

FAQs – Merchant Transmission Interconnections in the PJM Regions

NOTE:

Questions 1 through 37 – General Merchant Transmission

Questions 38 to end – Specific to use of HVDC

1. What is a PJM Merchant Transmission Interconnection Request?

- A. The PJM Transmission Grid provides the means for delivering the output of interconnected generators to the load centers of the PJM energy and capacity markets. As the Regional Transmission Organization (RTO), PJM administers the connection of generators and new transmission facilities to the PJM Transmission Grid. In this role, PJM coordinates the planning process for connection of new generation and/or new transmission facilities, coordinates the reliability studies for operation of new generation and/or new transmission facilities and oversees the construction of the required Interconnection Facilities. As specified in Part IV, Subpart B, Section 41.1 of the PJM Open Access Transmission Tariff (OATT), a party wishing “to interconnect or add Merchant Transmission Facilities to the Transmission System, or to increase the capacity of existing Merchant Transmission Facilities interconnected with the Transmission System shall submit to the Transmission Provider a Transmission Interconnection Request.” The Transmission Interconnection Request provides PJM with information about the proposed Merchant Transmission Facility that is required to initiate appropriate system reliability studies for connection of the new transmission facilities.

2. Who is required to request Interconnection with PJM?

- A. All new generation and/or transmission facilities that plan to interconnect and operate in parallel with the PJM Transmission Grid and participate in the PJM capacity and/or energy markets (new generation or transmission and any existing generation or transmission that is increasing capability by more than 1 MW above that specified in its existing ISA or any Energy Only resources requesting Capacity Interconnection Rights) must submit an Interconnection Request to PJM.

3. How is a Transmission Interconnection Request submitted to PJM?

- A. To initiate an interconnection request, the project developer/owner must submit an Interconnection Request to PJM in the form of a completed, executed Transmission Interconnection Feasibility Study Agreement (OATT Attachment S) and a non-refundable \$10,000 study fee. Refer to PJM Manuals M-14-A & B for further details about the Interconnection Request process.

4. Why must developers of new Merchant Transmission and owners that are upgrading existing Merchant Transmission facilities submit an Interconnection Request to PJM?

- A. The PJM RTO has the responsibility for planning the expansion and enhancement of the PJM Transmission Grid on a regional basis. To ensure that the PJM Transmission Grid is adequate to serve the PJM System load under all levels of load-serving conditions requires planning for necessary and timely expansion of the PJM Transmission Grid. The planned interconnection of new generating units and new Merchant Transmission facilities and any changes (increases or decreases) in the output capability of existing generating units or capability of existing Merchant Transmission facilities are among the critical inputs to expansion planning for the PJM Transmission Grid. Based on all of the requirements for firm transmission service on the PJM Transmission Grid, PJM annually develops a Regional Transmission Expansion Plan (RTEPlan) to meet those requirements. Thus, any entity that proposes to interconnect a generating unit or a Merchant Transmission facility within any PJM region or proposes to change the capacity of an existing generating unit or Merchant Transmission facility must request interconnection rights from PJM.

5. What is the purpose of the Regional Transmission Expansion Plan (RTEPlan)?

- A. The continuing evolution and growth of PJM's robust and competitive regional market rests on a foundation of bulk power delivery system reliability, ensuring PJM's ongoing ability to meet all of the regional load-serving obligations. PJM's FERC-approved Regional Transmission Expansion Planning Process ("RTEPProcess") preserves this foundation through independent analysis and recommendation, supported by broad stakeholder input and approval by an independent RTO Board in order to produce a single Regional Transmission Expansion Plan ("RTEPlan"). Refer to PJM Manual M-14-B for further details about the RTEPProcess.

6. How long is the process to obtain PJM Interconnection approval for a Merchant Transmission project?

- A. Part IV of the PJM OATT describes the procedures used to process all requests for interconnections with the PJM Transmission system. Part IV, Subpart B describes the specific procedures used to process requests for Merchant Transmission facility interconnections with the PJM bulk power transmission system. The OATT establishes the business rules for the Merchant Transmission facility interconnection process. These business rules include three analytical steps – Transmission Interconnection Feasibility Study, System Impact Study and Transmission Interconnection Facilities Study. Each step imposes its own financial obligations on the requesting party and establishes PJM milestone responsibilities. Refer to PJM Manual M-14-B and its Attachment A flow diagram for details and timeline of the study stages described below.

As the Transmission Provider, PJM, in coordination with any affected Transmission Owner(s), conducts **first stage** Transmission Interconnection Feasibility Studies twice each year (OATT at 41.2) for completion by:

- March 31, for requests received during the six-month period ending January 31, and
 - September 30, for requests received during the six-month period ending July 31.
- Thus, the initial Transmission Interconnection Feasibility Study stage could have a total duration of as long as **8 months** for requests submitted at the beginning of a particular interconnection request cycle.

