Regional White Paper

Presentation and Analysis of Southern Intertie Hourly Non-Firm Alternatives

February 16, 2016

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I. Introduction

Bonneville Power Administration (BPA) customers have become increasingly concerned that long-term firm (LTF) transmission service on the Southern Intertie no longer has the value that it once had. Some customers are not renewing service and have removed requests from the queue. These customers have also expressed concerns that an equitable share of the economic benefits derived from markets served by the Southern Intertie should go to Northwest parties that purchase long-term service over the intertie. BPA wants to see what actions (if any) it should take to make sure LTF service on the Southern Intertie remains viable and its customers receive an equitable share of the economic benefits provided by the Southern Intertie.

II. Background

What Is the Definition and Description of the Southern Intertie?

The Southern Intertie is a system of transmission lines used primarily to transmit power between the Pacific Northwest and California. It is comprised of the California Oregon Intertie (COI) and the Pacific Direct Current Intertie (PDCI). The California Oregon Intertie, recognized as WECC regional transmission Path 66, transfers power between Oregon and northern California. The PDCI is recognized as WECC regional transmission Path 65, and transfers power between Oregon and southern California. BPA is the Path Operator on the northern segment of the COI and the PDCI. In addition to functioning as the Path Operator, BPA owns the majority of the northern portion of the COI and is the sole owner of the northern portion of the PDCI. The costs of these facilities are known as the Southern Intertie segment and the costs are recovered through the Southern Intertie rates.

See Appendix A for a complete list of Southern Intertie ownership rights.

How does BPA recover the costs of the Southern Intertie?

Every two years BPA conducts a rate setting process (rate case), which includes setting the Southern Intertie rates. BPA sets rates for firm reservations of durations greater than or equal to 1 year (LTF), firm and non-firm reservations lasting 1-5 days, firm and non-firm reservations lasting for greater than 5 days and less than 1 year, and firm and non-firm hourly reservations. The Southern Intertie rates are set to recover the annual revenue requirement of the Southern Intertie segment. Currently, BPA does not distinguish between short-term firm and non-firm products when developing rates. In the previous rate proceeding (BP-16) the annual average of the Southern Intertie segmented revenue requirement was approximately $93 million. The Southern Intertie LTF transmission product was expected to recover approximately 95% of the Southern Intertie segmented revenue requirement. The hourly, days 1-5 and day 6+ products were expected to recover the remaining 5% of the Southern Intertie segmented revenue

requirement. The BP-16 estimates of each service's relative contribution to the recovery of the Southern Intertie revenue requirement are very close to historical averages.

The large portion of the revenue requirement recovered through LTF service provides stable and predictable cost recovery from year to year. LTF is provided through "take or pay" contracts that usually last several years. A decrease in LTF subscriptions negatively affects BPA in at least two ways.

First, a decrease in LTF transmission subscriptions will increase the rates of the remaining LTF Southern Intertie rights holders unless BPA receives a greater or equal amount of revenue from short term service. An increase in LTF rates may decrease other rights holders' economic incentive to continue to subscribe to LTF depending on why customers are purchasing LTF. The demand for LTF rights used to capture the spread between Pacific Northwest (PNW) and California energy prices is likely more price elastic than the demand for LTF rights used to serve load or the demand for LTF rights used to deliver renewable generation to California parties trying to meet renewable portfolio standards requirements.

Second, a decrease in LTF transmission subscriptions increases the risk of BPA under-recovering or over-recovering the costs of the Southern Intertie. If the amount of LTF subscription decreases and customers move towards using shorter term service to meet their needs, the volatility around cost recovery increases. This increased volatility occurs because subscriptions would be moving away from long-term take or pay service. If a larger portion of reservations have durations less than one year, sales are less certain and transmission reservations are more likely to depend on load and resource conditions and the economics of selling energy over the Southern Intertie on a short-term basis. Customers without LTF rights only pay for transmission when they decide it is economic to do so, and the year-to-year value of sales over the Southern Intertie may vary considerably depending on several market factors. This volatility in market conditions would make it difficult to forecast Southern Intertie reservations and may impact BPA's ability to appropriately recover the costs of the Southern Intertie.

See Appendix C for historical billing quantities and revenue on the Southern Intertie by service.

The Value of BPA Transmission Rights on the Southern Intertie

As discussed above, the majority of the costs on the northern portion of the Southern Intertie owned by BPA are recovered through LTF transmission contracts. This service requires that customers agree to pay the Southern Intertie long-term rate for a term of one year or longer. In exchange for entering into LTF contracts, customers receive the ability to schedule transmission in any hour of the year at BPA's highest transmission priority and redirect onto other Southern Intertie paths when ATC is available. On the Southern Intertie many

transmission customers are not using this transmission to serve their own load, but instead use their transmission rights to ship power or sell capacity between a low priced region (usually the Pacific Northwest) and a historically high priced region (usually California).

LTF transmission service is designed to have advantages over short-term non-firm transmission service. One traditional advantage of LTF transmission service is that customers with firm rights have the ability to use the reservation in any hour (subject to de-rates), while short-term non-firm transmission may be unavailable. Another traditional advantage of LTF transmission service over short-term non-firm service is that firm service has the highest priority in the event of a curtailment, meaning it will be the last service to be curtailed. In addition to security around ability to schedule and curtailment priority, LTF transmission service is designed to have a cost advantage. Under the current rate structure, LTF transmission service on BPA's system is more economic than hourly service as long as the customer uses the reservation more than 80 hours per week. Finally, LTF service with a duration of 5 years or more has "rollover rights" when the service agreement expires.

When a customer takes LTF transmission service, the cost of the transmission becomes a "sunk cost" for that customer and thus the major "hurdle rate" of deciding when it is economic to use transmission is eliminated for that customer for the life of the contract. Once a customer has a LTF contract the costs associated with purchasing transmission are incurred whether or not the rights are used and therefore do not influence the economics of making energy sales. Transmission losses and CAISO import fees would still remain variable costs for any LTF customer. Unlike LTF transmission, short-term transmission costs are incremental costs that must be included in every economic decision of whether to reserve transmission and sell power over the Southern Intertie. Theoretically, a transmission line that is fully subscribed with LTF has a higher probability of being fully utilized because LTF has minimal "hurdle rates" to utilizing that transmission. If the Southern Intertie has less LTF transmission, it may reduce the intertie utilization because a higher portion of market participants on the intertie will have variable "hurdle rates" and will not sell into the market in some hours when a long-term customer would have sold energy. However, a fully subscribed transmission path does not guarantee the path will be fully utilized when there is a positive economic spread. Some customers may have constraints to fully utilizing their transmission rights.

Recently BPA has experienced some customers not renewing their LTF Southern Intertie service. See Appendix B for LTF rights renewal history. Additionally, some customers have expressed reluctance to execute future renewals. These customers have indicated their reason for removing requests and not renewing service is due to a perceived reduction in the value of LTF rights. They state that the California Independent System Operator (CAISO) does not recognize BPA transmission priority when granting power awards and issuing curtailments. They explain that this, in conjunction with the pricing and availability of hourly non-firm (HNF), has made HNF a more attractive choice for sales to the CAISO since HNF purchases can be largely concentrated to only hours with the highest forecasted price spreads.

The ability to bid into the CAISO Day Ahead Market (DAM) without firm transmission rights and procure HNF prior to the tagging deadline is capable of devaluing long-term rights in two ways. First, it increases the probability that a customer with LTF rights will not be able to fully utilize its transmission rights. Second, it is capable of decreasing the value of sales into the Southern Intertie scheduling points. The CAISO grants awards up to its capacity on the Southern Intertie. However, the bids into the CAISO DAM are not limited to the CAISO capacity. When the volume of economic bids into a Southern Intertie scheduling point exceeds the scheduling limit, the marginal cost of congestion at the Scheduling Point increases. This congestion reduces the price that is paid to sellers at that scheduling point.

Seams Issues & Scope of this White Paper

Seams occur at boundary points between transmission providers due to differences in market designs, transmission scheduling practices, operating rules, etc. Customers identified three distinct seams that they believe are affecting the value of LTF service on the Southern Intertie. These identified seams on the Southern Intertie are between BPA and the CAISO, and between BPA and other OATT transmission providers.

1) BPA does not limit use of firm reservations during de-rates.

   When the path is de-rated, LTF customers can still schedule up to their full scheduling rights.

   This can lead to some long-term customers displacing other long-term customers and preventing them from utilizing their pro-rata share of available capacity during outages or de-rates. Additionally, this is capable of increasing economic congestion, which reduces the price sellers receive at the Southern Intertie Scheduling Points.

2) BPA's HNF service has the same priority in the CAISO Day Ahead Market as LTF service.

   The CAISO does not consider whether a customer has firm transmission capacity when awarding bids for the DAM. Because BPA sells unused long-term capacity as HNF at a relatively low transmission rate, customers without long-term capacity are able to bid into the CAISO DAM and purchase HNF transmission if they are awarded.

   The current scheduling structure allows customers to bid into the CAISO, planning to use HNF with little risk. This can lead to some HNF bids being awarded by the CAISO DAM over bids from LTF customers, preventing long-

term customers from fully utilizing their transmission rights. Additionally, this is capable of increasing economic congestion, which reduces the price sellers receive at the Southern Intertie scheduling points.

3) OATT transmission providers do not recognize the tagging priority of neighboring OATT transmission providers.

   California OATT providers perform the curtailments on the majority of tags moving N>S across the Southern Intertie; therefore, the transmission priority of the product used on their systems determines the order of curtailment. When the southern party is curtailing, the transmission priority of the service used on BPA's system is irrelevant and BPA firm transmission may be curtailed ahead of BPA non-firm transmission.

For the purposes of this White Paper, the scope is limited to addressing seams issue number two (#2), the use of BPA HNF transmission in the CAISO DAM. BPA believes the other two seams issues must be addressed, but they will be better addressed in a separate process. Several customers indicated interest in BPA working collaboratively with its neighboring Balancing Authorities to solve the identified seams issues. BPA will be pursuing collaborative solutions in ongoing discussions outside of this process and will keep customers apprised periodically as to the status of those discussions.

Current HNF Service Attributes

Rate Calculations

Currently, the rates for all of BPA's hourly transmission services (Network PTP, Southern Intertie, Montana Intertie, and Scheduling, System Control, and Dispatch) are based on the same ratio between long-term and hourly products. The hourly rate for both firm and non-firm products is developed by first dividing the annual rate, in $ per kw-year, by the average hours per year and multiplying the result by 1,000 mills per dollar to convert to an hourly rate in mills per kw-hour. Then, this hourly rate is multiplied by 24/16 (24 hours a day over 16 heavy load hours based on traditional industry definitions) and also multiplied by a ratio of 7/5 (seven days in a week divided by five weekdays). BPA has previously explained that multiplying by these factors ensures that if a customer were to "cherry pick" its purchases, and purchase only during all traditional heavy load hours Monday through Friday (80 hours a week), that customer would be paying as much as a LTF customer.

In addition, the BP-16 transmission rate schedule contains a provision for "Interruption of Non-Firm PTP Transmission Service." This provision states that non-firm Point to Point

customers will not be charged for transmission in hours when their transmission is curtailed because of conditions on the Federal Columbia River Transmission System (FCRTS).

Inventory and Release

On the Southern Intertie, BPA Transmission Services (BPAT) sells any unscheduled long-term capacity as HNF. At the opening of the real time window at 10:00 p.m. on the preschedule day, any long-term capacity that is not scheduled is released for sale as HNF. BPA continues to update the amount of HNF available for sale between the opening of the real time window and the hour for which HNF capacity is being sold. To the extent that customers purchase HNF and do not schedule the entire capacity, BPAT will resell the unused HNF capacity. For example, if a customer purchases 100 MW of HNF, but only schedules 75 MW, the remaining 25 MW is returned to the HNF inventory to be sold.

HNF Use in the CAISO

Shortly after the CAISO implemented the Market Redesign and Technology Upgrade (MRTU) in 2009, the CAISO removed the day-ahead tagging requirement for day-ahead power awards. This allows customers without LTF to bid into the CAISO DAM using HNF because 1) customers are not required to have acquired transmission to submit a bid, and 2) the CAISO grants awards economically without considering the OATT priority of the transmission which will deliver the energy. This allows customers without firm service to bid into the CAISO DAM by 10:00 a.m. and then later procure HNF if they are awarded in the CAISO DAM (see timeline below). BPA releases HNF based on unscheduled firm reservations at the opening of the "Real Time Window" (10:00 p.m.). Figure 1 illustrates the relationship between the timelines for the CAISO DAM and BPAT's release of unscheduled firm transmission.

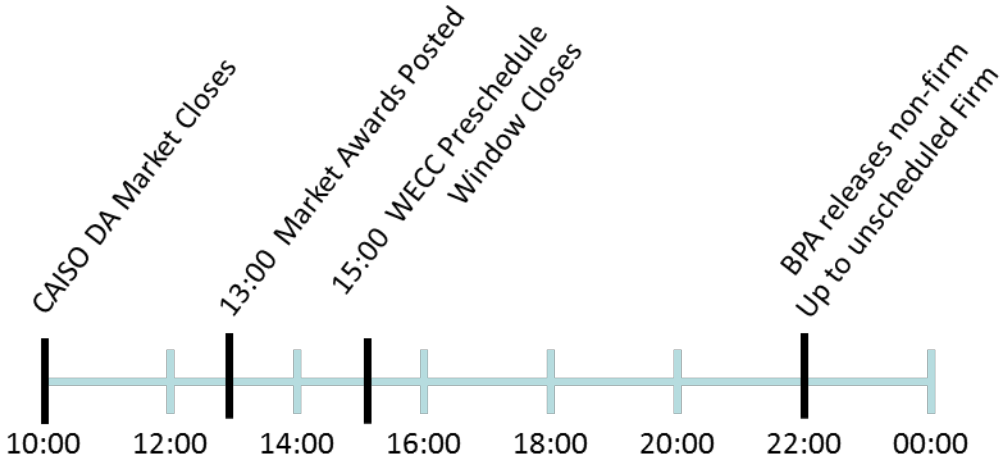


Figure 1. CAISO Day Ahead Market and BPAT Scheduling Timeline (Day Prior to Flow)

There is some risk of not being able to purchase HNF since BPA only releases LTF capacity that is not scheduled prior to the WECC pre-schedule deadline. However, if a customer with

LTF service does not receive an award in the DAM, the probability of BPA being able to offer that customer's capacity as HNF increases. This makes it less risky for a customer that has an award in the DAM (but no transmission rights) to obtain HNF and meet its obligation to CAISO. Therefore, HNF customers are largely insulated from any additional risk of relying on a short term non-firm product.

Positions in BP-16

In the BP-16 rate case, Joint Party 6 (Public Power Council and Powerex) proposed an alternative rate design for the Southern Intertie HNF service that would allocate costs between long-term and HNF services based on a proposed measure of average per customer historical use of HNF service on the Southern Intertie. The proposed methodology was designed so that a customer using the calculated average number of HNF hours would pay the same per MW as a customer using LTF. The proposal would have increased HNF rates by about 300%.

BPA staff filed rebuttal testimony that highlighted several concerns with the proposed methodology:

- Volume (MWs) of purchases was ignored.
- Methodology treats multiple requests during the same hour as one reservation, even if those requests were on different paths.
- HNF transmission is not always available, and the methodology did not take into account hours when a customer would like to purchase HNF but couldn't.
- May violate BPA rate principle of avoiding rate shock.
- High possibility of instability in rates from rate period to rate period.

The Administrator decided to retain the initial proposal HNF rate methodology, but acknowledged that there are seams issues with California and committed to holding regional workshops and potentially an expedited 7(i) process to pursue a rate solution prior to BP-18.

Potential for an Expedited 7(i) Process

The BP-16 Final ROD Administrator's Preface raised the possibility of an expedited 7(i) process to pursue any changes needed to protect BPA's ability to sell long-term transmission capacity. In the current public process, most customers have submitted comments expressing interest in exploring rate solutions and maintaining a timeline that allows for an expedited 7(i) process. However, a couple of customers have submitted comments that question whether there is enough risk to BPA's Southern Intertie cost recovery in the current rate period to warrant an expedited 7(i) process. They point out that only a limited number of customers taking LTF service during the current rate period (FY 2016-2017) must make their decision to either renew or stop taking LTF service within the current rate period and even fewer must make that decision prior to BPA determining whether an expedited 7(i) process is warranted. They also point out

there are sufficient MWs in the queue to potentially replace any customers that elect to stop taking LTF service.

Industry Scan

BPA identified two criteria for this industry scan, based on the alternatives developed by BPA and the region to maintain the value of Southern Intertie LTF rights.

1) Cost of HNF compared to LTF

One of the main issues explored in the regional discussions is that the cost of HNF relative to LTF does not reflect the relative value of the HNF product. Whereas LTF customers are required to purchase service in all hours of all months, HNF customers are able to purchase transmission only in the hours they plan to use transmission. Customers have argued that this flexibility makes the HNF product more valuable and this ability to "cherry pick" only the most desirable hours is being provided at too low a price.

