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Le 13 octobre 2010  
No de dossier : 10887/118243.00005

**PAR COURRIEL ET PAR MESSAGER**

Me Véronique Dubois, Secrétaire  
Régie de l'énergie  
800, Place Victoria, 2<sup>e</sup> étage, bureau 255  
Montréal (Québec) H4Z 2A2

**Objet : Demande de modification des tarifs et conditions des services de transport d'Hydro-Québec au 1er janvier 2009  
R-3669-2008-Phase 2**

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Chère consœur,

Veillez trouver ci-joint un original et huit (8) exemplaires des réponses de l'expert de Newfoundland & Labrador Hydro, Robert Sinclair aux demandes de renseignements de HQT dans le cadre du dossier mentionné en titre.

Espérant le tout conforme, veuillez agréer, chère consœur, l'expression de nos sentiments les plus distingués.

**FASKEN MARTINEAU DuMOULIN s.r.l.**

*(s) André Turmel*

André Turmel  
AT/nb

p.j.

c.c : Mes Jean Morel, Marie-Christine Hivon et Éric Dunberry, procureurs d'Hydro-Québec et à tous les intervenants

**RESPONSES TO  
INFORMATION REQUESTS NUMBER 1  
OF THE TRANSMISSION PROVIDER TO  
NEWFOUNDLAND AND LABRADOR HYDRO  
(« NLH »)**

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**PART 1**

**Amended Evidence of the Intervener  
Newfoundland and Labrador Hydro  
September 23, 2010**

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**Reference:** NLH's Argumentation of September 23, 2010, page 6:

*"Furthermore, in the part of the Order related to determining "Significant and Recurring" congestion, FERC insisted on the part played by stakeholders (including transmission customers) in network planning. FERC requested that transmission providers adopt an approach that ensures that economic studies required under this principle are focused on customer needs and concerns, not administratively determined metrics that may bear no necessary relation to those concerns."*

**Requests:**

- 1.1 Veuillez définir ce que vous entendez par « Significant and Recurring congestion ». [Translation] : Please define what you mean by "Significant and Recurring" congestion.

**Response:** The term "Significant and Recurring congestion" referenced by FERC in the context of the need for planning to involve both reliability and economical considerations, refers to congestion identified on the network by transmission customers. As FERC states:

*"those portions of the transmission system where [transmission customers] have encountered transmission problems due to congestion or whether they believe upgrades and other investment may be necessary to reduce congestion and to integrate new resources. (See Order 890 ¶547). (our emphasis).*

- 1.2 Êtes-vous d'accord que les « economic studies » auxquelles il est fait référence au paragraphe 542 de l'Ordonnance 890 de la FERC correspondent à un principe différent de celui de la « coordination »?  
[Translation] Do you agree that the "economic studies" referred to in paragraph 542 of Order 890 of the FERC correspond to a different principle from that of "coordination"?

**Response:** Yes. In Order 890, FERC established nine Planning Principles (Order 890 at ¶444). All these planning principles are included under the Order 890 topic of "Coordinated, Open and Transparent Planning". The term "economic studies" referred to in the request is discussed under the planning principle of "Economic Planning Studies", which is distinct from the planning

principle “coordination”. However, these principles should not be considered in isolation. The Commission stated it believes that “coordinated studies can, for system planning purposes, be more beneficial than studies performed on a request by request basis”<sup>1</sup>.

**Reference:** NLH’s Argumentation of September 23, 2010, page 11:

*“The Régie’s investment authorization process is not a “planning process” fulfilling the coordination requirement of FERC order 890, but rather a “public interest and cost-oriented approval process”. This is confirmed by the fact that HQT’s customers generally do not participate in these files; instead, we mainly find public interest intervenors such as environmental groups and organizations defending the interests of electricity consumers.*

*In the annual investment files for projects under \$25 million, only two of HQT customers’ have intervened (BEMI and OPG). In a total of nine files, they intervened only three times. As for the investment files for specific projects above \$25million, a total of three HQT customers have intervened (NLH, ÉLL, and BEMI, the last two being affiliated entities), and they did so in only three out of 33 files.*

*[...] In Régie’s files, intervenors are required to limit their intervention to the approval of the projects in question; they are not meant to interact meaningfully with regards to transmission planning.”*

## **Requests:**

2.1 Veuillez définir ce que vous entendez par « public interest and cost-oriented approval process » et fournir toutes les sources au soutien de cette définition.

[Translation]: Please define what you mean by “public interest and cost-oriented approval process” and provide all sources to support this definition.

**Response:** We refer to the Régie’s Decision D-2009-140, paragraph 43. In the matter of an investment case, according to Régie’s case law, the Régie must only ensure that projects submitted for its approval meet public interest objectives and that project costs are reasonable. The investment approval process is different from a planning process, given its mandate which is to approve the outcome of a planning process relative to these objectives, which is distinct from a coordinated opening planning process which provides for the exchange of information on a prospective basis between the Transmission Provider and its customers.

2.2 Expliquez la différence que vous faites entre « an environmental group or an organization defending the interests of electricity consumers » et les « HQT’s customers » et leur intérêt à participer au processus d’autorisation d’investissements.

[Translation]: Explain how you distinguish between “an environmental group or an organization defending the interests of electricity consumers” and “HQT’s customers” and their interest in participating in the investment approval process.

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<sup>1</sup> FERC Order 890, paragraph 543.

**Response:** Each of the categories of groups has different interests. Environmental groups may intervene in investment files to ensure that projects submitted to the Régie respect the principles of sustainable development. Organizations defending the interests of electricity consumers may be involved so that the rate impacts of the investments are taken into account by the Transmission Provider. Finally, HQT customers can intervene to ensure the equitable and transparent application of Hydro Québec's Open Access Transmission Tariff.

2.3 Expliquez pourquoi NLH n'a participé qu'à trois des 33 dossiers d'autorisation des investissements devant la Régie pour des projets de plus de 25 \$ millions.  
[Translation] Explain why NLH has participated in only three of 33 cases of investment proposals before the Régie for approval of projects over \$ 25 million.

**Response:** We participated in cases that we felt were relevant to us, in the context of our commercial interests.

2.4 Expliquez ce que vous entendez par l'expression « interact meaningfully ».  
[Translation]: Explain what you mean by “interact meaningfully.”

**Response:** Interact meaningfully with regards to transmission planning, means engagement in the development of a transmission study plan, the study base case and assumptions and the review of the study results. This engagement involves providing information and being provided with information in order to be able to provide relevant input, and to understand and have confidence in the results of the study process, such that the entire process is open and transparent and devoid of any potential for discriminatory treatment.

