, SPP recognized that the transformer waiver proposal is consistent with the FERC’s determination that “SPP must have some degree of flexibility in making cost allocation determinations and that therefore, the existence of a waiver process is appropriate.”

FERC conditionally approved SPP’s request for a transformer waiver process, but expressed concern that SPP’s filing did not provide factors that SPP will consider in evaluating waivers for dual voltage facilities. Therefore, FERC required SPP to submit a compliance filing incorporating the factors that would be used to evaluate a request for waiver for a dual voltage facility for cost allocation purposes.

In compliance with FERC’s directive, on August 16, 2010, SPP revised Section III of Attachment J to include the following language:

Any waiver request submitted shall be evaluated based upon the following general factors, including but not limited to: (i) whether the power flows through the transformer predominantly are from the lower voltage to the higher voltage; (ii) whether the transformer is not necessary for the support of, or does not substantially benefit, the lower voltage system in the host zone to which it is connected.

SPP stated in its compliance filing that the two factors listed above will be used in determining whether the dual voltage transformer will operate predominantly as a higher voltage facility or a lower voltage facility. If a transformer is determined to function mainly as a higher voltage facility, a waiver is appropriate and the transformer shall be cost-allocated in accordance with the tariff provisions for the high-side voltage.

Various parties sought rehearing and argued that the FERC’s finding in which it required SPP to revise its tariff to provide criteria for determining whether a waiver will be granted for cost allocation for dual voltage equipment while not requiring the methods, assumptions and data to be used in its evaluation is contrary to the “rule of reason”. In its July 21, 2011 Order Denying Rehearing and Granting Clarification, FERC disagreed with protesters and upheld the waiver criteria filed by SPP.

As approved, the transformer waiver language in Section III of Attachment J reads as follows:

A waiver may be requested to use a transformer’s higher voltage level instead of the lower voltage level for the purposes of cost allocation under this Attachment J based on the anticipated utilization of the transformer. Such request must be made in writing with supporting analysis and submitted to the Transmission Provider not later than one hundred eighty (180) days following the inclusion of the transformer in an approved SPP Transmission Expansion Plan. Any waiver request submitted shall be evaluated based upon the following general factors, including but not limited to: (i) whether the power flows through the transformer predominantly are from the lower voltage to the higher voltage; (ii) whether the transformer is not necessary for the support of, or does not substantially benefit, the lower voltage system in the host zone to which it is connected. The Transmission Provider shall make a recommendation to accept or deny the waiver, on a non-discriminatory basis, to the Markets and Operations Policy Committee. The Markets and Operations Policy Committee will consider the waiver request and the Transmission Provider’s recommendation, and will provide its own recommendation (along with the Transmission Provider’s recommendation) regarding such waiver to the SPP Board of Directors. Barring unusual circumstances, the recommendation to approve or reject such waiver request will be submitted to the SPP Board of Directors within one hundred twenty (120) days
following receipt of the waiver request.

As discussed, the tariff does not prescribe what specific data or documentation needs to be included in a transformer waiver request but, rather, it lists the evaluation criteria that will be utilized to review the waiver request. The language provides additional flexibility by stating that the evaluation will include the listed general factors but is not limited to the listed factors.

To date, SPP has received only four transformer waiver requests. Therefore, it appears that the criteria established in this process has not resulted in an overwhelming number of waiver requests.

B. CAWG’s Review of the Transformer Waiver Criteria

During the August 2019 CAWG meeting, the CAWG reviewed the transformer waiver language, discussed utilizing this process as a model for the byway cost allocation waiver process, and brainstormed potential modifications that could be made to the transformer waiver process for potential byway cost allocation waiver process purposes. The CAWG solicited comments from stakeholders regarding utilizing a process similar to the transformer waiver language.

None of the commenters opposed utilizing a revised version of the transformer waiver process. One commenter opined that the entity requesting the waiver should determine what information should be provided to substantiate its waiver request, while one commenter suggested specific criteria that could be utilized.

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24 During its October 25, 2011 meeting, the SPP Board approved SPP Staff’s recommendations to use the higher voltage level of: (1) Mid-Kansas’ Thistle (Medicine Lodge) 345/138kV transformer; and (2) SPS’s Hitchland 345/230kV transformer for cost allocation purposes. During its October 30, 2012 meeting, the SPP Board approved the Markets and Operations Policy Committee (MOPC) recommendation that the Board approve NPPD’s requested waiver for Base Plan Funding of the Neligh 345/115 kV transformer. During its July 28, 2015 meeting, the SPP Board approved the MOPC recommendation to deny KCPL’s South Waverly 161/69 kV transformer waiver request.
IV. Recommendation

The CAWG recommends that a waiver process be adopted for certain transmission facilities that meet specified qualifications. In the spirit of the transformer waiver process as outlined in Attachment J, Section III, the Byway Facility Cost Allocation Waiver process would be as follows:

A) INITIAL REQUEST

A waiver of the cost allocation methodology found in Section III of Attachment J of the SPP tariff may be requested based on the utilization or anticipated utilization of the transmission facility. The burden of demonstrating that a facility should receive a waiver rests upon the entity seeking the waiver.

The entity seeking the waiver (Entity) must initiate a request for a waiver (Request) to the Transmission Provider (SPP). SPP will not initiate requests.

For facilities with an NTC issued between June 19, 2010 and the effective date of this waiver process, a Request shall be made in writing to SPP within one hundred eighty (180) days following FERC approval of the waiver process. For facilities with an NTC issued after the effective date of this waiver process, a Request shall be made in writing to SPP within one hundred eighty (180) days of the issuance of the NTC. Such facilities’ NTC must have been issued through the ITP, High Priority, Attachment AQ or Aggregate Study processes. The portions of costs for facilities that were or will be directly assigned shall not be eligible for this review process.

SPP Staff shall provide notice to the CAWG and RSC upon receipt of a Request.

Required information that must be provided in the Request:

1. Entity requesting the waiver
2. Copy of the Notice to Construct for the Base Plan Upgrade (facility) for which the waiver is requested.
3. For an existing facility, the remaining gross plant, remaining net plant and current ATRR.
4. Map(s) showing location of facility
5. One-line diagram(s) of facility for which waiver is requested and nearby facilities.
6. For a reliability project, provide power flow information demonstrating the extent to which power flows on the facility result from output by resources not affiliated with utilities serving load in the zone.

While the original inquiry of the usage of Byway facilities by the CAWG specifically focused on “wind-rich” zones, the CAWG does not intend that this waiver process be tied to a specific type of generation, but rather the regional usage of Byway facilities due to higher levels of generation in comparison to load in certain zones. This is consistent with the neutral language in the July 23, 2019 HITT Report.
7. For an economic project, analysis estimating how much economic benefit from the facility is received by load in the zone where the facility is located.

8. If applicable, a list of resource(s) that the Entity assesses to be a primary cause of the transmission system need for the facility and the following associated information:
   a. Resource location on map;
   b. Resource location on one-line diagram;
   c. Whether load in host zone has rights to receive energy or capacity from the resource through contract or ownership;
   d. Type of interconnection service (ERIS/NRIS); and
   e. Whether resource is a source for long-term point-to-point or network transmission service with delivery to load in the host zone.

9. Any additional information the Entity seeking the waiver believes supports its request for a waiver.

B) STAFF REVIEW

Utilizing the information provided by the Entity, any waiver request submitted shall be evaluated by SPP staff based upon (but not limited to) the following factors:

   a. An analysis performed by SPP showing the percentage (%) power flows on the transmission facility from resources not affiliated with utilities serving load in the zone;
   b. Whether the transmission asset is not necessary for the support of, or does not substantially benefit, the host zone to which it is connected;
   c. A review of the arguments presented in support of the waiver by the Entity.

C) APPROVAL PROCESS

The following steps will be followed in order to approve any Request, based on the SPP Staff review of the factors, either individually or collectively.

1) Within 90 days of receipt of the requested waiver, SPP Staff shall make a recommendation regarding approval or denial of the Request to the CAWG, RSC and MOPC.

2) Within 120 days of receiving a recommendation from SPP Staff, the RSC and MOPC shall consider the Request and provide a recommendation, if any, for approval or denial of the waiver.

3) At the following SPP Board Meeting, SPP Staff shall present its analysis and the recommendations of the RSC and MOPC to the SPP Board for approval or denial of the Request. The SPP Board shall approve or deny the request. In no event may the decision by the SPP Board be tabled more than one meeting.

D) WAIVER APPROVAL

If the waiver is granted, the requested facility shall be cost allocated in the same manner as Base
Plan Upgrades that are greater than 300 kV (currently 100% regional funding of the portion of the Base Plan Upgrade cost eligible for cost allocation).

For existing facilities, the revised cost allocation methodology would become effective on the first calendar day of the month following approval of the waiver by the SPP Board. The revised cost allocation would apply prospectively, only to such facilities’ revenue requirements on or after the effective date.

E) WAIVER PROCESS REVIEW

The CAWG and RSC will review the Byway Facility Cost Allocation Review waiver process every five (5) years.
Appendix A

CAWG Initial Brainstorming of HITT Recommendation C2:

Evaluate Byway Facility Cost Allocation Review Process

August 2019 CAWG Meeting
CAWG Initial Brainstorming of HITT Recommendation C2: Evaluate Byway Facility Cost Allocation Review Process

Christine Aarnes
Kansas Corporation Commission

HITT Recommendation C2: Evaluate a byway facility cost allocation review process

- HITT Recommendation: SPP should evaluate creating a narrow process through which costs for specific projects between 100 kV and 300 kV can be fully allocated prospectively on a region-wide basis.

- CAWG/RSC Tasks:
  1. Establish narrow waiver criteria
  2. Establish the process for review and approval of waiver requests
HITT Report Additional Information

"Under this recommendation, costs for a byway-funded transmission upgrade could be funded using a region-wide allocation after meeting certain criteria under a narrow review process. Projects eligible for this narrow and limited process must be base plan upgrade costs eligible for cost allocation under the SPP tariff. This could include new or existing Schedule 11 facilities. Costs that are directly assigned shall not be eligible for this review.

This process could be administered through a request for waiver of the cost allocation that otherwise would be applicable. Information concerning the specific upgrade(s) must be submitted to SPP for such costs to be considered for full region-wide allocation. The process for review and approval of the requests could conceptually follow the current processes for addressing waiver requests related to upgrades for transmission service and for transformers, as described in Section III of Attachment J." (Emphasis added)

Attachment J, III Tariff Waiver Language

III. Base Plan Upgrades

A single Base Plan Upgrade is comprised of any upgrade or group of upgrades required to be made to a single transmission circuit, where a transmission circuit is comprised of all load carrying elements between circuit breakers or the comparable switching devices. A load carrying element within a Base Plan Upgrade that is connected at two different voltage levels (e.g. a 345kV/138kV transformer) shall, for the purposes of this Attachment J, be considered to have a nominal operating voltage of its lower voltage level (excluding any tertiary windings) and its costs shall be allocated in accordance with the rules governing the lower voltage level in this Attachment J.

A waiver may be requested to use a transformer’s higher voltage level instead of the lower voltage level for the purposes of cost allocation under this Attachment J based on the anticipated utilization of the transformer. Such request must be made in writing with supporting analysis and submitted to the Transmission Provider not later than one hundred eighty (180) days following the selection of the transformer in an approved SPP Transmission Expansion Plan. Any waiver request submitted shall be evaluated based upon the following general factors, including but not limited to:

1. Whether the power flows through the transformer predominantly are from the lower voltage to the higher voltage;
2. Whether the transformer is not necessary for the support of, or does not substantially benefit, the lower voltage system in the host zone to which it is connected. The Transmission Provider shall make a recommendation to accept or deny the waiver, on a non-discriminatory basis, to the Markets and Operations Policy Committee. The Markets and Operations Policy Committee will consider the waiver request and the Transmission Provider’s recommendation, and will provide its own recommendation (along with the Transmission Provider’s recommendation) regarding such waiver to the SPP Board of Directors. During unusual circumstances, the recommendation to approve or reject such waiver request will be submitted to the SPP Board of Directors within one hundred twenty (120) days following the receipt of the waiver request.
Attachment J, Section III Waiver Process

- Waiver for cost allocation purposes based on the anticipated utilization of the transformer.
- Request must be made in writing with supporting analysis not later than 180 days following the inclusion of the transformer in the approved SPP Transmission Expansion Plan.
- Any waiver request submitted shall be evaluated based on the following general factors, including but not limited to:
  1. whether the power flows through the transformer predominantly are from the lower voltage to the higher voltage;
  2. whether the transformer is not necessary for the support of, or does not substantially benefit, the lower voltage system in the host zone to which it is connected.
- SPP shall make a recommendation to the MOPC to accept or deny the waiver. The MOPC shall consider the waiver and provide a recommendation to the SPP Board of Directors within 120 days following the receipt of the waiver request.

Attachment J, Section III Takeaways?

- Should we use the transformer waiver evaluation criteria general factors as a starting point? Language could be modified as follows (or something similar):
  1. whether the power flows through the transformer on the transmission facility predominantly are from the lower voltage to the higher voltage export power from the zone.
  2. whether the transformer transmission project is not necessary for the support of, or does not substantially benefit, the lower voltage system in the host zone to which it is connected.
Attachment J, Section III Takeaways?