This industry scan compares HNF and LTF rates for OATT transmission providers (TPs) adjacent to BPA. It includes a review of the following aspects of rates:

- The price of the HNF rate
- Whether hourly firm service is available at the same rate
- The price of the LTF rate
- How the HNF rate compares to the rate for LTF
    - First, BPA developed a ratio of the hourly cost of LTF service to the hourly cost of HNF service.
    - Then, BPA converted this ratio into a number of hours per week assumption like BPA uses (168 hours in a week/# of hours HNF in use). This shows the amount of hours for which a customer would pay equivalent amounts for HNF and LTF service. BPA created this ratio for comparison purposes only. It is not meant to suggest other transmission providers develop their rate by making assumptions about the number of hours per week HNF is used.
- Whether there are any posted discounts

Key Findings

- PGE and PSE offer HNF on the northern half of the COI at rates lower than BPA.
- Comparing the relationship between LTF and HNF rates:

- TANC is the only provider with a higher HNF rate to LTF rate ratio. (equivalent to about 60 hours per week using BPA's rate construct)
- Several providers are close to BPA's current ratio (equivalent to 80 hours per week)
- About half of the providers reviewed set On-Peak and Off-Peak rates separately with the Off-Peak HNF rate being set equal to the hourly cost of LTF (derived by using a divisor of 168 hours per week)

Table 1: Results of Regional Rates Benchmarking

Transmission Provider (Path)	Hourly Non-firm Rate	Hourly Firm Rate Equal to HNF Rate?	LTF Rate	LT Multiplier to develop HNF rate (ex. BPA is 168/80)	Posted Discounts
BPA Southern Intertie	$3.53	Yes	$14,760/ MW yr	168/80	Currently No Posted Discounts
Avista	$5.77	Does not offer hourly firm	$24,000/ MW yr	~168/79.8	Currently No Posted Discounts
Avista - Colstrip	$3.91	Does not offer hourly firm	$16,410/ MW yr	~168/80.5	Currently No Posted Discounts
BC Hydro	$7.42	Yes	$64,967.88/MW yr	168/168	On Peak: $3/hr Off Peak:$1/hr
Idaho Power	On Peak: $4.79 Off Peak: $2.67	Does not offer hourly firm	$23,430/ MW yr	On Peak: ~168/93.8 Off Peak: 168/168	Currently No Posted Discounts
LADWP	On Peak: $10.81 Off Peak: $5.14	Yes	$44,990/ MW yr	On Peak = 168/79.8 Off Peak = 168/168	Currently 25% - 40% on certain unconstrained paths through Dec
NV Energy	On Peak: $6.25 Off Peak: $3.75	Does not offer hourly firm	$31,760/ MW yr	On Peak = 168/97.5 Off Peak = 168/162.4	Currently No Posted Discounts
PacifiCorp	On Peak: $6.85 Off Peak: $3.26	Yes	$28,505.70/MW yr	On Peak = 168/79.8 Off Peak = 168/168	Currently No Posted Discounts
PGE	On Peak: $1.257 Off Peak: $0.718	Does not offer hourly firm	$6,280/MW yr	On Peak: 168/95.8 Off Peak: ~168/168	Currently No Posted Discounts
PSE	On Peak: $4.3254 Off Peak: $2.4714	Yes	$21,592.30/MW yr	On Peak = 168/95.7 Off Peak = ~168/168	Have a discount posted on Windridge to Wanapum path (due to settlement)
PSE - COI Direct Assignment	On Peak: $1.9851 Off Peak: $1.1343	Does not offer hourly firm	$9,909.6/MW yr	On Peak = 168/95.7 Off Peak = ~168/168	Currently No Posted Discounts
SMUD - COTP	$11.1430	Does not offer hourly firm	$60,528/MW yr	~168/104.2	Currently No Posted Discounts
SMUD - Network	$2.0640	Does not offer hourly firm	$10,452/MW yr	~168/97.1	Currently No Posted Discounts
TANC	$17.64	Does not offer hourly firm	$54,450/MW yr	~168/59.2	Discount frequently on the COTP. Previous HNF discounts: 9/11/15 - $13.23 7/23/15 - $8.82 11/24/14 - $10.58 6/9/14 - $8.33 4/11/14 - $10.58 Have a formalized process for discounting

Valid for Service on Northern half of Southern Intertie
Valid for Service on Southern half of Southern Intertie

Comparison of Rate Levels

It is difficult to make a direct comparison between BPA's Southern Intertie rate and the rates included in Table 1 above. BPA's Southern Intertie rate includes the northern half of both the AC and DC paths. While there are other Southern Intertie providers in this table, no other rates are applicable to all the same facilities included in BPA's Southern Intertie rates. Other intertie providers only provide service on one path. Some rates apply to their whole system, including the Southern Intertie. Some are owners on the southern half of the Southern Intertie and thus own distinctly different assets from those included in BPA's rates. These differences in service should be considered when comparing the other TPs' rates to those of BPA:

BPA Southern Intertie rate:	Includes service over the Northern half of both AC and DC lines
LADWP rate:	Valid for service over their entire system, including the Southern half of the DC
PGE rate:	Valid for their entire system, including the Northern half of the COI
PSE – COI Direct Assignment rate:	Valid only for Northern half of the COI
SMUD – COTP rate:	Includes Southern half of the COI
TANC rate:	Includes Southern half of the COI

Comparison of Rate Ratio between LTF and HNF

As discussed above, it is difficult to compare BPA's Southern Intertie rates to those of other transmission providers because no other transmission providers' rates are for service on both the AC and DC interties. Since it is difficult to compare the rates, we also compared the ratio between LTF and HNF rates to determine the relative pricing between the two. To make the ratio more meaningful with respect to BPA's HNF rate setting, we converted these ratios to represent a ratio based on the "number of hours per week" framework which has often been used in these discussions.

BPA currently sets its HNF rate so that a customer that used HNF 80 hours per week would pay the same as a LTF customer. Thus, the ratio of BPA's HNF to LTF rate is 168/80. The calculated ratios for other TPs are shown in Table 1. We included TPs that do not provide service over the Southern Intertie to get a better sense of how regional TPs value HNF compared to LTF.

Only one transmission provider's rate (TANC) uses a LTF to HNF ratio that is lower than BPA's 80 hours per week. Several providers' rates result in a ratio with a similar "number of hours" as BPA. It is also common for transmission providers to offer different rates for On Peak and Off Peak periods. In these cases there is little or no inflation of the Off Peak HNF rate compared to the LTF rate. For many providers the Off Peak cost of an MWh of transmission for HNF and LTF customers is the same.

Discounting

The majority of transmission providers reviewed did not offer discounts; however, TANC frequently offers discounts on its Southern Intertie capacity. The TANC HNF rate has been consistently discounted over the past year by 25% - 50%.

2) Practices regarding availability of HNF

The non-firm rate alternatives identified in this process focus on the availability of HNF on BPA's share of the Southern Intertie. Specifically, Alternative #6 proposes that BPA stop returning the unscheduled portion of HNF reservation to the HNF inventory to be sold again; Alternative #9 proposes changing the time that unused LTF is made available for sale as HNF.

To compare differences in practices regarding availability of HNF, BPA reviewed other transmission providers' ATC IDs and other relevant business practices, as well as surveyed ATC points of contact.

Key Findings

- Only one other TP surveyed adds the unscheduled portion of HNF reservations back to its HNF inventory
- There is a wide range of times when unused LTF is sold as HNF
  - BPA's 10 p.m. release time is the latest
  - Several TPs release unused LTF at noon on the preschedule day (between submittal of CAISO day ahead bids and posting of day ahead awards)

Table 2 below provides a summary of BPA's understanding of how regional transmission providers manage these two issues.

Table 2: BPA Understanding of Regional HNF ATC Methodologies

	Postback Unused HNF?	Timing for Postback of unused Firm as Non Firm
Avista	Possible this occurs because ATC is updated after new and adjusted e-tags are received.	12:07 p.m. of the preschedule day
Idaho Power	No	Noon of the preschedule day
LADWP	No	4 p.m. of the preschedule day
NV Energy	No	Noon of the preschedule day
PacifiCorp		3:05 p.m. of the preschedule day
PGE	No	Start selling HNF at noon the preschedule day based on estimates. Release any additional capacity based on actual firm schedules at 2 p.m.
PSE	No	168 hours before the hour

Post-back of Unused HNF

Only one other provider included in the review (Avista) returns unused non-firm transmission to its non-firm ATC inventory. This return was not called out specifically in its ATC ID, but it is possible because ATC is updated after new and adjusted e-tags are received.

Timeframe for Post-back and Sale of Unused Firm as Non-firm

Post-back times of unused firm transmission for resale as non-firm varied widely among the transmission providers BPA reviewed. Most TPs perform the post-back sometime during the preschedule day, with several of those providers releasing this capacity at 12:00 p.m. One provider, PGE, uses an estimate of forecast firm transmission use to begin HNF sales at 12:00 p.m. At 2:00 p.m., PGE compares the forecast firm transmission use to actual firm scheduled. If there is unused firm transmission in excess of the estimate, it releases that capacity for sale as HNF.

BPA's Rate Principles

BPA developed principles for the Southern Intertie HNF analysis which will be used to evaluate each of the rate proposals. These principles were shared with customers and are the following:

1. Set rates and policies consistent with statutory requirements

a. Full and timely cost recovery
b. BPA's rates are based on total system costs
c. Equitable cost allocation between Federal and non-Federal uses of the transmission system
d. Encourages the widest possible diversified use of electric power at the lowest possible rates to consumers consistent with sound business principles

2. Set rates consistent with ratemaking principles

a. Cost causation
b. Consistent with statutory obligations and minimizes compliance risk
c. Simplicity, understandability, public acceptance and feasibility of application
d. Avoidance of rate shock
e. Rate stability from rate period to rate period

3. Considerate of seams issues with CAISO

a. Preserve the value of LTF BPA transmission products and ensure their long-term viability
b. Encourages continued subscription of LTF on the Southern Intertie
c. Durable and will be consistent over time and will withstand possible market changes.

BPA's Non-Rate Principles

BPA developed principles for the Southern Intertie HNF analysis which will be used to evaluate each of the non-rate proposals. These principles were shared with customers and are the following:

1. ***Consistent with statutory obligations and minimizes compliance risk***
2. ***Consistent with desired future state of BPA business and policy***
3. ***Ability to implement***
   a. Options provided herein will have implications for the ability to implement both from a technical standpoint, but also from a customer process and communication standpoint.
4. ***Supportability***
   a. Options provided herein will have implications for the ongoing cost of maintenance and upgrade for the systems automation that implements this decision.

5. ***Considers impacts to different customers***
6. ***Considers impacts to reliable operations***
7. ***Considers cost of implementation***
    a. Options presented here may have significantly different implementation costs associated with them.
8. ***Considers revenue impact***
9. ***Preserves the value of LTF BPA transmission products and ensure their long term viability***
10. ***Encourages continued subscription of LTF on the Southern Intertie***
11. ***Durable in that it will be consistent over time and will withstand possible market changes***

III. Proposed Alternatives

Alternative #0 – Status Quo

Description

BPA would make no changes to its current rate methodology, scheduling practices or HNF inventory calculations for the Southern Intertie.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

No. Current rates and scheduling practices are already established.

Will this alternative require systems and/or hardware upgrades?

No.

Possible Rate Range

The current HNF rate is 3.53 mills per kWh (or $ per MWh).

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

No change. As described in the background of this paper, the CAISO DAM currently does not consider OATT priority when assessing awards. Customers have indicated that this, along with the pricing and availability of HNF has eroded the advantages of LTF in the CAISO DAM.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

No change. For customers concerned about the value of LTF compared to HNF, this alternative does not encourage them to continue to subscribe to LTF.

Is this alternative durable?

No change. Historically, this alternative has been durable; however, if fears about LTF demand are realized, this alternative will likely not be sustainable as a long term solution.

Customer Positions, Analyses or Justification

EDP Renewables

EDPR would support [Alternative 0]. This alternative has no unintended consequences which would increase the need to manage oversupply conditions. This alternative also gives Bonneville time to work with the owners of the southern facilities to develop a long term mechanism that will allow long term recovery of the revenue requirement for the intertie facilities in the face of changing market dynamics… [T]he real threat to retention of long term firm customers is uncertainty and changing market dynamics - competition from Hourly Non-Firm transmission is minor in comparison.

Iberdrola Renewables

Iberdrola Renewables generally supports the comments submitted by Powerex…with the exception of Powerex's comments on Alternative No. 9…

Powerex

Powerex strongly opposes Alternative No. 0, which is to do nothing at all.

Public Power Council

PPC is opposed to continuation of the status quo on this issue. Throughout the process of the BP-16 case and this current workshop process, we are convinced that the seams issues identified are real and have meaningful impacts on the value of the LTF product on the Southern Intertie. Not addressing the issue deprives transmission customers purchasing the IS LTF product of the value of that product and also creates a threat to the viability of long-term cost recovery on the segment.

Snohomish PUD

Snohomish recognizes the need for change from the status quo. As such, Snohomish strongly opposes Alternative 0 to maintain the current hourly non-firm methodology for the Southern Intertie.

Southern California Edison

The White Paper listed several rate design proposals and at this time SCE supports the status quo as it is does not violate the principles described above. SCE strongly objects to any rate proposals designed to capture market value or high value hours, as they violate the principle of cost based rates. Implementing these types of rates harm transmission customers located in BPA area through the reduction in energy sales. The implementation of higher 'valued' based rates will transfer revenue from the non-firm customer to BPA or to holders of firm transmission holders. This clearly violates a cost-based rate principle and creates issues of discriminatory access.

Rate Alternatives

Alternative #1a – Recalculate the Southern Intertie HNF rate using the methodology proposed by Joint Party 06 in BP-16.

Description

BPA would adopt the rate proposal presented by Joint Party 06 in the BP-16 Rate Case, which looked at historic use of the HNF product on the Southern Intertie to develop a measure for determining how many hours a week, on average, per customer the product was used. In the proposal, an average usage of 23 hours was calculated by averaging the number of hours per week HNF customers used HNF in weeks that they purchased the product. BPA would then calculate the Southern Intertie HNF rate similar to the current methodology, but use a ratio of 168/23 instead of 168/80 (total hours in a week over heavy load hours in a week). At this rate, a customer purchasing HNF 23 hours per week would pay the same amount as a LTF customer.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This alternative will not require a tariff change or changes to business practices.

Will this alternative require systems and/or hardware upgrades?

This alternative will not require systems and/or hardware upgrades.

Possible Rate Range

The resulting rate would be approximately 11.41 mills per kWh or a 223% rate increase over the current HNF rate.

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative has been identified as effective in preserving the advantages of LTF in the CAISO DAM. Any increase in the HNF rate will increase the relative value of LTF, increase the ability of LTF customers to utilize their rights and increase the economic benefits to LTF customers. The degree of effectiveness is related to the magnitude of the rate change.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be very effective at encouraging continued subscription of LTF on the Southern Intertie. Any increase in the HNF rate will make LTF a better economic investment relative to HNF. In this alternative, any customer anticipating using the

Southern Intertie more than 23 hours per week would be better off reserving LTF transmission.

Is this alternative durable?

This alternative would be somewhat durable. Transmission rates that are based on historical reservations would need to be revisited from rate case to rate case. A large increase in the HNF rate would almost certainly reduce HNF reservations. In the next rate period, calculating the HNF rate based on actual usage per customer would increase the rate again, creating an unstable cycle of rate increases.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

Potentially. It is unclear why a usage methodology would not also apply to the Network.

Does this alternative create additional oversupply risks and/or costs?

This alternative could possibly increase the costs of acquiring HNF to prevent oversupply, but it does not impact the availability of HNF and thus will not increase the occurrence of the oversupply management protocol.

Does this alternative promote utilization of the Southern Intertie?

A fully subscribed Southern Intertie line has a higher probability of being fully utilized because all of the subscribers' long-term transmission costs are sunk and have minimal "economic hurdles". However, this alternative may decrease use of HNF on the Southern Intertie, so the overall impact on utilization is unclear.

Other initial evaluations

In BP-16, BPA staff filed testimony highlighting concerns with the proposed rate.

- Methodology may be difficult to confine to the Southern Intertie.
- Volume of purchases was ignored.
- Methodology treats multiple requests during the same hour as one request, even if those requests were on different paths.
- HNF transmission is not always available, and the methodology did not take into account hours when a customer would like to purchase HNF but couldn't.
- May violate BPA rate principle of avoiding rate shock.
- High possibility of instability in rates from rate period to rate period.

In addition, because the methodology is based on hours per customer, it fails to account for diversity among HNF customers.

Customer Positions, Analyses or Justification

Exelon Generation

Exelon Generation is not convinced that any change to the HNF rate mechanism is warranted at this time. Any increase to HNF rate will increase the value of LTF, but the tradeoff between preserving the value of LTF (as measured by whether or not customers are willing to sign up for it), and the short term revenues achieved by making unused system capacity available through HNF service seems quite difficult to predict.

Exelon Generation shares the concern noted by BPA in the Whitepaper that Alternatives #1 (Recalculate the Southern Intertie HNF rate using the methodology proposed by Joint Party 06 in BP-16)…could create severe rate shock.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE believe that rate adjustments may ultimately be appropriate if needed to address a transmission revenue shortfall, but proposed rate alternatives #1a and #1b would constitute a significant rate adjustment outside of a standard rate case that would be inappropriate and may violate BPA's principles of rate stability and avoidance of rate shock. BPA's benchmarking study showed that the current calculation is more in line with other entities in the region than either of the proposed calculations. And again, PGE and PSE reiterate that the data presented does not support the need for such a rate change in a mini 7i process, but would be more appropriately addressed in the BP-18 rate case.

Alternative #1b – Recalculate the Southern Intertie HNF rate based on a different measure of Southern Intertie usage.

Description

The current Southern Intertie HNF rate is calculated such that a customer reserving 80 hours per week pays the same as a customer with LTF. This alternative would create a measurement of HNF use (based on either schedules or reservations) to replace the 80 hours per week in the current rate calculation.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This alternative will not require a tariff change or changes to business practices.

Will this alternative require systems and/or hardware upgrades?

This alternative will not require systems and/or hardware upgrades.

Possible Rate Range

Based on preliminary analysis of historical data, the resulting rate may be between 5 and 8 mills per kWh. This would be a 40% to 130% rate increase over the current Southern Intertie HNF rate.

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative would be at least somewhat effective in preserving the advantages of LTF in the CAISO DAM. Increasing the HNF rate will increase the relative value of LTF from an economic investment perspective. It will also increase LTF utilization and the economic benefits to LTF customers because HNF will be an economic option in a smaller percentage of hours. The degree of effectiveness is related to the magnitude of the rate change.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be effective at encouraging continued subscription of LTF on the Southern Intertie. One of the main product advantages of LTF is the relative cost advantage. Any increase in the HNF rate will make LTF an even better economic investment relative to HNF. In addition, LTF customers may recover value by reselling unused firm transmission in BPA's secondary transmission market.

Is this alternative durable?

This alternative would be somewhat durable. Transmission rates that are based on historical reservations or other measures of usage may need to be revisited from rate case to rate case. If reservations or other measures of usage change because of a change in the rate, the rate may need to be updated to reflect the changes in reservations.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

Potentially. It is unclear why a usage methodology would not also apply to the Network.

Does this alternative create additional oversupply risks and/or costs?

This alternative could possibly increase the costs of acquiring HNF to prevent oversupply, but it does not impact the availability of HNF and thus would not lead to increased occurrence of the oversupply management protocol.

Does this alternative promote utilization of the Southern Intertie?

If LTF is fully subscribed on the Southern Intertie, the line has a higher probability of being fully utilized because all of the subscribers' long-term transmission costs are sunk and have minimal "economic hurdles". However, this alternative may decrease HNF use on the Southern Intertie, so the overall effect on utilization is unclear.

Customer Positions, Analyses or Justification

Exelon Generation

Exelon Generation is not convinced that any change to the HNF rate mechanism is warranted at this time. Any increase to HNF rate will increase the value of LTF, but the tradeoff between preserving the value of LTF (as measured by whether or not customers are willing to sign up for it), and the short term revenues achieved by making unused system capacity available through HNF service seems quite difficult to predict.

Exelon Generation shares the concern noted by BPA in the Whitepaper that…[recalculating] the Southern Intertie HNF rate based on a different measure of Southern Intertie usage…could create severe rate shock.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE believe that rate adjustments may ultimately be appropriate if needed to address a transmission revenue shortfall, but proposed rate alternatives #1a and #1b would constitute a significant rate adjustment outside of a standard rate case that would be inappropriate and may violate BPA's principles of rate stability and avoidance of rate shock. BPA's

benchmarking study showed that the current calculation is more in line with other entities in the region than either of the proposed calculations. And again, PGE and PSE reiterate that the data presented does not support the need for such a rate change in a mini 7i process, but would be more appropriately addressed in the BP-18 rate case.

TransAlta

Of the white paper solutions on which BPA is seeking comment, TransAlta supports 1b, recalculating the HNF rate based on a different measure of Southern Intertie usage, because it is most closely aligned with BPA's ratemaking principals and how the service is used today. TransAlta does not recommend a rate that could be deemed arbitrarily high…

Alternative #2 – Calculate the Southern Intertie HNF rate based on a different assumption of "high value" hours

Description

The current Southern Intertie HNF rate is calculated such that a customer reserving 80 hours per week pays the same as a customer with LTF. A customer that only planned on purchasing transmission in the traditional heavy load hour period (traditionally the most valuable hours to trade in) of 16 hours a day, five days a week, would pay the same as a customer purchasing LTF. This alternative recognizes that the CAISO DAM no longer trades in 16 hour heavy load blocks and would change the number of hours when a customer would pay the same for HNF and LTF.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This alternative will not require a tariff change or changes to business practices.

Will this alternative require systems and/or hardware upgrades?

This alternative will not require systems and/or hardware upgrades.

Possible Rate Range

Based on preliminary analysis assuming 56, 35, 28, and 20 "high value" hours in a week, the resulting Southern Intertie HNF rate would be approximately 5, 8, 9.5 and 13 mills per kWh, respectively. This would be approximately a 40%, 120%, 170%, and to 260% rate increase over the current HNF rate

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative would be effective in preserving the advantages of LTF in the CAISO DAM. Increasing the HNF rate will increase the relative value of LTF from an economic investment perspective. It will also increase LTF utilization and increase the economic benefits to LTF customers because HNF will be an economic option in a smaller percentage of hours. The degree of effectiveness is related to the magnitude of rate change.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be effective at encouraging continued subscription of LTF on the Southern Intertie. One of the main product advantages of LTF is the relative cost advantage. Any increase in the HNF rate will make LTF an even better economic investment than HNF. In addition, LTF customers may recover value by reselling unused firm transmission in BPA's secondary transmission market.