**Reference:** NLH's Argumentation of September 23, 2010, page 18:

*“As evidenced by the table found in Appendix III, in the 6 rate cases mentioned in HQT-19, document 1, HQT's only customer to participate regularly in such cases was BEMI; however, this company did not participate in the first rate case, R-3401-98.”*

**Request:**

3.1 Expliquez pourquoi NLH n'est intervenue dans aucun des dossiers tarifaires.  
[Translation]: Explain why NLH did not intervene in a single tariff case.

**Response:** Prior to 2006, NLH was not a customer of HQT. Subsequently, in 2007, NLH did participate in Régie's Rate case R-3640-2007, as a member of the Quebec Interconnection and Energy Group (“QIEG”).

**Reference:** NLH's Argumentation of September 23, 2010, page 25:

*“Since its creation, the BAPE has had the opportunity to examine transmission projects in three instances. HQT’s transmission customers did not intervene in any of these, nor was HQT’s general transmission plan discussed. [...]”*

*In all three cases, local groups were consulted by HQT in order to discuss their, respective, biophysical, social and economic concerns. However, transmission customers did not participate in the consultation process, and transmission planning was not addressed by the BAPE. Hydro-Québec is the only transmission customer’s whose interests were discussed. As shown in the documentation relating to the three projects, the BAPE’s main concern is how the project will affect local communities in a biophysical, social and economic perspective - there is no specific focus on the potential impacts on other stakeholders such as transmission customers.”*

**Requests:**

- 4.1 Expliquez pourquoi NLH n’est pas intervenue dans les trois processus du BAPE auxquels elle réfère.  
[Translation]: Explain why NLH did not intervene in the three stages of the BAPE process to which it refers.

**Response:** As a transmission customer the BAPE hearings were not relevant to us, as a forum to address our transmission planning interests.

- 4.2 Expliquez sur quoi NLH se fonde pour soutenir que « there is no specific focus on the potential impacts on other stakeholders such as transmission customers »?  
[Translation]: Explain the basis for NLH’s claim that “there is no specific focus on the potential impacts on other stakeholders such as transmission customers”?

**Response:** The BAPE is an agency dedicated to public information and consultation on projects likely to have impacts on the environment or any other question related to the quality of the environment. The scope of these hearings is focused on socioeconomic and environmental impacts.

**Reference:** NLH’s Argumentation of September 23, 2010, page 26:

*“(e) Other:*

*Mr. Rose lists other instances in which transmission planning could occur: exploratory studies under section 12A.5 of HQT’s OATT; HQT’s and the Régie’s complaint processes; and HQT’s system impact study process. These are certainly not coordinated transmission planning process, but, instead, one-on-one processes involving HQT and its customers, with a specific objective – which is not general transmission planning.”*

**Requests:**

- 5.1 Est-ce que NLH est membre du NPCC?  
[Translation]: Is NLH a member of NPCC?

**Response:** Yes.

- 5.2 Si oui, à quel titre?  
[Translation]: If so, in which capacity?

**Response:** General member (sector 5 – marketers, brokers and aggregators).

- 5.3 Depuis quand?  
[Translation]: Since when?

**Response:** 2009

- 5.4 Pourquoi NLH ne réfère pas à ce processus dans la liste précitée?  
[Translation]: Why does NLH not refer to this process in the list referred to above?

**Response:** NLH recognizes that the NPCC process involves coordinated planning. However, this coordinated planning is focused on reliability issues, not economic issues. Order 890 explicitly recognizes the need to go beyond reliability objectives in coordinating of transmission planning:

“At the outset, we wish to clarify that our primary objective in adopting this principle is to ensure that the transmission planning process encompasses more than reliability considerations. Although planning to maintain reliability is a critical priority, it is not the only one. Planning involves both reliability and economic considerations. Order 890 ¶542)”

Accordingly, Order 890 intends to introduce coordinated planning that focuses on economic issues. This does not displace NPCC function, but complements it by expanding the coordination activities beyond the reliability concerns that have been the traditional focus on NPCC. Indeed, there would be no need for FERC to promulgate the Order 890 Coordinated Planning requirements if FERC viewed NPCC (or any other NERC entity) as adequately addressing the economic concerns associated with transmission planning.

- 5.5 Est-ce que NLH a déjà fait des demandes d'études exploratoires en vertu de l'article 12A.5 des Tarifs et conditions?  
[Translation]: Has NLH ever made requests for exploratory feasibility studies under section 12A.5 of the OATT?

**Response:** Section 12A of the HQT OATT refers to Connection of Generating Stations. This section of the OATT would only apply to NLH if it was to build a generating plant in Québec. Connection Agreement do not constitute a reservation for transmission service.

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PART 2

Amended Direct Testimony of Dr. Robert Sinclair  
September 23, 2010

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**Reference:** Amended direct testimony of Dr. Sinclair, page 41:

“Appendix K sets out the regional planning requirements of Order 890”.

**Requests:**

1.1 Est-ce que vos services ont déjà été retenus relativement à l’Ordonnance 890 de la FERC?

[Translation]: Have your services ever been enlisted in respect of Order 890 of the FERC?

**Response:** Yes. My assignments generally involve issues closely connected to transmission policies. Because FERC Order 890 establishes the policies for transmission access, I am enlisted on a continual basis with respect to Order 890. Moreover, the fundamental mission of Potomac Economics is the monitoring of transmission markets. This includes monitoring the administration and compliance with FERC open access tariffs, including Order 890 tariffs. We also monitor multi-lateral RTO markets (e.g., ISO-NE), which also involve open access tariff issues.

In monitoring transmission tariffs, we are explicitly required by FERC Order to monitor, among other things:

- (1) The availability of transmission capacity (including the calculation of ATC values);
- (2) Requests for transmission service and the proper handling of these requests;
- (3) Transmission planning process; and
- (4) Congestion management;

1.2 Si oui, fournir la liste de ces mandats et leur objet.

[Translation]: If so, please provide a list of these mandates and their purpose.

**Response:**

1. *Southwest Power Pool (SPP) Future Markets*: SPP requested review and comment on the Draft Market Protocols for the LMP-based markets that are to be proposed in the SPP. Work Product: Draft Report expected November 2010 (not available due to confidential nature of work product).
2. *Independent Monitor for the Summer 2009 Entergy Request for Proposal for long-term resources*: Louisiana Public Service Commission required Independent Monitoring of the evaluation of production cost savings, transmission access, and other facets of the Entergy RFP selection process. Work Product: Draft Report expected December 2010.
3. *SPP/Entergy*; SPP requested examination of market power issues associated with Entergy joining SPP. Work Product: Expert Report of Dr. David Patton (attached, Confidential Material Redacted)
4. *Arizona Public Service*: Provide a FERC-required independent monitoring of Arizona Public Service Company's transmission network and policies. Work Product: Quarterly Reports (available on FERC website, Docket Docket No. EC05-20-000).
5. *Public Service of New Mexico*: Provide a FERC-required independent monitoring of Public Service Company of New Mexico's transmission network and policies. Work Product: Quarterly Reports (available on FERC website, Docket Docket No. EC05-29-000).
6. *Duke Power*: Provide a FERC-required independent monitoring of Duke Power Company's transmission network and policies. Work Product: Quarterly Reports (available on FERC website, Docket Docket No. EC05-1236-000).
7. *PacifiCorp*: Provide a FERC-required independent monitoring of PacifiCorp's transmission network and policies. Work Product: Quarterly Reports (available on FERC website, Docket Docket No. EC05-110-000).