After reviewing the results of the Transmission Interconnection Feasibility Study, the applicant must decide whether or not to pursue the **second stage** study, the System Impact Study. To maintain its assigned priority, the applicant must execute and return the System Impact Study Agreement within 30 days of receiving it. The System Impact Studies are also conducted by the Transmission Provider twice each year (OATT at 41.4.1), commencing on:

- May 1, for requests received during the six-month period ending January 31, and
- November 1, for requests received during the six-month period ending July 31.

In general, System Impact Studies will be completed within 120 days of the date the study begins. Thus, completion of the System Impact Studies could have a total duration of as long as **5 months** beyond the issue of the Transmission Interconnection Feasibility Study results.

Upon completion of the System Impact Study, the Transmission Provider will furnish a Transmission Interconnection Facilities Study Agreement to the applicant, along with the estimated cost of the study and the estimated time of completion. After reviewing the results of the System Impact Study, the applicant must decide whether or not to pursue the **third and final stage** study, the Transmission Interconnection Facilities Study. For an interconnection request to maintain its assigned priority, the applicant must execute and return the Transmission Interconnection Facilities Study Agreement within **30 days** of receiving it. Thus, the total duration for completing the PJM Interconnection approval process could be as long as **14 months plus the time required to complete the Transmission Interconnection Facilities Study.**

7. Are there any procedures or conditions available to expedite the process for approval of a Merchant Transmission project?

- A. Under certain circumstances, an applicant for a Transmission Interconnection Service Agreement may wish to initiate project construction activities on an expedited basis prior to completion of the Transmission Interconnection Facilities Study. One example of such a circumstance is to request that orders be placed for equipment or materials that have a long lead time for delivery. To initiate such an advance of construction activities, the applicant may request execution of an Interim Interconnection Service Agreement (ISA) for those construction activities being advanced. Such an Interim ISA would bind the applicant for all costs incurred for the construction activities being advanced pursuant to the terms of the PJM Tariff.

8. What information is developed and provided in the results of a Transmission Interconnection Feasibility Study?

- A. The Transmission Interconnection Feasibility Study assesses the potential reliability impacts for new Merchant Transmission facilities connecting to the PJM system. The study results provide a description of the exposures for network upgrade requirements, define the general scope and duration of work needed to complete any identified system upgrade projects and provide magnitude cost estimates for the identified system upgrade projects. If applicable, the Transmission Interconnection Feasibility Study shall include a preliminary estimate of the Incremental Deliverability Rights associated with the proposed Merchant Transmission Facilities.

9. What are Incremental Deliverability Rights?

- A. Incremental Deliverability Rights are the rights to the incremental ability, resulting from the addition of a Merchant Transmission Facility, to inject energy and capacity at a point on the Transmission System, such that the injection satisfies the deliverability requirements of a Capacity Resource. Refer to PJM Manual M-14-E, Section 2 for further details about Incremental Deliverability Rights.

10. What information is developed and provided in the results of a System Impact Study?

- A. The System Impact Study provides a thorough evaluation of the reliability impacts for new Merchant Transmission Facilities connecting to the PJM system. The study reviews both direct connection requirements and network impacts for interconnection of the new Merchant Transmission Facilities. The potential impacts of interconnecting the new Merchant Transmission Facilities with the PJM system are evaluated for compliance with various reliability criteria including operation during Normal System, Single Contingency and Second Contingency conditions; System Stability Analysis; Short Circuit Analysis; Generator Deliverability Analysis and CETO/CETL Criteria Analysis. The study results include a project description and the estimated cost for both the direct connection facilities and the network upgrade facilities required for interconnection of the new Merchant Transmission Facilities with the PJM system. When appropriate, the System Impact Study Report also defines the cost allocation for the network upgrade work.

11. Is thirty days sufficient time to have all developers respond to the System Impact Study results?

- A. The timing of the studies and the decision windows were chosen as a compromise to allow for information to be provided to the developer in a timely fashion, to proceed to the design of facilities and the execution of Interconnection Service Agreements as quickly as possible, and to develop the best possible regional plan that will meet the needs that have been identified. The decisions that are made at the end of a System Impact Study cycle will affect the start of the design phase for that cycle as well as the start of the System Impact Study phase for the subsequent queue. If the decision window is extended, the entire process must be stretched out to accommodate the additional time. By receiving the Transmission Interconnection Feasibility Study results, the developer

should be in a position to begin to evaluate the viability of a project before the completion of the System Impact Study. The thirty day window is a compromise that is necessary to meet the varied objectives of the process.