Is this alternative durable?

This alternative would be durable. Transmission rates that are based on historical data may need to be revisited from rate case to rate case. This alternative is likely to be more durable than Alternatives 1a and 1b since market conditions that indicate high CAISO net load hours are likely to be relatively more stable than use of the HNF product from rate period to rate period.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

Yes. Since markets accessed by the Southern Intertie have a different set of high net load hours than those on the Network segment, it would be easier to isolate the rate design to the Southern Intertie than Alternatives 1a and 1b.

Does this alternative create additional oversupply risks and/or costs?

This alternative could increase the costs of acquiring HNF to prevent oversupply, but it does not impact the availability of HNF and thus is will not increase the occurrence of the oversupply management protocol.

Does this alternative promote utilization of the Southern Intertie?

A fully subscribed Southern Intertie line has a higher probability of being fully utilized because all of the subscribers' long-term transmission costs are sunk and have minimal "economic hurdles". This alternative does not directly limit the availability of HNF. However, this alternative may decrease the use of HNF on the Southern Intertie, thus it is unclear how total utilization would be affected.

Customer Positions, Analyses or Justification

CAISO

[A] rate design change that is based on usage during "high value hours", instead of BPA's current methodology, could change the competitiveness of imports from the Pacific Northwest, relative to other resources that compete in the ISO's markets.

Calpine Corporation

Calpine believes that value should be reflected in prices…. Divining the "right" HNF rate, however, is no easy task. The simplest solution, which is part of several alternatives, is to adjust the denominator of the rate formula. One approach is to look south, and even the most casual observers of the CAISO market will conclude that as a result of the rather dramatic solar growth, there are only 4, or so, premium hours of each weekday, HE 17-20. So, 4 hours a day, 5 days a week would suggest that HNF could be based on much lower utilization (~20 hours per week) than that included in BP-16. This leads us to the conclusion that the rate alternatives, most likely alternative 2 holds the most promise for a productive and efficient result.

Cowlitz County PUD and Eugene Water & Electric Board

Cowlitz and EWEB urge BPA to initiate promptly an expedited 7(i) process to evaluate rate Alternative #2 from the White Paper and to adopt by FY 2017 an hourly non-firm rate for the Southern Intertie of approximately $13/MWh based on 20 high value hours per week. That said, we do not believe that such an HNF rate for SI service is likely to be a complete and perfect solution to all the problems identified by BPA's staff in the White Paper or by Power Ex, PPC and PGP in their comments to BPA's White Paper. Nevertheless, Rate Alternative #2 is a major step in the right direction and BPA can implement it unilaterally and quickly.

Exelon Generation

Exelon Generation is not convinced that any change to the HNF rate mechanism is warranted at this time. Any increase to HNF rate will increase the value of LTF, but the tradeoff between preserving the value of LTF (as measured by whether or not customers are willing to sign up for it), and the short term revenues achieved by making unused system capacity available through HNF service seems quite difficult to predict.

Exelon Generation shares the concern noted by BPA in the Whitepaper that…[calculating] the Southern Intertie HNF rate based on a different assumption of "high value" hours could create severe rate shock.

Iberdrola Renewables

Iberdrola Renewables generally supports the comments submitted by Powerex …with the exception of Powerex's comments on Alternative No. 9…Of the options proposed, Iberdrola Renewables believes that Alternative No. 2, where BPA would calculate the Southern Intertie Hourly Non-Firm rate based on a different assumption of "high value" hours, is the alternative most likely to retain the value of long-term firm transmission rights.

ICNU

Although potentially less effective than Alternative 3 in preserving LTF value, and scoring lower under BPA's overall evaluative rubric, ICNU could still support Alternative 2 in an expedited 7(i) proceeding. Specifically, ICNU would recommend the assumption of 20 "high value" hours in a week under an Alternative 2 analysis, to afford BPA the best possible means to

preserve LTF value on the Southern Intertie and to encourage continued LTF subscriptions. Notwithstanding, ICNU has some concerns with this methodology because it could potentially be viewed as creating an HNF rate that exceeds the firm rate, despite FERC's general policy to cap non-firm rates at the firm rate.

That said, ICNU agrees with BPA as to certain salutary attributes of the Alternative 2 option. First, this solution promises to be durable given "market conditions that indicate 'high value' hours are likely to be less effected by a change in the HNF than use of the HNF product period to period." Second, in comparison to other alternatives, it should be easier to isolate rate design under this solution "since markets accessed by the Southern Intertie have a different set of 'high value' hours than those on the network." Finally, as with Alternative 3, concerns over HNF rate shock should not prevent BPA from pursuing Alternative 2 in an expedited 7(i) proceeding, owing to the far more significant needs of ensuring LTF value on the Southern Intertie.

M-S-R Public Power Agency

Depending on whether the low or high alternative is selected, this change is expected to raise Hourly Non-Firm rates by forty to two hundred and seventy percent. The stated purpose of the change is to increase the relative value of the Long Term Firm product, compared with the Hourly Non-Firm product, and increase Long Term Firm utilization. Given the potential detrimental effect on revenues, M-S-R suggests the low case of a 40% increase is more prudent.

Northwest Requirements Utilities

Of the rate alternatives described in the Draft White Paper, NRU supports adoption of Alternative #2: Calculate the Southern Intertie HNF rate based on a different assumption of "high value" hours. Increasing the HNF rate better ensures that non-firm service is not an economic alternative to investing in long-term service on the Southern Intertie, thus reducing the risk of stranded costs in the Southern Intertie due to undersubscription. A rate solution is the most predictable and understandable means of addressing the risk of future under-recovery.

As the Draft White Paper articulates, the current Southern Intertie HNF rate is calculated such that a customer reserving 80 hours per week pays the same as a customer with long-term firm transmission. Using 80 hours per week to calculate the rate reflects the standard industry trading practices in the bilateral market of the Pacific Northwest: trading in multi-hour blocks of 8, 16, or 24 hours. However, the California Independent System Operator (CAISO) day ahead market operates at an hourly granularity. The different industry standard practices between the bilateral market in the Pacific Northwest and the hourly market in the CAISO day ahead market provides a strong rationale for modifying the number of "high value" hours used to calculate the Southern Intertie HNF rate.

Consequently, NRU supports calculation of the Southern Intertie HNF rate using the assumption of 20 "high value" hours. This would result in a rate of $13/MWh. This removes the

economic incentive to "cherry pick" high value hours rather than investing in long-term firm service.

This rate design is consistent with BPA's statutory requirements and ratemaking principles. Of particular importance to this topic are principles 1a "Full and timely cost recovery" and 1b "BPA's rates are based on total system costs." Alternative #2 would help BPA mitigate the risk of future under-recovery by setting BPA's transmission rates in a more equitable fashion based on the firmness of the actual transmission. It also meets principle 1c because the rate would not distinguish between federal and non-federal uses of the Southern Intertie and principle 1d by keeping the long-term and short-term rates as low as possible while still recovering the costs of the Intertie.

Alternative #2 also meets all of BPA's ratemaking principles, including cost causation, consistent with statutory obligations and minimizing compliance risk and simplicity. Principles 2d "avoidance of rate shock" and 2e "rate stability from rate period to rate period" are perhaps the most relevant on this topic and go hand-in-hand. BPA states in the Draft White Paper that Alternative #2 might violate the principle of avoiding rate shock. NRU disagrees. Even though this alternative will result in a higher hourly non-firm rate, it will help avoid large and volatile swings in all Southern Intertie rates in the future. It is essential that BPA take actions to avoid the risk of stranded assets and potential rate instability that could occur if BPA does not address the problem now.

Additionally, Alternative #2 does not require tariff or business practice changes and results in a durable and consistent rate design over time

Pacific Northwest Generating Cooperative

PNGC supports BPA adopting Alternative 2 - Calculate the Southern Intertie HNF rate based on a different assumption of 'high value' hours. We think that this alternative would be effective in helping to maintain the value of LTF rights on the Southern Intertie. Alternative 2 is consistent with the all of the rate principles outlined in the White Paper. It is also an action that BPA can take independently of the CAISO.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE believe it would be difficult for BPA to justify applying this approach only to the Southern Intertie. Further, this approach could result in a significant rate adjustment outside of a standard rate case that would be inappropriate and may violate BPA's principles of rate stability and avoidance of rate shock. Again, such an action would be more appropriately addressed in the BP-18 rate case.

Powerex

The White Paper contemplates revising the number of hours used to calculate the Hourly Non-Firm rate, from its current value of 80 hours per week to a value of either 56 hours or 20

hours per week. These revised inputs would result in a Southern Intertie Hourly Non-Firm rate of $5/MWh or $13/MWh, respectively.

Increasing the Hourly Non-Firm rate on the Southern Intertie has the potential to be highly effective in addressing the seams issue with CAISO. It may be very difficult for Bonneville to unilaterally ensure that Non-Firm service on the Southern Intertie has an inferior product quality to Firm service in practice, as intended under Bonneville's OATT. However, it is comparatively straightforward for Bonneville to ensure that Non-Firm service is not an economic alternative to investing in Long-Term Firm service. Powerex therefore concurs with Bonneville's preliminary assessment that increasing the Hourly Non-Firm rate could provide a strong incentive for customers to subscribe to Long-Term Firm service in the North-to- South direction and increase the likelihood that the Southern Intertie remains fully subscribed.

For the rate increase to be effective in addressing the seams issue with CAISO, however, it must be sufficiently high to deter "cherry picking" in a large number of hours. The higher the rate, in other words, the less likely that market conditions will make it economic for a transmission customer to use Hourly Non-Firm service to bypass the priority of Firm Bonneville transmission service. In Powerex's view, the low end of the range ($5/MWh) would be insufficient to materially deter the use of Hourly Non-Firm transmission service to bypass Long-Term Firm priority. A rate at the high end of the range (*i.e.*, closer to $13/MWh), however, could be highly effective under most market conditions. Of course, a rate equal to the cost of expansion, as proposed under Rate Alternative No. 3, would be highly effective under virtually all conditions.

Bonneville has articulated a sound cost-based foundation for modifying the rate. Namely, Bonneville could revise the number of hours per week used to convert the annual rate to an hourly rate. Powerex believes that 20 hours per week is consistent with the objective of identifying the number of "high value" hours, which are unique to the Southern Intertie given that CAISO's day-ahead market operates at an hourly granularity. This is distinguishable from Bonneville transmission service on other paths, which are used to undertake bilateral transactions generally under industry standard multi-hour blocks of 8,16, or 24 hours. Moreover, by clearly basing the calculation of the Southern Intertie hourly rate on a revised input parameter, which is neither based on past usage patterns nor expected to reflect usage going forward, Bonneville can ensure the rates under this methodology are stable and will not change dramatically with each rate case.

A significant increase in the rate of Hourly Non-Firm transmission service on the Southern Intertie also would not raise a valid "rate shock" concern. First, a higher Hourly Non-Firm rate will have no material adverse impact on Bonneville's revenues from sales of Hourly service. This is primarily because Hourly Non-Firm sales account for only a small fraction of Bonneville's total Southern Intertie revenues in the first place. Even if Hourly Non-Firm revenues decline, this impact would be more than outweighed by the benefit of ensuring that

Long-Term Firm service is fully subscribed. And of course, it is entirely possible that Hourly Non-Firm sales revenues will actually increase, if the reduction in quantity is less than the increase in the rate. As the White Paper's "industry scan" shows, an Hourly Non-Firm rate of approximately $10-13/MWh would be broadly consistent with the hourly tariff rates on the southern segment of the COI and PDCI.5 Powerex does not consider it to be "rate shock" for Bonneville to set its Hourly Non-Firm rates at a level comparable to the prevailing Hourly Non-Firm rates charged on the southern segments of the Southern Intertie facilities.

The second possible concern is that the higher Hourly Non-Firm rate would somehow undermine the full utilization of the Southern Intertie facilities. Again, exactly the opposite is true. Full economic utilization is ensured when incremental transaction costs are minimized, as this allows transmission customers to move power between regions in response to even small price differences. One way to achieve maximum utilization could be to just make short-term transmission service entirely free. While this would surely encourage full utilization, it would just as assuredly cannibalize all sales of Long-Term Firm service and would be wholly incompatible with Bonneville's business model for recovering the revenue requirements of the Southern Intertie. An alternative way to achieve maximum utilization is to ensure that the full capacity of the Southern Intertie is sold on a long-term basis, ahead of the day-ahead and real-time wholesale energy markets. This means that, in every hour of the year, there will already exist sufficient "sunk" transmission reservations to allow the entire capability of the Southern Intertie facilities to be scheduled, without requiring the incremental purchase of any additional transmission rights.

This is the precise outcome that is supported by Rate Alternative No. 2. By strengthening the incentives for transmission customers to purchase Long-Term Firm service on the Southern Intertie, Bonneville can ensure that the Southern Intertie can be fully utilized using transmission reservations that have already been sold on a long-term basis; no additional "hurdle rates" will need to be incurred in order to achieve full use of the transmission facilities. Transmission customers investing in Long-Term Firm service will have multiple ways to use those reservations, all of which result in maximum utilization: (1) they can use the reservation to deliver their own energy resources from the Northwest to California; (2) they can use the reservation to acquire energy resources from other parties in the Northwest, and deliver these to California; or (3) they can re-sell their reservations in the secondary market to third parties that are able to make more efficient use of the transmission service. Critically, Bonneville's Hourly Non-Firm rate— regardless of level—will not be a hindrance to any of the three activities described above. They can all take place to the fullest extent possible under given market conditions, which means that the Southern Intertie utilization will be maximized as well.

The worst possible outcome in terms of full economic utilization of the Southern Intertie would be one in which Long-Term Firm service is no longer fully subscribed, meaning that transmission customers would need to purchase incremental transmission rights on a short-term basis in order to make full use of the Southern Intertie. In this case, the hourly transmission rates

would indeed be a "hurdle rate" that could present a barrier to otherwise efficient transactions and undermine utilization. This is the very scenario that appears to be emerging under the existing rate framework and that, in Powerex's view, will not be avoided by a rate increase that is only in the "low" end of Bonneville's proposed range. A materially higher rate (*i.e.*, in the range of $10-$13/MWh), however, will likely be sufficient to significantly improve the prospects of the Southern Intertie capacity continuing to be fully sold on a Long-Term Firm basis, and thus for the maximum economic utilization of the Southern Intertie.

A higher rate for Hourly Non-Firm service on the Southern Intertie will also help address the loss of BPA Firm priority at seams with Southern Intertie transmission providers other than CAISO (*i.e.*, seams issue 3 in the White Paper). While the underlying cause of that seams issue is different, its harm can also be mitigated by reducing the financial incentive to use BPA Hourly Non-Firm service to flow ahead of BPA Firm service. Hence, implementing Rate Alternative No. 2, especially at the higher end of Bonneville's proposed range, has a high likelihood of addressing two of the three seams issues that have been identified on the Southern Intertie.

For the foregoing reasons, Powerex believes Rate Alternative No. 2 is feasible to implement, well supported by and within Bonneville's ratemaking authority, will lead to stable outcomes over time, can be limited in application only to the Southern Intertie, and does not raise any valid "rate shock" or utilization concerns. If the rate is set at a sufficiently high level, this alternative has the potential to be highly effective in addressing the effective loss of BPA Firm priority at the seam with CAISO, and potentially also with other downstream transmission providers on the Southern Intertie.

Public Generating Pool

PGP supports Alternative #2 – Calculate the Southern Intertie HNF rate based on a different assumption of "high value" hours. PGP believes Alternative #2 satisfies the criteria that BPA has established for this process with regard to BPA's statutory obligations and ratemaking principles and provides the proper balance of risk and benefit. Alternative #2 raises the HNF rate to an amount that is material and in a price range similar to what other BAAs price their export transmission. This change will ensure long-term firm transmission customers maintain the economic benefit of purchasing long-term transmission service over the Southern Intertie.

Public Power Council

Based on analysis of the options presented in the white paper, PPC supports a change to the Southern Intertie hourly non-firm (IS HNF) rate as the most immediate and important solution. Specifically, "Alternative #2 – Calculate the Southern Intertie HNF rate based on a different assumption of 'high value' hours" appears promising. Within this option, PPC supports the calculation based on 20 high value hours per week, resulting in an IS HNF rate of approximately $13/MWh.

This rate alternative has a number of advantages. It would be very effective under most economic conditions in ensuring the intended advantages of long-term firm service under BPA's OATT framework and encouraging continued subscription of the IS LTF product. The alternative would also not require any tariff or business practice changes and would be a durable, stable solution through time. The IS HNF rate under this alternative would also be comparable to levels charged by transmission providers on the southern side of the facilities.

The BPA white paper raises the issue of potential rate shock in implementation of a relatively large percentage increase in the IS HNF rate. PPC does not believe this is a substantial concern in this context. Because the actual volume of IS HNF sales is small, any rate change will have minimal impacts on BPA's revenue collection in either an upward or downward direction. Similarly from the perspective of customers who purchase the IS HNF product, the small volume of sales means even a relatively large change in rate would have minimal impacts on the overall cost of doing business.

Snohomish PUD

Snohomish strongly supports BPA adopting the methodology proposed in Alternative 2. Utilizing a more accurate assumption for evaluating the 'high value" hours properly sends price signals and supports economic allocation of Southern Intertie capacity. This methodology seems to contain the most analytical rigor, and does not rely on assumptions or require the use of a discount factor.

Snohomish also recognizes that this alternative presents a range of possible outcomes between $5 and $13 per MWh. In its December 17 presentation, BPA's effectiveness matrix shows that this alternative becomes increasingly effective as the price approaches $13/MWh. As the non-firm rate increases, the benefit of using the HNF product over firm service decreases, helping to bridge the gap in value and encourage investment in long term reservations. Snohomish would recommend that the methodology focus on the higher end of the price spectrum. A nominal increase from $3.53 to $5 / MWh, for example, is unlikely to result in a significant shift from status quo. In turn, this will result in continued erosion of long term firm rights and the possible loss of long term reservation.

Southern California Edison

SCE strongly objects to any rate proposals designed to capture market value or high value hours, as they violate the principle of cost based rates. Implementing these types of rates harm transmission customers located in BPA area through the reduction in energy sales. The implementation of higher 'valued' based rates will transfer revenue from the non-firm customer to BPA or to holders of firm transmission holders. This clearly violates a cost-based rate principle and creates issues of discriminatory access.

Tacoma Power

To the extent that BPA is unable to address this seams issue in an open collaboration with CAISO, or through a non-rate action, it makes sense for BPA Transmission Services to change its transmission rates to better balance equity of LTF and HNF service. In adjusting the formula on which the LTF rate is converted to the HNF rate, Rate Alternative No. 2 proposed in the White paper appears to be a sensible means of accomplishing this end. Other rate actions may also have merit, but BPA should guard against creating the perception that it is using its transmission rate making authority to affect a market outcome.

Alternative #3 – Set the Southern Intertie HNF rate based on the cost of expansion

Description

BPA would develop an estimate of the build cost to expand the Southern Intertie and then divide the total costs by the number of hours the new build would be in service to determine the HNF rate.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This alternative would not require a tariff change or changes to business practices. However, it may require that BPA update its cost estimates to expand the Southern Intertie, which date from 2008.

Will this alternative require systems and/or hardware upgrades?

This alternative will not require systems and/or hardware upgrades.

Possible Rate Range

The resulting rate would be greater than 20 mills per kWh. This would be at least a 450% rate increase over the current Southern Intertie HNF rate. The current estimated cost of expansion is $27 per MWh, although BPA may need to revisit that estimate if it were to pursue this rate.