1.3 Si des rapports ou témoignages écrits ont été fournis ou déposés, en fournir une copie.

[Translation]: If reports or written statements were provided or filed, please supply a copy.

**Response**: Please see response to 1.2, above.

2.1 Est-ce que vos services ont déjà été retenus relativement au processus de planification des installations de transport prévu à l'Appendice K du pro forma OATT de la FERC?

[Translation]: Have your services ever been enlisted in the planning of the transmission facilities represented in Appendix K of the OATT's FERC pro forma?

**Response:** Yes. I have been enlisted in projects that include planning processes for entities that have adopted FERC's Appendix K. This included assignment where we were specifically required by FERC to monitor transmission planning processes. See Response to 1.1, above.

2.2 Si oui, fournir la liste de ces mandats et leur objet.

[Translation]: If so, provide a list of these mandates and their purpose.

**Response:**

1. *Independent Monitor for the Summer 2009 Entergy Request for Proposal for long-term resources:* Louisiana Public Service Commission required Independent Monitoring of the evaluation of production cost savings, transmission access, and other facets of the Entergy RFP selection process. Work Product: Draft Report expected December 2010.

2. *SPP/Entergy;* SPP requested examination of market power issues associated with Entergy joining SPP. Work Product: Expert Report of Dr. David Patton (attached, Confidential Material Redacted).

3. *Arizona Public Service:* Provide a FERC-required independent monitoring of Arizona Public Service Company's transmission network and policies. Work Product: Quarterly Reports (available on FERC website, Docket Docket No. EC05-20-000).

4. *Public Service of New Mexico:* Provide a FERC-required independent monitoring of Public Service Company of New Mexico's transmission network and policies. Work Product: Quarterly Reports (available on FERC website, Docket Docket No. EC05-29-000).

2.3 Si des rapports ou témoignages écrits ont été fournis ou déposés, en fournir une copie.

[Translation]: If reports or written statements were provided or filed, please supply a copy.

**Response:** Please see response to 2.2, above.

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**MARKET POWER STUDY  
OF  
ENTERGY TEXAS INTEGRATION INTO THE  
SOUTHWEST POWER POOL**



David B. Patton, Ph.D.  
POTOMAC ECONOMICS, LTD.

December 2008

CONFIDENTIAL MATERIAL REDACTED

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**I. INTRODUCTION AND SUMMARY**

Potomac Economics has been engaged to perform an evaluation of market power related to Entergy Texas, Inc. (ETI) joining the Southwest Power Pool (SPP) and to identify mitigation options that would address any market power issues found.

This study is designed to address requirements of the Public Utility Regulatory Act (PURA) as modified by Texas Senate Bill 7.<sup>1</sup> There are two relevant requirements in this case. First, PURA establishes a maximum market share threshold of 20 percent for any area to be defined as a Qualified Power Region (QPR).<sup>2</sup> In other words, a region satisfies this test to be a QPR if no suppliers have a market share greater than 20 percent. Our analysis confirms that this test is satisfied for the combined SPP/ETI Area.<sup>3</sup>

Second, PURA requires that the analysis include an assessment of import capability for QPRs that are not entirely within Texas:

In determining whether a power region not entirely within the state meets the requirements of this section, the commission shall consider the extent to which the available transmission facilities limit the delivery of electricity from generators located outside the state to areas of the power region within the state.<sup>4</sup>

However, PURA and subsequent Public Utility Commission of Texas (PUCT) precedent do not provide specific guidance or requirements for the analysis necessary to satisfy this section. Hence, we interpret this section as a requirement to evaluate local market power in transmission-constrained areas in the portions of the ETI service area (“the ETI Area”). Because transmission constraints can isolate areas with a relatively small number of potential suppliers, it is the local market power analysis that is most likely to indicate potential competitive concerns that may require some form of market power mitigation.

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<sup>1</sup> Public Utility Regulatory Act, TEX. UTIL. CODE ANN. §39 (PURA).

<sup>2</sup> PURA §39.152(a)(3).

<sup>3</sup> Throughout this report the term “ETI Area” is used to describe the area of Texas currently served by Entergy Texas, Inc. (ETI).

<sup>4</sup> PURA §39.152(b).

We use a number of market power indicators in this analysis. These indicators include several measures of how concentrated the ownership of supply is in the constrained areas, as well as a determination of whether the largest supplier's resources are needed to meet the demand in the area (i.e., whether the supplier is "pivotal"). Finally, because there are significant transmission constraints that bind into and within the ETI Area, we define two geographic markets for these analyses:

- The entire ETI Area; and
- The Western Subregion within the ETI Area (which is defined as the load and resources west of the Jacinto and Cypress substations).

Our analysis of the local market power issues in the ETI Area indicate limited potential competitive concerns in the ETI Area or Western Subregion. The market concentration results indicate that the market in the ETI Area will support workable competition, although the concentrations are in the highly-concentrated range. Requiring ETI to sell a portion of its capacity in the ETI Area via capacity auctions as described in PURA would substantially reduce the market concentration in the area.

With regard to the pivotal supplier analysis, most scenarios show that ETI will not be pivotal (including all analyses of the Western Subregion). In two cases where we find ETI to be pivotal, we also find that there are a number of factors that significantly ease our competitive concerns. First, ETI has a number of reliability-must-run (RMR) obligations in the area that compel its generation to run to support the reliability of the system. These obligations would prevent ETI from threatening to withhold supply.

Second, the concern in this study is whether ETI could raise prices to retail customers in the region. In scenarios that show ETI as pivotal, it is pivotal over a relatively small portion of the load. Hence, ETI would have to withhold most of its resources to raise prices to a small portion of load. Further, the magnitude of that price increase would be limited by ETI's obligations as a provider-of-last-resort (POLR). Although the specifics of the POLR pricing provisions that would apply to ETI are unknown, it is highly unlikely that they would allow a price increase large enough to make withholding profitable in this case.