12. What information is developed and provided in the results of a Transmission Interconnection Facilities Study?

- A. The Transmission Interconnection Facilities Study provides complete details of the requirements for interconnecting a new Merchant Transmission project to the PJM system. The study includes a general description of the new Merchant Transmission interconnection project, indicates any changes from the System Impact Study Report, describes the scope of both Direct Connection work and Network Upgrade work and sets a schedule of major project milestone dates. The Transmission Facilities Study Report also provides Design Descriptions of the facilities to be installed and a detailed cost estimate of the work. The assignment of Transmission Injection and Withdrawal Rights associated with new Merchant D.C. or Fully Controllable A.C. Transmission Facilities will be made in accordance with Section 47 of the PJM Tariff and may depend upon the capabilities of facilities and upgrades necessary to accommodate other Interconnection Customers' Interconnection Requests.

13. What are Transmission Injection Rights and Transmission Withdrawal Rights?

- A. Transmission Injection Rights are the rights to schedule capacity and/or energy deliveries at a defined Point of Interconnection between a Merchant Transmission Facility and the PJM Transmission System. Capacity and/or Energy Transmission Injection Rights may be awarded only to a Merchant D.C. or Fully Controllable A.C. Transmission Facility that connects the Transmission System to another control area outside of the combined PJM Region. Deliveries scheduled using Capacity Transmission Injection Rights have rights similar to those under Firm Point-to-Point Transmission Service or, if coupled with a generating unit external to the combined PJM Region that satisfies all applicable criteria specified in the PJM Manuals, similar to Capacity Interconnection Rights. Deliveries scheduled using Energy Transmission Injection Rights have rights similar to those under Non-Firm Point-to-Point Transmission Service.

Firm Transmission Withdrawal Rights are the rights to schedule capacity and energy withdrawals from the PJM Transmission System at a defined Point of Interconnection between a Merchant Transmission Facility and the PJM Transmission System. Withdrawals scheduled using Firm Transmission Withdrawal Rights have rights similar to those under Firm Point-to-Point Transmission Service. Non-Firm Transmission Withdrawal Rights are the rights to schedule energy withdrawals from a specified point on the Transmission System. Withdrawals scheduled using Non-Firm Transmission Withdrawal Rights have rights similar to those under Non-Firm Point-to-Point Transmission Service. Firm and Non-Firm Transmission Withdrawal Rights may be awarded only to a Merchant D.C. or Fully Controllable A.C. Transmission Facility that connects the Transmission System with another control area outside the combined PJM Region.

Transmission Injection Rights and Transmission Withdrawal Rights are available to developers of Merchant D.C. or Fully Controllable A.C. transmission facilities only if the developer has elected, pursuant to Section 41.1 of the PJM Tariff, to receive Transmission Injection Rights and Transmission Withdrawal Rights in lieu of Incremental Deliverability Rights, Incremental Auction Revenue Rights and Incremental Available Transfer Capability Revenue Rights. Refer to PJM Manual M-14-E, Section 2 for further details about Transmission Injection Rights and Transmission Withdrawal Rights.

14. What are Incremental Auction Revenue Rights?

- A. Incremental Auction Revenue rights are the additional Auction Revenue Rights (as defined in Section 1.3.1 of Attachment K to the PJM Tariff), not previously feasible, created by the addition of new Merchant Transmission Facilities, or a new transmission facility or upgrade resulting from the accommodation of an Interconnection Request pursuant to Part IV of the PJM Tariff. Refer to PJM Manual M-14-E, Section 2 for further details about Incremental Auction Revenue Rights.

15. What are Incremental Available Transfer Capability Revenue Rights?

- A. Available Transfer Capability Revenue Rights (ATCRRs) are the rights of a Transmission Owner to the revenues for Available Transfer Capability that are made possible by the Transmission Facilities installed by the Transmission Owner. Incremental ATCRRs are those additional ATCRRs, not previously feasible, created by the addition of Merchant Transmission facilities, or a new transmission facility or upgrade resulting from the accommodation of an Interconnection Request pursuant to Part IV of the PJM Tariff. Refer to PJM Manual M-14-E, Section 2 for further details about Incremental ATCRRs.

16. How are the increases and decreases in MW values for projects handled?

- A. Any increase in the MW size of a project will not be accepted within the scope of the existing queue position. Such changes must be submitted with a new Transmission Interconnection Feasibility Study request.

Decreases in MW size for projects can be accepted in response to the results of either the Transmission Interconnection Feasibility Study or the System Impact Study. Decreases identified during the performance of either study will be accepted at the discretion of the PJM OI based on the impact to the work in progress.

17. When (time frame) will a Merchant Transmission project no longer be allowed to reduce the size of its project?

- A. Currently, we allow limited project reductions at all phases of the interconnection process. A total reduction of up to 50% of the original project size is allowed after the Transmission Interconnection Feasibility Study is issued but before the System Impact Study Agreement is executed. A total reduction of up to the greater of 20% of the project

size considered in the impact study or 50 MW will be allowed after the Impact Study is issued.

18. Is there a limit on the amount of MW increase that a project in the queue may request?

- A. Any increase to the MW size of a project will not be accepted within the scope of the existing queue position. Such changes must be submitted with a new Transmission Interconnection Feasibility Study request.