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative would be very effective in preserving the advantages of LTF in the CAISO DAM. Increasing the HNF rate will increase the relative value of LTF from an economic investment perspective. It will also increase LTF utilization and increase the economic benefits to LTF customers because HNF will be an economic option in a smaller percentage of hours. The degree of effectiveness is related to the magnitude of the rate change.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be very effective at encouraging continued subscription of LTF on the Southern Intertie. One of the main product advantages of LTF is the relative cost advantage. Any increase in the HNF rate will make LTF an even better economic investment than HNF. A rate increase greater than 450% would provide a very strong incentive to continuing LTF service on the Southern Intertie. In addition, LTF customers

may recover value by reselling unused firm transmission in BPA's secondary transmission market.

Is this alternative durable?

It is difficult to determine if this alternative would be durable since the $27 mills per kWh was calculated for a different purpose and a new study would need to be completed to have a better understanding if this alternative is durable. Calculating the estimated cost of expansion was heavily assumption based and if reservations or other measures of usage are not consistent with the assumptions used to develop the $27, the rate may need to be updated to reflect the changes in use. This alternative is likely more durable than Alternatives 1a and 1b because construction costs are probably more stable from rate period to rate period than use of the HNF product under changing costs.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

A change in the HNF rate design methodology may be difficult to confine to the Southern Intertie. Network, HNF, and Hourly SCD are all calculated with the same methodology as the Southern Intertie HNF Rate. It could be argued that BPA should also apply the cost of expansion on the Network, either on all paths or constrained paths, for HNF service.

Does this alternative create additional oversupply risks and/or costs?

This alternative could possibly increase the costs of acquiring HNF to prevent oversupply, but it does not impact the availability of HNF and thus it will not increase the occurrence of the oversupply management protocol.

Does this alternative promote utilization of the Southern Intertie?

A fully subscribed Southern Intertie line has a higher probability of being fully utilized because all of the subscribers' long-term transmission costs are sunk and have minimal "economic hurdles". This alternative does not directly limit the availability of HNF. However, this alternative would significantly decrease the use of HNF on the Southern Intertie, so it is unclear how overall utilization would be impacted.

Customer Positions, Analyses or Justification

Exelon Generation

Exelon Generation would not support either Alternative #3 (Set the Southern Intertie HNF rate based on the cost of expansion) or Alternative #5 (Eliminate the HNF Interruption Credit), as both are untenably arbitrary and far afield of cost based solutions.

ICNU

As expressed in prior comments, ICNU believes that it would be appropriate to apply a form of opportunity cost pricing to the HNF rate, calculating the rate based on the cost of expansion. ICNU believes this is a defensible approach because, as discussed in FERC Order 888, use of opportunity cost pricing is a permissible methodology to bypass the general requirement that non-firm rates be capped at the firm rate. The cost of expansion is an appropriate opportunity cost because, absent new transmission capacity, no incremental transactions can physically occur on the Southern Intertie, due to the fact that it is already fully subscribed. Such a methodology will also provide for an efficient price signal of the costs associated with HNF customers' use of this commercial path.

In terms of effectiveness, ICNU concurs with BPA's assessment that Alternative 3 would be a "very effective" solution, both to preserve LTF value and to encourage continued subscriptions on the Southern Intertie. BPA recognizes, when considering a rate alternative to preserve LTF value, that "[t]he degree of effectiveness is related to the magnitude of rate change." Accordingly, an HNF rate based on cost of expansion methodology provides a rate adjustment of sufficient magnitude to ensure that LTF value will be preserved. Similarly, ICNU agrees with the conclusion that the likely magnitude of the HNF rate increase under Alternative 3 "would provide a very strong incentive to continuing LTF service on the Southern Intertie."

When considering Alternative 3, any potential rate shock must be weighed in the balance of all Southern Intertie transmission service concerns. In other words, the crucial benefit of ensuring the preservation of LTF value, as accounting for 95% of Southern Intertie revenue requirement, far outweighs the comparatively modest rate concerns relevant to the 5% revenue requirement attributable to HNF service. Simply put, Alternative 3 is the best overall rate option when factoring all three main evaluative criteria used by BPA: 1) preserving LTF value (highest rating); 2) encouraging continued LTF subscription (highest rating); and 3) durability (second highest rating). In light of the relative priority which should be afforded to LTF concerns, therefore, Alternative 3 should be the first option considered as the focus of an expedited 7(i) rate proceeding in the coming months.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE believe it would be difficult for BPA to justify applying this approach only to the Southern Intertie. Further, this approach would result in a significant rate adjustment outside of a standard rate case that would be inappropriate and may violate BPA's principles of rate stability and avoidance of rate shock. Further, it is unclear why a Southern Intertie rate should be based on the cost of expansion rather than embedded cost.

Southern California Edison

This proposal may have merit as it implies marginal cost based ratemaking which can achieve efficient market outcomes. It is unclear if this would be done as a redesign of all transmission rates or if this is piecemeal to only HNF rates.

Alternative #4 – Set the Southern Intertie HNF rate based on market indicator

BPA Initial Evaluation

BPA is only exploring cost based rate methodologies at this time.

Customer Positions, Analyses or Justification

None received.

Alternative #5 – Eliminate the HNF interruption credit

Description

Currently, if a HNF reservation on the Southern Intertie is curtailed and the need for curtailment is caused by conditions on the FCRTS, the customer is credited back for the curtailed portion of its reservation. This alternative would eliminate this credit.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This alternative would not require a tariff change or changes to business practices.

Will this alternative require systems and/or hardware upgrades?

This alternative would not require systems and/or hardware upgrades, although some small changes to the billing system would be required.

Possible Rate Range

There would be no rate effect since this is a credit for the interruption of HNF. The HNF interruption credit is not currently forecasted in the rate case and, therefore, is not used in the calculation of rates.

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative would be somewhat effective in preserving the advantages of LTF in the CAISO DAM. If removing the HNF interruption credit introduced enough financial risk to reduce customer reliance on HNF, it could be effective at preserving the advantages of LTF. In the past few years, BPA has not seen a large amount of HNF reservations receive the interruption credit. This seems consistent with customers' arguments that there is a relatively small risk of curtailment for HNF. However, this alternative may have increased effectiveness when combined with other alternatives that may increase curtailments of HNF. It also becomes more effective as the HNF rate increases.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be somewhat effective at encouraging continued subscription of LTF on the Southern Intertie. Given the historical low levels of HNF interruption credits that have been issued, it is unlikely this alternative would be a major factor in the decision to continue subscription in LTF.

Is this alternative durable?

This alternative would be very durable." The elimination of the HNF Interruption credit could be a onetime change.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

A change in the HNF rate design methodology may be difficult to confine to the Southern Intertie. BPA may consider removing the Southern Intertie interruption credit only because curtailments are largely performed by the sink, and BPA is not the sink on the majority of schedules on the Southern Intertie. Curtailments performed by other TPs are not done according to BPAT priority.

Does this alternative create additional oversupply risks and/or costs?

This alternative could possible increase the costs of trying to acquire HNF to prevent oversupply, but it does not impact the availability of HNF and thus would not increase the occurrence of the oversupply management protocol.

Does this alternative promote utilization of the Southern Intertie?

This alternative would have very little impact on Southern Intertie utilization.

Customer Positions, Analyses or Justification

CAISO

The ISO's markets award energy schedules and the supporting transmission service within the ISO's BAA based on overall economic merit within the market's energy requirements and transmission capacity, which is a composite of many factors that affect the bid prices...[E]liminating BPA's HNF interruption credit due to curtailment may increase some customers' costs of transmission service but increase the certainty of costs that they will incur.

Exelon Generation

Exelon Generation would not support either Alternative #3 (Set the Southern Intertie HNF rate based on the cost of expansion) or Alternative #5 (Eliminate the HNF Interruption Credit), as both are untenably arbitrary and far afield of cost based solutions.

Iberdrola Renewables

Iberdrola Renewables generally supports the comments submitted by Powerex…with the exception of Powerex's comments on Alternative No. 9…

Pacific Northwest Generating Cooperative

PNGC also believes that BPA should continue to consider some of the other alternatives to address the issues. For example, Rate Alternative 5- Eliminate the HNF interruption credit is certainly a common sense idea that should be strongly considered. BPA should also look seriously at the non-rate Alternatives 6 and 9. While these alternatives are rated "somewhat effective" by themselves, in combination with rate Alternatives 2 and 5, the package could be quite effective in having parties rethink their use of HNF in place of LTF rights on the Southern Intertie.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE believe elimination of the credit for the interruption of HNF would provide some incentive for customers to maintain LTF subscriptions but is not likely to address the concerns at issue.

Powerex

Powerex supports this measure from a conceptual and a pragmatic standpoint. Conceptually, transmission reservations are always subject to the availability of the underlying facilities. De-rates can and do occur, and when they do, it is entirely possible that transmission customers will be unable to schedule on their reservations, or will experience curtailments on previously accepted schedules. Eliminating the interruption credit for Hourly Non-Firm service merely exposes transmission customers reserving Hourly Non-Firm service to the same availability-related consequences faced by customers reserving service for longer durations.

As a practical matter, the elimination of the interruption credit will essentially make the *effective* cost of Hourly Non-Firm service somewhat higher on an expected value basis. This is unlikely to be a material change, however, given the very limited frequency with which the interruption credit is currently applied.

Public Generating Pool

PGP also agrees with BPA's current leaning towards Alternative #5 – Eliminate the HNF interruption credit. While Alternative #5 introduces some financial risk to customers relying on HNF transmission service, the risk of curtailment is relatively small and this alternative has no effect on the HNF transmission rate. Alternative #5 is not effective on its own but has some benefits if implemented alongside Alternative #2.

Snohomish PUD

Snohomish supports the elimination of the HNF Interruption Credit. While this credit is not a major factor in the benefit differential, it is another example of the imbalance between firm and non-firm rights holders. Elimination of the credit does not directly influence the level of the rate, but rather shifts risk from the transmission provider to the customer. Snohomish is not currently aware of a similar credit offered on any other transmission provider's system. While eliminating this credit will not fully solve the seams issue, it will further reduce the gap in

value between firm and non-firm rights holders. Snohomish supports the analysis as stated in the draft White Paper and supports adopting Alternative 5.

Non-Rate Alternatives

Alternative #6 – Sell HNF inventory once

Description

Once an HNF reservation has been scheduled on the Southern Intertie, BPA would not post the unscheduled portion of the reservation back to the market.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This alternative will not require a tariff change, but it will likely require a change to business practices.

Will this alternative require systems and/or hardware upgrades?

Yes. This alternative will likely require systems and/or hardware upgrades. The amount of work would be based on whether this alternative is implemented for all paths or just the Southern Intertie. Implementing this alternative across all paths has an estimated cost of $350,000 and could be implemented in six months. Implementing this alternative only on the Southern Intertie is more complex and has an estimated cost of $700k - $2.5M and could take longer than 6 months.

Cost Estimate (All Paths)

- $100k OATTI system
- 2 FTE for 6 months at $125k per year (assuming GS-13)

Cost Estimate (Southern Intertie Only)

- $200k - $1M OATTI System
- 4-10 FTE for 1 year at $125k per year (assuming GS-13)

There would be little risk to implementing either change, as it would simply be a switch in current functionality.

Possible Rate Range

N/A

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative would be somewhat effective in preserving the advantages of LTF in the CAISO DAM. The effectiveness of this alternative will be determined by the amount of risk it introduces to a customer that intends to rely on the availability of HNF. Currently, BPA only posts back HNF when a portion of an HNF request is scheduled. We believe a relatively small amount of capacity would be affected by this change. We anticipate this alternative would result in a small reduction in the availability of the HNF product, thus introducing some risk around relying on HNF to deliver in the CAISO DAM. To the extent that this additional risk reduces demand for HNF, this alternative would increase LTF utilization and increase the economic benefits received by LTF customers.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be somewhat effective at encouraging continued subscription of LTF on the Southern Intertie. One of the product advantages of LTF is that the owners are able to schedule their reservation in any given hour. If a customer is unable to acquire HNF transmission to deliver power, then it creates an incentive for that customer to either acquire LTF or acquire firm transmission in the resale market. Since this alternative will impact the availability of HNF, it will increase the appeal of LTF service.

Is this alternative durable?

This alternative would be very durable. This would be a onetime change.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

This alternative could be limited to the Southern Intertie, but at an increased systems cost. Hourly transmission is currently unlimited on the Network, so this would not have an effect on the ability to reserve Network transmission until BPA stops selling unlimited amounts of hourly firm and non-firm on the Network segment.

Does this alternative create additional oversupply risks and/or costs?

This alternative creates little additional risk in the likelihood/costs of oversupply. BPA Power Services uses HNF to sell into the CAISO during times of high generation. Reducing the availability of HNF, especially during hours when the Southern Intertie is heavily used during runoff, could increase the likelihood of oversupply and/or the costs to BPA of avoiding oversupply. However, this alternative would not likely reduce the available amount of hourly non-firm greatly. Additionally, BPA could attempt to purchase Southern Intertie transmission in the secondary market to mitigate this risk.

Does this alternative promote utilization of the Southern Intertie?

This alternative could reduce Southern Intertie utilization. If customers have CAISO awards but are unable to find HNF transmission, Southern Intertie utilization would decrease. This risk could be mitigated by the development of a more liquid secondary market for transmission.

Customer Positions, Analyses or Justification

CAISO

The ISO's markets award energy schedules and the supporting transmission service within the ISO's BAA based on overall economic merit within the market's energy requirements and transmission capacity, which is a composite of many factors that affect the bid prices. If BPA were to sell hourly non-firm service on the Southern Intertie only once, customers may be disadvantaged in scheduling energy between BAAs but may gain an advantage in being less subject to curtailment.

Calpine Corporation

Calpine believes that value should be reflected in prices. It follows, therefore that transmission should be offered at a price which reflects its value, but importantly, that any transmission not pre-scheduled should be conveniently made available. As a general matter, we dislike the proposed "non-rate" alternatives that restrict the availability of transmission both because they restrain trade, and also because they reduce the potential revenue stream to offset the total system costs. Parties that want no-notice transmission, and do not commit to pay the ongoing cost of service (i.e., hourly non-firm) should pay a substantial premium over the firm price for access to that service.

Exelon Generation

Exelon Generation objects to each of the non-rate alternatives that are aimed at restricting the use of HNF service (alternatives #6, #7, #7a, #7b, #8, #10, and #11). Mechanisms that artificially restrict maximum use of the system conflict with open access principles that available transmission should be made available.

Iberdrola Renewables

Iberdrola Renewables generally supports the comments submitted by Powerex…with the exception of Powerex's comments on Alternative No. 9…

M-S-R Power Agency

M-S-R understands that BPA is also considering some modifications to its scheduling protocols for Hourly Non-Firm service. M-S-R is agnostic regarding such protocol changes with the caveat that any changes not cause a reduction in Hourly Non-Firm revenues.

Pacific Northwest Generating Cooperative

BPA should also look seriously at the non-rate Alternatives 6 and 9. While these alternatives are rated "somewhat effective" by themselves, in combination with rate Alternatives 2 and 5, the package could be quite effective in having parties rethink their use of HNF in place of LTF rights on the Southern Intertie.

Portland General Electric and Puget Sound Energy, Inc.

With only one round of HNF made available, this may encourage subscribers already leaning toward LTF to move in that direction. However, PGE and PSE agree with BPA's assessment that the amount of HNF impacted by this rule would be minimal and the effect may not be noticeable.

Powerex

Non-Rate Alternative No. 6 would modify the manner in which Bonneville manages its Hourly Non-Firm inventory to make sure that unused Firm service is only "sold once" as Hourly Non-Firm. Currently, Firm reservations that are not scheduled by the close of the preschedule window are made available as Hourly Non-Firm at approximately 10 p.m. on the day prior to flow. When a transmission customer purchases Hourly Non-Firm service, the remaining HNF ATC is reduced by the amount of the reservation. If that customer subsequently schedules on the reservation, any portion of that reservation that is not scheduled is added back to the HNF ATC. In effect, Hourly Non-Firm service is not sold merely on the basis of Firm reservations that have not been fully scheduled, but also on Hourly Non-Firm reservations that have been partially, but not fully scheduled. As the White Paper points out, other transmission providers do not re- sell unused Hourly Non-Firm, and Bonneville could cease doing so by modifying its business practices, ATC Implementation Document, and software. Powerex supports Non-Rate Alternative No. 6 as it avoids excessive over-selling of transmission capacity. Consequently, this non-rate measure will decrease the ability to rely on the availability of Hourly Non-Firm service to make deliveries on CAISO market awards.

Public Generating Pool

PGP does not oppose Alternative #6 – Sell HNF inventory once – if implemented in addition to Alternative #2. While this alternative slightly decreases the availability of HNF transmission on the Southern Intertie, the impact is minimal and the alternative implemented by itself is not effective.

Snohomish PUD

Snohomish supports adopting Alternative 6, as described in the White Paper. Currently, BPA re- sells any unscheduled HNF capacity in the event a customer only partially schedules their full purchase. This adds uncertainty to the amount of inventory available and promotes selling capacity in excess of what is actually available. Snohomish is not aware of any other transmission provider that resells capacity that has been sold once already. Selling HNF

capacity only once does reduce the overall amount available as compared to today, but increases the potential utilization by long term rights holders.

Southern California Edison

SCE strongly objects to proposals that would reduce transmission use or allow withholding which can lead to market manipulation and result in higher prices. Withholding unused transmission on the Southern Intertie would artificially reduce economic trade which harms society. The loss in economic trade would harm generators that cannot sell energy as well as consumers that cannot buy lower priced energy. This would harm participants located in California and the Northwest.

Alternative #7a – Do not sell HNF on the Southern Intertie

Description

BPA would completely stop selling HNF on the Southern Intertie.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

Yes. This alternative will require a tariff change (Section 14).

Will this alternative require systems and/or hardware upgrades?

This alternative may require systems and/or hardware upgrades.

Possible Rate Range

N/A

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative has been identified as very effective in preserving the advantages of LTF in the CAISO DAM. If BPA were to stop selling HNF, customers would not have a choice between HNF and LTF. LTF customers would be able to utilize all of their transmission rights (except during line de-rates) and receive a greater portion of the economic benefits of the Southern Intertie.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be very effective at encouraging continued subscription of LTF on the Southern Intertie. If BPA were to stop selling HNF, customers would not have a choice between HNF and LTF. They would need to either acquire LTF or acquire firm transmission in the resale market.

Is this alternative durable?

This alternative would be very durable. This would likely be a onetime change.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

In theory, BPA could change its tariff so it only stops selling HNF on the Southern Intertie.

Does this alternative create additional oversupply risks and/or costs?

This alternative would create additional oversupply risks because BPA Power Services often uses HNF to market federal power in California during periods of high generation.

Does this alternative promote utilization of the Southern Intertie?

This alternative could significantly reduce Southern Intertie utilization. If customers have CAISO awards but are unable to find HNF transmission, Southern Intertie utilization would decrease. This risk could be mitigated by the development of a more liquid secondary market for transmission.

Customer Positions, Analyses or Justification

Calpine Corporation

Calpine believes that value should be reflected in prices. It follows, therefore that transmission should be offered at a price which reflects its value, but importantly, that any transmission not pre-scheduled should be conveniently made available. As a general matter, we dislike the proposed "non-rate" alternatives that restrict the availability of transmission both because they restrain trade, and also because they reduce the potential revenue stream to offset the total system costs. Parties that want no-notice transmission, and do not commit to pay the ongoing cost of service (i.e., hourly non-firm) should pay a substantial premium over the firm price for access to that service.

EDP Renewables

This alternative is inconsistent with FERC's open access principles. It would significantly increase the need for and cost of managing oversupply conditions.

Exelon Generation

Exelon Generation objects to each of the non-rate alternatives that are aimed at restricting the use of HNF service (alternatives #6, #7, #7a, #7b, #8, #10, and #11). Mechanisms that artificially restrict maximum use of the system conflict with open access principles that available transmission should be made available.