Third, in the cases where ETI is pivotal, it is only in a small number of hours. The pivotal supplier analysis uses the load forecast for the annual peak of the year. In general, the load declines sharply from the annual peak hour to other hours, which limits the extent to which ETI is pivotal. In other words, ETI's resources would only be needed to serve a portion of the load when load levels are close to the annual peak.

Finally, as a Regional Transmission Organization (RTO), SPP will have a market monitor and market power mitigation measures necessary to address concerns in the region. Given the vast quantities of withholding that would be necessary to exploit ETI's pivotal supplier status, its conduct would not go unnoticed by the market monitor or the Federal Energy Regulatory Commission (FERC).

Hence, we find that market power mitigation measures are not necessary to address competitive issues in this case. However, if policymakers desire additional assurance that the market will perform competitively, implementing a 15 percent capacity auction as called for in PURA would lower concentration levels and reduce the extent to which ETI is pivotal. Unless additional transmission capacity can be built that produce net benefits to the region, capacity auctions are the most cost-effective form of market power mitigation.

## II. MARKET SHARES IN THE COMBINED SPP/ETI REGION

### A. Requirements of PURA

As described in the introduction, this study is designed to address the requirements of PURA. There are two relevant requirements in this case. First, PURA establishes a maximum market share threshold for any area to be defined as a Qualified Power Region (QPR):

QUALIFYING POWER REGIONS. (a) The commission shall certify a power region if:

- (1) a sufficient number of interconnected utilities in the power region fall under the operational control of an independent organization as described by Section 39.151;
- (2) the power region has a generally applicable tariff that guarantees open and nondiscriminatory access for all users to transmission and distribution facilities in the power region as provided by Section 39.203; and
- (3) no person owns and controls more than 20 percent of the installed generation capacity located in or capable of delivering electricity to a power region, as determined according to Section 39.154.<sup>5</sup>

Our market share analysis addresses part (3) of this requirement. Market share analyses offer the simplest, most basic characterization of potential market power. The wholesale market share screen measures whether a seller has a dominant position in the market based on the number of megawatts of installed capacity owned or controlled by the seller as compared to the installed capacity of the entire relevant market.

To calculate the market shares, we use the maximum capacity ratings from the SPP summer 2012 power flow base case. For simplicity, each supplier's total represents a simple "steel in ground" amount.<sup>6</sup> Affiliated companies' generation was aggregated to the parent/holding company. The totals do not reflect contract sales or purchases, transmission limitations, or other complications.<sup>7</sup> The analysis is also conservative because it does not reflect the import

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<sup>5</sup> PURA §39.152.

<sup>6</sup> The one exception to this is the Tenaska Gateway plant. Gateway is switchable between the Eastern Interconnect and ERCOT, but can only deliver 195 MW of its 1,132 MW into SPP.

<sup>7</sup> PUCT Subst. R. §25.401 provides detailed guidance on calculating the installed generation shares. Our analysis does not address four points in the detailed guidelines. Our calculation did not consider: (1) affiliated generators located outside of the region; (2) generators located on the boundary between regions; (3) grandfathered generating capacity located within ozone non-attainment areas; and (4) transmission import capability into the region. The most significant factor in this analysis would be the inclusion of some additional supply owned by ETI's affiliates outside of the SPP/ETI Region. However, ETI's market share would remain (Footnote is continued on the next page.)

capability from outside the SPP/ETI Area. Hence, capacity shares are understated because imported supply is not included. Table 1 shows our analysis:

**Table 1: Market Shares in the SPP/ETI Area**

<b>Supplier</b>	<b>Capacity</b>	<b>Share of Combined Regions</b>
American Electric Power Co., Inc.	9,754	18.5%
Westar Energy Inc.	6,568	12.4%
OGE Energy Corp.	5,812	11.0%
Xcel Energy, Inc.	4,195	7.9%
Great Plains Energy Corp.	4,039	7.6%
Tenaska, Inc.	2,348	4.4%
<b>ETI</b>	<b>2,300</b>	<b>4.4%</b>
Calpine Corp.	1,352	2.6%
Western Farmers Electric Coop	1,292	2.4%
Empire District Electric Co.	1,263	2.4%
Kelson Energy	1,250	2.4%
Bechtel Group, Inc.	1,200	2.3%
All others less than 2%	11,449	21.7%
<b>Total</b>	<b>52,823</b>	<b>100.0%</b>

This analysis shows that ETI has a capacity share of 4.4 percent and that no supplier has a market share greater than 20 percent. Hence, the market share QPR requirement is satisfied for the combined SPP/ETI Area.

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well below 20 percent even if this capacity were included (to the extent import capability would allow it to be delivered into the area). Given the total supply in the region, the other factors would also not likely cause the 20 percent market share threshold to be violated.

### III. LOCAL MARKET POWER ANALYSIS FOR THE ETI AREA

#### A. Requirements of PURA and Market Power Metrics

PURA requires that the analysis include an assessment of import capability for QPRs that are not entirely within Texas:

In determining whether a power region not entirely within the state meets the requirements of this section, the commission shall consider the extent to which the available transmission facilities limit the delivery of electricity from generators located outside the state to areas of the power region within the state.<sup>8</sup>

PURA and subsequent PUCT precedent do not provide specific guidance or requirements for the analysis necessary to satisfy this section. Hence, we interpret this section as a requirement to evaluate local market power in transmission-constrained areas in the ETI Area. To produce a robust evaluation of potential local market power, we analyze two measures of market power in both the ETI Area and the Western Subregion. For each measure, we conduct multiple scenarios that address alternative assumptions regarding obligations to serve load and the participation of a key supplier in the ETI Area. These alternatives are described in the following subsections.

#### 1. Measures of Market Power

To evaluate the competitiveness of the market in both the ETI Area and Western Subregion, we perform the following two analyses.

*Market Concentration Analysis:* A common measure of market concentration used by economists is the Herfindahl-Hirschman Index (HHI). The HHI is a standard measure of market concentration calculated by summing the square of each supplier's market share. The index ranges from 0 to 10,000, increasing as suppliers' market shares increase and as the number of suppliers serving the market falls. The antitrust agencies generally characterize markets with HHIs greater than 1,800 as highly concentrated.<sup>9</sup> Concentration statistics can indicate the likelihood of coordinated interaction in a market. All else being equal, the higher the HHI, the

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<sup>8</sup> PURA §39.152(b)

<sup>9</sup> The DOJ and FTC evaluate the *change* in HHI as part of standard merger analysis. However, this is only a preliminary analysis that would typically be followed by a more rigorous evaluation of the likely price effects of the merger.

more likely it is that firms would be able to extract excess profits from the market. Due to the prevalence of excess capacity in most hours and other factors that tend to mitigate market power in electricity markets, it is reasonable to conclude that markets with HHIs less than 2,500 are likely to be workably competitive. This is consistent with the range that Mr. Schnitzer established as a market power mitigation target in his prior study of the competitive issues associated with integrating the ETI Area into SPP.<sup>10</sup>

The market share assessment and HHI statistics provide only general indicators of market concentration in electric power markets, not definitive measures of market power.<sup>11</sup> The usefulness of these statistics is limited by the fact that they reflect only the supply-side, and ignore demand-side factors affecting competition. Also, these statistics are relatively static in orientation, which limits their value for characterizing the constantly changing balance of resources and load affecting market power in electric markets. Since electricity cannot be stored economically in large scale, production must match demand on a real-time basis. When demand rises, a larger share of generation is used to satisfy the demand. This means there are fewer alternative resources remaining that could increase output to counteract the actions of a supplier seeking to withhold resources. Hence, markets with higher resource margins tend to be more competitive, but both the market share and HHI statistics neglect this aspect of the market. Pivotal supplier analysis, discussed next, addresses this shortcoming.