19. When will a complete dollar estimate for connection of each project be determined?

- A. At the end of the System Impact Study, each of the projects in an equivalent queue will know their cost responsibility (estimates) for interconnection to the transmission system. These estimates will be based on the projects recommended by the RTEPP and the cost allocations for each project. However, each project is ultimately responsible for costs actually incurred to construct the necessary transmission upgrades.

20. For cost allocation, is money reimbursed to the first project by later projects in the queue when they both impact the same facility? After a network facility is built for a previous generator and/or Merchant Transmission developer, can a new generator or Merchant Transmission project jump on the excess transmission capability without expenditure?

- A. When multiple projects in the same queue impact a facility, the cost allocation will assign a portion of the upgrade responsibility to each project. This would not involve reimbursement, per se. If a project in a later queue impacts a facility already identified as requiring an upgrade, cost responsibility may be assigned to the later project. Refer to PJM Manual M-14-B, Attachment B, for details about PJM Generation and Transmission Interconnection Cost Allocation Methodologies.

21. How will the cancellation of projects that occur during the Transmission Interconnection Facilities Study or even during construction of facilities be handled as far as cost allocation and moving ahead with construction?

- A. It is expected that some projects will drop from the queue during or after the Generation and/or Transmission Interconnection Facilities Study phase. Depending on the progress of construction of regional plan upgrades, significant costs may remain that must be assigned to some party. Prior to construction, needs and cost responsibility will be redetermined per section 41.7.3 (c) of the PJM Tariff. After the start of construction, PJM will evaluate each situation, on a case by case basis, and make a determination as to the most appropriate course of action.

22. Can a Merchant Transmission project be connected to more than one voltage at a substation or more than one substation allowing the developer to decide which bus to sell energy and capacity?

- A. A Merchant Transmission project can be connected to more than one voltage level or to more than one substation. However, if a parallel path is created for the system, that path

must be under the control of the Transmission Provider. The Merchant Transmission developer cannot be in a position to create congestion on the system by opening facilities under its control and then benefiting from that congestion through sales of transmission service to bypass that congestion.

23. Can projects be in more than one cluster?

- A. Yes, it is possible that a project can have impacts on two clusters based on a single interconnection option while it does not make sense to combine all of the related generators into one large cluster.

24. What is the definition of minimal upgrade costs?

- A. A minimal upgrade is the next logical upgrade for a specific facility that would satisfy the appropriate criteria tests imposed under the process.

25. What is an Interconnection Service Agreement for Merchant Transmission Facilities?

- A. After the Transmission Interconnection Facilities Study is completed, the Transmission Provider (PJM) will furnish an Interconnection Service Agreement (ISA) to be executed by the applicant and any affected Interconnection Transmission Owner(s). The ISA defines the obligation of the Merchant Transmission developer regarding cost responsibility and the expected dollar flows for required transmission system upgrades. These dollar flows may be related to cost responsibility for facilities constructed for the Merchant Transmission project or lower voltage transmission charges for projects connected below the voltage level of the facilities recovered through the PJM Tariff. The ISA also identifies the rights associated with the interconnection of the Merchant Transmission Facility and any operational responsibilities, restrictions or other limitations on which those rights depend. The ISA defines the Transmission Injection and/or Withdrawal Rights of the Merchant Transmission project and quantifies the dollar flows related to interconnection service. The ISA also defines the physical interconnection between the Merchant Transmission facilities and the Transmission System and the operational responsibilities associated with the interconnection. The ISA further identifies any changes in construction responsibility from the Standard Option for Transmission Owner Interconnection Facilities due to the Interconnection Customer exercising the Negotiated Contract Option or the Option to Build. Further information on all terms and conditions to be incorporated and made part of an ISA may be found in Part IV of the PJM Open Access Transmission Tariff (Subpart B at 41.7, Subpart E and Attachment O) available on the PJM website <http://www.pjm.com/>

26. What is a Construction Service Agreement for Merchant Transmission Facilities?

- A. A Construction Service Agreement specifies the Terms and Conditions for the construction of any Interconnection Facilities required to interconnect a Merchant Transmission Facility with the PJM Transmission Grid. The Construction Service Agreement is executed among the applicant for Transmission Service (Transmission Interconnection Customer), the Transmission Provider and the affected Interconnection

Transmission Owner(s). The form of a Construction Service Agreement may be found in the PJM Open Access Transmission Tariff as Attachment P. Further information on all terms and conditions to be incorporated and made part of a Construction Service Agreement may be found in Part IV of the PJM Open Access Transmission Tariff (Subpart F and Attachment P) available on the PJM website <http://www.pjm.com/>

27. When will realistic time frames be developed for construction schedules?

- A. During the System Impact Study, construction schedules will be evaluated considering the scope of the regional plan. The schedules included in the System Impact Study results should provide a more realistic view of the construction requirements for the entire regional plan. The schedules will be more accurately defined in the Transmission Interconnection Facilities Study.