M-S-R Power Agency

M-S-R understands that BPA is also considering some modifications to its scheduling protocols for Hourly Non-Firm service. M-S-R is agnostic regarding such protocol changes with the caveat that any changes not cause a reduction in Hourly Non-Firm revenues.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE are opposed to this alternative. BPA would be eliminating the secondary market as a source of revenue and limiting its cost recovery capabilities to only the LTF contracts. In addition, BPA would unnecessarily hamper regional access to the CAISO market. Ultimately, this alternative could result in increased rate requirements for LTF customers to cover the loss of revenue from the secondary market.

Snohomish PUD

Snohomish strongly opposes this Alternative. Currently, hourly non-firm provides benefit to BPA, Pacific Northwest stakeholders and California stakeholders. While this benefit is currently imbalanced, it is not efficient or prudent to completely eliminate the benefit for everyone. Rather, implementing the alternatives identified in these comments will help rebalance the costs and benefits of hourly non-firm and will send the proper price signals to firm and non-firm rights holders and encourage continued investment in the Southern Intertie.

Southern California Edison

SCE strongly objects to proposals that would reduce transmission use or allow withholding which can lead to market manipulation and result in higher prices. Withholding unused transmission on the Southern Intertie would artificially reduce economic trade which harms society. The loss in economic trade would harm generators that cannot sell energy as well as consumers that cannot buy lower priced energy. This would harm participants located in California and the Northwest.

TransAlta

TransAlta does not recommend non-rate solutions that are designed to dramatically reduce access to the HNF product, such as ceasing to sell HNF entirely.

Alternative #7b – Stop selling HNF on the Southern Intertie when schedules are within a certain percent or a MW threshold of SOL

Description

BPA would stop selling HNF when schedules reach a certain percent or MW threshold of the System Operating Limit (SOL) to maintain reliability for its LTF customers and reduce DTC scheduling freezes.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

Yes. This alternative would require changes to BPA business practices and ATC methodology.

Will this alternative require systems and/or hardware upgrades?

This alternative may require systems and/or hardware upgrades.

Possible Rate Range

N/A

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

The effectiveness of this alternative will be determined by the amount of risk it introduces to a customer that intends to rely on the availability of HNF. It is anticipated that this alternative would reduce bids into the DAM that plan on using HNF to deliver since HNF would be less available and customers would face increased risk around the ability to deliver energy consistent with their DAM awards. This would increase LTF utilization and increase the economic benefits received by LTF customers. This alternative would also time the removal of HNF when the Southern Intertie is the most valuable (highly utilized), ensuring LTF has a greater product advantage in times of high value.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be more effective at encouraging continued subscription of LTF on the Southern Intertie. One of the product advantages of LTF is that owners are able to schedule their reservation in any given hour. If a customer is unable to acquire HNF

transmission to deliver power, then it creates an incentive for that customer to either acquire LTF or acquire firm transmission in the resale market.

Is this alternative durable?

This alternative would be very durable. This would likely be a onetime change.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

It is unclear whether this proposal could be or should be limited to the Southern Intertie.

Does this alternative create additional oversupply risks and/or costs?

This alternative could create additional risk in the likelihood/costs of oversupply. Power Services uses HNF to sell into CAISO in times of high generation. Reducing the availability of HNF, especially during hours when the intertie is heavily used during runoff, could increase the likelihood of oversupply or the costs to BPA of avoiding oversupply. BPA would be able to attempt to purchase Southern Intertie transmission in the secondary market to mitigate this risk.

Does this alternative promote utilization of the Southern Intertie?

This alternative might reduce Southern Intertie utilization depending whether utilization is defined as actual energy flow or just on use of transmission reservations. If customers have CAISO awards but are unable to find HNF transmission, Southern Intertie utilization would decrease. However, this alternative would decrease flows in order to enforce the "firmness" of capacity tags. Capacity does not necessarily result in energy flowing over the Southern Intertie, but it is still using the transmission system.

Customer Positions, Analyses or Justification

Calpine Corporation

Calpine believes that value should be reflected in prices. It follows, therefore that transmission should be offered at a price which reflects its value, but importantly, that any transmission not pre-scheduled should be conveniently made available. As a general matter, we dislike the proposed "non-rate" alternatives that restrict the availability of transmission both because they restrain trade, and also because they reduce the potential revenue stream to offset the total system costs. Parties that want no-notice transmission, and do not commit to pay the ongoing cost of service (i.e., hourly non-firm) should pay a substantial premium over the firm price for access to that service.

EDP Renewables

This alternative would reduce the availability of Hourly Non-Firm at the very times it is most needed to avoid or mitigate the need for oversupply.

Exelon Generation

Exelon Generation objects to each of the non-rate alternatives that are aimed at restricting the use of HNF service (alternatives #6, #7, #7a, #7b, #8, #10, and #11). Mechanisms that artificially restrict maximum use of the system conflict with open access principles that available transmission should be made available.

M-S-R Power Agency

M-S-R understands that BPA is also considering some modifications to its scheduling protocols for Hourly Non-Firm service. M-S-R is agnostic regarding such protocol changes with the caveat that any changes not cause a reduction in Hourly Non-Firm revenues.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE are concerned that BPA is moving in the dangerous direction of constructing BPA policy that limits access to transmission service to certain customers in an effort to influence market activity. Also, BPA may find it difficult to confine this approach to the Southern Intertie.

Southern California Edison

SCE strongly objects to proposals that would reduce transmission use or allow withholding which can lead to market manipulation and result in higher prices. Withholding unused transmission on the Southern Intertie would artificially reduce economic trade which harms society. The loss in economic trade would harm generators that cannot sell energy as well as consumers that cannot buy lower priced energy. This would harm participants located in California and the Northwest.

Alternative #8 – Implement duration based competition on the Southern Intertie

Description

BPA would award HNF capacity on the Southern Intertie to requests with the longest duration.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This alternative may require a tariff change to fully implement.

Will this alternative require systems and/or hardware upgrades?

This alternative will require systems and/or hardware upgrades.

Possible Rate Range

N/A

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

The effectiveness of this alternative will be determined by the amount of risk it introduces to a customer that intends to rely on the availability of HNF. It also may increase the economic cost of relying on HNF. This alternative eliminates customers' ability to directly "cherry-pick" the hours for which they have awards. Customers may have to purchase more hours of HNF than they need to ensure they have transmission to deliver their power awards. This creates extra costs to a customer planning on using HNF. It is anticipated that this option would not substantially increase risk around purchasing HNF. In review of market data, it appears that hours of economic value happen in clusters (multiple hours in a row), thus it does not appear there would be a large penalty for purchasing multiple hours of HNF.

Under this alternative, customers may need to buy more hours of HNF than they need to ensure they are awarded HNF. The added risk around the availability of HNF and the additional costs of purchasing more HNF than necessary could somewhat reduce the amount of HNF bids in the CAISO DAM. However, for many customers purchasing multiple hours of HNF this would not be problematic. This alternative could be more effective when combined with an increase to the HNF rate. To the extent that bids using HNF to bid into the CAISO DAM are reduced, this alternative would increase LTF utilization and increase the economic benefits received by LTF customers.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be more effective at encouraging continued subscription of LTF on the Southern Intertie because it reduces HNF customers' certainty that they will be able to receive transmission service. One of the product advantages of LTF is that the owner is able to schedule that reservation in any given hour. If a customer is unable to acquire HNF transmission to deliver power or has to buy HNF in excess of its true transmission need, there is an incentive for that customer to either acquire LTF or acquire firm transmission in the resale market.

Is this alternative durable?

This alternative would be very durable. This would likely be a onetime change.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

Yes. The OATT requires these competitions.

Does this alternative create additional oversupply risks and/or costs?

This alternative creates little additional risk in the likelihood/costs of oversupply.

Does this alternative promote utilization of the Southern Intertie?

This alternative would have limited effect on Southern Intertie utilization since the amount of HNF available is not impacted. It would only impact who is being awarded the HNF.

Customer Positions, Analyses or Justification

Exelon Generation

Exelon Generation objects to each of the non-rate alternatives that are aimed at restricting the use of HNF service (alternatives #6, #7, #7a, #7b, #8, #10, and #11). Mechanisms that artificially restrict maximum use of the system conflict with open access principles that available transmission should be made available.

M-S-R Power Agency

M-S-R understands that BPA is also considering some modifications to its scheduling protocols for Hourly Non-Firm service. M-S-R is agnostic regarding such protocol changes with the caveat that any changes not cause a reduction in Hourly Non-Firm revenues.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE support BPA exploring this alternative and agree that it could restrict the HNF customers' ability to cherry pick the peak hours if there is more risk of the schedule being bumped for another HNF with a longer duration. However, BPA may find it difficult to confine this approach to the Southern Intertie.

Alternative #9 – Change the HNF release time on the Southern Intertie

Description

BPA could release HNF on the Southern Intertie earlier in the preschedule day, after the CAISO DAM bid submittal deadline and before the CAISO DAM awards are posted. Alternatively, BPA could move the HNF release time to the day of schedule, possibly close to T -20 (the scheduling deadline).

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This would not require a tariff change, but it will require a change in BPA's business practices.

Will this alternative require systems and/or hardware upgrades?

Yes. This alternative would require an estimated $3M in additional costs to complete systems and/or hardware upgrades and would likely take more than one year to implement. Cost estimates are as follows:

- 2 FTE at $125k per year (assuming GS-13)
- $2.75M in OATTI systems costs

Possible Rate Range

N/A

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative has been identified as more effective in preserving the advantages of LTF in the CAISO DAM. BPA has discussed two possible times when it may want to release unscheduled LTF as HNF service.

1) Release at noon the preschedule day

If BPA released HNF after the CAISO DAM bids are submitted, but prior to the posting of the DAM awards, a customer planning on acquiring HNF would need to attempt to purchase HNF before it knows the hours and quantities it needs HNF for deliveries to the CAISO.

However, this alternative might actually increase certainty of some customers' ability to acquire HNF. If HNF is released prior to the close of the WECC preschedule window,

there will be an abundance of HNF because LTF reservations have not been scheduled. A customer could "self-schedule" into the CAISO, or agree to sell at any price, ensuring it would receive awards, and purchase HNF capacity and schedule that HNF in the WECC pre-schedule with very little risk. On the Southern Intertie, some customers have congestion revenue rights (CRRs) and bid into the CAISO market as self-schedules. Self-schedules are considered the "most economic" by CAISO when granting DAM awards, so customers with self-schedules will be highly confident that their award amount will be accepted. In this scenario, customers that self-schedule will know their award amount with high confidence and benefit from the increased HNF inventory. Additionally, customers without LTF transmission will be able to preschedule HNF transmission. These risks may be mitigated by releasing HNF at noon and encumbering ATC based on forecasted pre-schedules.

2) Release HNF at T-60 prior to operating hour

Under current practices, BPA releases all HNF for the next operating day at the open of the real time window at 10:00 p.m. of the preschedule day. At 10:00 p.m., customers with CAISO awards can request HNF transmission for every hour of their reservation. If BPA released HNF at T-60, customers would have less time to acquire HNF before the tagging deadline (T-20). This would increase the risk of relying on HNF as customers would need to try to acquire HNF at the beginning of every hour rather than acquiring blocks of HNF.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be more effective at encouraging continued subscription of LTF on the Southern Intertie. One of the advantages of LTF is that the owner is able to schedule that reservation in any given hour. If a customer is unable to acquire HNF transmission to deliver power or has to buy HNF in excess of what it needs, there is an incentive for that customer to either acquire LTF or acquire firm transmission in the resale market.

Is this alternative durable?

This alternative would be very durable. This would likely be a onetime change.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

This alternative could be limited to the Southern Intertie because CAISO market timelines affect a large portion of Southern Intertie schedules, but few schedules on the Network.

Does this alternative create additional oversupply risks and/or costs?

This alternative would create little additional risk in the likelihood/costs of oversupply. This alternative would not reduce the inventory of transmission; rather it would change the time of the release.

Does this alternative promote utilization of the Southern Intertie?

This alternative might have limited effect on Southern Intertie utilization if some HNF customers are deterred from using HNF service because of increased risk.

Customer Positions, Analyses or Justification

CAISO

Changing the release time of hourly non-firm capacity could impact BPA customers' scheduling practices but could be beneficial in regional market functions if properly coordinated with neighboring BAAs' timelines.

Exelon Generation

With respect to Alternative #9 (Change the HNF Release time on the Southern Intertie) and Alternative #13 (BPA proactively manages curtailments on the Southern Intertie prior to the interval), Exelon Generation believes that there may be merit in pursuing each of these alternatives because each of them more directly addresses the fundamental problem of ensuring that LTF actually has a higher priority than HNF.

Iberdrola Renewables

Iberdrola Renewables suggests that all proposals concerning Alternative No. 9 require further consideration and analysis before Iberdrola Renewables can support adoption of a modified release time. No changes, nor investments in software and hardware upgrades, should be made until the full effect and import of this potential modification is understood in the context of its effects on the wider system.

ICNU

In conjunction with either Alternative 2 or 3, ICNU recommends that BPA continue to develop Alternative 9 (i.e., changing the HNF release time on the Southern Intertie), as a complementary non-rate solution to durably preserve LTF value and to encourage continued LTF subscription on the Southern Intertie. In advocating for Alternative 9, ICNU emphasizes the need to further *develop* this potential solution. To be effective, the release of the HNF product may need to be made prior to 13:00, when the Cal-ISO market awards are posted. This presents logistical challenges, however, because it would require release of HNF prior to the closure of the WECC preschedule window at 15:00. But, since the Cal-ISO awards will determine who ultimately flows on the path, BPA should be able to safely develop a methodology to determine

unscheduled rights prior to the closure of the preschedule window, without substantial exposure to oversubscription.

Even with these logistical challenges, ICNU considers Alternative 9 to be the most promising non-rate solution under consideration. Releasing HNF transmission prior to the time that import bids are awarded by the Cal-ISO market would appear to be a direct and effective way that BPA can prevent improper use of HNF, while preserving the nature of the underlying HNF product. In theory, this alternative could ensure that a market participant would no longer have the option to secure HNF transmission after being awarded an import bid into the Cal-ISO. ICNU shares BPA's concern, however, that "this alternative might actually increase certainty of some customers' ability to acquire HNF," due to self-scheduling options. For this reason, ICNU believes that further study and analysis is imperative. Moreover, releasing HNF at T-60 as BPA suggests, or at another T- interval, may also be an effective means to "increase the risk of relying on HNF as customers would need to try and acquire HNF at the beginning of every hour rather than acquiring blocks of HNF." ICNU agrees that, "[i]f a customer is unable to acquire HNF transmission to deliver power or they need to buy HNF in excess of what they need, it creates an incentive for that customer to either acquire LTF or acquire firm transmission in the resale market."

M-S-R Power Agency

M-S-R understands that BPA is also considering some modifications to its scheduling protocols for Hourly Non-Firm service. M-S-R is agnostic regarding such protocol changes with the caveat that any changes not cause a reduction in Hourly Non-Firm revenues.

Pacific Northwest Generating Cooperative

BPA should also look seriously at the non-rate Alternatives 6 and 9. While these alternatives are rated "somewhat effective" by themselves, in combination with rate Alternatives 2 and 5, the package could be quite effective in having parties rethink their use of HNF in place of LTF rights on the Southern Intertie.

Portland General Electric and Puget Sound Energy, Inc.

BPA may have difficulty confining this practice to the Southern Intertie. Also, a number of BPA transmission customers may have difficulty purchasing HNF at T-20.

Powerex

Non-Rate Alternative No. 9 would modify the time at which Bonneville makes Hourly Non-Firm service available. In the workshops, Bonneville initially proposed an earlier release, such as noon of the preschedule day. Both in the workshops and in the White Paper, Bonneville has also proposed to consider a later release, such as 60 minutes prior to each deliver hour (T-60). Powerex greatly appreciates Bonneville's examination of the role that the timing of the release of Hourly Non-Firm can have on the seams issue with CAISO. Powerex has carefully evaluated the likely outcomes of changing the release timing and, as discussed further below,

strongly believes that an earlier release would actually exacerbate, rather than mitigate, the seams issue with CAISO, and would also greatly exacerbate the other seams issues identified on the Southern Intertie. A later release, however, could be an important improvement, though Bonneville may wish to consider a release between T-90 and T-120 to ensure

Hourly Non-Firm service would be available in time to support participation in CAISO's real-time market, which requires bids to be submitted by T-75.

Changes to the timing of release of unused Firm as Hourly Non-Firm ultimately seek to address the extent to which a seller that receives a CAISO market award can be confident of being able to purchase Hourly Non-Firm transmission service from Bonneville to deliver on that award. This certainty is the result of two factors: (1) the amount of competition from other transmission customers to purchase Hourly Non-Firm service, and (2) the quantity of Hourly Non-Firm service that will be available from Bonneville. If the quantity of Hourly Non-Firm service is high, and the competition to acquire it is low, then an individual market participant can be highly confident that they will be successful in obtaining Hourly Non-Firm service from Bonneville. If, conversely, the quantity of Hourly Non-Firm service offered by Bonneville is low, and the competition among purchasers is fierce, then an individual market participant would face a considerable risk of not being able to obtain Hourly Non-Firm service from Bonneville (and would thus be encouraged to commit in advance to purchase Firm service).

Changes to the release timing for Hourly Non-Firm service can therefore be evaluated based on their potential effect on:

1. The likely demand from other transmission customers seeking to purchase Hourly Non-Firm service; and

2. The supply of Hourly Non-Firm service from Bonneville.

As Bonneville explained in the workshop, an earlier release may increase the demand among transmission customers to obtain Hourly Non-Firm service, since the earlier release would occur before the results of CAISO's day-ahead market are known. It is certainly possible, for instance, that requests for Hourly Non-Firm service would be received not only from transmission customers that ultimately *receive* a CAISO award, but also from customers that submitted a day-ahead offer *but do not ultimately receive* an award. Powerex understands that one of Bonneville's rationales for considering an earlier release is that it may increase competition for Hourly Non-Firm service in this manner, thereby reducing the certainty of receiving an Hourly Non-Firm reservation. But the extent to which this will occur depends heavily on the degree of uncertainty over whether or not offers into the CAISO day-ahead market will be accepted. If customers can reliably predict whether they will receive a CAISO award, then the increase in demand for Hourly Non-Firm service will be very limited. Unfortunately, this is the outcome that Powerex expects from an earlier release time, as a large amount of CAISO day-ahead awards on the interties are currently the result of "self-schedules"

in CAISO's market—effectively price-taker offers that are virtually guaranteed to be accepted by the CAISO except under extraordinary circumstances. Only "price- sensitive" offers face material uncertainty over whether or not they will receive a CAISO award. But, for the entities submitting "price-sensitive" offers, it will likely be too financially risky to commit to purchasing Hourly Non-Firm service prior to knowing the result of the CAISO day-ahead market, and they may cease participating altogether. Thus, Powerex expects that the earlier release of Hourly Non-Firm service by Bonneville will not materially increase demand, and hence will not significantly reduce the ability of entities to rely on using Hourly Non-Firm service to make deliveries to CAISO.

Perhaps more critically, Bonneville's consideration of an earlier release also needs to consider the impact on the supply of Hourly Non-Firm service. A release at, say, noon of the preschedule day would require Bonneville to determine how much Firm service is "unused" even before the prescheduling deadline of 3 p.m. But prior to 3 p.m., Firm reservations that will be used in the day-ahead time-frame (to schedule deliveries pursuant to CAISO day-ahead awards and/or to schedule deliveries on the non-CAISO southern segment) may not yet be scheduled at the time of the Hourly Non-Firm release. This has the potential to massively *increase* the inventory of Hourly Non-Firm service that Bonneville would be selling. It is entirely possible, and even likely, that the net effect of an earlier release would be to significantly increase, rather than decrease, the ability of entities to rely on Hourly Non-Firm service for deliveries to CAISO.