- How could a TO demonstrate that the power flows on the transmission facility predominantly export power from the zone?
- How could a TO demonstrate that the transmission facility is not necessary for the support of, or does not substantially benefit, the host zone?

Possible Solutions:
- Demonstrate that the TO exports more than x percent (40%, 50%, 60%) of the time based on hourly data. Based on something else?
- Wind Rich Area Report discusses defining “wind-rich zones” using an initial threshold of wind generation exceeding 100% of 12 CP load. Report also states that it may be prudent to designate zones with wind generation between 50% and 100% 12 CP as “potential wind-rich zones” for tracking purposes. Should we create and utilize a “wind-rich zone” initial threshold?
- Solar generation will continue to increase within SPP. Should any threshold adopted be broadened to include solar? Perhaps instead of establishing an initial threshold of wind generation exceeding 100% of 12 CP load, the threshold could be renewable generation exceeding 100% of 12 CP load?

Attachment J, Section III Takeaways?

- Attachment J, Section III requires a waiver request to be made in writing with supporting analysis not later than 180 days following the inclusion of the project in an approved SPP Transmission Expansion Plan.
  - Should the burden be placed on the Transmission Owner to make the request and provide supporting analysis? Could SPP staff identify a project during its planning processes?
  - Should the waiver request timeframe for future projects be subject to a 180-day timeframe? Different timeframe?
  - What should the waiver request timeframe be for existing projects?
Attachment J, Section III Takeaways?

- SPP shall make a recommendation to accept or deny the waiver to the MOPC. The MOPC shall consider the waiver and provide a recommendation to the SPP Board of Directors within 120 days following the receipt of the waiver request.
  - Instead of (or in addition to) the MOPC, should the waiver be reviewed by the RSC? (Yes, the RSC should review waiver requests.)
  - Timeframe for recommendation to be submitted to the Board of Directors?
  - Other processes and/or timeframes?

Next Steps

- Further develop and evaluate ideas discussed today
- Solicit input/proposals from stakeholders
Appendix B

Sunflower Presentation on Possible Criteria/Process for HITT Recommendation C2

September 2019 CAWG Meeting
HITT Recommendation – C2

1. "Under this recommendation, costs for a byway-funded transmission upgrade could be funded using a region-wide allocation after meeting certain criteria under a narrow review process. Projects eligible for this narrow and limited process must be base plan upgrade costs eligible for cost allocation under the SPP tariff. This could include new or existing Schedule 11 facilities.

2. Costs that are directly assigned shall not be eligible for this review.

3. This process could be administered through a request for waiver of the cost allocation that otherwise would be applicable. Information concerning the specific upgrade(s) must be submitted to SPP for such costs to be considered for full region-wide allocation. The process for review and approval of the requests could conceptually follow the current processes for addressing waiver requests related to upgrades for transmission service and for transformers, as described in Section III of Attachment J." (Emphasis added)
Building a Criteria Based on Attachment J Waiver Concept

- Waiver for cost allocation purposes based on the anticipated utilization of the transformer.
- Any waiver request submitted shall be evaluated based on the following general factors, including but not limited to:
  1. Whether the power flows through the transformer predominantly are from the lower voltage to the higher voltage;
  2. Whether the transformer is not necessary for the support of, or does not substantially benefit, the lower voltage system in the host zone to which it is connected.

Concepts Used In Creating The Criteria

- Narrow Process
- Anticipated Utilization for Future NTCs
- Predominate Flow
- Reliability vs Economic Projects
- Facility not necessary to support or substantially benefit low voltage system
Criteria For Evaluating NTCs

- **Pricing Zone Criteria (Wind/Renewable Rich)**
- **Byway NTC Date Criteria (V/B Effective Date)**
- **TO Waiver TO request a waiver & Provide list of Byway NTC with analysis documentation**

- NTC significantly impacted by renewable injections measured using Transmission Distribution Factors (TDF)
- NTC necessary based on N-1 reliability in the pricing zone measured using latent ITP models contingency analysis
- NTC utilization for local load or for export measured using real hourly flow data on the NTC

**NTC Qualifies**
For its cost fully allocated prospectively, on region-wide basis

---

**Criteria For Evaluating NTCs**

**Local Zone Qualification Criteria**
- **Renewable Rich**: Renewable (Wind) generation in local zone exceeding 100% of 12 CP
- **Export**: Local Zone Export >50% of hrs-yr.

**Each Byway NTC Qualification Criteria**
- **NTC issued after June 2010**
- **Tie-Line NTC**: Exporting >50% of hrs-yr. or Anticipated to export >50% of time
- **Embedded Line NTC**: Open facility test or Transmission Distribution Factor Analysis (TDF)
Local Pricing Zone Qualification Criteria

- **Renewable Rich**
  Wind & Solar generation in local zone exceeding 100% of 12 CP
  - Minimum of one-year

- **Pricing Zone Exports**
  Local zone exporting > 50% of the total annual hours
  - Minimum of one-year

Byway NTC Date Criteria

- Any NTC generated by SPP planning study and defined as reliability or economic project which was issued after is eligible for consideration under the new evaluation review process
  - After June 19, 2010
Tie-line and Transformer NTCs Criteria

- Tie-line & TXF NTC (Predominant Flow)
- Provide at least 1 year of real-time data showing the % of hours the tie line exports are greater than the loss at least 50% of the times (1-yr)
- Transformer flow is supporting an export more than 50% of the times (1-yr)

Embedded Byway NTCs Criteria

- Embedded NTC
- Option I: ITP Reliability Analysis (N-1)
- OR
- Option II: TDF ITP Analysis
Option I: Embedded Byway NTCs “N-1 Analysis”

- **New Construction**
  - Use analysis to determine NTC is needed for Local Zone Reliability
- **Remove from the ITP model**
  - Reverse to original wire size and configuration before NTC issued
- **Conduct N-1 analysis to determine voltage or thermal violations @ current load levels in ITP models**
- **List of NTCs to be Evaluated (nominated by the TO)**
- **Rebuild Existing Facilities**

************
Option I: Embedded Byway NTCs “N-1 Analysis”

- **N-1 Analysis**
  - To determine which NTC/s are necessary to maintain local system reliability
- **Conduct N-1 Analysis**
  - **No Violation**
    - All NTCs are eligible for uplift
  - **Violations**
    - Test Which NTCs are needed to mitigate the violations
    - NTCs NOT needed to mitigate violations are eligible for uplift
    - NTCs needed to mitigate violations are NOT eligible for uplift consideration
### Option II: TDF Analysis

<table>
<thead>
<tr>
<th>PTDF (N-0) (Power Transfer Distribution Factor)</th>
<th>OTDF (N-1) (Outage Transfer Distribution Factor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTDF Impact of incrementing each “wind farm” on NTC &gt; 3% (Rate A)</td>
<td>OTDF Impact of incrementing each “wind farm” on NTC &gt; 3% (Rate B)</td>
</tr>
<tr>
<td>PTDF Impact of incrementing all “wind farms” on NTC &gt; 5% (Rate A)</td>
<td>OTDF Impact of incrementing all “wind farms” on NTC &gt; 5% (Rate B)</td>
</tr>
</tbody>
</table>

Transmission Distribution Factor (TDF). TDF is the measure of responsiveness or change in electrical loading on system facilities due to an increase in electric power output from wind farm/s and expressed in per cent (up to 100%) of the change in power flow on NTCs (monitored facility).

---

### Midwest Energy Proposed Criteria: Economic Byway Projects Criteria

- Should economic byway projects be regionally allocated if the local zone is classified as “Renewable Rich” & exports > 50% of times?
  - Economic projects are based on ITP scenario models which calculates B/C ratio based on all SPP footprint benefits not the local zone benefit
  - Local zone pay and lose any benefit they receive from congestion
Note On The Criteria Developed

- Our criteria presented here is intended to be used for Sunflower system which has large amount of wind connected to it and small pricing zone.
- Other wind rich entities can provide their own criteria which fits their local system behavior under heavy renewable penetration.
Appendix

- Background Information on this topic related to Sunflower pricing zone for discussion purposes if needed

<table>
<thead>
<tr>
<th>Wind Connected Data</th>
<th>Operating MW</th>
<th>Commercial Date</th>
<th>GI Number</th>
<th>Contracted</th>
<th>GI Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection Point</td>
<td>P&lt;sub&gt;MAX&lt;/sub&gt; (MW)</td>
<td>2017/18</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Central Plains 115kV</td>
<td>99.0</td>
<td>100.0</td>
<td>3/1/2009</td>
<td>GEN-2001-09M</td>
<td>Great Plains/Westar</td>
</tr>
<tr>
<td>Buckner 345kV</td>
<td>155.6</td>
<td>165.6</td>
<td>12/31/2012</td>
<td>GEN-2010-009</td>
<td>Kansas City Power &amp; Light</td>
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<tr>
<td>Buckner 345kV</td>
<td>209.1</td>
<td>203.0</td>
<td>6/3/2012</td>
<td>GEN-2007-040</td>
<td></td>
</tr>
<tr>
<td>Mingo 345kV</td>
<td>202.4</td>
<td>202.4</td>
<td>7/16/2015</td>
<td>GEN-2015-065</td>
<td>100MW Target; 160MW T-Mobile; balance merchant</td>
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<tr>
<td>Mingo 345kV</td>
<td>73.6</td>
<td>73.6</td>
<td>7/16/2019</td>
<td>GEN-2016-067</td>
<td></td>
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<tr>
<td>Mingo 115kV</td>
<td>197.8</td>
<td>197.8</td>
<td>4/20/2020</td>
<td>GEN-2015-064</td>
<td>10MW Brown-Forman; 130MW Alliance power R5</td>
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<tr>
<td>Crooked Creek 115kV</td>
<td>98.9</td>
<td>99.2</td>
<td>11/2/2011</td>
<td>GEN-2008-079</td>
<td>KCP&amp;L Greater Missouri Operations</td>
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<tr>
<td>Clay County Top 115kV</td>
<td>113.0</td>
<td>112.0</td>
<td>3/1/2001</td>
<td>GEN-2001-003</td>
<td>KCP&amp;L/Sunflower</td>
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<tr>
<td>Greensburg 115kV</td>
<td>12.5</td>
<td>12.5</td>
<td>2/1/2010</td>
<td>GEN-2010-079</td>
<td>Kansas Power Pool</td>
</tr>
<tr>
<td>Elm Creek 230kV</td>
<td>191.0</td>
<td>191.0</td>
<td>12/1/2008</td>
<td>GEN-2003-006A</td>
<td>Empire District</td>
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<tr>
<td>Elm Creek 230kV</td>
<td>99.0</td>
<td>99.0</td>
<td>12/1/2008</td>
<td></td>
<td>Westar</td>
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<tr>
<td>Booting Star Top 115kV</td>
<td>105.0</td>
<td>104.0</td>
<td>8/1/2012</td>
<td>GEN-2001-035A</td>
<td>Mid-Kansas</td>
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<tr>
<td>Spearville 230kV</td>
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<td>105.0</td>
<td>8/1/2006</td>
<td>GEN-2002-025A</td>
<td>Sprint</td>
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<td>Spearville 230kV</td>
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<td>12/1/2010</td>
<td>GEN-2004-004</td>
<td>KCP&amp;L</td>
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<td>Clark County 345kV</td>
<td>178.2</td>
<td>178.2</td>
<td>7/1/2017</td>
<td>GEN-2012-024</td>
<td>Alliant Risk Transfer</td>
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<tr>
<td>Clark County 345kV</td>
<td>102.0</td>
<td>100.0</td>
<td>12/1/2016</td>
<td>GEN-2011-008</td>
<td>Google</td>
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<tr>
<td>Clark County 345kV</td>
<td>98.0</td>
<td>98.0</td>
<td>12/21/2016</td>
<td>Kansas City Board of Public Utilities</td>
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<tr>
<td>Clark County 345kV</td>
<td>102.0</td>
<td>102.0</td>
<td>12/21/2016</td>
<td></td>
<td></td>
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<tr>
<td>Vernon 345kV</td>
<td>151.8</td>
<td>170.0</td>
<td>8/1/2012</td>
<td>GEN-2005-012</td>
<td>Westar</td>
</tr>
<tr>
<td>Vernon 345kV</td>
<td>16.1</td>
<td>16.1</td>
<td>8/1/2012</td>
<td></td>
<td></td>
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<tr>
<td>Vernon 345kV</td>
<td>82.8</td>
<td>82.8</td>
<td>8/1/2012</td>
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<tr>
<td>Vernon 345kV</td>
<td>149.7</td>
<td>149.7</td>
<td>3/3/2017</td>
<td>GEN-2008-124</td>
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<tr>
<td>Patridge Top 138kV</td>
<td>100.0</td>
<td>101.0</td>
<td>12/1/2008</td>
<td>GEN-2005-021</td>
<td>Westar</td>
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<tr>
<td>TOTAL</td>
<td>2,942</td>
<td>2,867</td>
<td></td>
<td></td>
<td>2018 SEP/C/MKEC Pricing Zone Combined Load 1,085 MW &amp; Wind Penetration 27.1% Based on Summer peaks load</td>
</tr>
</tbody>
</table>
ATRR For Potential Uplift Of Byway NTCs For Sunflower/MKEC

- No longer wind rich
- The longer we wait the less relive wind rich will have

Recovery of New Projects’ ATRR – More in the Early Years
<table>
<thead>
<tr>
<th>YEAR</th>
<th>Peak Area Load in MW</th>
<th>Wind In-service in MW</th>
<th>Renewable Penetration based on Peak</th>
<th>Renewable Penetration Based on CP</th>
<th>Number of Hours Generation &gt; 12 CP</th>
<th>Percent Export Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>1,106.8</td>
<td>1,732.6</td>
<td>156%</td>
<td>190%</td>
<td>5,053</td>
<td>57.5%</td>
</tr>
<tr>
<td>2017</td>
<td>1,100.9</td>
<td>2,790.8</td>
<td>253%</td>
<td>310%</td>
<td>5,954</td>
<td>68.0%</td>
</tr>
<tr>
<td>2018</td>
<td>1,085.3</td>
<td>2,790.8</td>
<td>257%</td>
<td>312%</td>
<td>6,024</td>
<td>68.8%</td>
</tr>
</tbody>
</table>

2018 Repeat: 1,085.3, 2,790.8, 257%, 312%, 5,148, 58.8%

- Must be > 100%
- Must be > 50%
- Using only wind generation considered
Appendix C

CAWG's September 17, 2019

Request for Comments
One of the HITT items assigned to CAWG is to evaluate Byway Facility Cost Allocation Review process. CAWG has begun the education and analysis phase of the recommendation. As part of the education and analysis, CAWG is seeking input from the membership on possible options for which this can be accomplished.

