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Navigating the Winds of Change: Licensing, Registration, and Regulatory Overlay for Wind Farms and Associated Transmission in Texas

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NAVIGATING THE WINDS OF CHANGE: LICENSING, REGISTRATION, AND REGULATORY OVERLAY FOR WIND FARMS AND ASSOCIATED TRANSMISSION IN TEXAS

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I. INTRODUCTION

The State of Texas leads the United States in wind energy generation capacity—it has more than twice the wind generation capacity of the next-closest state, California.[1] If Texas was an independent nation, it would rank sixth in the world in total installed wind capacity.[2]

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1. WIND POWERING AMERICA, http://www.windpoweringamerica.gov/wind_installed_capacity.asp (last visited Nov. 3, 2013).

2. Office of the Governor: Economic Development & Tourism, *Texas Renewable Energy Industry Report* (July 2012), http://governor.state.tx.us/files/ecodev/Renewable_Energy.pdf.

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Texas has a rich history of legislation and regulatory effort to thank for these statistics, which reflects the knowledge that energy and infrastructure drive the economy. Starting in 1999, Texas became one of the first states to enact a Renewable Portfolio Standard ("RPS").[3] The RPS set a state-wide goal for new renewable energy installation with deadlines for when that goal was to be met.[4] In addition to passing an RPS, Texas also created Competitive Renewable Energy Zones ("CREZs"). CREZs are areas of Texas that have been designated by the Public Utility Commission of Texas ("PUCT") to receive special benefits for wind transmission and development due to their strong wind resources and large financial commitments in the region by wind developers.[5] These programs, and several others, have helped the wind industry in Texas grow exponentially to continually reach the goals set out by the RPS long before deadlines arrive. In fact, on a recent day towards the end of March, wind generation accounted for 29% of the electricity used by most Texans.[6]

Even though the RPS, CREZs, and several other programs have helped Texas become an international leader in wind energy production, many of the administrative hurdles to wind development that are experienced elsewhere in the United States still exist in Texas today. This Article is intended to discuss transmission issues, explain how a wind farm connects to the transmission grid, and help flesh-out some of the administrative processes in licensing and registering a wind farm that must be completed before transmission interconnection can be sought.

II. Lease Negotiation and Siting

Other Symposium presenters will cover lease negotiation and siting in depth. In short, the Authors would note the oft-quoted real estate mantra that the three ultimate considerations in finding an appropriate property are "location, location, location," and the Authors would agree.[7] Properly siting a wind farm and obtaining lease rights over

3. State EERS and RPS Activity, http://www.stateinnovation.org/Events/Event-Listing/New-Jersey-Energy-Strategy-Academy-(1)/Additional-Materials/Energy-Efficiency-Resource-Standards/State-Energy-Efficiency-Resource-Standards-and-Ren.aspx (last visited Jan. 1, 2014).

4. S.B. 7, 1999 Leg., 76th Reg. Sess. (Tex. 1999).

5. 16 Tex. Admin. Code § 25.174(4) (1999) (Pub. Util. Comm'n, Competitive Renewable Energy Zones), *available at* http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=2&ch=25&rl=174.

6. *Wind generation output sets ERCOT record*, Statesman.com (Mar. 28, 2014), http://www.statesman.com/weblogs/the-blotter/2014/mar/28/wind-generation-output-sets-ercot-record/.

7. William Safire, *Location, Location, Location*, N.Y. Times, June 26, 2009, http://www.nytimes.com/2009/06/28/magazine/28FOB-onlanguage-t.html?_r=0, (clarifying that the phrase "location, location, location" was coined in the American Midwest in the 1920s).

relevant lands are some of the preliminary considerations when planning wind generation in Texas. Access to transmission should be a primary consideration when siting. After all relevant siting factors have been considered, a location selected, and wind lease rights obtained, the developer must consider how to get the energy produced to market, which is the subject of this Article: the regulatory factors relevant to formation, registration, and interconnection to transmission service providers.