Finally, while there is considerable uncertainty about the effectiveness of an earlier release in resolving the seams issue with CAISO, an earlier release would unambiguously make the seams issues with other downstream transmission service providers significantly worse. In considering any of the measures set forth in the White Paper, Powerex believes a guiding principle should be to not exacerbate the other existing seams issues on the Southern Intertie. Simply put, an earlier release would make it possible to schedule on Bonneville Hourly Non-Firm service within the preschedule window. This is not possible at present—Bonneville Hourly Non-Firm can only be used to schedule a delivery within the real-time scheduling window. If Bonneville Hourly Non-Firm service became available in the preschedule window, it would offer additional opportunities for entities with Firm reservations on downstream transmission providers' systems (*e.g.*, from LADWP on the PDCI, or from TANC or SMUD on the COTP) to acquire

Bonneville Hourly Non-Firm service and submit a complete e-Tag in the preschedule window. For example, a customer with Long-Term Firm service on the southern segment would now be able to purchase Bonneville Hourly Non-Firm service in the preschedule window, purchase day-ahead energy in the Pacific Northwest, and submit an e-Tag by the preschedule deadline of 3 p.m. This will create a powerful new opportunity for customers with Firm transmission service on the southern segment to utilize Hourly Non-Firm Bonneville service, and hence less opportunity for Bonneville Firm transmission reservations to be used. An earlier release of Bonneville Hourly Non-Firm service would increase the importance of Firm

transmission on the southern segments, while Bonneville Firm transmission would become even less relevant than it is today.7

For the foregoing reasons, Powerex strongly urges Bonneville *not* to release Hourly Non-Firm service any earlier than it currently does.

While an earlier release would likely be highly detrimental to the seams issues on the Southern Intertie, a *later* release does not pose such risks, and is worth further consideration. A release at T-60, as discussed at the workshop and in the White Paper, could be beneficial in two ways. First, it would give transmission customers with Firm reservations the maximum amount of time to use their reservations, and thus reduces the potential for the amount of "unused" Firm to be overstated (and hence the HNF inventory to be overstated). Second, a T-60 release would result in a "rolling release" of Hourly Non-Firm service on a one-hour-at-a-time basis. In contrast, the current release practices make Hourly Non-Firm service available for all hours of the operating day at the same time. A one-hour-at-a-time release therefore introduces additional uncertainty that may be effective in deterring transmission customers from relying on Hourly Non-Firm service to schedule multi-hour blocks of energy in real-time.

Discussion of a later release has focused on T-60, but Bonneville could consider alternative release times that are also close to the start of each delivery hour, but may differ in their alignment with other scheduling timelines. For instance, bids into the CAISO real-time market are due at T-75; for participants that are reluctant to submit real-time bids unless they have already obtained Bonneville transmission service, a T-60 release may be viewed as "too late." In this case, Bonneville may wish to consider releasing Hourly Non-Firm service on a one-hour-at-a-time basis at, say, between T-90 and T-120. Compared to a T-60 release, a release between T-90 and T-120 may result in greater competition for HNF service, consistent with Bonneville's goal of reducing the certainty of acquiring it.

Public Generating Pool

PGP would like to continue discussions regarding Alternative #9 – Change the HNF release time on the Southern Intertie – to better understand all of the impacts and potential unintended consequences. PGP agrees with BPA that releasing HNF after the CAISO DAM bids are submitted, but prior to the posting of the DAM awards may actually increase certainty of some customers' ability to acquire HNF and may over-release HNF inventory from long-term firm reservations that have yet to be scheduled against prior to close of the WECC preschedule window. Regarding BPA releasing HNF inventory at t-60 minutes prior to the operating hour, PGP would like to better understand potential unintended consequences both to sales of HNF transmission service and BPA's ability to forecast flows in future hours, which is an important reliability tool for BPA.

Snohomish PUD

Snohomish believes that this non rate-based solution has the potential to solve the seams issue related to the timing mismatch between CAISO bid awards and the release of hourly non-firm inventory. However, there has not been enough study of the potential impacts of shifting the release time for hourly non-firm. It is unclear how either possible release time identified in the White Paper (either Noon on the preschedule day or T-60 before the hour) would affect the market in the Northwest or in California.

Snohomish encourages BPA to continue analysis on this option and hold further workshops to evaluate possible effects. Because this alternative does not affect the hourly non-firm rate, BPA could continue with an expedited 7(i) in parallel to these additional workshops. Once the proper timing and approach is identified, BPA could then make any needed changes to its Business Practices. Snohomish agrees with the White Paper analysis that this option could be effective at encouraging subscription to long term firm but believes that further study is necessary before implementation takes place.

Tacoma Power

To the extent that BPA is unable to address this seams issue in an open collaboration with CAISO, or through a non-rate action, it makes sense for BPA Transmission Services to change its transmission rates to better balance equity of LTF and HNF service. In adjusting the formula on which the LTF rate is converted to the HNF rate, Rate Alternative No. 2 proposed in the White Paper appears to be a sensible means of accomplishing this end. Other rate actions may also have merit, but BPA should guard against creating the perception that it is using its transmission rate making authority to affect a market outcome.

Alternative #10 – Limit HNF sales on the Southern Intertie to the amount calculated after the close of the Day Ahead preschedule window

Description

Instead of continuously updating the HNF inventory through the real time window, BPA would lock in available HNF capacity on the Southern Intertie when the Day Ahead preschedule window closes and eliminate "post-backs" subsequent to the HNF release.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This will require a change to BPA's business practices.

Will this alternative require systems and/or hardware upgrades?

This alternative will require systems and/or hardware upgrades.

Possible Rate Range

N/A

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative would be somewhat effective at preserving the advantages of LTF in the CAISO DAM. This alternative was developed assuming that the amount of schedules at the close of the Day Ahead Pre-Schedule window may be a better representation of what the actual expected encumbered transmission will be. However, a review of schedules indicates that scheduled LTF usually increases after the close of the pre-schedule window as customers schedule additional transactions; therefore, it is believed that this would have little, if any, impact on the availability of HNF service.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be somewhat effective at encouraging continued subscription of LTF on the Southern Intertie. One of the product advantages of LTF is that the owner is able to schedule that reservation in any given hour. While we believe this alternative would have a limited effect on the availability for HNF, it could create some additional uncertainty around availability of HNF capacity. To the extent this alternative increases risk around the availability of HNF, LTF becomes a more desirable product.

Is this alternative durable?

This alternative would be very durable. This would likely be a onetime change.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

It is unclear whether this change can and should be limited to the Southern Intertie.

Does this alternative create additional oversupply risks and/or costs?

This alternative creates additional risk in the likelihood/costs of oversupply. This alternative could reduce the inventory of HNF transmission. In times of possible oversupply this could increase the likelihood of an event or increase the costs that would be paid for transmission in the secondary market.

Does this alternative promote utilization of the Southern Intertie?

This alternative might have limited effect on Southern Intertie utilization if inventory of HNF is impacted. It is unclear how large the change in HNF inventory would be.

Customer Positions, Analyses or Justification

Calpine Corporation

Calpine believes that value should be reflected in prices. It follows, therefore that transmission should be offered at a price which reflects its value, but importantly, that any transmission not pre-scheduled should be conveniently made available. As a general matter, we dislike the proposed "non-rate" alternatives that restrict the availability of transmission both because they restrain trade, and also because they reduce the potential revenue stream to offset the total system costs. Parties that want no-notice transmission, and do not commit to pay the ongoing cost of service (i.e., hourly non-firm) should pay a substantial premium over the firm price for access to that service.

Exelon Generation

Exelon Generation objects to each of the non-rate alternatives that are aimed at restricting the use of HNF service (alternatives #6, #7, #7a, #7b, #8, #10, and #11). Mechanisms that artificially restrict maximum use of the system conflict with open access principles that available transmission should be made available.

M-S-R Power Agency

M-S-R understands that BPA is also considering some modifications to its scheduling protocols for Hourly Non-Firm service. M-S-R is agnostic regarding such protocol changes with the caveat that any changes not cause a reduction in Hourly Non-Firm revenues.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE are concerned that BPA is proposing to limit access to a market when there is available capacity under the accepted ATC methodology. Again, PGE and PSE are concerned that BPA is proposing to use transmission policy to influence the power market and participants. Transmission policy should be based on reliability and cost recovery and should not be used to benefit certain customers over others.

Southern California Edison

SCE strongly objects to proposals that would reduce transmission use or allow withholding which can lead to market manipulation and result in higher prices. Withholding unused transmission on the Southern Intertie would artificially reduce economic trade which harms society. The loss in economic trade would harm generators that cannot sell energy as well as consumers that cannot buy lower priced energy. This would harm participants located in California and the Northwest.

Alternative #11 – Limit availability of HNF service on the Southern Intertie (tie to posted secondary transmission market)

Description

BPA would only offer HNF on the Southern Intertie when secondary transmission is not posted on OASIS for resale.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This alternative would require a tariff change.

Will this alternative require systems and/or hardware upgrades?

This alternative would require systems and/or hardware upgrades. BPA does not currently have systems capable of monitoring the resale market in real time. The system would need to communicate information about available resales to the system calculating ATC.

Possible Rate Range

N/A

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative would be very effective in preserving the advantages of LTF in the CAISO DAM. This alternative removes most of the economic incentive to sell into the CAISO DAM using HNF. If a customer bids into the CAISO DAM and is awarded, the customer's first option would be to purchase transmission from firm customers. Firm customers would likely sell the transmission for a price closer to the "price spread" between the PNW and California. This would remove some or the majority of the economic benefit of the sale. It is anticipated that this would significantly decrease bidding into the CAISO DAM from customers that intended to rely on HNF. By doing so, this alternative would increase the ability of LTF customers to utilize their transmission and would likely increase economic benefits they receive.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be very effective at encouraging continued subscription of LTF on the Southern Intertie. As discussed above, we anticipate that this alternative would

greatly reduce the economic incentive to bid into the CAISO DAM using HNF. This would result in increased LTF utilization and economic benefits. Additionally, when a LTF customer is unable to utilize its transmission, customers seeking HNF would need to purchase service from the LTF customer. This would increase the price the LTF customer receives for resale of that transmission.

Is this alternative durable?

This alternative would be more durable. This alternative would be a drastic change from BPA's current practices; therefore, BPA would need to more thoroughly explore how this market for unused firm transmission would be operated. It may take several "iterations" before a well-functioning secondary transmission market could be developed.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

In theory, BPA could make a change to its OATT that applies only to the Southern Intertie.

Does this alternative create additional oversupply risks and/or costs?

This alternative could increase the costs of avoiding oversupply if additional transmission is needed and the resale market is priced higher than the HNF rate. It is unlikely to increase the likelihood of an oversupply event, as it should not impact ATC inventory (just whether it is available from BPAT or another transmission customer).

Does this alternative promote utilization of the Southern Intertie?

This alternative might have limited effects on Southern Intertie utilization. Higher costs in the secondary market might deter some customers from purchasing and using transmission on a short term basis.

Other initial evaluations

BPA would also need to explore how this market is monitored.

Customer Positions, Analyses or Justification

Calpine Corporation

Calpine believes that value should be reflected in prices. It follows, therefore that transmission should be offered at a price which reflects its value, but importantly, that any transmission not pre-scheduled should be conveniently made available. As a general matter, we dislike the proposed "non-rate" alternatives that restrict the availability of transmission both

because they restrain trade, and also because they reduce the potential revenue stream to offset the total system costs. Parties that want no-notice transmission, and do not commit to pay the ongoing cost of service (i.e., hourly non-firm) should pay a substantial premium over the firm price for access to that service.

EDP Renewables

In the White Paper, Bonneville assumes that it would allow Long Term Firm rights holders to resell their transmission rights at a market price based on the price differential between the California and Northwest markets. As the White Paper notes, a market based transmission resale rate would effectively eliminate the benefit of a transaction for customers which did not own Long Term Firm rights. But Bonneville should also evaluate this alternative on a cost-based transmission re-sale rate. While it seems obvious that a customer with Long Term Firm rights would like to get the benefit of the price differential without actually bidding into the market, Bonneville may be able to preserve the value of long term firm rights by limiting the price of transmission resales to the actual cost plus a fixed premium.

Exelon Generation

Exelon Generation objects to each of the non-rate alternatives that are aimed at restricting the use of HNF service (alternatives #6, #7, #7a, #7b, #8, #10, and #11). Mechanisms that artificially restrict maximum use of the system conflict with open access principles that available transmission should be made available.

M-S-R Power Agency

M-S-R understands that BPA is also considering some modifications to its scheduling protocols for Hourly Non-Firm service. M-S-R is agnostic regarding such protocol changes with the caveat that any changes not cause a reduction in Hourly Non-Firm revenues.

Portland General Electric and Puget Sound Energy, Inc.

Again, this alternative suggests BPA is attempting to use transmission policy to influence power market activity and PGE and PSE are concerned this alternative would adversely affect market liquidity.

Southern California Edison

SCE strongly objects to proposals that would reduce transmission use or allow withholding which can lead to market manipulation and result in higher prices. Withholding unused transmission on the Southern Intertie would artificially reduce economic trade which harms society. The loss in economic trade would harm generators that cannot sell energy as well as consumers that cannot buy lower priced energy. This would harm participants located in California and the Northwest.

Alternative #12 – BPA limits LTF schedules to their pro-rata share during path de-rates

Description

BPA has determined this alternative is out of scope in this process. It will be addressed in a different process.

Alternative #13 – BPA proactively manages curtailments on the Southern Intertie prior to the interval

Description

BPA would actively issue N>S curtailments on the Southern Intertie to enforce BPA OATT priority.

BPA Initial Evaluation

Will this alternative require tariff or business practice changes?

This alternative would not require a tariff change.

Will this alternative require systems and/or hardware upgrades?

This alternative would not require systems and/or hardware upgrades.

Possible Rate Range

N/A

Will this alternative be effective at preserving the advantages of LTF in the CAISO Day Ahead Market?

This alternative would be somewhat effective in preserving the advantages of LTF in the CAISO DAM. One of the primary advantages of LTF transmission is its priority in the event of a curtailment. Customers with higher priority transmission are curtailed after customers with lower priority transmission. When issuing curtailments on a path, generally the sink issues the curtailment according to the priority of the transmission on its system. Under this alternative, BPA would take a more proactive role in issuing curtailments. This would increase the advantage of LTF by ensuring BPA's transmission priority is enforced more regularly. We believe this alternative would create some additional benefits for LTF; however, those benefits would be limited because, although the alternative would enforce LTF priority in the event of a curtailment, it would not address the relative product advantages of LTF when the CAISO is granting awards in the DAM.

Will this alternative encourage continued subscription in LTF on the Southern Intertie?

This alternative would be somewhat effective at encouraging continued subscription of LTF on the Southern Intertie. This alternative would reinforce the "firmness" of LTF transmission and decrease the number of hours when LTF is curtailed. Both of these

outcomes would increase the incentive of customers' continued subscription of LTF on the Southern Intertie.

Is this alternative durable?

This alternative could be more durable, depending on the reactions of adjacent BAs to this alternative. If they also begin making proactive curtailments, this alternative may have no impact.

Is there a potential that the rationale for this alternative could also apply to other segments (i.e. the Network) that do not have the same issues as the Southern Intertie?

This would not be an issue because BPA would issue the curtailments under status quo policies and the priority of firm service is considered for all parts of the FCRTS, including the Network and the Southern Intertie.

Does this alternative create additional oversupply risks and/or costs?

This alternative would create little additional risk in the likelihood/costs of oversupply.

Does this alternative promote utilization of the Southern Intertie?

This alternative would not affect Southern Intertie utilization, it only concerns which tags are curtailed.

Customer Positions, Analyses or Justification

EDP Renewables

Bonneville should enforce OATT priorities.

Exelon Generation

With respect to Alternative #9 (Change the HNF Release time on the Southern Intertie) and Alternative #13 (BPA proactively manages curtailments on the Southern Intertie prior to the interval), Exelon Generation believes that there may be merit in pursuing each of these alternatives because each of them more directly addresses the fundamental problem of ensuring that LTF actually has a higher priority than HNF. However, Exelon Generation would urge that, with respect to Alternative #13, there needs to be careful attention to implementation to ensure that curtailment management does not result in a situation that eliminates all certainty associated with HNF awards – i.e., at some point, an award of HNF and use of that award for scheduling must not be undone by late scheduling of LTF.

M-S-R Power Agency

M-S-R understands that BPA is also considering some modifications to its scheduling protocols for Hourly Non-Firm service. M-S-R is agnostic regarding such protocol changes with the caveat that any changes not cause a reduction in Hourly Non-Firm revenues.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE suggest BPA identify the OATT principle that would allow BPA to curtail the north side of the Southern Intertie when congestion is actually occurring on the south side of the path. Additionally, PGE and PSE suggest BPA explain how this process will affect other network interties.

IV. Customer Comments on the Expedited 7(i) Process

Cowlitz County PUD and Eugene Water & Electric Board

Cowlitz and EWEB urge BPA to initiate promptly an expedited 7(i) process to evaluate rate Alternative #2 from the White Paper and to adopt by FY 2017 an hourly non-firm rate for the Southern Intertie of approximately $13/MWh based on 20 high value hours per week.

Iberdrola Renewables

Iberdrola Renewables, while recognizing that the issues presented and the potential alternative solutions are complex, supports Bonneville's potential use of an expedited Pacific Northwest Electric Power Planning and Conservation Act Section 7(i) process. Iberdrola Renewables appreciates BPA's desire to move quickly to address customer concerns, as well as its attention to the formal processes required in order to do so.

ICNU

ICNU recommends that the BPA adopt Alternative 3, calculating the hourly non-firm ("HNF") rate based on the cost of expansion, as the best potential rate alternative. ICNU recommends that BPA implement this rate alternative in an expedited 7(i) proceeding.

Northwest Requirements Utilities

Due to the concerns about the devaluing of long-term firm transmission on the Southern Intertie articulated above, it is appropriate for BPA to hold an expedited rate case this spring to formally address this issue through a change to the rate design, which would go into effect at the start of FY 2017.

Pacific Northwest Generating Cooperative

BPA should consider using an expedited 7(i) process to put [Alternative 2] in place.

Portland General Electric and Puget Sound Energy, Inc.

PGE and PSE are concerned that BPA has not weighed the costs of moving forward with an expedited 7i process against the potential benefits such an approach may offer compared to simply incorporating the issue into the upcoming BP-18 rate case. PGE and PSE suggest that BPA provide some initial data detailing the potential revenues, costs, and rate increases each of the rate and non-rate alternatives are expected to bring. What increased costs would BPA attempt to recover in the expedited 7i process and what is the cause of those costs? Is there a forecast of potential lost revenues? What is that forecast based upon?

PGE and PSE suggest that BPA add an assessment of the benefits to be gained and costs to be incurred by completing an expedited 7i process compared to enacting, as necessary,

available non-rate alternatives prior to the BP-18 rate case. While a good starting point, the qualitative analysis provided in the whitepaper lacks depth and data that is required for customers and BPA to make properly informed decisions. PGE and PSE recommend that prior to engaging in a rate making process, BPA provide a more detailed quantitative analysis.

Powerex

The change in the Hourly Non-Firm rate for the Southern Intertie should be implemented through an expedited 7(i) process, allowing the new rate to become effective beginning October 1, 2016. Having determined that a rate change is likely to be the most effective way to address the seams issue with the CAISO, there is no valid reason to delay its implementation. Bonneville transmission customers investing in Long-Term Firm service on the Southern Intertie have already experienced the harm of the seams issue for several years. The workshops convened by Bonneville have led to broad agreement on the importance of the issue and on the need for Bonneville to take decisive action to address it. To delay this action would prolong the harm being experienced by Bonneville's transmission customers and create uncertainty about what actions Bonneville will take at a later date. Moreover, an expedited 7(i) process should be relatively straight forward, given the extensive work completed in this workshop, including identifying an appropriate rate solution. Finally, the expedited 7(i) process would allow Bonneville to gain important experience to gauge the effectiveness of the higher rate, allowing any adjustments to be pursued promptly in the BP-18 rate case proceeding one year later. Conversely, if a rate change is deferred until the BP-18 rate case, any adjustments would have to wait two years. For the foregoing reasons, Powerex strongly supports an expedited 7(i) proceeding to implement a change in the rate for Hourly Non-Firm service on the Southern Intertie.