28. How is a Schedule of Work developed to meet the in service date specified by the Transmission Interconnection Customer?

- A. The Party(ies) responsible for installing the Transmission Interconnection Facilities and/or Network Upgrade Facilities shall use reasonable efforts to install those facilities in accordance with an agreed Schedule of Work. In the event that the responsible Parties are unable to agree upon the terms of a Construction Service Agreement, the Transmission Interconnection Customer shall have the right, but not the obligation (“Option to Build”), to design, procure, construct and install all or any portion of the Transmission Owner Interconnection Facilities.

29. What is the Option to Build?

- A. The Transmission Interconnection Customer may choose to design and install all or any portion of the Transmission Owner Interconnection Facilities if the Transmission Interconnection Customer and the Interconnected Transmission Owner are unable to agree upon the terms of a Construction Service Agreement. If the Transmission Interconnection Customer chooses to exercise the Option to Build, the Interconnection Parties must adhere to a timeline for various activities that require coordination among the Interconnection Parties.

30. How does a Transmission Interconnection Customer exercise the Option to Build?

- A. In order to exercise the Option to Build, the Transmission Interconnection Customer must provide the Transmission Provider and the Interconnected Transmission Owner with written notice of its election to exercise the option by no later than seven days after the date that is 30 days after Transmission Interconnection Customer’s execution of the Interconnection Service Agreement, provided, however, that the Transmission Interconnection Customer and the Interconnected Transmission Owner may by mutual agreement extend the time period for exercise of the option. Refer to Part IV, Subpart F, Section 83.2.3 of the PJM OATT for further details about the manner and conditions associated with the Option to Build.

31. At what point are dollars for system reinforcements due? How will the mechanism for payment be established in the Interconnection Service Agreement?

- A. After construction of system reinforcements begin, invoices are issued by the Transmission Provider and payments are due on a monthly “pay as you go” basis. However, alternative arrangements may be negotiated between the Merchant Transmission Developer and the Transmission Owner(s) responsible for the construction and such arrangements are included in the Interconnection Service Agreement.

32. If projects further back in the queue are ready to come on line ahead of projects sooner in the queue, when will it be determined whether those earlier queued projects will stay on course or not be built?

- A. Milestones will be included in Transmission Interconnection Facilities Study Agreements and Interconnection Service Agreements to ensure that projects continue to demonstrate progress toward their ultimate completion. There are no guarantees that any project will ultimately be completed, regardless of how far they have proceeded in the process.

33. What if a project is delayed? What are the obligations of the project?

- A. Milestones will be negotiated in both the Transmission Interconnection Facilities Study Agreement and the Interconnection Service Agreement. If a project is delayed, the tariff allows the Transmission Provider to extend milestone dates in the event of delays not caused by the Interconnection Customer. Other failures to meet milestone dates will result in the removal of the associated project from the interconnection queue. Any project so removed from the queue is still responsible, under the tariff, for costs incurred prior to removal from the queue.

34. Who will schedule outages for construction?

- A. Scheduling of transmission outages for construction will be coordinated through PJM.

35. Can a "regulated utility" build a Merchant Transmission project in the service territory of another "regulated utility"?

- A. That determination is primarily a regulatory one. We believe that any entity can initiate a Merchant Transmission project, including another "regulated utility", however that regulated utility could not include the cost of such a Merchant Transmission project in its regulated rates for its "home" service area. Such cost treatment must be treated independently, possibly through an unregulated subsidiary.

36. Does a "regulated utility" have the right of "first refusal" if another entity wants to build a Merchant Transmission project within the service territory of the "regulated utility"?

- A. We believe that the initiator of a Merchant Transmission project owns the "right of first refusal". However, for economic expansion projects defined by PJM, if no Merchant party has come forward to initiate such reinforcement, it is expected that the "home" regulated utility would be offered the "right of first refusal".

37. What if a Merchant transmission project, in addition to providing the intended economic benefit, also provides a "reliability" benefit? How is the cost of the "reliability benefit" allocated? Does it matter whether or not the Merchant transmission project functionally replaces a "planned" or an "unplanned" reliability project?

A. We believe that the value of the reliability benefit would be allocated as a "credit" to the developer of the Merchant project for reliability projects included in the regional transmission expansion plan as approved by the PJM Board. For unplanned reliability projects, no "credit" would be allocated to the developer.

38. What type of transmission service do I need to schedule transactions over a merchant transmission HVDC facility?

A. PJM presently sees the transmission service requirements unfolding in two components:

- 1) *Subscription for transmission service over a HVDC merchant facility itself.* Assuming that the facility developer/owner has elected transmission injection and withdrawal rights instead of possible ATC rights, the 'transmission service' over the facility would be scheduled according to the developer/operator's "open season" subscription, regardless of which RTO retains operational control of the HVDC merchant facility.
- 2) *Transmission service from the source(s) in PJM to the HVDC terminal in PJM.* The transmission customer can choose either point-to-point transmission service or network transmission service, depending on their respective circumstances.