The zip file contains 4 documents:

- The first document is initial thoughts on a way for which to accomplish using Attachment J of the OATT as the model and a list of question seeking feedback.
- The second document is the presentation from the CAWG meeting with more in depth information.
- The third document is a request for comments concerning options presented by Sunflower/Midwest Energy
- The fourth documents is the presentation from the CAWG meeting.

Additional members will be presenting at the upcoming CAWG meetings, but the CAWG is requesting input to ensure an open and communicative process.

Please provide written feedback to Lee Elliott (lelliott@spp.org), Christine Aarnes (c.aarnes@kcc.ks.gov) and Cindy Ireland (cindy_ireland@psc.state.ar.us) by MONDAY, SEPTEMBER 30 to ensure the comments will be included in the posting for the CAWG meeting.

Thanks,

Lee Elliott
Regulatory Analyst III
Southwest Power Pool
office: 501.482.2469 • cell: 501.529.2611

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HITT RECOMMENDATION C-2
CAWG DISCUSSION ITEMS

The HITT Report suggests that the process for review and approval of a waiver, as described in HITT Recommendation C-2, could conceptually follow the current process for addressing waiver requests related to upgrades for transmission service and for transformers as described in Section III of Attachment J. During its August 2019 meeting, the CAWG discussed utilizing the waiver criteria contained in Attachment J, III as a starting point.

The relevant transformer waiver language in Attachment J, III states:

A waiver may be requested to use a transformer’s higher voltage level instead of the lower voltage level for the purposes of cost allocation under this Attachment J based on the anticipated utilization of the transformer. Such request must be made in writing with supporting analysis and submitted to the Transmission Provider not less than one hundred eighty (180) days following the inclusion of the transformer in an approved SPP Transmission Expansion Plan. Any waiver request submitted shall be evaluated based upon the following general factors, including but not limited to: (i) whether the power flows through the transformer predominantly are from the lower voltage to the higher voltage; (ii) whether the transformer is not necessary for the support of, or does not substantially benefit, the lower voltage system in the host zone to which it is connected.

The Transmission Provider shall make a recommendation to accept or deny the waiver, on a non-discriminatory basis, to the Markets and Operations Policy Committee. The Markets and Operations Policy Committee will consider the waiver request and the Transmission Provider’s recommendation regarding such waiver to the SPP Board of Directors. Barring unusual circumstances, the recommendation to approve or reject such waiver request will be submitted to the SPP Board of Directors within one hundred twenty (120) days following the receipt of the waiver request.

The CAWG seeks comment on the following:

1. Would it be appropriate to modify the evaluation language to read as follows: “Any waiver request submitted shall be evaluated based upon the following general factors, including but not limited to: (i) whether the power flows through the transformer on the transmission facility predominantly are from the lower voltage to the higher voltage support the export of power from the zone; and (ii) whether the transformer transmission project is not necessary for the support of, or does not substantially benefit, the lower voltage system in the host zone to which it is connected.” Other suggestions?

2. How could a Transmission Owner demonstrate that the power flows on the transmission facility predominantly support the export of power from the zone?

3. How could a Transmission Owner demonstrate that the transmission facility is not necessary for the support of, or does not substantially benefit, the host zone? How should “does not substantially benefit” be defined?
4. Should we look at all generation that exceeds XX% and the local zone exports greater than 50% of the hours in a year? Other suggestions?

5. The HITT C-2 recommendation anticipates including existing NTCs in the waiver process. Are the current timeframes in J, III appropriate for existing NTCs? Are the timeframes appropriate for future NTCs? If not, what should the timeframes be for waiver request filings and review?

6. The Attachment J, III waiver process directs the MOPC to consider the waiver request and provide a recommendation to the SPP Board of Directors. Should the RSC be included in the review process and, if so, to what extent?

7. Attachment J, Section III transformer waiver process requires the request to be made in writing with supporting analysis not later than 180 days following the inclusion of the transformer in the approved SPP Transmission Expansion Plan. Instead of the “approved SPP Transmission Expansion Plan”, should it be limited to the ITP? Other suggestions?
Background:

The HITT recommended pursuing zonal consolidation as its preferred cost allocation modification to address, among other things, wind-rich cost allocation. The HITT also recommended developing a limited cost allocation review process.

The SPP Board of Directors, in recommendation C-2 of the HITT Report, recommended that SPP evaluate creating a narrow process through which costs for specific projects between 100 kV and 300 kV can be fully allocated prospectively on a region-wide basis. According to the Report, the process should take into consideration regional benefits resulting from the facilities, including energy exports from the transmission pricing zone where each project is located.

Under this recommendation, costs for a byway-funded transmission upgrade could be funded using a region-wide allocation after meeting certain criteria under a narrow review process. Projects eligible for this narrow and limited process must be base plan upgrade costs eligible for cost allocation under the SPP tariff. This could include new or existing Schedule 11 facilities. Costs that are directly assigned shall not be eligible for this review.

The HITT report suggested that this process could be administered through a request for waiver of the cost allocation that otherwise would be applicable. Information concerning the specific upgrade(s) must be submitted to SPP for such costs to be considered for full region-wide allocation. The process for review and approval of the requests could conceptually follow the current processes for addressing waiver requests related to upgrades for transmission service and for transformers, as described in Section III of Attachment J.

The CAWG and RSC are tasked with leading this recommendation. The ESWG and RTWG are the assigned secondary working groups.

Sunflower and Midwest Energy’s Draft Proposal for the C-2 Byway Waiver Process

1. In order to be eligible to seek a waiver, the following criteria must be met:
   a. Renewable generation in local zone exceeds 100% of 12 CP; and
   b. Local zone exports >50% of the hours in a year.

2. If the criteria in item 1 have been met, then a TO in that Zone may seek a waiver to regionally allocate the remaining costs of an NTC for a byway facility that was issued on or after June 19, 2010 that the TO demonstrates was built to primarily support the exports of renewables in its Zone. The waiver request must include supporting documentation to satisfy the applicable test for the facility as follows:
3. **Tie-Line Test:**
   a. For Tie-Lines between Zones that have been in service for 1 year or longer
      Provide at least 1 year of real-time data to demonstrate that the tie-line exports
      more than 50% of the hours of the year.
   b. For Tie-Lines that have been in service for less than one year or for new Tie-Line
      NTCs that upgrade or will create a new tie-line between Zones: Provide analysis
      to demonstrate the anticipated flow will predominantly be out of the pricing zone
      (or “exporting” out of the Zone) using ITP economic models.

4. **Transformer Test:**
   a. For existing transformer NTCs: Provide at least 1 year of real-time data to
      demonstrate that the transformer exports\(^1\) more than 50% of the hours of the
      year.
   b. For new transformer NTCs: Provide analysis to demonstrate anticipated flow will
      predominantly export\(^2\) out of the pricing zone using ITP economic models.

5. **Embedded Byway Test:**
   Transmission owner must provide data to satisfy one of the following two
   options, Option 1 or Option 2:
   a. **Option 1:** Conduct ITP reliability analysis to determine whether the
      NTC is needed for local zonal reliability. There must be no resulting
      voltage or thermal violations at current load levels in ITP models
      under the following conditions:
      i. New construction or previously constructed Facility NTC –
         Take out the NTC and run N-1 analysis using latest ITP models;
         or
      ii. Rebuild Existing Facility NTC – Reverse the upgrade to its
         original size and configuration and run N-1 analysis using
         latest ITP models.
   b. **Option 2:** Transfer Distribution Factor (TDF) ITP Analysis: By
      incrementing the output of renewable generating resources and
      evaluating the PTDF (Power Transfer Distribution Factor) or the OTDF
      (Outage Transfer Distribution Factor) determine the impact on the
      flow on the NTC. If the impact of the TDF (PTDF or OTDF) exceeds a
      set threshold then the NTC is deemed necessary to continued exports
      and qualifies for a waiver. (Note that a Transfer Distribution Factor is
      the measure of responsiveness or change in electrical loading on

---

\(^1\) An export for transformers consists of the power flow from the low voltage side of the
transformer which is < 345 kV (byway system) to the high voltage side which is greater or
equal to 345 kV of the transformer (Highway system).

\(^2\) See footnote 1.
system facilities due to an increase in electric power output from specific identified generator(s) and expressed in per cent (up to 100%) of the change in power flow on NTCs (monitored facility.)

6. **Economic Project Test:** For an NTC that is byway funded and is classified as an economic project in a Zone that meets the criteria in Item 1, the cost of such project will be regionally funded if the project is not needed to support the reliability of the local byway system.
Appendix D

AECC Presentation to CAWG HITT C1 and C2

November 2019
AECC Presentation to CAWG
HITT C1 and C2
November 5, 2019

AECC Concerns

• Disagree that export flow is the best measure to evaluate “cost causation” and to “quantify benefits that accrue to zones where significant wind generation has been located.”
  • AECC believes some other considerations (next slide) are better than export flow for meeting the rate design goals
  • Load flow analyses used by SPP to justify the current highway/byway is unlike analyses CAWG has seen to-date to justify any changes

• To the extent it occurs, disagree that new wind and solar should be able to locate on any transmission line and expect the region to pay for the transmission required to deliver to loads
Other Considerations besides Export Flow to Use for HITT C1 and C2

- If transmission is built to serve local reliability needs, should it be funded by more zones or regionally (beyond the 1/3 already allocated regionally)?
- Are new renewables causing higher cost for a zone or simply using existing transmission capacity?
- Should zones/loads that are not benefiting from the current highway/byway cost allocation be asked to pay additional amounts?
  - Consider RCAR benefit/cost ratios
  - Consider Load LMPs
- Will C1 and C2 allow for local areas to benefit even more from local policies that support new wind and solar?
- Is it more economical to locate solar and wind near to loads at a slightly higher generation cost but a lower overall transmission cost?

High Priority Incremental Load Study Report

April 2, 2014
HPiLS Task Force
HPiLS Used for Illustrative Example

Executive Summary

Southwest Power Pool's High Priority Incremental Load Study (HPiLS) evaluated transmission needs resulting from significant incremental load growth expectations in certain parts of SPP. In April 2013, the SPP Board of Directors directed this study be performed in response to concerns about oil and gas shale play developments, and other future load additions in the region that had not been accounted for in previous planning efforts or in models being used in planning efforts underway at the time. By directing this out-of-cycle study, the Board recognized the need to cost-effectively address system needs in a timely manner that could not otherwise be accomplished by waiting upon completion of SPP’s next scheduled planning efforts that would incorporate these load growth assumptions.
4 Load and Generation Outlook

4.2 Load Forecast Descriptions

Two load forecasts were submitted for each of the study years 2015, 2018, and 2023 by the modeling contacts for each planning areas. The two load forecasts were based on two load probability assumptions; the 50/50 load forecast probability and the 90/10 load forecast probability. The 50/50 and 90/10 load forecasts represent the incremental load projections relative to the respective study base models. In addition to the incremental load forecasts, load forecast corrections for the base models were also submitted to account for updates in the base load projections.


5 Drivers

5.2.2 Total Load Change by Area

The total load changes from the base 2015, 2018, and 2023 study models to the HPILS 2015, 2018, and 2023 50/50 and 90/10 study models for each planning area are shown in Figure 5.2 through Figure 5.4.