III. LICENSING/REGISTRATION

A. *Background*

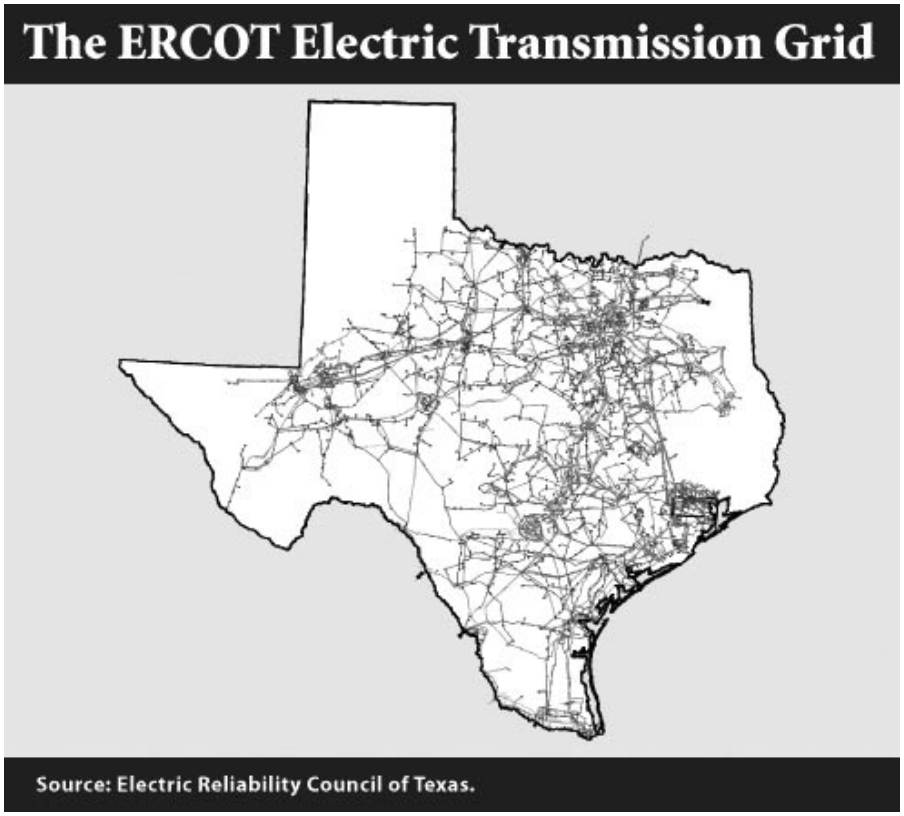
Regardless of its capacity, a wind farm has very little value without the ability to sell the newly generated electricity. In order to sell electricity generated by a wind farm, the developer will have to interconnect to the grid, which will involve licensing processes with the relevant grid operator as well as negotiations and contracts with the relevant transmission service provider ("TSP") or transmission and distribution utility ("TDU"). The main transmission issue faced by newly built wind farms is the construction of transmission facilities between the wind farm and a point of interconnection with a nearby TSP or TDU. However, before any transmission facilities can be constructed, the developer will usually have to sign an interconnection agreement with the applicable TSP or TDU, which can only occur when the developer has undergone a licensing process with the regional transmission organization and registered with the PUCT.

Electric utilities in the State of Texas are regulated by the PUCT.[8] The PUCT has delegated the management of 85% of Texas's electric load to the Electric Reliability Council of Texas ("ERCOT").[9] Another system operator, the Southwest Power Pool ("SPP"), covers a portion of the Texas Panhandle that has seen some wind development take place.[10] Interconnection to either of these grids is a separate registration process and is therefore analyzed separately below.

8. TEX. UTIL. CODE ANN. § 32.001 (West 2013).

9. *About ERCOT*, ELEC. RELIABILITY COUNCIL OF TEX., INC. ("ERCOT"), http://www.ercot.com/about/ (last visited Jan. 16, 2014).

10. FED. ENERGY REGULATORY COMM'N ("FERC"), http://www.ferc.gov/market-oversight/mkt-electric/spp.asp (last updated Nov. 26, 2013).



B. *ERCOT*

The ERCOT grid is unique in that it is entirely intrastate, so the Federal Energy Regulatory Commission ("FERC") has no jurisdiction over the transmission of electric energy within ERCOT.[11] It is ERCOT's responsibility to regulate and control the generation, transmission, and consumption of electricity for 85% of the Texas power grid.[12] Due to this responsibility, ERCOT has created its own interconnection process separate from the process required by the PUCT. For a new Interconnecting Entity ("IE") to connect to the ERCOT grid, the entity must initiate interconnection procedures and file applications for interconnection with both ERCOT and the PUCT.[13]

An IE goes through various interconnection processes with ERCOT and the transmission service provider to whose facilities the IE will connect. Interconnection and TSP negotiations are addressed below in Section IV.A.