39. PJM has indicated that once TWRs are granted for a HVDC cable project, the cable becomes eligible for either Network Service or Point-to-Point (PtP) Service. What are the requirements to utilize network service for capacity and energy sales from PJM to an external region in the context of HVDC cable project(s)?

A. Only Point-to-Point Service is available for service or sales to non-designated loads. The only exception that provides for use of Network Service is for a Network Customer that requests transmission service for load outside of PJM and elects to include its entire load as Network Load for all purposes ([PJM OATT, Part III, Article 31.3](#)).

40. Strictly in terms of reliability, what are the tradeoffs between Firm PtP and Network Service? Does Firm PtP offer additional reliability benefits for the entitlement holder of the cable's TWRs?

A. There are no reliability differences between Firm Point-to-Point and Network Service.

41. What, if anything, needs to be done to "match" PtP service with the TWRs obtained by the merchant HVDC project?

A. To "match" PtP transmission service with the TWRs, PtP service must be requested between each source node and the TWR sink node terminal of the HVDC project.

42. If an entity were to hold Firm PtP to a generator with whom a bilateral arrangement were in place but the generator were unavailable, would that entity be permitted to transport energy from a PJM Spot Market Hub to the cable injection point on a firm basis? If not, why not?

A. Yes, all load not offset by self-supply or bilateral arrangement has inherent spot market back-up and will pay the LMP of the load location when purchasing spot market energy. If the load has entered into a bilateral transaction then the load is responsible for congestion charges from the source point of the transaction to the load location for the transaction MW amount. The generator or seller of the bilateral arrangement has inherent spot market back-up at the source point of the transaction. If the cable injection point is considered a Network Load, it would be Firm service subject to load deliverability requirements using Network Service. Modeled as Firm point-to-point Transmission Service the transmission service is still FIRM and the Energy would be sourced from the Spot Market Hub and subject to congestion which may or may not be covered with FTRs. The Spot Market Hub would be considered a change in source, which may not align with energy provided from the specific generator.

43. Is Firm PtP service applicable when more than one source of energy is contemplated under a bilateral contract?

A. Yes, but only with separate Point-to-Point service agreements for each bilateral contract.

44. Which type of service (Network vs. Firm PtP) would be applicable in the case where an entity enters into a call option arrangement under a defined indexed value with a generator in PJM, thereby providing that entity with the ability to procure energy from the bulk power market during lower cost hours and/or when the unit is unavailable?

A. See response to 41 above regarding spot market energy.

45. For a scenario where a party pays to reinforce the PJM System to fulfill the TWR requested in the System Impact Study (SIS) and also procures Firm PtP, is it correct that such party pays the *greater of* the annualized cost of the system improvements or the Firm PtP charge, but not both. Also, does this provision apply if the party elects Firm PtP rather than Network Service?

A. The above interpretation is correct. The test applies to both Firm Point-to-Point Service and Network Service, to the extent that Network Service is applicable (See response to 38 above regarding applicability of Network Service).

46. If a merchant HVDC project obtains TWRs and not TIRs, can energy be imported into PJM on a *non-firm basis* when market conditions warrant?

A. No.

47. What has been the historical frequency and duration of curtailments for transmission customers who have contracted for Non-Firm PtP Service in PJM? Can an entity obtain historical information regarding the quality of Non-Firm PtP service? Are there any forecasts or other analysis regarding quality of non-firm transmission service in PJM?

A. PJM Performance Department can gather statistics, that can, by Transmission type, provide the capacity reserved, the amount scheduled, and the amount curtailed on an hourly basis. These statistics could be processed for something a little less granular. It will take 2-3 days to gather and process the data. PJM may charge for the service to provide historical data. There are no forecasts regarding the future quality of non-firm transmission service in PJM.

48. What is the procedure for interrupting customers with Non-Firm PtP Service? What are PJM's notice requirements for curtailments? What is the procedure and service classification priority for interrupting or curtailing transmission customers? Are all Non-Firm transmission holders interrupted or curtailed on an equi-proportional basis? If no, how are such interruptions or curtailments performed? Is duration of service a factor? If so, how? Does shorter term Firm PtP have the same status as monthly or annual Firm PtP? Are affected shippers interrupted or curtailed on a coincident basis?

A. A full description of curtailment priority can be found in Chapter 2, Energy Scheduling, of the PJM Regional Practices and Business rules located at <http://oasis.pjm.com/rpdoc.html>. Notice requirements are a function of system conditions and the urgency to curtail. The curtailment would occur at the next practical schedule change point. Only service that adversely affects the system constraint would be considered as a candidate for curtailment by service type, willingness to pay congestion, duration and timestamp.