2018 Summer Total Load Change by Area

Figure 5.3: 2018 Total Incremental Load Change by Area

7.1 System Needs
Reliability needs were identified to satisfy the NERC Reliability Standards, SPP Reliability Criteria and local planning criteria for system intact and N-1 contingency conditions. Individual projects were targeted to meet the various reliability needs outlined in the sections that follow. The needs identified for the SPP footprint fell into these six states: Kansas, Louisiana, Nebraska, New Mexico, Oklahoma, and Texas.
AECC’s Position on Cost Causation
The HPILS Example

• Zones submitted load growth expectations
• SPP issued NTCs to meet reliability needs related to the load growth
• New HPILS transmission investments were significant (number of projects and dollars) and funded using the highway/byway allocation
• Is the cost causation “reliability needs,” or the wind generation that subsequently located on some of these lines?
• AECC argues that the cost causation is meeting reliability needs based on load expectations (that, by the way, have yet to materialize) of the host zones
SPP testimony in FERC filing to justify change to highway/byway.

Q. DID SPP CONDUCT ANY QUANTITATIVE ANALYSES TO DETERMINE THE APPROPRIATE VOLTAGE LEVELS ELIGIBLE FOR THE VARIOUS HIGHWAY/BYWAY COST ALLOCATION RATIOS?

A. SPP conducted both a Transmission Distribution Analysis and an Injection Withdrawal Transmission Utilization Analysis.

FERC Docket ER10-1069
Testimony of Leslie Dillahunty, Exhibit No. SPP-1, Page 36 of 47, lines 4-8.
https://elibrary.ferc.gov/dmsweb/search/fercadvsearch.asp,
Accession Number: 20100420-0203

Transmission Distribution Analysis Results

Used by SPP in FERC filing to justify percentages used for voltage classes

Supporting Elements by Category
Internal Transactions

The EHV systems support regional transfers while lower voltages provide localized support.

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage of All TDFs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced Portfolio</td>
<td>98%</td>
</tr>
<tr>
<td>Existing 345 kV Systems</td>
<td>78%</td>
</tr>
<tr>
<td>Existing 138 &amp; 115 kV Systems</td>
<td>38%</td>
</tr>
<tr>
<td>Existing 69 kV Systems</td>
<td>14%</td>
</tr>
</tbody>
</table>

https://www.spp.org/documents/12189/transmission%20distribution%20analysis%20of%20regional%20transfers%20final%2003112010.pdf
Injection/Withdrawal Analysis

Results

- Regional and Local Usage by Voltage Class

<table>
<thead>
<tr>
<th>Layer</th>
<th>Local</th>
<th>Regional</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 345 kV</td>
<td>35.8%</td>
<td>64.2%</td>
<td>100%</td>
</tr>
<tr>
<td>345 kV and above</td>
<td>22.4%</td>
<td>77.6%</td>
<td>100%</td>
</tr>
</tbody>
</table>


Supplemental Staff Analysis

- SPP performed an alternate analysis that took into account the line mileage associated with the transactions (MW-mile type analysis).

- MW-mile type analysis indicates a greater usage of the highway system for all TOs.

- This analysis skews toward highway usage as most highway facilities will carry larger amounts of energy and are of longer mileage.

- Sunflower’s impacts were seen to be around 24% compared to 33% of the SPP region.
Injection Analysis Review

- Transmission Owners (TOs) with denser loads (AEP, OKGE, KCPL, OPPD) will handle on average 33% of all (regional and local) transactions on their systems.

- TOs with less dense loads (NPPD, WAPA, WFEC) will have larger impacts on their byway systems.
  - Some TOs with few highway facilities (WFEC) will have larger impacts on byway systems.

- SPP's analysis showed SECI's byway system handled 41% of transactions (regional and local) compared to 47% in SECI's analysis.

- SPP's analysis calculated an average of 50% regional usage of the byway system – compared to 46% in SECI's analysis.

Consider & quantify benefits that accrue to zones where significant wind generation has been located

<table>
<thead>
<tr>
<th>RCAR</th>
<th>Benefit/Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEP</td>
<td>1.75</td>
</tr>
<tr>
<td>CUS</td>
<td>0.59</td>
</tr>
<tr>
<td>EDE</td>
<td>0.81</td>
</tr>
<tr>
<td>GMO</td>
<td>2.15</td>
</tr>
<tr>
<td>GEDA</td>
<td>1.58</td>
</tr>
<tr>
<td>KCPL</td>
<td>2.97</td>
</tr>
<tr>
<td>LES</td>
<td>2.27</td>
</tr>
<tr>
<td>MGOW</td>
<td>2.89</td>
</tr>
<tr>
<td>MKLL</td>
<td>1.28</td>
</tr>
<tr>
<td>NPPD</td>
<td>1.53</td>
</tr>
<tr>
<td>OGE</td>
<td>2.91</td>
</tr>
<tr>
<td>OPPD</td>
<td>0.87</td>
</tr>
<tr>
<td>SEPX</td>
<td>3.73</td>
</tr>
<tr>
<td>SPS</td>
<td>3.94</td>
</tr>
<tr>
<td>UKM</td>
<td>3.89</td>
</tr>
<tr>
<td>UTEC</td>
<td>2.08</td>
</tr>
<tr>
<td>WR</td>
<td>2.16</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2.45</td>
</tr>
</tbody>
</table>

Average Day-Ahead LMPs ($/MWh) for Load Zones for 12 months ending July 31, 2019 (calculated by AECC from market data)

- SPS: $23.35
- GSEC: $22.75
- SECI: $22.39
- AEP: $27.64
- AECC: $28.32
- Empire: $29.78
- OG&E: $26.37
- Westar: $22.99

AECC Supports Wind and Solar

Is it more economical to locate solar and wind near to loads at a slightly higher generation cost but a lower overall transmission cost?

Andrew Lachowsky
Arkansas Electric Cooperative Corporation
VP, Planning and Market Operations
andrew.lachowsky@aecc.com
(501)570-2435
Appendix E

Recommendations for Byway Facilities Waiver Process Presentation by OG&E

December 2019 CAWG Meeting
Recommendations for Byway Facilities Waiver Process

David Kays
Oklahoma Gas and Electric Company

General Statement

It is OG&E’s position that a Waiver Process for Byway Facilities is nothing but a band aid that does not solve the problem.
The Problem

The problem that needs addressing is the identification and construction of Base Plan Upgrades for the delivery of uncommitted renewable resources. Uncommitted renewable resources incur none of the costs of such upgrades yet benefit by additional capacity provided by the upgrade.

Now the recommendations!

Applicability – Existing Byway Facilities

A request for Waiver from Byway Cost Allocation must be made in writing, with supporting data and analysis, and submitted to the Transmission Provider no less than one hundred eighty (180) days following the effective date approved by FERC for the Waiver Process Tariff changes. The supporting data and analysis should cover the twelve (12) months prior to the date the NTC was issued for the applicable Byway facility. Such data and analysis should justify the upgrade providing export opportunities for renewable resources.
Applicability – New Byway Facilities

A request for Waiver from Byway Cost Allocation must be made in writing, with supporting data and analysis, and submitted to the Transmission Provider no less than one hundred eighty (180) days following the inclusion of the Byway facility in an approved ITP Report or the SPP Transmission Expansion Plan. The supporting data and analysis should cover the twelve (12) months prior to the Byway facilities inclusion in an approved ITP Report or the SPP Transmission Expansion Plan. Such data and analysis should justify the upgrade providing export opportunities for renewable resources.

Waiver Criteria

• Nameplate value of eligible Renewable resources in local zones exceeds 100% of the Zonal monthly peak demands for twelve (12) consecutive months, and
• Local zone has eligible Renewable resource exports greater than fifty percent (50%) of the hours in a year.
Exclusions from Eligible Renewable Resources

- Nameplate value of Renewable resources connected to Highway facilities,
- Nameplate values of Renewable resources with firm Transmission Service for loads outside local Zone, and
- Where self-scheduled resources are greater than ten percent (10%) of the local Zone's Network Resources an equal amount of nameplate MWs of Renewable resources will not be considered eligible.

Data Supporting Waiver Request

- For existing Byway facilities, hourly Eligible Renewable output and hourly interconnect metering values for the twelve (12) months prior to the NTC need date.
- For new Byway facilities, hourly Eligible Renewable output and hourly interconnect metering values for the twelve (12) months prior to the Byway facilities inclusion in an approved ITP Report or the SPP Transmission Expansion Plan.
- Hourly data for twelve (12) months supporting the Byway facility provides less than fifty percent (50%) of the benefits as compared to the costs allocated to the local zone. For example, if seventy percent (70%) of the project costs are allocated to the local zone then less than thirty-five percent (35%) of the benefits accrue to the zone.
Data Supporting Waiver Request

• Hourly data for twelve (12) months supporting the output of eligible Renewable resources connected to Highway flow through Byway facilities as exports from the local zone greater than fifty percent (50%) of the hours in the twelve (12) month period.

• Cost shift impacts to other pricing zones in the SPP footprint.

• Any additional supporting data the requesting entity feels the Transmission Provider needs to make an informed decision.

Additional Cost Allocation Thoughts

• When sub-regional Schedule 11 zones are created then maybe;
  o Byway facilities identified for reliability would be allocated as they are today, however
  o Byway facilities identified as economic would be cost allocated across the newly created Schedule 11 sub-regional that includes the zone where the upgrade is constructed.
Questions
Appendix F

Recommendations for Byway Facilities Waiver Process Presentation by OG&E

December 2019 CAWG Meeting
Qualifying Criteria to Seek a Waiver - SUN & MWE’s draft proposal requires an entity to meet the following criteria in order to be eligible to seek a waiver:

a. Renewable generation in local zone exceeds 100% of 12 CP; and
b. Local zone exports >50% of the hours in a year.

Related Written Comments:

• AECC Additional Comments – AECC states that generators affiliated with the entity submitting the waiver request shall not contribute to justification for a waiver request.
• AEP Comments – AEP suggests all affiliated generation and PPAs should be excluded in the determination of a “wind-rich” zone.
• NPPD Comments – NPPD believes it is discriminatory because most zones would not be eligible for a waiver.
• Sunflower Comments – Sunflower supports reviewing all generation instead of singling out renewables. “Nameplate generation in a zone exceeds 150% of the peak load in the 5-year planning case” could be another way to look at it.
• SPS Xcel Comments – SPS asserts that the waiver determination criteria should be more general. If the driver was economics outside of your zone, you should be able to apply for a waiver. SPS opposes the proposal if it is limited to only “high wind-rich area” zones.

Discussion Questions:
1.A. Should an entity be required to meet qualifying criteria in order to be eligible to seek a waiver of the cost allocation that otherwise would be applicable? If an entity is able to meet the established waiver criteria to justify different cost allocation for a particular NTC, is this sufficient?
1.B. If it is deemed appropriate to require entities to meet preliminary criteria to be eligible to seek a waiver, is the criteria proposed by SUN & MWE the appropriate eligibility criteria? If not, what criteria do you suggest?
1.C. Some entities have opined that identifying a specific type of generation in the waiver criteria could be viewed as discriminatory. Do you agree? What alternative language would you suggest, if any? Would revising the language to eliminate any reference to renewable generation expand the potential list of eligible projects too broadly? If so, what additional constraints should be considered to ensure that this remains a narrow, targeted process to address the cost allocation issue at hand? (Note: FERC has approved SPP’s tariff filings related to special cost allocation for network upgrades for wind resources to serve load in another zone and found SPP’s treatment
for such wind resources reasonable because of the “location-constrained” nature of such resources, even though it is dissimilar to the allocation methodology for other resources. The FERC also found that SPP’s wind cost allocation proposal reduced barriers to wind generation integration and reiterated that it has recognized that renewable resources, such as wind, are typically constrained because of their location, relative size, and the immobility of their fuel sources, and therefore present unique challenges that other resources do not face.)

2. **General Waiver Language** - Pursuant to SUN & MWE’s draft proposal, if the initial criteria in item 1 have been met, a TO in that zone may seek a waiver to regionally allocate the remaining costs of an NTC for a byway facility that was issued on or after June 19, 2010. The TO must demonstrate that the facility was built to primarily support the exportation of renewables in its zone. The waiver request must include supporting documentation to satisfy the applicable test for the facility as described in sections 3, 4 and 5.

**Discussion Questions:**
2.A. Is Section 2 of the SUN & MWE proposal reasonable? Should “support the exportation of renewables” be revised to generation-neutral language? Any other suggestions or discussion regarding Section 2?

3. **Tie-Line Test** – SUN & MWE’s proposed test for tie-lines is as follows:
   a. For tie-lines between zones that have been in service for 1 year or longer, provide at least 1 year of real-time data to demonstrate that the tie-line exports more than 50% of the hours of the year.
   b. For tie-lines that have been in service for less than one year or for new tie-line NTCs that upgrade or will create a new tie-line between zones, provide analysis to demonstrate the anticipated flow will predominantly be out of the pricing zone (or “exporting” out of the zone) using ITP economic models.