*Pivotal Supplier Analysis:* A more reliable means to evaluate the competitiveness of electricity markets and recognize the dynamic nature of market power in these markets is to identify when one or more suppliers are “pivotal”. A supplier is pivotal when the output of some of its resources is needed to meet demand in the market. A pivotal supplier has the ability to unilaterally raise the market prices by withholding its supply. However, a pivotal supplier will only have market power if it has the *incentive* to engage in this conduct. In other words, it must be profitable for the supplier to withhold its supply.

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<sup>10</sup> Report of Michael Schnitzer, Entergy Gulf States, Inc.'s Transition to Competition Plan at para. 85 (December 29, 2006)

<sup>11</sup> For example, see Severin Borenstein, James B. Bushnell, and Christopher R. Knittel, “Market Power in Electricity Markets: Beyond Concentration Measures,” *Energy Journal* 20(4), 1999, pp. 65-88.

To determine whether a particular supplier is pivotal, we remove the resources of this supplier from the total available resources and compare this to the total demand for energy and reserves. Total available resources include those located in the market area as well as those that can be supplied to the market through import capability. If internal resources and import capability (excluding those of the supplier in question) are sufficient to satisfy the demand, the supplier is not pivotal. Alternatively, if the internal resources and import capability without the supplier are not sufficient to satisfy the demand, the supplier is pivotal.

### **2. Data Sources**

The data for our analysis comes primarily from the SPP summer 2012 power flow base case. This includes the maximum physical capability of each generating unit as well as the maximum transmission capacity between the ETI Area and the rest of SPP. For jointly-owned units, ownership shares were identified using data provided by Entergy, SPP, and Platts. Data on long-term firm transactions was provided by Entergy.

### **3. Scenarios**

We evaluate a range of concentration and pivotal supplier scenarios in order to reflect two important aspects of the market. First, we incorporate certain assumptions about suppliers' load obligation in our analysis. Second, we consider the uncertain status of the Cottonwood facility owned by Kelson Energy. This facility has initiated a process to disconnect from the Eastern Interconnect and interconnect to ERCOT.

#### *Load Obligations*

The obligation to serve load, whether by long-term contract or regulation, has a significant effect on this analysis. Although this study is intended to reflect full retail competition, we recognize that load obligations will likely exist at some level. In most areas where retail competition has been introduced, a limited portion of the native load has switched to alternative suppliers. Additionally, utilities in Texas may be required to serve as the provider-of-last-resort for retail customers in their area. This obligation includes pricing for such service that is regulated by the PUCT.

These load obligations have a significant effect on market power findings because a supplier will not have an incentive to withhold resources it needs to serve its load. Resources that cannot be withheld should be accounted for in the analysis of a firm's market power. The changing load obligations under retail competition complicate assumptions regarding market concentration and pivotal supplier calculations.

We consider three scenarios to reflect alternative assumptions regarding the portion of existing load suppliers will be obligated to serve. We include a zero-percent load obligation case, a 50-percent load obligation case, and 100-percent load obligation case. A zero-percent load obligation case reflects full retail competition with no obligation to serve current retail customers. The *installed capacity* measure described below is used for this case because it includes no offset for load obligations.

When load obligations are non-zero (i.e., in the 50-percent and 100-percent load obligation cases), then the market share and pivotal supplier calculations are based on an *uncommitted capacity* analysis. Uncommitted capacity is calculated based on the installed capacity minus the load obligations of each supplier. This metric better addresses how obligations to serve load at a fixed price affect a supplier's incentives to exercise market power.

The 100-percent load obligation case assumes no retail load switching. The 50-percent load obligation case reflects the load switching experience in ERCOT where we understand that approximately 40 percent of load has switched under the retail access program.

### *Cottonwood Plant*

The second aspect of the market supply that we include in the market concentration and pivotal supplier calculations involves the Cottonwood generating facility owned by Kelson Energy. This facility is currently physically connected to the ETI Area in the Eastern Interconnect, but has initiated a process to disconnect from the Eastern Interconnect and interconnect to ERCOT. Depending on the resolution of that case, the facility will either be connected to ERCOT or it will be connected to the SPP/ETI Area. Therefore, we calculate one set of scenarios assuming Cottonwood is in the SPP/ETI Area and another set assuming it is in ERCOT.

In the next section, we present the results of the concentration analyses. In section C, we present the results of the pivotal supplier analysis.

**B. Market Concentration Results: ETI Area**

In this section we present the market concentration results for the ETI Area. We provide three separate analyses. In subsection 1, we present the market concentration analysis for the zero-percent load obligation case, which is equivalent to the installed capacity analysis. In addition, we present various mitigation scenarios to illustrate their effect on the market concentration. The second and third analyses involve uncommitted capacity analyses for the 100-percent load obligation case and the 50-percent load obligation case. These two analyses are presented in subsection 2. Because the results of these two analyses indicate no potential competitive concerns, we did not analyze the effects of mitigation.

**1. Installed Capacity Results**

As discussed above, the installed capacity results are equivalent to a zero-percent load obligation case. In other words, all of the capacity owned by each supplier is included in the market, even if it is needed to satisfy load obligations in reality. Table 1 shows the installed capacity HHI calculation in the ETI Area for the case that assumes the Cottonwood facility remains in the ETI Area.

The table shows each supplier's physical capacity within the ETI Area as well as capacity imports. There are 960 MW of capacity purchases with 839 MW from sources outside the ETI Area. Most of the outside imports are from Entergy units in Louisiana serving ETI load, although some imports serve municipal entities. We assume Cottonwood is available at 600 MW and that Tenaska's Frontier unit is limited to 300 MW due to limits on the firm transmission available for these resources. Available transfer capability (ATC) indicates the unused capacity on the interfaces into the ETI Area. We assume the unused ATC cannot be withheld, so we attribute a market share of zero to the ATC in the HHI calculation.