For FIRM, curtail schedules that effectively relieve the constraint, proportionally among Native Load customers, Network customers and customers taking Firm Point-to-Point transmission service. (NERC Transmission Bucket 7). (Chapter 2, Energy Scheduling, of the PJM Regional Practices and Business rules located at <http://oasis.pjm.com/rpdoc.html>).

49. Along a specific transmission path, there may be multiple parties that are transporting through a constrained flow gate, but only a single entity using a specific transmission path. Is the curtailment performed on all paths through the constrained flowgate?

A. Curtailments are flowgate based. Any transaction adversely impacting the constrained flowgate or system element is a candidate for curtailment regardless of the path being utilized.

50. What are the differences in scheduling protocols / requirements between Firm PtP, Non-Firm PtP, and Network Service?

- A. Table 1.6 of the Regional Practices and Business Rules. – Transmission Service Submittals, (located at <http://oasis.pjm.com/rpdoc.html>) defines the submittal times and response times for reservation types. Energy scheduling is done on a first come first serve basis.

51. We understand that hourly Non-firm PtP is currently offered at a discounted rate of \$0.67/MWh. Please confirm. How is the discounted Non-Firm PtP rate derived?

- A. The current discounted rate for all Non-Firm service is \$0.67/MWh. For rate determination, see PJM Tariff, Schedule 8, Non-Firm Point-to-Point Transmission Service (<http://www.pjm.com/documents/downloads/agreements/tariff.pdf>) and PJM Regional Practices and Business Rules, Section 1.13, PJM Non-Firm Pricing and Discounting Policy (<http://oasis.pjm.com/rpdoc.html>). Additionally, there is an Allegheny Power transitional market expansion charge (TMEC) with a rate of \$0.33/MWh collected for each reservation. See PJM Tariff, Schedule 8, Item 7 - Transitional Revenue Neutrality Charge.

52. Is the discounted Non-firm PtP applied on a reservation basis or volumetrically?

- A. The discounted Non-Firm Point-to-Point is assessed on a reservation basis according to the MW of capacity reserved (excluding PJM curtailments). There is no additional discounting for volume considerations.

53. How does the expansion of the PJM “footprint” affect the pricing of Non-Firm PtP? Under what circumstances would the pricing of Non-firm PtP significantly change over the next two years?

- A. It is expected that the non-firm rate will increase with Market Integration.

54. To the extent requests for Firm PtP increase so that the Available Transmission Capability (ATC) declines to zero, can any change in the Non-Firm PtP rate discount be expected?

- A. No discount change would be expected.

55. Are transmission rights tradable / assignable? Does OASIS facilitate a secondary market for transmission rights? For example, if an entity procured long-term Firm PtP, could that entity repost its transmission rights for specific hours for assignment to a third party? If yes, could the entity procure Firm / Non-Firm PtP service as available on a secondary market?

- A. Transmission rights are tradable / assignable. PJM would not act as an agent, but would facilitate the entity’s arrangements with a third party. The entity could procure transmission service on a secondary market. OASIS does not currently facilitate a secondary market.

- 56. Once firm service is purchased, can PJM's ATC calculations alter service availability?**
- A. No.
- 57. Does PJM sell firm transmission rights up to the TTC of a specific pathway?**
- A. PJM does not sell transmission service rights up to TTC. TRM and CBM margins, where appropriate, are maintained for system reliability - See PJM Manual for Transmission Service Requests (<http://www.pjm.com/contributions/pjm-manuals/pdf/m02v07.pdf>).
- 58. Can Non-Firm PtP be made available even if ATC = 0 MW? How is the quantity of Non-Firm PtP available service determined? Specifically, is the amount of Non-Firm PtP a margin above the TTC, or, a derived % of the TTC that is not available to Firm PtP and/or Network service requests?**
- A. Non-Firm Point-to-Point is available even if ATC is zero, as long as the willing to pay congestion flag is set to yes. The amount of Non-Firm Point-to-Point willing to pay congestion is not determined. Non-Firm Point-to-Point is curtailable under Emergency Procedures for reliability, until that point additional charges associated with redispatch are used to manage congestion and maintain schedules. The customer can curtail the transaction at any time to avoid the congestion charges associated with continued redispatch for delivery. See section 2, Available Transfer Capability of PJM Manual 2: Transmission Service Requests (<http://www.pjm.com/contributions/pjm-manuals/pdf/m02v07.pdf>).
- 59. Can PJM provide a history of the ATC for a give pathway or flowgate?**
- A. PJM Performance Department may be able to provide some statistics on Path ATC. PJM may charge for the services to gather the data, if not readily available.
- 60. Can PJM provide a history of Non-Firm service made available and/or approved/disapproved?**
- A. PJM Performance Department can gather statistics, that can, by Transmission type, provide the capacity reserved, the amount scheduled, and the amount curtailed on an hourly basis. These statistics could be processed for something a little less granular.
- 61. The System Impact Study (SIS) process can represent a maximum of 105 days to receive PJM's response to the SIS request. What is the average turnaround?**
- A. You should plan on response within tariff requirements.
- 62. ARR are provided upon request to entities seeking Firm PtP or Network Service. Is there any reason not to request ARRs?**
- A. An ARR is defined by a source point, a sink point and a MW quantity. The economic value of an ARR is the ARR MW amount times the difference between the ARR Sink LMP minus the ARR Source LMP where the LMPs are clearing prices derived from the Annual FTR Auction. If the Sink LMP is less than the Source LMP, then the ARR is an economic liability to the ARR holder.