Public Power Council

PPC supports implementation of a change in the IS HNF rate in an expedited rate proceeding ahead of the BP-18 rate period with the rate going into effect for FY 2017. This approach has the benefit of providing relief on this issue, which has been ongoing for some years, at the earliest opportunity. Additionally, having the rates in effect for one year ahead of the BP-18 rate period would act effectively as a pilot program and allow for adjustments based on any unforeseen consequences.

Snohomish County PUD

Snohomish believes that implementing a combination of rates and non-rates solutions will best address the seams issue. By implementing a rates solution in an expedited 7(i) process beginning in March 2016, BPA can recapture some lost value, as well as bring the hourly non-firm rate to comparable levels with California-based transmission providers' hourly non-firm rates.

An added benefit to holding an expedited 7(i) process and implementing a revised rate in fiscal year 2017 is the opportunity for BPA and its customers to observe the market impacts of the new rate. These observations will lend BPA strong evidence for retaining or revising the rate as part of the BP-18 Rate Case.

V. BPA Recommendation

BPA recognizes that changes in the CAISO DAM have eroded the product advantages and value of long-term transmission service on the Southern Intertie. Accordingly, BPA needs to take actions to protect the value of LTF and encourage the continued investment in LTF transmission service. BPA believes a bundle of rate and non-rate solutions would be the most effective, unilateral action BPA could take to ensure LTF transmission subscribers continue to receive the economic benefits of the Southern Intertie and the long-term transmission product has a material product advantage over HNF. Although the seams issue warrants a change, BPA does not see a need to have a mini 7(i) process given the many complex issues and priorities that BPA and the region will be facing this spring and summer.

Rate Alternative

BPA recommends Alternative #2 – calculate the Southern Intertie HNF rate based on a different assumption of "high value" hours. The current Southern Intertie HNF rate is calculated such that a customer that planned on purchasing transmission in the traditional heavy load hour period (16 hours a day, 5 days a week) would pay the same as a customer purchasing LTF. On the Southern Intertie this is an outdated assumption. The markets served by the Southern Intertie, which traditionally have had the same price across all heavy load hours, now have an hourly shape of value across the day. Additionally, the CAISO DAM does not trade in traditional heavy load hour blocks and customers can choose to sell into only the most valuable times of the day. All of these factors support BPA changing the rate design of HNF.

CAISO solar generation and load data shows that CAISO load net of solar generation has begun to "dip" during the middle of the day when solar generation is highest. This is consistent with much industry literature on the CAISO "Duck Curve". This shift in California's daily net load shape has been reflected in California power prices and demand for imports. The middle of the day, which has traditionally been some of the most valuable hours, have trended downward as solar generation has increased. Recent data indicates the most valuable time of the day, when load net of solar generation is highest, appears to be 4-6 hours during the evening peak. The CAISO's Time of Use proposed "on-peak" definition (from March 12, 2015) reflects this changing net load profile. The proposal identified 5 hours a day, 7 days a week as "on-peak".

In the BP-18 Initial Rate Proposal, BPA will propose a new methodology for the HNF IS rate supported by the above factors. BPA's proposal will reflect that a range of 4-6 hours a day may be appropriate. In workshops preceding the BP-18 Rate Case, BPA will also explore possible seasonal and/or peak/off-peak HNF rates, etc.

Non-Rate Alternative

BPA staff recommends Alternative #6 – only sell hourly non-firm transmission once. BPA would not post back the unscheduled portion of a HNF reservation to HNF transmission

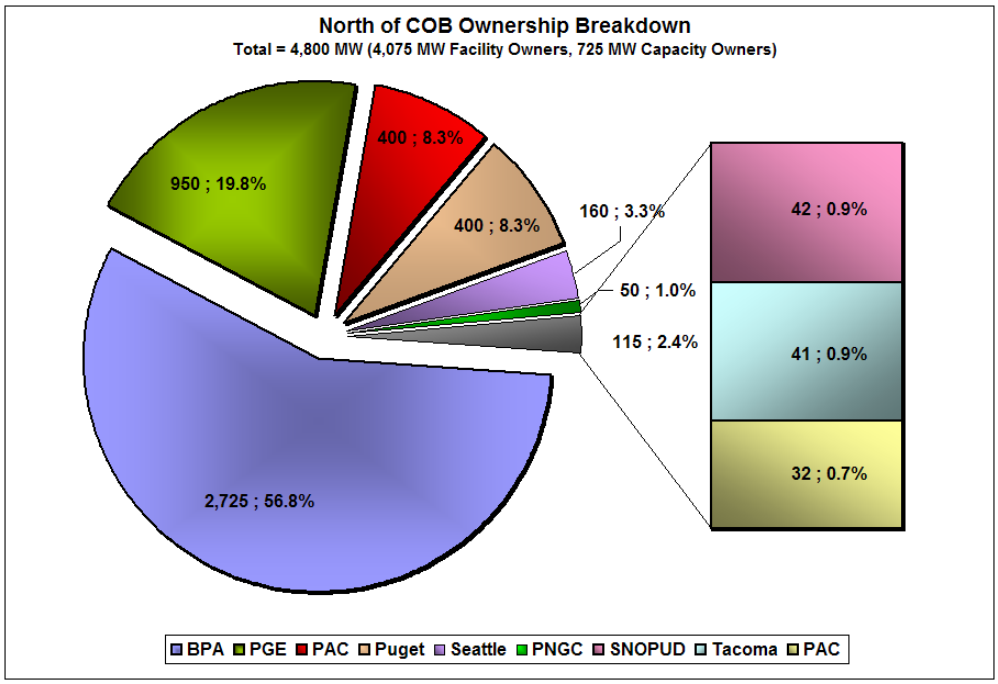
inventory. The costs to implement it will be included in the IPR 16 process. The implementation timeframe is estimated at 6 months. BPA will continue to explore the other non-rate alternatives identified in the white paper, as many customers noted that more exploration is needed to determine if they are viable.

Appendix A: Southern Intertie Ownership

California Oregon Intertie Ownership

Ownership North of COB

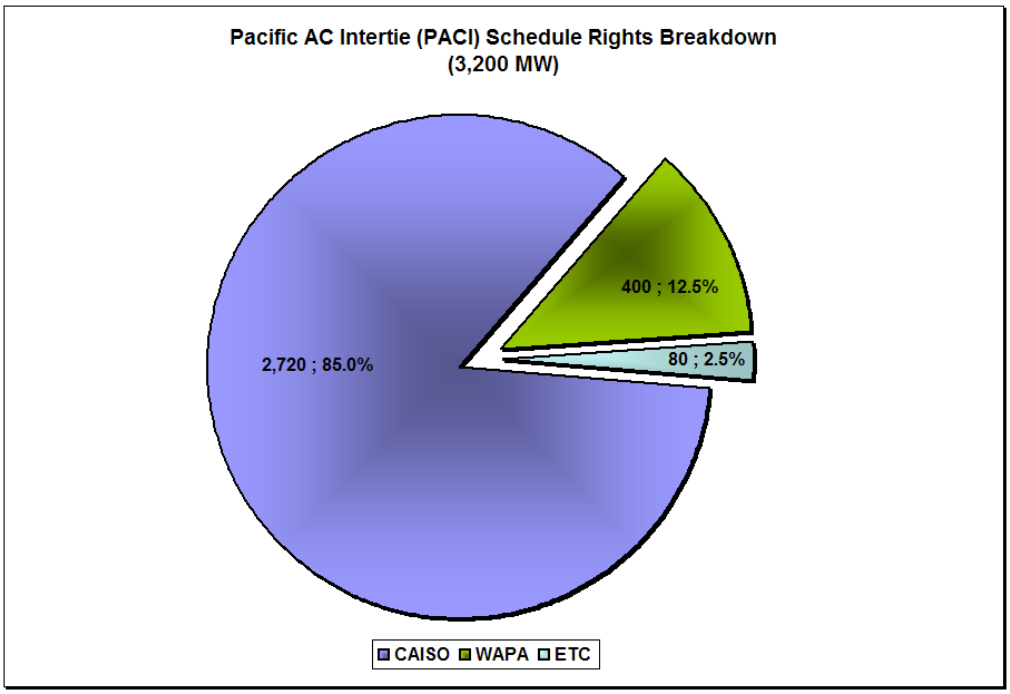
The California Oregon Intertie (COI) north of the California Oregon Border (COB) is shared by Facility and Capacity Owners. The Facility Owners include BPA, Pacificorp and Portland General Electric. Capacity Owners include Puget Sound Energy, Seattle City Light, Pacific Northwest Generating Cooperative (PNGC), Snohomish County PUD, Tacoma Power, and Pacificorp.



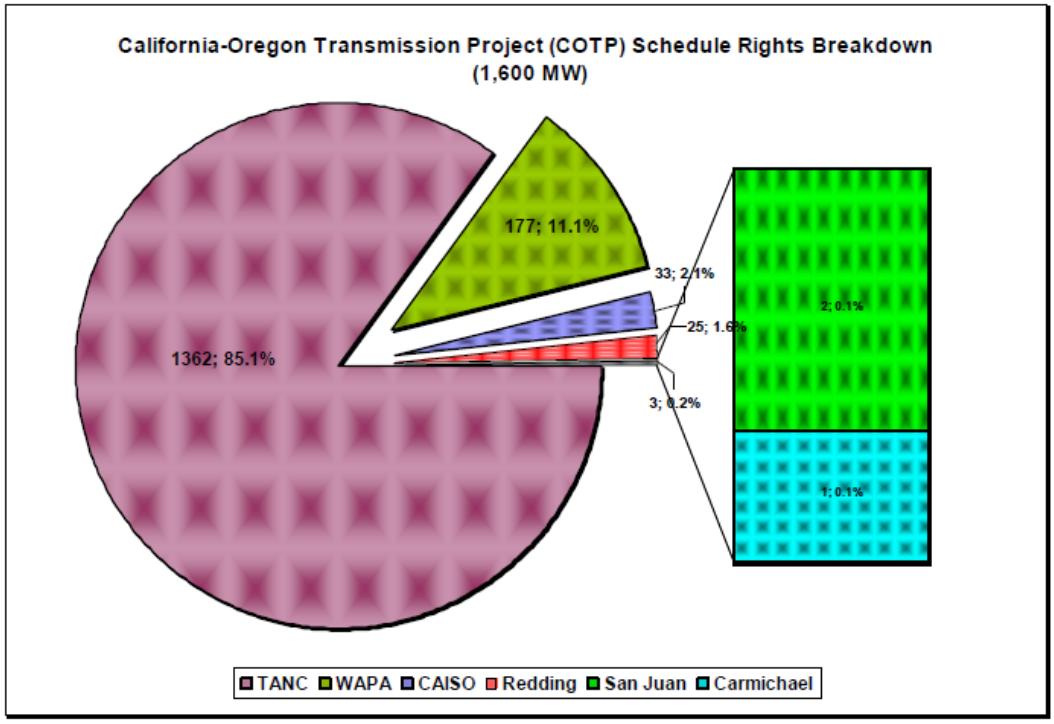
Source: Transmission Utilization Group: COI Utilization Report May 04, 2011

Ownership South of COB

Ownership of the 3,200 MW Pacific AC Intertie (PACI) lines is shared between WAPA, PG&E and Pacificorp. Through agreements, 2,720 MW of this capacity has been turned over to the CAISO. The 1,600 MW California-Oregon Transmission Project (COTP) line is owned by TANC, WAPA Redding, San Juan and Carmichael. 33 MWs of the COTP line has been turned over to the CAISO.



Source: Transmission Utilization Group: COI Utilization Report May 04, 2011



Source: Transmission Utilization Group: COI Utilization Report May 04, 2011

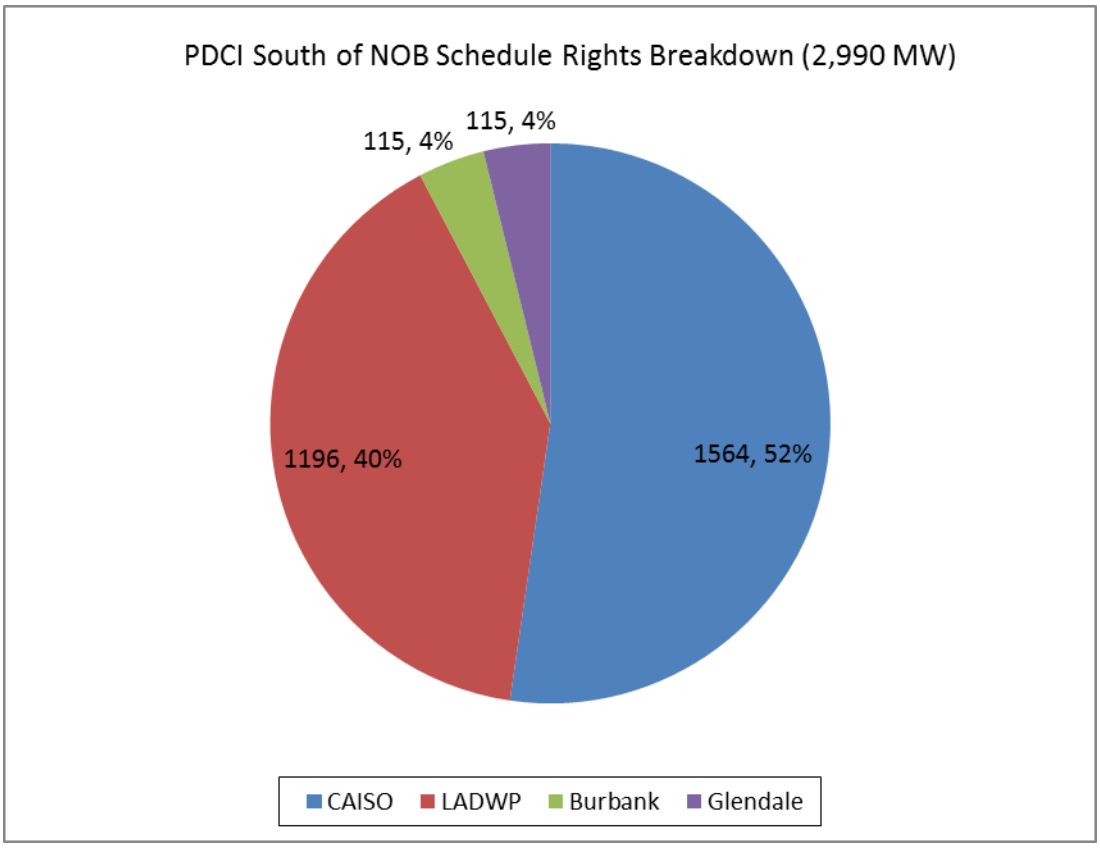
Pacific Direct Current Intertie Ownership

Ownership North of NOB

The Pacific Direct Current Intertie (PDCI) north of the Nevada Oregon Border (NOB) is owned by BPA.

Ownership South of NOB

The PDCI south of NOB is jointly owned by Southern California Edison, Los Angeles Department of Water and Power, Burbank, Glendale and Pasadena. 1564 MW of capacity has been turned over to the CAISO.



Appendix B: Long-Term Rights Renewal History and Status of the Queue

COI N>S Renewal History

Fiscal Year	TSR MWs Ending	MW Eligible for Renewal	MW Electing to Renew	MW Not Eligible for Renewal	New Offers Accepted	MWs at Risk of Non-Renewal
2011-2016	1617	1417	1309	200	474	
2017	1058	358	358*	700	700	0
2018						0
2019	1142	1142				1142
2020	200	200				200

* As of 01/19/2016 all 358 MWs have submitted requests for rollover

PDCI N>S Renewal History

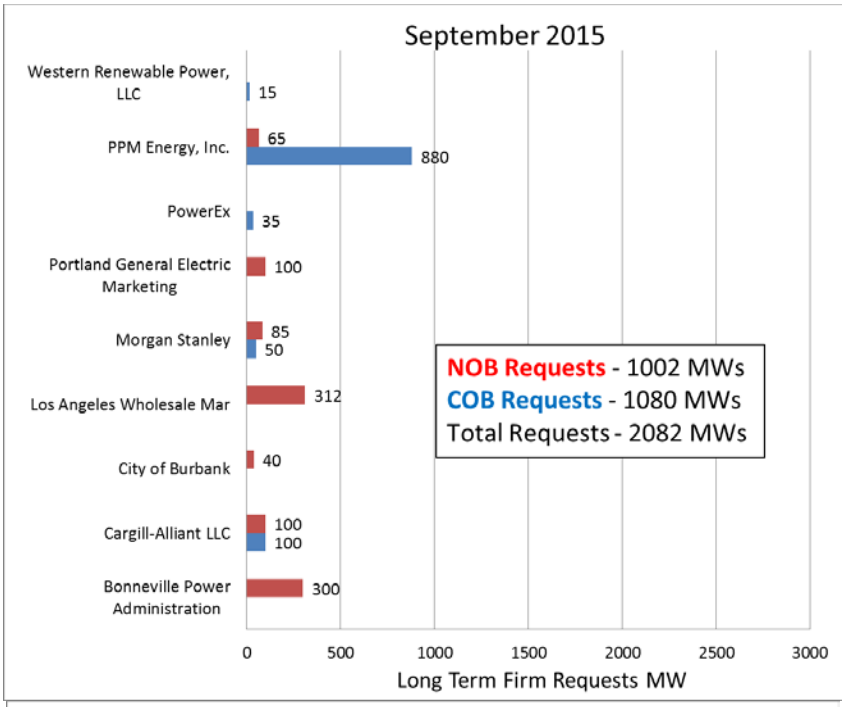
Fiscal Year	TSR MWs Ending	MW Eligible for Renewal	MW Electing to Renew	MW Not Eligible for Renewal	New Offers Accepted	MWs at Risk of Non-Renewal
2011-2016	2324	2249	2199	75	394	
2017	761	461	415*	300	300	46
2018	357	357				357
2019	795	795				795
2020	440	440				440

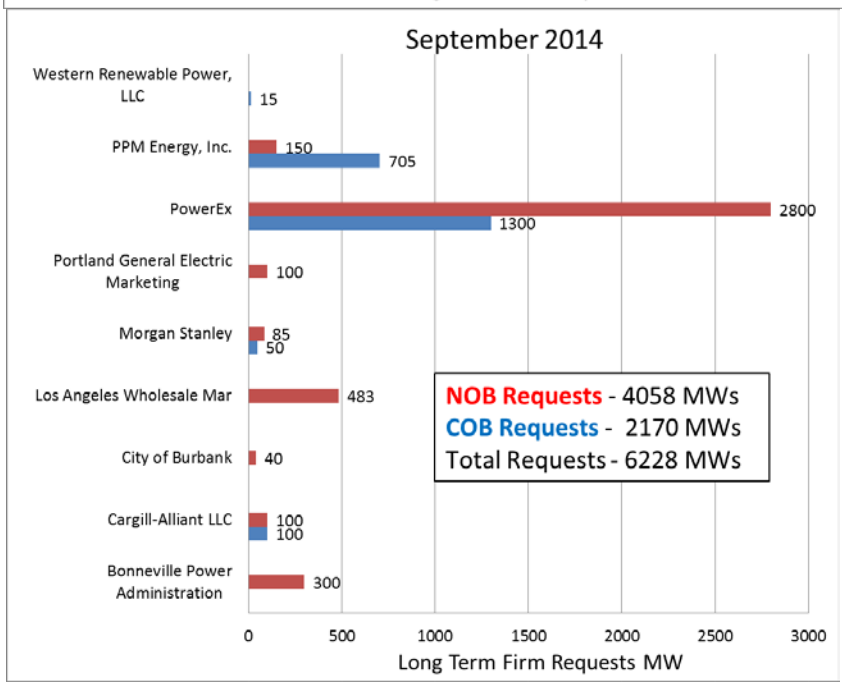
* As of 01/19/2016 415 MWs have submitted requests for renewal.