**Table 1: Market Concentration in ETI Area: Installed Capacity**  
Cottonwood Included

Supplier	Owned capacity	Capacity Purchases/ Imports	Capacity Sales	Net Capacity	Share
ArcLight Capital Prtrs/Reliant Energy	115	-	-	115	1.7%
ConocoPhillips/NRG Energy	555	-	-	555	8.0%
Dupont	75	-	-	75	1.1%
East Texas Electric Coop, Inc.	340	239	-	579	8.3%
<b>ETI</b>	<b>2,300</b>	<b>643</b>	-	<b>2,943</b>	<b>42.3%</b>
Exxon Mobil Corp.	495	-	-	495	7.1%
Kelson Energy	600	-	-	600	8.6%
SRMPA	-	77	-	77	1.1%
Sabine River Authority of Louisiana	91	-	91	-	0.0%
Southwestern Power Administration	52	-	52	-	0.0%
Tenaska, Inc.	300	-	-	300	4.3%
ATC				1,224	0.0%
Total	4,923	960	143	6,964	
				<b>HHI:</b>	<b>2,068</b>

Note: Withholding of ATC is assumed to be impossible so market share is assumed to be zero. Reliability investments have no effect on ATC. Cottonwood (Kelson Energy) limited to 600 MW, Frontier (Tenaska) limited to 300 MW. Jointly-owned plants operated jointly.

Table 1 shows that ETI has a market share of 42.3 percent. The HHI in the ETI Area is 2,068. Due to the potential that Cottonwood may disconnect from the Eastern Interconnect we made the same calculations, but with Cottonwood's capacity removed. However, removing Cottonwood caused an increase in ATC of 131 MW, partially offsetting the capacity loss. The HHI in this alternative case (not shown) rose to 2,292.

The HHI for both cases is within the range that should support a workably competitive market. Additionally, HHI values must be evaluated in light of other factors. In this case, these factors include load obligations, excess capacity, reliability-must-run (RMR) obligations, and other factors that may increase or decrease the competitiveness of the market. As discussed in the next section, these factors tend to mitigate potential competitive concerns. Considering the HHI values and these other factors, we conclude that these results do not raise significant competitive concerns.

Nonetheless, we performed sensitivity analyses presented below that show how the market concentration in the ETI Area would be affected by two types of mitigation measures. The first is the expansion of the transmission capacity into the ETI Area to raise ATC values and allow

increased competition from external suppliers. The second is capacity sales by ETI that would reduce ETI’s market share.

For capacity sales we use 500 MW because it is approximately 15 percent of ETI’s capacity in the area. Fifteen percent is the divestiture floor value in PURA. Table 2 shows the results of the mitigation analyses.

**Table 2: Summary of HHI Impact of Mitigation Measures**

<b>Case</b>	<b>ATC Mitigation (MW)</b>	<b>Cap Sale Mitigation (MW)</b>	<b>ETI Share</b>	<b>Total Capacity (MW)</b>	<b>HHI</b>
<b>Cases with Cottonwood @ 600 MW</b>					
No Mitigation	0	0	42.3%	6,964	2,068
500 MW ATC Mitigation	500	0	39.4%	7,464	1,810
500 MW Capacity Sale (~15% Sale)	0	500	34.8%	6,963	1,544
<b>Cases with Cottonwood @ 0 MW</b>					
No Mitigation	0	0	45.3%	6,495	2,292
500 MW ATC Mitigation	500	0	42.1%	6,995	1,976
500 MW Capacity Sale (~15% Sale)	0	500	37.6%	6,495	1,712

The table shows that both mitigation approaches are effective at reducing the HHI to less than 2,000. Capacity sales are generally more effective because they reduce the market share of the largest supplier (ETI) more directly. With Cottonwood out of the market, a 500 MW capacity sale mitigation reduces the HHI to 1,713 while the same amount of new transmission reduces it to 1,976.

The installed capacity analysis ignores the effects of load obligations, excess capacity, and RMR obligations. These are better captured in the uncommitted capacity and pivotal supplier analyses discussed below.

## 2. Uncommitted Capacity Results

The next analysis of uncommitted capacity shares accounts for load obligations by subtracting the peak load obligation from the suppliers’ total resources. It is a variation on the installed capacity market analysis which implicitly assumes a zero percent load obligation.

The uncommitted capacity measure is typically a more accurate indicator of market power because it reflects the mitigation effects of load obligations (i.e. there is no incentive to withhold resources needed to serve load). We calculated the uncommitted capacity values for a 100-percent load obligation case and a 50-percent load obligation case. Table 3 shows the analysis for the 50-percent load obligation case with Cottonwood included.

**Table 3: Market Concentration Analysis ETI Area: Uncommitted Analysis  
50-Percent Load Obligation Case; Cottonwood Included**

Supplier	Firm					Load Obligation	Uncommitted Capacity	Share of Uncommitted Capacity
	Owned Capacity	Purchases /Imports	Firm Sales	Net Capacity				
ETI	2300	643	0	2943	2066	877	20.3%	
Kelson Energy	600	0	0	600	0	600	13.9%	
Tenaska, Inc.	300	0	0	300	0	300	6.9%	
East Texas Electric Coop, Inc.	340	189	0	529	479	50	1.2%	
Exxon Mobil Corp.	495	0	0	495	0	495	11.4%	
ConocoPhillips/NRG Energy	555	0	0	555	0	555	12.8%	
SRMPA	0	127	0	127	89	38	0.9%	
Dupont	75	0	0	75	0	75	1.7%	
ArcLight Capital Partners/Reliant Energy	115	0	0	115	0	115	2.7%	
Sabine River Authority of Louisiana	91	0	91	0	0	0	0.0%	
Southwestern Power Administration	52	0	52	0	0	0	0.0%	
ATC	1224	0	0	1224	0	1224	0.0%	
<b>Total</b>	<b>4923</b>	<b>960</b>	<b>143</b>	<b>5740</b>	<b>2634</b>	<b>4329</b>	<b>958</b>	

*Note* : Cottonwood (Kelson Energy) limited to 600 MW and Frontier (Tenaska) limited to 300. Withholding of ATC assumed to be impossible so market share is 0. Jointly-owned plants assumed to be operated jointly.

The table shows the owned physical capacity located in the ETI Area, as well as the capacity that is imported or exported over the interconnections into the ETI Area. Uncommitted capacity is defined as the net capacity less the load obligation. The uncommitted capacity value is the basis for the market shares and the HHI. The resulting HHI is 958, which indicates that the market is not concentrated.

Table 4 shows the 100-percent load obligation case. Uncommitted Capacity is reported as zero when load obligation is greater than net capacity. The table shows that the HHI in this case is also low at 861.