63. Please explain the process for allocation of FTR revenues among ARR holders.

A. An ARR is defined by a source point, a sink point and a MW quantity. The economic value of an ARR is the ARR MW amount times the difference between the ARR Sink LMP minus the ARR Source LMP where the LMPs are clearing prices derived from the Annual FTR Auction. Annual FTR Auction revenues are distributed to ARR holders in proportion to each ARR's economic value.

64. Can the holders of FTRs bid in the associated FTR auctions? If so, does PJM's market mitigation enforcement restrict bidding parameters?

A. PJM's holders can bid into the Annual FTR Auction. There are no bidding parameter restrictions but the Market Monitor Unit does monitor for market manipulation.

65. The PJM Billing Manual (M-29), p. 10, under the Transmission Congestion Charges bullet, references "explicit" and "implicit." Please define "explicit" and "implicit" transmission congestion charges.

A. Explicit congestion charges apply to the buyer of a bilateral energy transaction where the source differs from the sink. They are calculated as transaction MWh times the difference in price between the sink and the source. Implicit congestion charges reflect the moving of energy generated or purchased to where it was consumed or sold within each customer account. It is calculated by subtracting the amount already paid for spot market energy at an average rate from a locational net energy bill where all energy injections and withdrawals are priced at the applicable bus price. More information on this can be found in the PJM Operating Agreement Accounting Manual.

66. In order to complete their due diligence effort, can an entity have access to PJM's eTools that are available to PJM members through the PJM site? If so, what administrative requirements are needed to facilitate data exchange?

A. Access to PJM's eTools is provided to those entities that submit a request for a legitimate use.

67. Is the selection of Incremental Deliverability Rights (IDRs), Incremental Auction Revenue Rights (IARRs), and Incremental Available Transfer Capability Revenue Rights (IATCRRs) over TIRs and TWRs an actual option if an entity were to inject power into the proposed PJM node for a HVDC cable?

A. Not at the present queue position if the HVDC developer has already selected TIRs and TWRs.

68. Are IATCRRs valued based on PtP service or Network service?

A. No.

- 69. Can the IATCRRs be sold through the PJM OASIS, or are they sold through a separate open-access system?**
- A. They are not sold through the OASIS. No separate open-access system is provided by PJM.
- 70. The IARRs are rights to the revenues with incremental FTRs associated with the system improvement. Which zones or nodes are represented in the relevant FTRs?**
- A. Incremental ARR may be requested between any two points for which PJM calculates a price.
- 71. Are the IDRs specific as to the location of the deliverability right? That is, we assume that IDRs could not be resold to a generator interconnecting at another node. Is that accurate?**
- A. Yes, IDRs are for a specific location. They could be resold to a generator interconnecting at another node, however the amount of IDRs would be decreased based on the injection impact at the new site relative to the original location.
- 72. How do the ARRs provided through ownership of Firm PtP service and IARRs offered through system build-out interact? Are they additive?**
- A. ARRs are allocated annually, subject to feasibility, to firm transmission service customers through a two-stage Annual ARR Allocation process. Incremental ARRs are allocated to those paying for system upgrades. Incremental ARRs have a life-span of 30 years or the life of the upgrade whichever is less.
- 73. Does PJM have a projection of ancillary charges, including transition charges, going forward?**
- A. PJM has no such projection.
- 74. How are Transitional Revenue Neutrality Charges calculated?**
- A. Transitional charges are derived at the discretion of the entities responsible for their determination. There is no set procedure. Typically, the transmission owners calculate the amount of revenues being lost due to integrating with PJM and allocating it monthly to network load customers.
- 75. If an entity were to resell the energy procured at the generator bus – before carriage across transmission wires – do the transmission charges, losses, and ancillary charges apply?**
- A. The party responsible for the transmission charges is subject to the agreement of sale. If not specified, the default party for the transmission service charges would be the party taking delivery (load).

76. PJM currently calculates losses based on 3% of system prices during peak hours and 2.5% of system prices during off-peak hours. Our understanding is that PJM is contemplating changing that mechanism to a marginal loss-based system. Please comment on the likelihood and timing of a change in the loss calculation mechanism.

A. Losses are 3% and 2.5% of system load, respectively, and billed at the system price at the time of occurrence. It is tentatively planned to change to a marginal loss-based system sometime mid- to late 2005.

77. Reserved

78. Reserved

79. Reserved

80. Reserved