11. FERC, https://www.ferc.gov/industries/electric/indus-act/rto/ercot.asp (last updated Oct. 17, 2011).

12. ERCOT, *supra* note 9.

13. *Resource Entities*, ERCOT, INC., http://www.ercot.com/services/rq/re/ (last visited Feb. 19, 2014).

Once the IE has completed negotiations with the TSP, it must finish its registration with ERCOT. First, the IE must submit the Resource Entity Registration Form[14] to ERCOT designating a Qualified Scheduling Entity ("QSE").[15] The IE must then complete the design and installation of an ERCOT-polled settlement meter, establish a data link with the QSE, designate a registered load serving entity ("LSE"), and submit the ERCOT New Generator Commission Checklist.[16] Once those forms are submitted, the QSE must sign the Resource Entity's Qualified Scheduling Entity Acknowledgement, coordinate the first operating day with the IE and ERCOT account manager, and then request ERCOT approval to enter full commercial operations.[17] In its entirety, the ERCOT registration and interconnection process will take between 244 and 850 days to complete.[18] Although parts of the overall process are addressed in this Article below in Section IV.A, here is an overall timeline for registration and interconnection in ERCOT:

Notification of Generation Interconnection or Change Request:	1-10 days
Security Screening Study:	10-90 days
Develop Scope Agreement for Full Interconnection Study:	1-60 days
Full Interconnection Study:	40-300 days
Negotiate and Execute Interconnection Agreement:	180 days

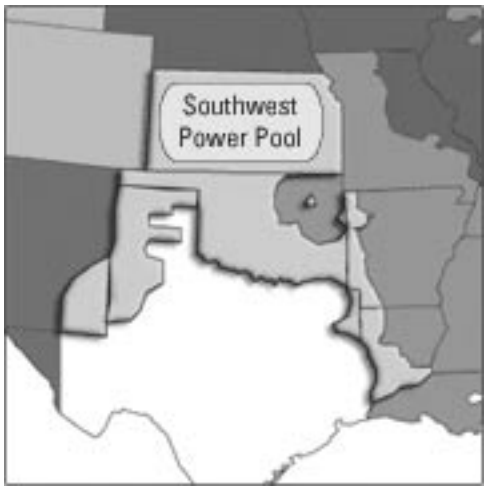
14. This is called a Resource Entity Registration Form because the entity is referred to as an IE prior to approval, but once registration is complete the entity is referred to as a Resource Entity ("RE"). *See* ERCOT, *Generation Resource Interconnection or Change Request* § 5.7.1, http://www.ercot.com/content/mktrules/guides/planning/current/05-080113.doc (last visited Jan. 16, 2014) [hereinafter *Generation Resource Interconnection*].

15. A QSE ensures that the supply of electricity can meet the demand and is financially liable to ERCOT for any reliability issues. This function can be performed by a third party or by the generator, but if the generator chooses to act as the QSE, it must qualify as a QSE with ERCOT. *See infra* note 48 (providing steps in the registration process to qualify).

16. ERCOT, http://www.ercot.com/services/rq/lse (last visited Jan. 25, 2014) (stating that a LSE is an entity that supplies electricity to "end-users and wholesale customers. LSEs include competitive retailers that sell electricity at retail in the competitive market," as well as "electric cooperatives and municipally owned utilities that do not operate as [competitive retailers] and do not plan to offer customer choice.").

17. *Id.*

18. *Generation Resource Interconnection*, *supra* note 14.



C. *SPP*

The Southwest Power Pool ("SPP") is a Regional Transmission Organization[19] that provides services to nine states, including Texas.[20] The SPP is responsible for monitoring the transmission and consumption of 15% of Texas's electric load and approximately 25% of Texas's land area.[21]

The SPP has its own set of interconnection procedures that must be followed to connect to the grid. The SPP is under the jurisdiction of the FERC because it is an interstate electricity provider.[22] In addition to registering with the SPP, a Texas IE intending to generate electricity in Texas should also register with the PUCT.[23] Connecting to the SPP's grid tends to be more costly and time consuming than connecting to the ERCOT grid.[24]

In its entirety, SPP registration will take at least nine months to complete, and the costs of the installation will vary substantially from project to project. Although parts of the overall process are addressed in this Article below in Section IV.B, here is a general, overall timeline for the minimum amount of time it might take for registration and interconnection in SPP:

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19. 18 C.F.R § 35.34(j) (A Regional Transmission Organization is an independent operator with authority for all transmission facilities under its control.); *Id.* § 35.34(k) (Its responsibilities range from administration and design of its tariff to managing transmission congestion.).