**Related Written Comments:**
- LES Comments – LES did not respond specifically to the tie-line test but in response to CAWG’s question regarding whether it should look at local zones that export greater than 50% of the hours in a year, LES stated that 50% seems too low. However, LES further opined that if the TO could demonstrate that the power flows on the transmission facility predominantly support the export of power from the zone and that the facility is not necessary for the support of, or does not substantially benefit, the host zone, this metric may not be necessary.
- AECC Additional Comments – In response to CAWG’s question regarding what components of the transformer waiver process in Attachment J could be utilized for this waiver process, AECC stated that a “but for” test should be utilized to show that the facility is not necessary for the support of or does not substantially benefit the host zone. AECC further suggests that the modeling that resulted in
the NTC should show that the upgrades were not needed “but for” the generators causing the flows onto the higher voltage transmission.

Discussion Questions:
3.A. Is SUN & MWE’s proposed tie-line test a reasonable method to demonstrate that a transmission tie-line is utilized to benefit the region more than the zone? Is “exports more than 50% of the hours of the year” the appropriate metric? Any thoughts on a “but for” test or other suggestions?
3.B. During our October CAWG discussion on this issue, an entity inquired how we would be able to distinguish between exported energy vs. through-flow energy. Any thoughts in response to this comment? Is it relevant whether it is through-flow energy or exported energy since the facility is utilized by entities outside of the zone and is presumably not benefiting the host zone?

4. **Transformer Test** - SUN & MWE’s proposed test for transformers is as follows:
   a. For existing transformer NTCs, provide at least 1 year of real-time data to demonstrate that the transformer exports more than 50% of the hours of the year.
   b. For new transformer NTCs, provide analysis to demonstrate anticipated flow will predominantly export out of the pricing zone using ITP economic models.

Related Written Comments:
• AECC Additional Comments – See #3 written comments regarding AECC’s suggested “but for” test.

Discussion Questions:
4.A. Is SUN & MWE’s proposed transformer test a reasonable method to demonstrate that the transformer benefits the region more than the zone? Any thoughts on a “but for” test or other suggestions?

5. **Embedded Byway Test** - SUN & MWE’s proposed test for embedded byways is as follows:
   Transmission owner must provide data to satisfy one of the following two options, Option 1 or Option 2:
   a. Option 1: Conduct ITP reliability analysis to determine whether the NTC is needed for local zonal reliability. There must be no resulting

---

1 An export for transformers consists of the power flow from the low voltage side of the transformer which is < 345 kV (byway system) to the high voltage side which is greater or equal to 345 kV of the transformer (Highway system).
2 See footnote 1.
voltage or thermal violations at current load levels in ITP models under the following conditions:

i. New construction or previously constructed Facility NTC – Take out the NTC and run N-1 analysis using latest ITP models; or

ii. Rebuild Existing Facility NTC – Reverse the upgrade to its original size and configuration and run N-1 analysis using latest ITP models.

b. Option 2: Transfer Distribution Factor (TDF) ITP Analysis: By incrementing the output of renewable generating resources and evaluating the PTDF (Power Transfer Distribution Factor) or the OTDF (Outage Transfer Distribution Factor) determine the impact on the flow on the NTC. If the impact of the TDF (PTDF or OTDF) exceeds a set threshold then the NTC is deemed necessary to continued exports and qualifies for a waiver. (Note that a Transfer Distribution Factor is the measure of responsiveness or change in electrical loading on system facilities due to an increase in electric power output from specific identified generator(s) and expressed in percent (up to 100%) of the change in power flow on NTCs (monitored facility.)

Related Written Comments:
• AECC Additional Comments – See #3 written comments regarding AECC’s suggested “but for” test.

Discussion Questions:
5.A. Option 2 is similar or the same as one of the analyses performed by SPP to support the Highway/Byway cost allocation methodology. Any questions or concerns with using this methodology?
5.B. Option 1 appears to be similar to a “but for” test. Thoughts on this proposal? Is SUN & MWE’s Option 1 similar to AECC’s suggestion and/or does it address AECC’s concern/suggestion?

6. Economic Project Test – SUN & MWE proposes, for an NTC that is byway funded and classified as an economic project in a zone that meets the criteria in Item 1, the cost of such project will be regionally funded if the project is not needed to support the reliability of the local byway system.

Related Written Comments:
• SPS Xcel Comments – SPS supports this provision, assuming the application of the waiver process is generally applied based on the economics of the project, not a narrow application based on the definition of a “wind-rich area”.

4
Discussion Questions:
6.A. Does this proposal seem reasonable? If yes, how could an entity demonstrate that the project is not needed to support the reliability of the local byway system?

7. **AECC's Pro-Rated Funding Approach** - AECC suggests in its Updated Comments that, if the CAWG were to consider funding less than 100 percent of qualifying projects regionally, AECC would recommend that SPP utilize the RCAR results to establish the additional funding amount. Specifically, AECC recommends the additional regional funding percentage would be according to the following formula:

1) \( \frac{1}{3} + \frac{2}{3} \times \text{average of the 3 zones that have the lowest RCAR ratios / RCAR of zone where transmission is located} \)

2) Maximum of 100% regional funding

3) RCAR at the time of waiver request will be used

AECC’s rationale for utilizing the RCAR is to provide incentive to SPP members that support C2 to support transmission that benefits the lower RCAR zones.

Discussion Questions:
7.A. How would SPP support this cost allocation proposal at FERC? Any other thoughts or suggestions regarding this proposal?

8. **AECC's Proposed Cap on Additional Regional Funding** - AECC recommends regional funding through the C2 waiver process should be limited to a specific percentage of regional funding for all transmission and the date of the submission of each waiver request will establish priority if the funding threshold is reached.

Discussion Questions:
8.A. Would this proposal be deemed discriminatory if some projects that meet the waiver criteria are eligible for regional funding but other projects that also meet the waiver criteria are not eligible because the funding threshold was previously reached? How would SPP support this proposal at FERC?
Appendix G

Further Discussion of Sunflower & Midwest Energy (SUN & MWE)

Draft HITT C-2 Proposal & Written Comments

January 2020 CAWG Meeting
1. **Qualifying Criteria to Seek a Waiver** - SUN & MWE’s draft proposal requires an entity to meet the following criteria in order to be eligible to seek a waiver:
   a. Renewable generation in local zone exceeds 100% of 12 CP; and
   b. Local zone exports >50% of the hours in a year.

Related Written Comments:
- **AECC Additional Comments** – AECC states that generators affiliated with the entity submitting the waiver request shall not contribute to justification for a waiver request.
- **AEP Comments** – AEP suggests all affiliated generation and PPAs should be excluded in the determination of a “wind-rich” zone.
- **NPPD Comments** – NPPD believes it is discriminatory because most zones would not be eligible for a waiver.
- **Sunflower Comments** – Sunflower supports reviewing all generation instead of singling out renewables. “Nameplate generation in a zone exceeds 150% of the peak load in the 5-year planning case” could be another way to look at it.
- **SPS Xcel Comments** – SPS asserts that the waiver determination criteria should be more general. If the driver was economics outside of your zone, you should be able to apply for a waiver. SPS opposes the proposal if it is limited to only “high wind-rich area” zones.
- **OG&E Presentation/Comments** – OG&E suggests the following qualifying criteria to seek a waiver:
   a. Nameplate value of eligible renewable resources in local zones exceeds 100% of the zonal monthly peak demands for 12 consecutive months; and
   b. Local zone has eligible renewable resource exports greater than 50% of the hours in a year.

Discussion Questions:
1.A. Should an entity be required to meet qualifying criteria in order to be eligible to seek a waiver of the cost allocation that otherwise would be applicable? If an entity is able to meet the established waiver criteria to justify different cost allocation for a particular NTC, is this sufficient?
1.B. If it is deemed appropriate to require entities to meet preliminary criteria to be eligible to seek a waiver, is the criteria proposed by SUN & MWE the appropriate eligibility criteria? If not, what criteria do you suggest?
1.C. Some entities have opined that identifying a specific type of generation in the waiver criteria could be viewed as discriminatory. Do you agree? What alternative
language would you suggest, if any? Would revising the language to eliminate any reference to renewable generation expand the potential list of eligible projects too broadly? If so, what additional constraints should be considered to ensure that this remains a narrow, targeted process to address the cost allocation issue at hand? (Note: FERC has approved SPP’s tariff filings related to special cost allocation for network upgrades for wind resources to serve load in another zone and found SPP’s treatment for such wind resources reasonable because of the “location-constrained” nature of such resources, even though it is dissimilar to the allocation methodology for other resources. The FERC also found that SPP’s wind cost allocation proposal reduced barriers to wind generation integration and reiterated that it has recognized that renewable resources, such as wind, are typically constrained because of their location, relative size, and the immobility of their fuel sources, and therefore present unique challenges that other resources do not face.)

2. **General Waiver Language** - Pursuant to SUN & MWE’s draft proposal, if the initial criteria in item 1 have been met, a TO in that zone may seek a waiver to regionally allocate the remaining costs of an NTC for a byway facility that was issued on or after June 19, 2010. The TO must demonstrate that the facility was built to primarily support the exportation of renewables in its zone. The waiver request must include supporting documentation to satisfy the applicable test for the facility as described in sections 3, 4 and 5.

**Related Written Comments:**
- OG&E Presentation/Comments – OG&E suggests that a waiver must be made in writing, with supporting data and analysis within 180 days following the inclusion of the byway facility in an approved ITP report or the SPP Transmission Expansion Plan. The supporting data and analysis should cover the 12 months prior to: (1) the byway facility’s inclusion in an approved ITP or STEP for new facilities; or (2) the date the NTC was issued for the applicable NTC for existing facilities. The supporting analysis and data should justify the upgrade providing export opportunities for renewable resources.

**Discussion Questions:**
2.A. Is Section 2 of the SUN & MWE proposal reasonable? Should “support the exportation of renewables” be revised to generation-neutral language? Any other suggestions or discussion regarding Section 2?
2.B. Is the 180-day timeframe proposed by OG&E to file a waiver request reasonable? If not, any other suggestions – shorter, longer?
2.C. SUN/MWE & OG&E both propose providing 12 months/1 year of data. Is 12 months the appropriate amount of data or do you have another suggestion? OG&E suggests that the data cover the 12 months prior to the issuance of the NTC or inclusion in an ITP or STEP whereas SUN/MWE did not specify the 12-month period of data. Should the timeframe be the immediately prior 12 months? If the utilization of an upgrade
radically changes after the facility is placed in service, would the project be eligible for a waiver? Should we provide flexibility for changes like this that could occur?

3. **Tie-Line Test** – SUN & MWE’s proposed test for tie-lines is as follows:
   a. For tie-lines between zones that have been in service for 1 year or longer, provide at least 1 year of real-time data to demonstrate that the tie-line exports more than 50% of the hours of the year.
   b. For tie-lines that have been in service for less than one year or for new tie-line NTCs that upgrade or will create a new tie-line between zones, provide analysis to demonstrate the anticipated flow will predominantly be out of the pricing zone (or “exporting” out of the zone) using ITP economic models.

**Related Written Comments:**
- LES Comments – LES did not respond specifically to the tie-line test but in response to CAWG’s question regarding whether it should look at local zones that export greater than 50% of the hours in a year, LES stated that 50% seems too low. However, LES further opined that if the TO could demonstrate that the power flows on the transmission facility predominantly support the export of power from the zone and that the facility is not necessary for the support of, or does not substantially benefit, the host zone, this metric may not be necessary.
- AECC Additional Comments – In response to CAWG’s question regarding what components of the transformer waiver process in Attachment J could be utilized for this waiver process, AECC stated that a “but for” test should be utilized to show that the facility is not necessary for the support of or does not substantially benefit the host zone. AECC further suggests that the modeling that resulted in the NTC should show that the upgrades were not needed “but for” the generators causing the flows onto the higher voltage transmission.
- OG&E Presentation/Comments – OG&E did not speak specifically to the tie-line test but, in general, suggested that data supporting any waiver request include hourly data for 12 months supporting the output of eligible renewable resources from the local zone greater than 50% of the hours in the 12-month period.

**Discussion Questions:**
3.A. Is SUN & MWE’s proposed tie-line test a reasonable method to demonstrate that a transmission tie-line is utilized to benefit the region more than the zone? Is “exports more than 50% of the hours of the year” the appropriate metric? Any thoughts on a “but for” test or other suggestions?
3.B. During our October CAWG discussion on this issue, an entity inquired how we would be able to distinguish between exported energy vs. through-flow energy. Any thoughts in response to this comment? Is it relevant whether it is through-flow energy or exported energy since the facility is utilized by entities outside of the zone and is presumably not benefiting the host zone?
4. **Transformer Test** - SUN & MWE’s proposed test for transformers is as follows:
   a. For existing transformer NTCs, provide at least 1 year of real-time data to demonstrate that the transformer exports\(^1\) more than 50% of the hours of the year.
   b. For new transformer NTCs, provide analysis to demonstrate anticipated flow will predominantly export\(^2\) out of the pricing zone using ITP economic models.

Related Written Comments:
- AECC Additional Comments – See #3 written comments regarding AECC’s suggested “but for” test.
- OG&E Presentation/Comments – OG&E suggested that data supporting any waiver request include hourly data for 12 months supporting the output of eligible renewable resources from the local zone greater than 50% of the hours in the 12-month period.