**Table 4: Market Concentration Analysis ETI Area: Uncommitted Analysis**  
100-Percent Load Obligation Case; Cottonwood Included

Supplier	Firm			Net Capacity	Load Obligation	Uncommitted Capacity	Share of Uncommitted Capacity
	Owned Capacity	Purchases /Imports	Firm Sales				
ETI	2300	643	0	2943	4131	0	0.0%
Kelson Energy	600	0	0	600	0	600	17.4%
Tenaska, Inc.	300	0	0	300	0	300	8.7%
East Texas Electric Coop, Inc.	340	189	0	529	479	50	1.4%
Exxon Mobil Corp.	495	0	0	495	0	495	14.3%
ConocoPhillips	555	0	0	555	0	555	16.1%
NRG Energy, Inc.	0	0	0	0	0	0	0.0%
SRMPA	0	127	0	127	89	38	1.1%
Dupont	75	0	0	75	0	75	2.2%
ArcLight Capital Partners, LLC	115	0	0	115	0	115	3.3%
Reliant Energy	0	0	0	0	0	0	0.0%
Sabine River Authority of Louisiana	91	0	91	0	0	0	0.0%
Southwestern Power Administration	52	0	52	0	0	0	0.0%
ATC	1224	0	0	1224	0	1224	0.0%
<b>Total</b>	<b>4923</b>	<b>960</b>	<b>143</b>	<b>5740</b>	<b>4700</b>	<b>3452</b>	<b>861</b>

*Note* : Cottonwood (Kelson Energy) limited to 600 MW and Frontier (Tenaska) limited to 300. Withholding of ATC assumed to be impossible so market share is 0. Jointly-owned plants assumed to be operated jointly.

The results of both of the uncommitted capacity cases indicate that there are no competitive concerns. These low levels of market concentration can be explained by the fact that the load obligations substantially reduce ETI’s available supply to service others. In fact, in the 100 percent case, ETI is a net buyer.<sup>12</sup> Because these results raise no competitive concerns, there is no need to show the effects of potential mitigation measures on the uncommitted capacity market concentration.

<sup>12</sup> In the case with Cottonwood removed the HHIs are slightly lower. Hence, those case also do not reveal competitive concerns.

**C. Pivotal Supplier Results: ETI Area**

Our next analysis seeks to determine if any suppliers may be “pivotal” in the ETI Area under peak demand conditions. A supplier is pivotal if its resources are necessary to satisfy the load and reserves within the area (in this case, the ETI Area). Pivotal supplier analyses provide a more reliable indicator of market power than HHI analyses in electricity markets because they capture the effects of excess capacity and other factors that affect the competitiveness of the market.

We determine whether a supplier is pivotal by comparing the demand in the area to the total supplies in the area, less uncommitted resources owned by the supplier in question. If the demand cannot be satisfied with these supplies, the supplier is pivotal. Only uncommitted resources of the supplier are removed from the total supply because only uncommitted capacity can be profitably withheld by the supplier.

We examine six cases in Table 5. We determine whether ETI is pivotal in cases assuming a load obligation of 100 percent, 50 percent, and 0 percent. These three cases are examined both with and without the Cottonwood facility.

**Table 5: Pivotal Supplier Analysis in the ETI Area**

	ETI Net Supply	ETI Load Obligation	Uncommit. ETI Supply	ETI Area Supply	ETI Area Supply w/o ETI	ETI Area Load + Reserves	ETI Area Pivotal
<b>Cases with Cottonwood at 600 MW</b>							
100% Load Obligation	2943	4131	0	6964	6964	4841	No
50% Load Obligation	2943	2066	877	6964	6086	4841	No
0% Load Obligation	2300	0	2300	6964	4664	4841	Yes
<b>Cases with Cottonwood Removed</b>							
100% Load Obligation	2943	4131	0	6495	6495	4841	No
50% Load Obligation	2943	2066	877	6495	5617	4841	No
0% Load Obligation	2300	0	2300	6495	4195	4841	Yes

All values in MW. ETI net supply decreases in no-load obligation case because ETI is assumed to no longer control firm transmission into ETI.

The table shows the ETI net supply, which includes its internal generating resources and the import capability ETI can control by designating external resources to be imported to serve the load. In the zero-percent load obligation case, ETI’s net capacity declines because we assume

that ETI will not have the ability to hold the firm transmission into the ETI Area. This assumption is based on the fact that firm transmission is acquired by designating network resources outside the ETI Area to serve load within the area. If a supplier has no load to serve, it will not have the ability to designate network resources and occupy the firm transmission into the ETI Area. Accordingly, ETI is no longer entitled to the 643 MW of network transmission rights reflected in the 100-percent and 50-percent load obligation cases.

The pivotal supplier calculation is performed on the right-hand side of the table where the total ETI Area supply (including import capability) is reduced by ETI's uncommitted capacity, and compared to the total demand in the area (i.e., load plus reserve requirements).<sup>13</sup> ETI is pivotal if the supply in the area not controlled by ETI does not exceed the total demand in the area. The results of our analysis show that ETI is only pivotal in the 0 percent load case, both with and without Cottonwood. With Cottonwood included, only roughly 180 MW of demand could not be served without ETI's resources. Without Cottonwood, the unsatisfied demand could climb to approximately 650 MW. Because ETI has 2300 MW of supply, it would therefore have to withhold roughly 1650 MW in the case without Cottonwood to raise prices to the residual 650 MW of peak load in the ETI Area.

The indication that ETI is pivotal in these cases raises potential competitive concerns. However, this does not mean that it actually has market power. In order to have market power, ETI must have the ability to withhold the resources necessary to raise prices and profit by doing so. Based on our review of the relevant factors that bear on ETI's ability and incentives to withhold resources, we find that market power mitigation should not be necessary to achieve a workably competitive market in the ETI Area. This finding is based, in part, on the following factors:

First, a significant portion of ETI's capacity is reliability-must-run, which means that they must be operated to support the transmission system. Because RMR resources cannot be withheld by the supplier, they should not be included in the pivotal supplier test. ETI is not pivotal if it cannot withhold such capacity.

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<sup>13</sup> Reserves are assumed to be three percent of load.

Second, ETI will likely continue to be obligated to serve load as a provider-of-last-resort. POLR prices in ERCOT are capped relative to prevailing wholesale prices. It is unclear what “price-to-beat” or POLR provisions would be applied in the ETI Area. However, because ETI would have to withhold the majority of its resources in order to receive the price-to-beat or POLR price from the remaining retail customers, such a strategy would only be economic if the PUCT allowed extremely high POLR pricing. We believe that this is unlikely and withholding of this magnitude, therefore, is unlikely to be economic.