COI S>N Renewal History

Fiscal Year	TSR MWs Ending	MW Eligible for Renewal	MW Electing to Renew	MW Not Eligible for Renewal	New Offers Accepted	MWs at Risk of Non-Renewal
2016	71	71	0			

The tables presented above show how many MWs have service that ends in each given fiscal year. Customers are required to submit requests to exercise rollovers 1 year prior to their service end date. For example, the COI has 357 MWs of service that ends in FY 2018. Those customers would need to submit requests to exercise rollovers in FY 2017.





Reason For Removal From Queue	MWs
Requests Withdrawn	- 4065 MWs
Offers Declined	- 85 MWs
Within 60 Days of Stop Date	- 171 MWs
Incremental Requests	175 MWs
September 2015 Queue - September 2014 Queue	- 4146 MWs

Appendix C: Historical Southern Intertie Performance Period Revenue

Historical Performance Period Revenue

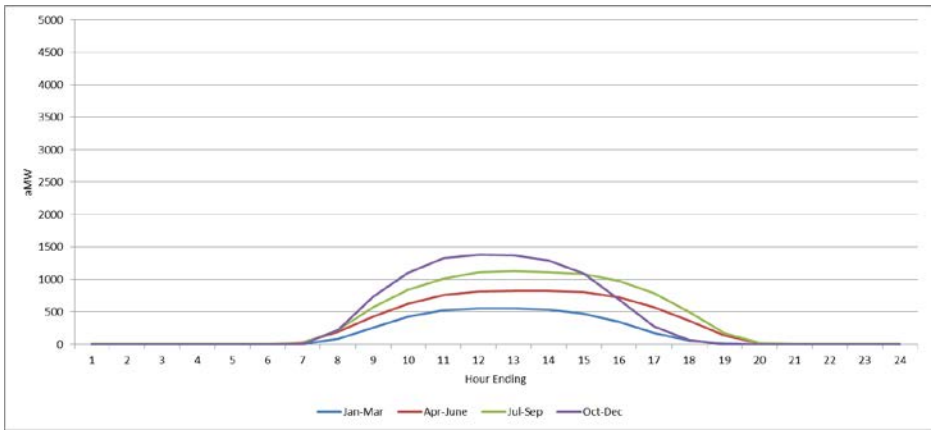
Fiscal Year	Long Term Firm	Days 1-5	Days 6+	Hourly Firm	Hourly Non Firm	Total
2007	$ 78,441,314	$ 2,764,944	$ 376,656	$ 1,130	$ 3,037,643	$ 84,621,687
2008	$ 85,021,215	$ 1,014,300	$ 1,297,935	$ 483,359	$ 2,664,719	$ 90,481,528
2009	$ 83,914,407	$ 638,940	$ 1,074,780	$ 332,940	$ 825,844	$ 86,786,911
2010	$ 83,732,094	$ 717,360	$ 217,980	$ 167,543	$ 2,037,336	$ 86,872,313
2011	$ 84,234,196	$ 1,289,640	$ 2,556,405	$ 322,765	$ 4,021,463	$ 92,424,469
2012	$ 92,269,773	$ 142,980	$ 444,330	$ 270,925	$ 3,365,495	$ 96,493,503
2013	$ 92,852,916	$ 280,860	$ 792,315	$ 390,998	$ 2,923,622	$ 97,240,711
2014	$ 81,957,096	$ 320,424	$ 217,190	$ 269,420	$ 2,697,618	$ 85,461,748

Historical Revenue as a Percent of Total Southern Intertie Reservation Revenue

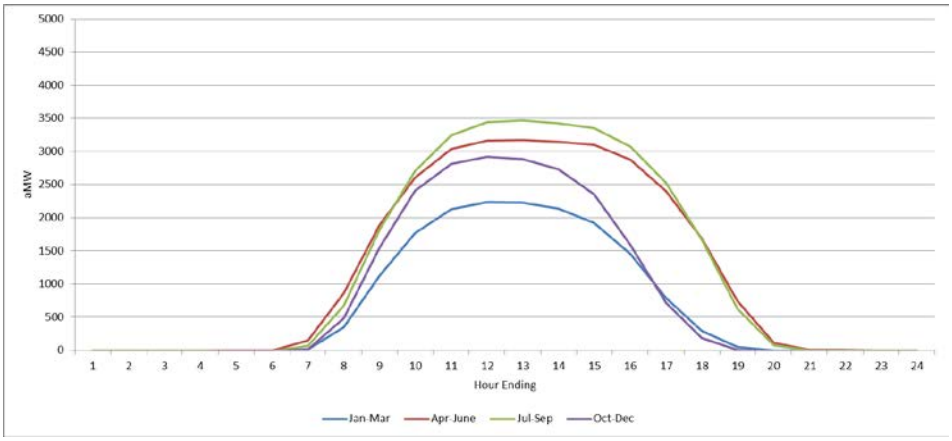
Fiscal Year	Long Term Firm	Days 1-5	Days 6+	Hourly Firm	Hourly Non Firm
2007	93%	3%	0%	0%	4%
2008	94%	1%	1%	1%	3%
2009	97%	1%	1%	0%	1%
2010	96%	1%	0%	0%	2%
2011	91%	1%	3%	0%	4%
2012	96%	0%	0%	0%	3%
2013	95%	0%	1%	0%	3%
2014	96%	0%	0%	0%	3%

Appendix D: CAISO Solar Generation Integration

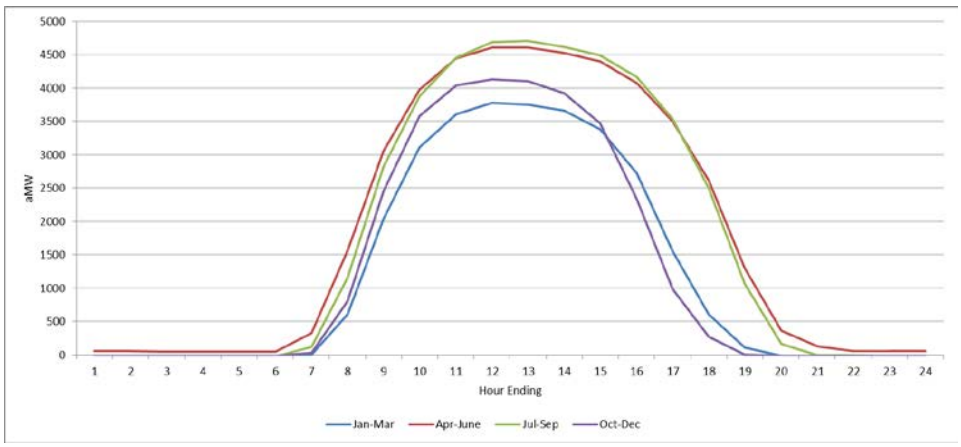
Calendar Year 2013 CAISO Actual Solar Generation



Calendar Year 2014 CAISO Actual Solar Generation

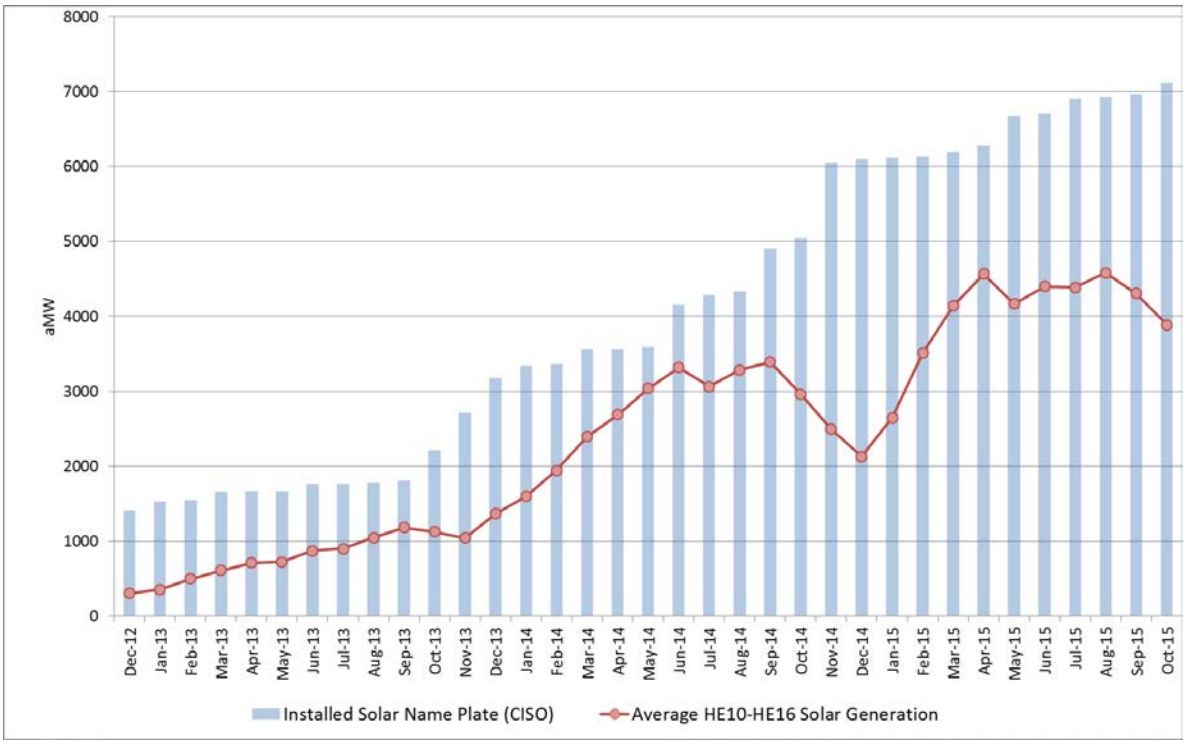


Calendar Year 2015 CAISO Actual Solar Generation



Source: CAISO OASIS http://oasis.caiso.com/mrioasis/logon.do

CAISO Installed Solar Name Plate and Solar Generation

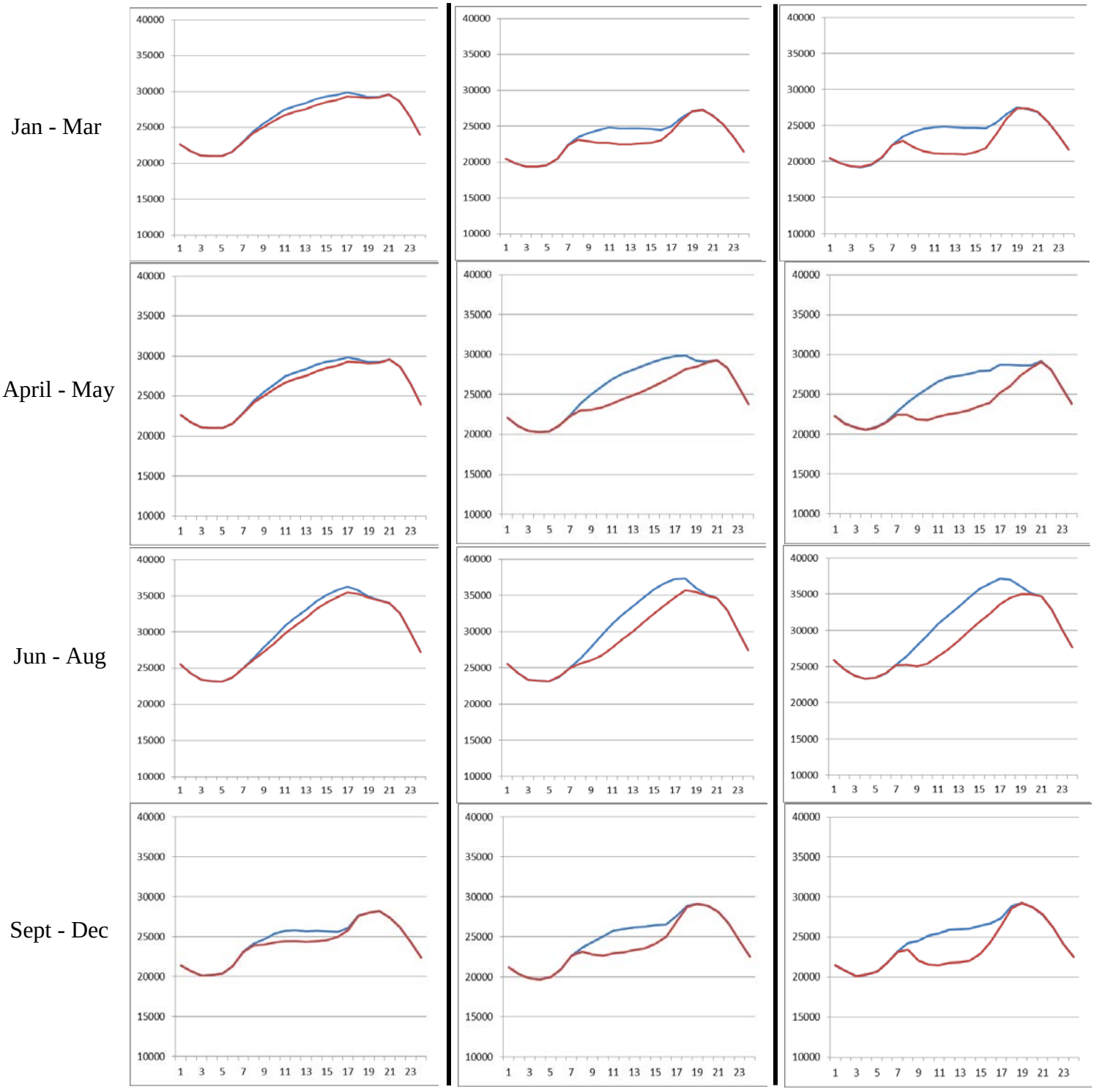


The graph above shows the cumulative name plate of Solar Generation in the CAISO, by month and actual average solar generation of HE10-HE16 by month.

Generator Name Plate Source: CAISO Master Control Area Generating Capability List (Dec 07, 2015)

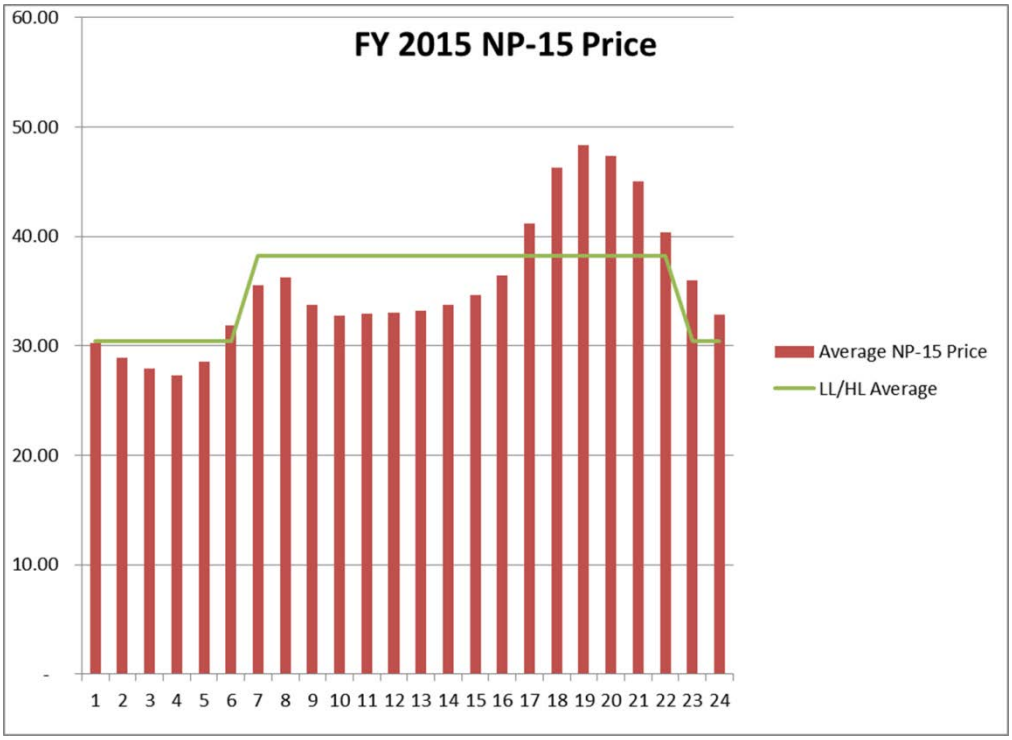
Solar Generation Source: CAISO OASIS http://oasis.caiso.com/mrioasis/logon.do

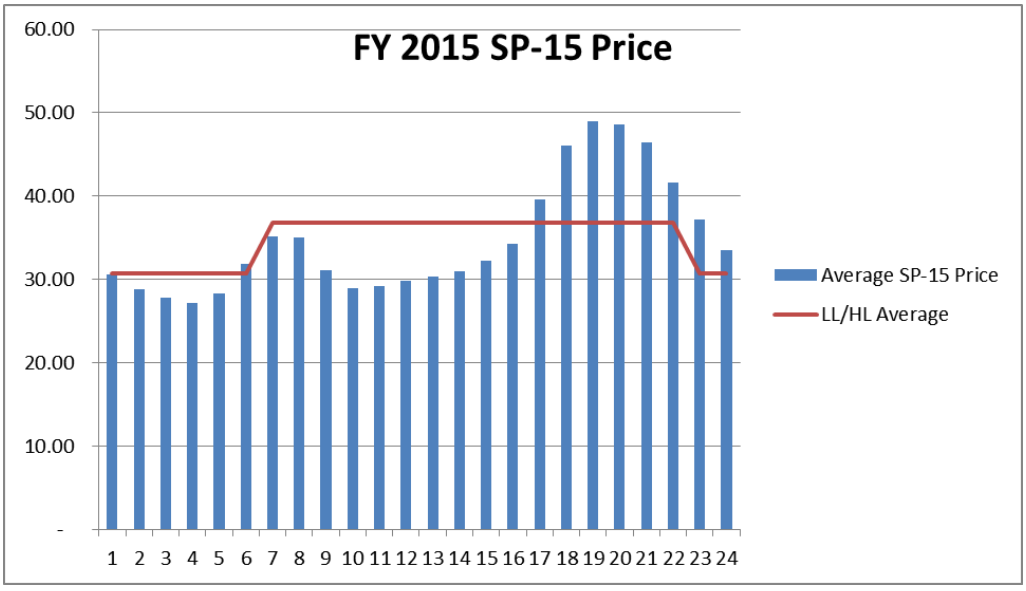
CAISO Load and Load Net of Solar Generation by Hour Ending



Source: CAISO OASIS http://oasis.caiso.com/mrioasis/logon.do

CAISO Energy Prices by Hour Ending





The integration of solar generation and changing profile of load net of solar is reflected in internal California prices. The middle of the day, which has traditionally been some of the most valuable hours, has seen prices and demand for imports in California trend downward as solar generation has increased. The most valuable hours of the day now concentrate in the evening peak when solar begins to ramp down and more expensive generation has to ramp on to meet load.

In CAISO's March 12, 2015 presentation, Time of Use (TOU) period analysis to address "high Renewable" grid needs, the CAISO recognized the impact of solar integration on its net load profile and recommended a new set of definitions on what are "peak hours". CAISO's proposed definition of "peak" aligns with BPA's proposal to use 5 hours/day 7 days/week.

Source: CAISO TOU period analysis to address "High Renewable" grid needs, March 12, 2015