Discussion Questions:
4.A. Is SUN & MWE’s proposed transformer test a reasonable method to demonstrate that the transformer benefits the region more than the zone? Any thoughts on a “but for” test or other suggestions?

5. **Embedded Byway Test** - SUN & MWE’s proposed test for embedded byways is as follows:
   Transmission owner must provide data to satisfy one of the following two options, Option 1 or Option 2:
   a. Option 1: Conduct ITP reliability analysis to determine whether the NTC is needed for local zonal reliability. There must be no resulting voltage or thermal violations at current load levels in ITP models under the following conditions:
      i. New construction or previously constructed Facility NTC – Take out the NTC and run N-1 analysis using latest ITP models; or
      ii. Rebuild Existing Facility NTC – Reverse the upgrade to its original size and configuration and run N-1 analysis using latest ITP models.
   b. Option 2: Transfer Distribution Factor (TDF) ITP Analysis: By incrementing the output of renewable generating resources and evaluating the PTDF (Power Transfer Distribution Factor) or the OTDF

\(^1\) An export for transformers consists of the power flow from the low voltage side of the transformer which is < 345 kV (byway system) to the high voltage side which is greater or equal to 345 kV of the transformer (Highway system).
\(^2\) See footnote 1.
(Outage Transfer Distribution Factor) determine the impact on the flow on the NTC. If the impact of the TDF (PTDF or OTDF) exceeds a set threshold then the NTC is deemed necessary to continued exports and qualifies for a waiver. (Note that a Transfer Distribution Factor is the measure of responsiveness or change in electrical loading on system facilities due to an increase in electric power output from specific identified generator(s) and expressed in percent (up to 100%) of the change in power flow on NTCs (monitored facility.)

Related Written Comments:
- AECC Additional Comments – See #3 written comments regarding AECC’s suggested “but for” test.
- OG&E Presentation/Comments – OG&E suggested that data supporting any waiver request include hourly data for 12 months supporting the output of eligible renewable resources from the local zone greater than 50% of the hours in the 12-month period.

Discussion Questions:
5.A. Option 2 is similar or the same as one of the analyses performed by SPP to support the Highway/Byway cost allocation methodology. Any questions or concerns if this methodology is utilized?
5.B. Option 1 appears to be similar to a “but for” test. Thoughts on this proposal? Is SUN & MWE’s Option 1 similar to AECC’s suggestion and/or does it address AECC’s concern/suggestion?

6. Economic Project Test – SUN & MWE proposes, for an NTC that is byway funded and classified as an economic project in a zone that meets the criteria in Item 1, the cost of such project will be regionally funded if the project is not needed to support the reliability of the local byway system.

Related Written Comments:
- SPS Xcel Comments – SPS supports this provision, assuming the application of the waiver process is generally applied based on the economics of the project, not a narrow application based on the definition of a “wind-rich area”.

Discussion Questions:
6.A. Does this proposal seem reasonable? If yes, how could an entity demonstrate that the project is not needed to support the reliability of the local byway system? Should we not define specific criteria and instead leave it up to the TO to determine how it could demonstrate that the project is not needed to support the reliability of the local byway system?
7. **AECC’s Pro-Rated Funding Approach** - AECC suggests in its Updated Comments that, if the CAWG were to consider funding less than 100% of qualifying projects regionally, AECC would recommend that SPP utilize the RCAR results to establish the additional funding amount. Specifically, AECC recommends the additional regional funding percentage would be according to the following formula:

1) \( \frac{1}{3} + \left[ \frac{2}{3} \times \text{average of the 3 zones that have the lowest RCAR ratios} / \text{RCAR of zone where transmission is located} \right] \)
2) Maximum of 100% regional funding
3) RCAR at the time of waiver request will be used

AECC’s rationale for utilizing the RCAR is to provide incentive to SPP members that support C2 to support transmission that benefits the lower RCAR zones.

**Discussion Questions:**
7.A. How would SPP support this cost allocation proposal at FERC? Any other thoughts or suggestions regarding this proposal?

8. **AECC’s Proposed Cap on Additional Regional Funding** - AECC recommends regional funding through the C2 waiver process should be limited to a specific percentage of regional funding for all transmission and the date of the submission of each waiver request will establish priority if the funding threshold is reached.

Discussion Questions:
8.A. Would this proposal be deemed discriminatory if some projects that meet the waiver criteria are eligible for regional funding but other projects that also meet the waiver criteria are not eligible because the funding threshold was previously reached? How would SPP support this proposal at FERC?

9. **OG&E’s Proposed Exclusions from Eligible Renewable Resources** – OG&E suggests the following be excluded from waiver tests that include renewable resources:
   a. Nameplate value of renewable resources connected to highway facilities;
   b. Nameplate value of renewable resources with firm transmission service for loads outside the local zone; and
   c. If self-scheduled resources are greater than 10% of the local zone’s network resources an equal amount of nameplate MW of renewable resources would not be considered eligible.

Discussion Questions:
9.A. During the December CAWG meeting, OG&E stated that a renewable resource connected to a highway facility should be included if an entity can demonstrate that a renewable resource utilizes the byway system. Thoughts on excluding the nameplate value of renewable resources connected to highway facilities, but provide flexibility to allow a TO to demonstrate why it should be included?
9.B. With regard to renewable resources with firm transmission service for loads outside the local zone, are there any situations where the costs would not already be allocated in accordance with the wind rule (67% of the costs allocated to the entire SPP region and 33% of the cost are directly assigned to the transmission customer)? If not, does this exclusion seem reasonable since different cost allocation would already be applicable?

9.C. With regard to the proposal to subtract an equal amount of nameplate MW of renewable resources if greater than 10% of the local zone’s network resources are self-committed:
   (1) How would this be measured and over what time period?
   (2) Would this provision only apply to the waiver-seeking entity’s self-committed resources since the waiver-seeking entity cannot control the actions of another generator within its zone?
   (3) Should reliability requirements be taken into consideration?
   (4) If the CAWG/RSC supports this suggestion, is 10% the correct number?
   (5) How would SPP support this proposal at FERC?
   (6) Other thoughts?
### Summary of Comments Submitted to CAWG Regarding HITT Recommendation C-2

<table>
<thead>
<tr>
<th>Commenter</th>
<th>General Comments</th>
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</table>
| **Arkansas Electric Cooperative Corporation (AECC)** | AECC’s comments are not specific to HITT Recommendation C-2, but rather HITT Recommendation C-1.  
• Under the Schedule 11 zonal consolidation scenarios evaluated by the HITT, AECC estimates it will pay an additional $3.8 million per year.  
• Wind-rich areas have lower LMPs, which benefits the host zone. AECC suggests that, to the degree that wind is exported across zones, it will be predominantly over higher voltage lines that are regionally funded.  
• The lower cost to serve load more than offsets the increased cost of transmission in these zones. According to AECC’s calculations, Sunflower receives a net benefit of $7 million per year by being in a low-energy cost (high-wind) area. AECC suggests it may be worthwhile to have SPP staff calculate values for all of its load zones. |
| **AEP**                                        | • AEP doesn’t support retroactive ratemaking and refers to remedies included in the RCAR process.  
• If we do reallocate byway costs, AEP would rather see an SPP analysis on the beneficiaries rather than an uplift to the entire region.  
• If the CAWG decides to follow the process outlined by Sunflower, it should consider the following:  
  o If Sunflower’s assertion that reliability project costs are being driven from GIs in the zone, then CAWG should find ways to address that problem rather than shifting costs to the entire region.  
  o Remain cognizant that several other HITT recommendations are at play, which all compound. |
| **Nebraska Public Power District (NPPD)**       | • The proposal attempts to correct an issue that has been caused by the Interconnection Planning Process, which fails to identify necessary upgrades during the interconnection study process. The change to the waiver process attempts to correct the issue via an indirect allocation process, whereas the cause is the planning process.  
• Most zones would not be eligible for the waiver; therefore, NPPD believe it is discriminatory.  
• Interconnection projects (that cause the costs) should bear the costs of the upgrades instead of regionally funding the costs, thereby forcing other customers to pay for upgrades from which they receive no benefits. |
<p>| <strong>Lincoln Electric System (LES)</strong>               | The onus for proving a need for highway funding should remain on the entity seeking the waiver. It should be a narrow process and nearly all byway projects approved under the ITP process should remain byway projects. The methodology used to show a need for highway funding for a byway project within one ITP may not necessarily be a good guideline for the next or other ITPs because it may apply to too many projects within a particular ITP. There needs to be flexibility within the process to recognize this. |
| <strong>SPS-Xcel</strong>                                   | If we create larger zones, we don’t need a waiver process. |</p>
<table>
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<tr>
<th>Commenter</th>
<th>CAWG's Request for Comments on the Waiver Criteria in J, III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Would it be appropriate to modify the evaluation language to read as follows:</strong> “Any waiver request submitted shall be evaluated based upon the following general factors, including but not limited to: (i) whether the power flows through the transformer on the transmission facility predominantly are from the lower voltage to the higher voltage support the export of power from the zone; and (ii) whether the transformer transmission project is not necessary for the support of, or does not substantially benefit, the lower voltage system in the host zone to which it is connected.” Other suggestions?</td>
<td></td>
</tr>
<tr>
<td>LES</td>
<td>LES does not believe the language is inappropriate; however, it may be too broad if left by itself.</td>
</tr>
<tr>
<td>SPS -Xcel</td>
<td>With regard to the phrase “support the export of power from the zone”, SPS supports the modification if this applies to everyone. SPS opposes if it’s limited to only “high wind-rich area” zones.</td>
</tr>
<tr>
<td><strong>2. How could a Transmission Owner demonstrate that the power flows on the transmission facility predominantly support the export of power from the zone?</strong></td>
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</tr>
<tr>
<td>LES</td>
<td>This should be at the discretion of the entity seeking the waiver and the approval of the MOPC.</td>
</tr>
<tr>
<td>SPS -Xcel</td>
<td>The TO should not perform the analysis; it should be up to SPP. It should be a documented and replicable process.</td>
</tr>
<tr>
<td>Sunflower</td>
<td>SPP could use the following proposal (Sunflower’s proposal) for Step 1 to demonstrate the flows support exports. In order to be eligible to seek a waiver, the following criteria must be met: a. Renewable generation in the local zone exceeds 100% of 12 CP; and b. Local zone exports &gt; 50% of the hours in a year.</td>
</tr>
<tr>
<td><strong>3. How could a Transmission Owner demonstrate that the transmission facility is not necessary for the support of, or does not substantially benefit, the host zone? How should “does not substantially benefit” be defined?</strong></td>
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</tr>
<tr>
<td>LES</td>
<td>This should be at the discretion of the entity seeking the waiver and the approval of the MOPC.</td>
</tr>
<tr>
<td>SPS -Xcel</td>
<td>If it wasn’t for this flow, the project wouldn’t be built. Therefore, “substantially benefit” does not need to be defined. Again, SPS suggests the analysis be performed by SPP.</td>
</tr>
<tr>
<td>Sunflower</td>
<td>If the project is economic, look at the project benefits used to approve the project and see how many accrue to the host zone. If it is below a certain threshold, then it is not substantially benefiting the host zone. If the project is a reliability project, compare the impact of the host zone’s contracted generation serving its load vs. the rest of the generation in the zone exporting out of the host zone. Calculate the DF of host zone DNRs to host zone NITS load on the reliability problem the project solves and compare that to the DF of ERIS or external DNR generation to the rest of the market or the contracted NITS load, respectively.</td>
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<tr>
<td><strong>4. Should we look at all generation that exceeds XX% and the local zone exports greater that 50% of the hours in a year? Other suggestions?</strong></td>
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</tr>
<tr>
<td>LES</td>
<td>Greater than 50% seems low. If there was adequate demonstration that met the purposes of 2 and 3, this might not be necessary.</td>
</tr>
<tr>
<td>SPS -Xcel</td>
<td>No. This provision should not be included. If this suggestion were included, the process would be only applicable to 2 zones.</td>
</tr>
<tr>
<td>Sunflower</td>
<td>Supports reviewing all generation instead of singling out renewables. “Nameplate generation in a zone exceeds 150% of the peak load in the 5-year planning case” could be a way to look at it.</td>
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<tr>
<td><strong>Summary of Comments Submitted to CAWG Regarding HITT Recommendation C-2</strong></td>
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<tr>
<td><strong>5. The HITT C-2 recommendation anticipates including existing NTCs in the waiver process. Are the current timeframes in J, III appropriate for existing NTCs? Are the timeframes appropriate for future NTCs? If not, what should the timeframes be for waiver request filings and review?</strong></td>
<td></td>
</tr>
<tr>
<td>LES</td>
<td>We may need to allow for a one-time exception for existing facilities that allows them to go beyond 180-days. However, there should be a limited time for these requests.</td>
</tr>
<tr>
<td>SPS -Xcel</td>
<td>SPS does not believe existing NTCs should qualify. The process should only apply to future NTCs only.</td>
</tr>
<tr>
<td>Sunflower</td>
<td>180-days is not appropriate for older NTCs; there needs to be a window to review older NTCs. For future projects, the timelines in J, III are probably okay. A sensitivity akin to Sunflower’s 5a or 5b could be run by either SPP or the TO during the ITP process.</td>
</tr>
<tr>
<td><strong>6. The Attachment J, III waiver process directs the MOPC to consider the waiver request and provide a recommendation to the SPP Board of Directors. Should the RSC be included in the review process and, if so, to what extent?</strong></td>
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</tr>
<tr>
<td>LES</td>
<td>Perhaps only for previously approved projects, because there may be some cost shifts.</td>
</tr>
<tr>
<td>SPS -Xcel</td>
<td>The RSC should set the policy but they are not an operational/implementation body, so the waiver review process should be left to the MOPC.</td>
</tr>
<tr>
<td>Sunflower</td>
<td>From a practical standpoint, no. Each member of the RSC has a responsibility, often statutory, to fight for lower rates for their state’s ratepayers. The purpose of evaluating these waivers would naturally put that group at odds with each other.</td>
</tr>
<tr>
<td><strong>7. Attachment J, Section III transformer waiver process requires the request to be made in writing with supporting analysis not later than 180 days following the inclusion of the transformer in the approved SPP Transmission Expansion Plan. Instead of the “approved SPP Transmission Expansion Plan”, should it be limited to the ITP? Other suggestions?</strong></td>
<td></td>
</tr>
<tr>
<td>AEP</td>
<td>All NTCs associated with firm TSRs, GIs and AQ request should be excluded. Any upgrades that were already subject to the “wind rule” should be excluded because 33% of the costs have already been assigned to the off taker.</td>
</tr>
<tr>
<td>LES</td>
<td>Yes, it should be limited only to the ITP process.</td>
</tr>
<tr>
<td>SPS -Xcel</td>
<td>SPS supports limiting the process to the ITP.</td>
</tr>
<tr>
<td>Sunflower</td>
<td>No. If an extraordinary transmission plan is developed (ie, HPILS, CREZ, etc.) then you wouldn’t want the waiver option excluded.</td>
</tr>
</tbody>
</table>
## Summary of Comments Submitted to CAWG Regarding HITT Recommendation C-2