Third, in the cases where ETI is pivotal, it is only pivotal in a small number of hours. The pivotal supplier analysis uses the load forecast for the annual peak of the year. In general, the load declines sharply from the annual peak hour to other hours, which limits the extent to which ETI is pivotal. In other words, ETI’s resources would only be needed to serve a portion of the load when load levels are close to the annual peak.

Finally, as an RTO, SPP will have a market monitor and market power mitigation measures necessary to address market power in the region. Given the vast quantities of withholding that would be necessary exploit ETI’s pivotal supplier status, its conduct would not go unnoticed by the market monitor or FERC.

**IV. ANALYSIS OF LOCAL MARKET POWER IN WESTERN SUBREGION OF ETI AREA**

In this section of the report, we review the market concentration and the pivotal supplier analyses for the Western Subregion of the ETI Area. The Western Subregion is defined as the load and resources in the ETI Area west of the Jacinto and Cypress substations. We analyze it separately because transmission constraints limit the extent to which load in the area can be served by resources outside of the Western Subregion. Section A below contains the market concentration analysis of the Western Subregion while Section B contains the pivotal supplier analysis.

Based on information from ETI, we assume a transfer capability into the Western Subregion from the rest of ETI of [REDACTED]. Like the analyses for the entire ETI Area, we produce results for three scenarios with varying load obligation assumptions. Cottonwood is not located in the Western Subregion so we do not model the alternative Cottonwood scenarios. Tenaska's Frontier unit is located in the Western Subregion and we do continue to limit that unit to 300 MW in each of the analyses.

**A. Market Concentration Results: Western Subregion**

As with the broader ETI Area, we produce market concentration results for three scenarios. One scenario for installed capacity (zero-percent load obligation case) and two for the uncommitted capacity case (50-percent load obligation case, and 100-percent load obligation case).

Like the previous analyses, we assume the rights to the transfer capability (which can be used to serve a large share of the load in the area) can only be held by entities serving load in the area. Because the installed capacity analysis assumes no load obligation, the [REDACTED] of transfer capability is open to all market participants. In the 50-percent and 100-percent cases, we assume that ETI controls the portion of the interface capability into the Western Subregion that corresponds to the load that they serve in the area. In other words, we assume that they can serve their load with resources outside of the Western Subregion, effectively preventing competing suppliers from using this capability.

We assume any transfer capability not held by suppliers within the Western Subregion is available on a competitive basis with no single firm having a significant market share (or the ability to prevent others from using the import capability). These assumptions are bolstered by

the fact that the SPP will operate a real-time market that will fully use the transmission capability into the area. This real-time market will provide a supplemental source of supply for competitive retail suppliers. For purposes of these analyses, the assumption that transmission capability will be competitively available is reflected by attributing a market share of zero for the transfer capability.

**Table 6: Market Concentration in Western Subregion: Installed Capacity**

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The market concentration analysis for the Installed Capacity case is shown above in Table 6. The HHI in this case is well below the 1,000 level. This indicates that the market is unconcentrated and raises no significant competitive concerns.

The analysis of uncommitted capacity under a 50-percent-load-obligation scenario is shown in Table 7.

**Table 7: Concentration of Uncommitted Capacity Western Subregion  
50-Percent-Load-Obligation**

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Redacted

ETI's net capacity in the Western Subregion grows from 456 MW in the Installed Capacity case to [REDACTED] in this case because we assume that it will have the ability to control [REDACTED] of the [REDACTED] of total transfer capability. Likewise, East Texas Electric Cooperative is assumed

to control firm import capacity needed to serve its 50-percent load obligation. The smaller quantity of remaining rights is released to the market. These changes increase the market share of ETI and the overall market concentration. As the table shows, the HHI in this case is 1,560. It remains well below levels that would raise competitive concerns.

The analysis of uncommitted capacity in the 100-percent-load-obligation scenario results in a very high HHI. However, all load serving entities have sufficient capacity to serve their own load so competitive concerns are limited.

In summary, the three market concentration analyses in this subsection do not raise significant market power concerns in the Western Subregion.

### **B. Pivotal Supplier Results: Western Subregion**

In this section, we present our pivotal supplier analysis for the Western Subregion. Like the concentration analysis, we consider three load-obligation scenarios (0 percent, 50 percent, and 100 percent). ETI's net supply in the 100 percent load obligation case is equal to its load obligation. This occurs because ETI's load obligation is greater than its physical generating capacity in the Western Subregion. Therefore, ETI uses the transfer capability to serve the balance of its load.

In the 50-percent load obligation case, ETI is able to retain transfer rights up to its assumed load obligation (50 percent of its current load). Hence, the ETI net supply in that case is the ETI load obligation plus ETI's physical generation capacity in the subregion (456 MW). In the zero-percent load obligation case, ETI net supply is equal to its physical capacity because it cannot retain network transmission rights without load obligations.

A summary of the pivotal supplier analysis of the Western Subregion is shown in Table 8. The pivotal supplier calculations are shown on the right-hand side of the table. The total ETI area supply is reduced by ETI uncommitted capacity and compared to the Western Subregion load plus reserves. Reserves are assumed to be three percent of load.

**Table 8: Pivotal Supplier Analysis – Western Subegion**

Redacted

In summary, the table shows that ETI is not pivotal in any of the cases. Even if they were, however, market power concerns would be substantially mitigated by the fact [REDACTED]

These results confirm the conclusions from the market concentration analyses that there are not significant competitive concerns associated with satisfying the demand in the Western Subregion.

## **V. CONCLUSION**

The results of our analyses of the ETI Area and the Western Subregion in ETI do not raise substantial competitive concerns. Hence, we find that market power mitigation measures are not necessary to address competitive issues in this case.

However, a subset of the market power measures we present in this report do indicate potential concerns. In particular, the market concentration levels both with and without Cottonwood are at the high end of levels that we would consider workably competitive. Additionally, ETI is pivotal in cases where it has no load obligations. However, there are a number of factors that mitigate any potential competitive concerns raised by these results. These factors include:

- ETI has a number of RMR obligations that compel its generation to run to support the reliability of the system, which would prevent it from withholding its supply.
- It is unlikely to be profitable for ETI to exercise market power as ETI would have to withhold most of its resources to raise prices to a small portion of load. Further, the magnitude of that price increase would be limited by ETI's potential POLR obligations.
- ETI is pivotal in only a small number of hours when load is near the annual peak.
- SPP will have a market monitor and market power mitigation necessary to address market power in the region.

Nonetheless, if policymakers desire additional assurance that the market will perform competitively, implementing a capacity auction for 15 percent or more of ETI's capacity as called for in PURA would lower concentration levels and reduce the extent to which ETI is pivotal. Unless additional transmission capacity can be built that produces net benefits to the region, the capacity auctions are likely the most cost-effective form of market power mitigation.