<table>
<thead>
<tr>
<th>Commenter</th>
<th>CAWG's Request for Comment on Sunflower &amp; Midwest Energy's Draft Proposal for the C-2 Byway Waiver Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. In order to be eligible to seek a waiver, the following criteria must be met:</strong></td>
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<tr>
<td></td>
<td>a. Renewable generation in local zone exceeds 100% of 12 CP; and</td>
</tr>
<tr>
<td></td>
<td>b. Local zone exports &gt;50% of the hours in a year.</td>
</tr>
<tr>
<td>AEP</td>
<td>When determining whether a zone is “wind rich”, all affiliated generation and PPAs should be excluded.</td>
</tr>
<tr>
<td>SPS - Xcel</td>
<td>SPS does not support and does not believe it complies with the roughly commensurate C/B standard. The waiver determination should be more general – if the driver was economics outside of your zone, you should be able to apply for a waiver. SPP should determine whether a waiver should be granted.</td>
</tr>
<tr>
<td><strong>2. If the criteria in item 1 have been met, then a TO in that Zone may seek a waiver to regionally allocate the remaining costs of an NTC for a byway facility that was issued on or after June 19, 2010 that the TO demonstrates was built to primarily support the exports of renewables in its Zone. The waiver request must include supporting documentation to satisfy the applicable test for the facility as follows:</strong></td>
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<tr>
<td><strong>3. Tie-Line Test:</strong></td>
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<tr>
<td></td>
<td>a. For Tie-Lines between Zones that have been in service for 1 year or longer Provide at least 1 year of real-time data to demonstrate that the tie-line exports more than 50% of the hours of the year.</td>
</tr>
<tr>
<td></td>
<td>b. For Tie-Lines that have been in service for less than one year or for new Tie-Line NTCs that upgrade or will create a new tie-line between Zones: Provide analysis to demonstrate the anticipated flow will predominantly be out of the pricing zone (or “exporting” out of the Zone) using ITP economic models.</td>
</tr>
<tr>
<td>SPS - Xcel</td>
<td>The ability to apply for a waiver should be more general and not limited to a “wind rich area”.</td>
</tr>
<tr>
<td><strong>4. Transformer Test:</strong></td>
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<tr>
<td></td>
<td>a. For existing transformer NTCs: Provide at least 1 year of real-time data to demonstrate that the transformer exports more than 50% of the hours of the year.</td>
</tr>
<tr>
<td></td>
<td>b. For new transformer NTCs: Provide analysis to demonstrate anticipated flow will predominantly export out of the pricing zone using ITP economic models.</td>
</tr>
<tr>
<td>SPS - Xcel</td>
<td>SPS does not support the application to existing projects; therefore, 4a is not needed. SPS agrees with 4b and believes the determination should be made by SPP.</td>
</tr>
</tbody>
</table>
5. Embedded Byway Test:
Transmission owner must provide data to satisfy one of the following two options, Option 1 or Option 2:
   a. Option 1: Conduct ITP reliability analysis to determine whether the NTC is needed for local zonal reliability. There must be no resulting voltage or thermal violations at current load levels in ITP models under the following conditions:
      i. New construction or previously constructed Facility NTC – Take out the NTC and run N-1 analysis using latest ITP models; or
      ii. Rebuild Existing Facility NTC – Reverse the upgrade to its original size and configuration and run N-1 analysis using latest ITP models.
   b. Option 2: Transfer Distribution Factor (TDF) ITP Analysis: By incrementing the output of renewable generating resources and evaluating the PTDF (Power Transfer Distribution Factor) or the OTDF (Outage Transfer Distribution Factor) determine the impact on the flow on the NTC. If the impact of the TDF (PTDF or OTDF) exceeds a set threshold then the NTC is deemed necessary to continued exports and qualifies for a waiver. (Note that a Transfer Distribution Factor is the measure of responsiveness or change in electrical loading on system facilities due to an increase in electric power output from specific identified generator(s) and expressed in per cent (up to 100%) of the change in power flow on NTCs (monitored facility.))

<table>
<thead>
<tr>
<th>SPS - Xcel</th>
<th>SPS does not support the application to existing projects; therefore, 5 is not needed.</th>
</tr>
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<tbody>
<tr>
<td>AEP</td>
<td>CAWG should consider whether it makes sense for economic, reliability, or both types of projects to be elevated.</td>
</tr>
<tr>
<td>SPS - Xcel</td>
<td>SPS supports this provision, assuming the application of the waiver process is generally applied based on the economics of the project and not a narrow application to “wind-rich areas”.</td>
</tr>
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Appendix I

Summary of Comments Submitted to CAWG Regarding

HITT C2 White Paper
# Summary of Comments Submitted to CAWG Regarding HITC C2 Whitepaper

<table>
<thead>
<tr>
<th>Commenter</th>
<th>General Comments</th>
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<tbody>
<tr>
<td>Alabama Power/Southern Company Services</td>
<td>Alabama Power is concerned that the proposed changes could materially increase the total cost of transmission service without the required commensurate benefits and contrary to FERC’s cost causation principles.</td>
</tr>
<tr>
<td>American Electric Power (AEP)</td>
<td>AEP states that much of the current concern in Kansas comes from byway reliability projects that assume a 1.0 B/C in their zone because reliability issues must be fixed. The problem is that these reliability projects were driven by Generator Interconnection (GI) customers and that these reliability projects haven't been built to serve load but rather to facilitate exports. AEP is not completely opposed to the reallocation of a very limited number of projects from byway cost allocation to highway cost allocation, but it does have some general concerns. AEP suggests the process should only be done on a prospective basis (meaning projects issued NTCs after some future date.) AEP further suggests that only future projects be evaluated under this process. That said, if any historical projects are considered/reviewed, AEP suggests focusing on economic projects since they were approved on regional APC benefits instead of specific transmission zone reliability concerns. AEP suggests that the planning process should consider how to value highway projects more than byway projects so that larger 345kV projects are constructed existing the areas and bypassing the lower voltage system.</td>
</tr>
<tr>
<td>American Power Alliance</td>
<td>The American Power Alliance submitted edits to the background section of the whitepaper but did not submit any edits or comments on the proposed waiver process.</td>
</tr>
<tr>
<td>Evergy, Inc.</td>
<td>Evergy is not opposed to reallocation of discrete base plan projects from byway cost allocation to highway cost allocation. However, Evergy is concerned with the development of a new process outside of the RCAR progress.</td>
</tr>
<tr>
<td>GridLiance High Plains</td>
<td>GridLiance is in agreement with CAWG’s approach and believes CAWG is headed in the right direction. The efforts should have a “no regrets” outcome for moving forward.</td>
</tr>
<tr>
<td>Kansas Electric Power Coop (KEPCo)</td>
<td>KEPCo is generally supportive of the waiver process in the white paper, and notes that its member companies have been adversely impacted by the treatment of certain byway projects under the current HWBW methodology.</td>
</tr>
<tr>
<td>ITC Great Plains</td>
<td>ITC supports the C2 recommendation and agrees that this process is needed due to the misalignment of cost assignments due to the influx of renewable generation in specific zones. ITC further supports the CAWG’s recommendation that the costs eligible for review should include further revenue requirements for new and existing Schedule 11 facilities.</td>
</tr>
<tr>
<td>Nebraska Public Power District (NPPD)</td>
<td>NPPD states that the proposed change attempts to correct the issue via an indirect allocation when the cause of the issue is the planning process. Those that cause the cost (interconnection projects) should bear the cost of the upgrades. While the waiver process is trying to fix an inequity that is occurring, it is difficult to support if the underlying problem, which is the study process, is not being addressed as well.</td>
</tr>
<tr>
<td>NextEra Energy Transmission</td>
<td>NextEra Energy Transmission is in support of the direction that this Cost Allocation Working Group Byway Facility Cost Allocation Review Process White Paper is taking. The document follows the principle of HITC Cost Allocation Recommendation C2, where costs for specific projects between 100 kV and 300 kV can be allocated on a region-wide basis.</td>
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</table>
### Summary of Comments Submitted to CAWG Regarding HITT C2 Whitepaper

<table>
<thead>
<tr>
<th>Commenter</th>
<th>Burden of Proof</th>
<th>Eligibility to Seek a Waiver</th>
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<tbody>
<tr>
<td><strong>Omaha Public Power District (OPPD)</strong></td>
<td>OPPD is in favor of a surgical waiver process as it helps alleviate some of the wind-rich zone concerns. OPPD would, however, like to see the waiver implemented and the NEDTF changes to be fully flushed out and implemented prior to zonal consolidation to ensure that zones are treated appropriately. Waiting to see the effects of these two changes would grant SPP and the CAWG the opportunity to ensure things are working as intended and to correct any unintended consequences.</td>
<td><strong>Western Farmers, Golden Spread, Sunflower</strong>&lt;br&gt;LES/SUN specify that facilities for which an entity seeks a waiver, must be limited to NTCs that were issued through the ITP, High Priority or Balanced Portfolio processes. As written, the white paper does not specify the processes.</td>
</tr>
<tr>
<td><strong>Oklahoma Gas &amp; Electric (OG&amp;E)</strong></td>
<td>While it is undoubtedly true that wind energy is being exported from zones with a high concentration of wind generation and that the ITP has identified needed byway facilities within these zones, despite little or negative load growth, OG&amp;E does not believe these facts by themselves are relevant concerns. OG&amp;E opines that such exports may be facilitated by higher voltage facilities or facilities constructed to facilitate firm transmission that are already cost allocated according to the wind rule.</td>
<td><strong>Western Farmers, Golden Spread, Sunflower</strong>&lt;br&gt;The waiver language, as written, lists the Transmission Owner as the entity seeking the waiver. WF, GS &amp; S suggest the waiver criteria be expanded to allow any load impacted entity to be eligible to seek a waiver; therefore, they suggest “TO” be replaced by “Affected SPP Member”.</td>
</tr>
<tr>
<td><strong>SPS</strong></td>
<td>The waiver process should only be applied to new projects, not just the undepreciated amounts. First, applying the waiver to existing projects creates uncertainty to customers and transmission owners for all future transmission customers. Second, the CAWG should be aware of the cost implications and magnitude of adopting a cost allocation methodology to reallocate exiting projects. The criteria should be narrowly defined.</td>
<td><strong>Lincoln Electric System (LES)/Sunflower</strong>&lt;br&gt;OG&amp;E believes that any waiver process must first require a waiver applicant to be qualified. Without a qualifier, OG&amp;E believes the floodgates will be open for all to regionalize as many byway facilities as possible.</td>
</tr>
<tr>
<td><strong>Commenter</strong></td>
<td><strong>ITC</strong></td>
<td>ITC supports the CAWG’s recommendation that the burden should be borne by the entity seeking the waiver.</td>
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<tr>
<td></td>
<td><strong>AEP</strong></td>
<td>AEP suggests that the party seeking the waiver should be responsible for any cost associated with the waiver request.</td>
</tr>
<tr>
<td></td>
<td><strong>Western Farmers, Golden Spread, Sunflower</strong></td>
<td>As written, the white paper places the burden on the entity seeking the waiver. WF, GS &amp; S suggest that this should be the case for existing projects, but for new projects, SPP should have this information with the description in the ITP. They further recommend the CAWG ask SPP what information SPP can provide in the ITP process to support or not support waiver requests that arise in future ITPs.</td>
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<td></td>
<td><strong>SPS</strong></td>
<td>SPS suggests that the requesting entity should have the burden of proof to present the request, but to the extent the analysis and data already exist, that information should be the basis of the request.</td>
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<tr>
<td>Commenter</td>
<td>Waiver Evaluation Criteria</td>
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<tr>
<td>KEPCo</td>
<td>KEPCo suggests the process for a waiver should be simplified. KEPCo believes the criteria should be more precise to ensure that waiver requests are approved in a consistent non-discriminatory manner. The SPP staff evaluation should consider the evaluation criteria individually and collectively.</td>
<td></td>
</tr>
<tr>
<td>ITC</td>
<td>ITC agrees with the usage of the transformer waiver process – specifically, the anticipated utilization of the facility – as a starting point. ITC supports the recommended factors to be evaluated by SPP, namely: (1) whether power flows on the facility primarily result from the output of resources affiliated with utilities serving zonal load; and (2) whether the facility is necessary to support, or primarily benefits, in-zone load. However, ITC notes that the complexities of market transactions, inter-zonal transfers, power purchase agreements and affiliate transactions could complicate these evaluations. Less involved analyses – including simple comparisons of nameplate generation capacity to zonal peak demand in renewable-rich zones – would take less time and effort, and may provide results that are similar in accuracy.</td>
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<td>NPPD</td>
<td>The white paper should be more specific in quantifying the criteria enabling a waiver request to ensure all requests are evaluated consistently. The methodology required to analyze the percent of unaffiliated generation should be defined.</td>
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<td>Evergy</td>
<td>Evergy suggests running the economic models without the self-commitments of resources to see how much power is exporting during market dispatch. Self-commitments could be contributing to the level of exports. Evergy asks whether wind facilities that have associated firm transmission should be eliminated from the export analysis. The proposed process seems to look only at the current economic and reliability models and current exports without any consideration or differentiation for load that has already paid for upgrades needed to facilitate delivery of those resources to load through the aggregate study process.</td>
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<tr>
<td>OPPD</td>
<td>OPPD suggests for new projects that are part of an ITP portfolio, the project should not be eligible for a waiver if the zone is above a 1.5 B/C ratio for the total ITP portfolio in which it is approved. The B/C ratio for an entity that is already benefiting should not be elevated. OPPD has concerns over the use of “predominantly” and “substantially” in the evaluation criteria of the whitepaper. OPPD opines that the terms are open to interpretation and, over time, the true intention of a surgical approach may be lost. OPPD suggests the predominantly be defined to mean more than a simple majority and should mean something without question is to another zone’s benefit. OPPD questions whether “substantially benefit” means that the zone receives a substantial portion of the benefits or that it just receives a substantial benefit which may or may not be more than others benefit. OPPD suggests that it should be based on the benefit and not related to a percentage of overall benefits. OPPD suggests that a resource with firm transmission service starting prior to the NTC for the potential waiver project should be considered the same as a resource that serves load in the zone because the resource has already gone through the SPP study process and should already have the upgrades identified that were needed to export the energy.</td>
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<td>Company</td>
<td>Comments</td>
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<td>Alabama Power</td>
<td>Suggests generation affiliated with or otherwise serving loads in other portions of SPP should be treated as byway facilities in or for those determination zones. For example, if shift factor analysis shows that only 2 adjacent zones absorb all or most of the production cost or LMP benefits of certain excess zonal resources, then only those adjacent zones should be allocated the byway costs at issue.</td>
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<td>OG&amp;E</td>
<td>Once qualified, the applicant should demonstrate the particular byway facilities for which a waiver is sought provide excessive benefits to parties outside the zone. Finally, the applicant should demonstrate that removal of the byway facilities for which the waiver is sought does not result in the zone’s 67% cost responsibility for non-waived Schedule 11 byway facilities provide to the zone. OG&amp;E further suggests the following waiver criteria: • Nameplate value of Eligible Renewable Resources in local zone exceeds 100% of the Zonal monthly peak demands for 12 consecutive months • Local zone has Eligible Renewable Resources exports greater than 50% of the hours in a year. OG&amp;E further suggests that Eligible Renewable Resources include all renewable generation interconnected to facilities within the zone excluding: • Nameplate value of renewable resources connected to highway facilities; • Nameplate value of renewable resources with firm Transmission Service for loads outside the local zone; and • Where self-scheduled resources are greater than 10% of the local zone’s network resources are an equal amount of nameplate MWs of renewable resources will not be considered eligible.</td>
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<td>SPS</td>
<td>Suggests that the criteria be narrowly defined. For new projects, the requesting entity should be able to rely on power flow models that are produced by SPP that drove the need for the line or CCN (that is SPP’s determination regarding the need for the project). The requesting entity should have the burden of proof to present the request but to the extent the analysis and data already exist, that information should be the basis of the request. When SPP presents its business case during the ITP process, that business case should include the underlying need for the project.</td>
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<td>Western Farmers, Golden Spread, Sunflower</td>
<td>Suggest the 2nd evaluation criteria be reworded as follows “(ii) whether the transmission asset is not necessary for the support of, or does not substantially benefit, the host zone to which it is interconnected in roughly commensurate with the factors of the cost allocation protocols.”</td>
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<td>LES/Sunflower</td>
<td>The LES/SUN proposes that SPP staff, utilizing the information provided by the Entity, evaluate any waiver request submitted based upon (but not limited to) the following factors: 1) An analysis performed by SPP showing the percentage (%) power flows on the transmission facility from resources not affiliated with utilities serving load in the zone; 2) An opinion on whether the transmission asset is not necessary for the support of, or does not substantially benefit, the host zone to which it is connected; 3) A review of the arguments presented in support of the waiver by the entity.</td>
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# Summary of Comments Submitted to CAWG Regarding HITT C2 Whitepaper

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<th>Commenter</th>
<th>Supporting Analysis</th>
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<td>ITC</td>
<td>ITC supports the proposed list of supporting analysis but suggests the entity be allowed the latitude to determine additional supporting information. Additionally, SPP, CAWG and the RSC should have the authority to determine what data they need and will consider in making a recommendation regarding approval or denial.</td>
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<td>Western Farmers, Golden Spread, Sunflower</td>
<td>With regard to item 8 in the list of supporting items that suggests the applicant provide analysis of how much benefit the zone received from an economic project, WF, GS &amp; S asks what information could be provided in the ITP. There may not be a need for the applicant to conduct a comprehensive cost/benefit study if appropriate information could be gleaned during the ITP process. WF, GS &amp; S suggest that this discussion occur at an ESWG meeting.</td>
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<td>LES/Sunflower</td>
<td>The LES/Sunflower proposal includes the same supporting analysis list included in the draft white paper, except it excludes the requirements to include: (1) power flow information demonstrating the extent to which power flows on the facility result from output by resources not affiliated with utilities serving load in the zone for a reliability project; and (2) for an economic project, analysis estimating how much economic benefit from the facility is received by load in the zone where the facility is located.</td>
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<td>NPPD</td>
<td>NPPD suggests defining the level of detail of supporting analysis that will be available to the members of the CAWG, RSC, MOPC and interested stakeholders to guide their decisions.</td>
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<th>Commeter</th>
<th>Duration of Waiver/Sunset</th>
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<td>AEP</td>
<td>AEP suggests that the cost shifts should sunset after, at most, 5 years or the next iteration of the RCAR and should only be approved if the requesting entity is experiencing a B/C ratio below 1.0. If we don’t trust the results of the RCAR, then the RCAR needs to be revisited. AEP further suggests that unless the TO can provide refreshed data showing the harm still exists, the highway allocation should revert back to byway after 5 years.</td>
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<tr>
<td>Alabama Power</td>
<td>Alabama Power further argues that a one-time showing of byway zone exports is insufficient. SPP should conduct load flow analysis annually or biannually with informational filings showing that the cost allocation continues to meet FERC’s cost causation principles, and the burden of proof should remain with the waiver seeker. Alabama Power further suggests that reallocation of any cost should be phased in, capped and/or not exceed specified Schedule 11 increase limits. Further, the reallocation of costs should be time limited and not include any facilities or upgrades completed before January 1, 2020.</td>
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<th>Commenter</th>
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<td>ITC</td>
<td>ITC supports the role of SPP and the RSC in making recommendations on the waiver requests. ITC suggests that the role of the MOPC should be clarified. As written, the MOPC should “consider” the request. ITC sees the MOPC’s role as an advisory body and approval by the MOPC should not be a required step.</td>
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<td>KEPCo</td>
<td>KEPCo suggests the approval process should require SPP staff review followed by approval of the RSC and the SPP Board.</td>
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<td>NPPD</td>
<td>NPPD suggests the MOPC be required to approve or deny the request prior to going to the Board for approval or denial.</td>
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Western Farmers, Golden Spread, Sunflower

WF, GS & S suggest the approval process be revised as follows to make the RSC and MOPC reviews comments/recommendations instead of approvals: The Transmission Provider shall make a recommendation regarding approval or denial of the waiver request to the CAWG and RSC within 90 days of receipt of said waiver. The RSC shall consider the SPP Staff analysis of the waiver request and provide a recommendation for approval and/or comments on the request, if any, within one hundred twenty (120) days following receipt of the waiver request recommendation from the Transmission Provider. If the waiver request is approved by the RSC, upon receipt of the recommendation and comments from the RSC, or at the end of 120 days, the Transmission Provider shall present the waiver request to the MOPC. After consideration of the recommendation by the MOPC, the Transmission Provider shall present the comments from both the RSC’s recommendation of approval, including any comments from and the MOPC, to the SPP Board for approval or denial.

LES/Sunflower

The LES/Sunflower proposal clarifies the approval process, including that comments from the MOPC will be presented to the SPP Board but approval by the MOPC should not be required.

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<tr>
<td>ITC</td>
<td>ITC supports the proposed timelines.</td>
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<td>Western Farmers, Golden Spread, Sunflower</td>
<td>For future NTCs, WF, GS &amp; S suggest changing the timeline for seeking a waiver from 120 days to 180 days after the issuance of the NTC, similar to the timeframe for a transformer waiver.</td>
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<tr>
<td>LES/Sunflower</td>
<td>Sunflower-specific comments suggest the SPP review be reduced to 60 days, instead of 90 days and the RSC review be reduced to 90 days from 120 days. LES is okay with the timelines as written in the draft whitepaper.</td>
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<tr>
<td>Evergy</td>
<td>Evergy questions whether FERC needs to approve any change in cost allocation instead of the change being effective after the date the Board approves the waiver.</td>
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<td>Alabama Power/Southern Company Services</td>
<td>Alabama Power suggests that SPP will need to demonstrate with substantial evidence that changes will satisfy FERC’s vigorous standards, including those set forth in Order 1000. Alabama Power states that the process must meet FERC’s requirements for tariff waivers, which are: (1) the beneficiary of the waiver acted in good faith; (2) the waiver is of limited scope; (3) the waiver addresses a concrete problem; and (4) the waiver does not have undesirable consequences. Further, Alabama Power believes FERC should make each decision for a waiver instead of SPP.</td>
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<td>Evergy</td>
<td>Evergy suggests mentioning in the white paper that the NEDTF is working on the problem regarding ERIS not appropriately identifying transmission improvements. Evergy believes prospective changes to transmission pricing zones may be appropriate and could help alleviate some of the issues described in the white paper, thereby reducing the need for the targeted allocation process.</td>
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### Summary of Comments Submitted to CAWG Regarding HITT C2 Whitepaper

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<td><strong>AEP</strong></td>
<td>AEP suggests the NEDTF be allowed to finish its work. If the cost of upgrades on systems are directly assigned to the generator, then this perceived problem is greatly reduced. AEP suggests that the C2 approach shifts cost to other loads in the region, loads that according to AEP likely benefit even less than those requesting reallocation. Allowing the NEDTF to address this issue will instead lead to the generator interconnection customer paying these cost. AEP suggests this recommendation be reevaluated after the NEDTF finishes its work. AEP states that there are three HITT recommendation that potentially solve the wind-rich areas issue. In AEP’s view, all three are not needed. THE NEDTF is trying to develop more value for a GI customer to take NRIS service and providing a larger sub-regional area that can be used for load to arrange for designated resource capacity without additional transmission service study. NEDTF also plans to evaluate the impact threshold for GI customers taking ERIS service.</td>
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<tr>
<td><strong>OPPD</strong></td>
<td>OPPD supports the waiver process, but would like to see the waiver implemented and the NEDTF changes to be fully flushed out and implemented prior to zonal consolidation occurring to ensure that zones are treated appropriately. Waiting to see the effects of these two changes would grant SPP and the CAWG the opportunity to ensure things are working as intended and to correct any unintended consequences.</td>
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