20. SOUTHWEST POWER POOL, http://www.spp.org/section.asp?pageid=1 (last visited Oct. 19, 2013).

21. ERNEST E. SMITH ET AL., TEXAS WIND LAW § 7.01 (LexisNexis 2013).

22. *Id.*

23. PUB. UTIL. COMM'N OF TEXAS ("PUCT"), http://www.puc.texas.gov/industry/electric/business/pgc/Pgc.aspx (last visited Jan. 16, 2014).

24. SMITH ET AL., *supra* note 21, § 7.01.

Interconnection Request:	1-30+ days
Feasibility Study:	1-90+ days
Preliminary Interconnection System Impact Study:	1-150+ days
Definitive Interconnection System Impact Study:	1-120+ days
Interconnection Facilities Study:	1-90+ days
Generator Interconnection Agreement:	1-60+ days

D. *PUCT*

As previously mentioned, even though a new generator must register with ERCOT or SPP, they must also register with the PUCT.[25] By comparison, the PUCT process is simple and straightforward. Thirty days prior to commencing operations, the IE must submit the Power Generation Companies ("PGC") Registration Form to the PUCT.[26] The PGC Registration Form is relatively short and only requires general company and facility information.[27] Once the PGC Registration Form is approved by the PUCT in its entirety, the IE is finished with the PUCT generator registration process.[28]

One more PUCT registration route is available, but not required, to new wind farms in ERCOT regions; as part of its plan to promote renewable energy development in the state, Texas created a Renewable Energy Credit ("REC") program in 1999.[29] The purpose of the REC program is to award generators of renewable energy with account credits and compliance premiums in order to reach the renewable energy goals set out in the Public Utility Regulatory Act ("PURA") in the most efficient manner possible.[30] These tradable credits are accumulated for each megawatt ("MW") of renewable energy produced, and are accumulated in accounts managed by ERCOT.[31] To earn renewable energy credits, an IE must become a

25. 16 TEX. ADMIN. CODE § 25.5(54) (2011) (Tex. Pub. Util. Comm'n, Definitions), *available at* http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=T&app=9&p_dir=F&p_rloc=153710&p_tloc=14913&p_ploc=1&pg=2&p_tac=&ti=16&pt=2&ch=25&rl=5 (last visited Jan. 16, 2014) ("A person that owns an electric generating facility in Texas and is either a power generation company or a qualifying facility and generates electricity intended to be sold at wholesale, must register as PGC [with the PUCT].").

26. *Certification and Licensing*, PUCT, http://www.puc.texas.gov/industry/electric/business/pgc/Pgc.aspx (last visited Jan. 16, 2014).

27. 16 TEX. ADMIN. CODE § 25.109(54) (2011); Registration Form for Power Generation Companies, PUCT, http://www.puc.texas.gov/industry/electric/business/pgc/Pgc.aspx (last visited Feb. 19, 2014).

28. 16 TEX. ADMIN. CODE § 25.109(54) (2011).

29. 16 TEX. ADMIN. CODE § 25.173(a)(2) (2001) (Tex. Pub. Util. Comm'n, Goal for Renewable Energy), *available at* http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=2&ch=25&rl=173 (last visited Jan. 16, 2014).

30. *Id.*

31. ERCOT, *Renewable Energy Credit*, http://www.ercot.com/services/programs/rec (last visited Jan. 16, 2014).

new facility or a small producer,[32] submit the REC certification form thirty days prior to commencing operations, enter a form Market Participant Agreement with ERCOT, and meet the requirements of PUC Substantive Rule 25.173.[33]

IV. INTERCONNECTION

A. *Grid Interconnection in ERCOT*

The first step in the ERCOT interconnection process is the submission of a Generation Interconnection or Change Request ("GINR") Application along with a Security Screening Study fee by the new IE.[34] The GINR will include a completed and executed generation entity information sheet, a broad summary of the IE's plan for energy generation, and a non-refundable fee of $5,000 or $7,000 depending on the size of the proposed wind farm.[35] ERCOT will notify the IE within seven business days if the form is not complete.[36] The IE has ten business days to complete the GINR after notification from ERCOT of an incomplete form, or the GINR will be deemed incomplete and will be rejected.[37] When the form is completed, ERCOT will date-stamp the form and notify the IE of receipt of the completed form within ten business days.

Once the GINR is complete and the security screening study fee has been paid, the Security Screening Study can begin. The Security Screening Study is intended to be a preliminary measure of the feasibility of adding new wind generation to the grid at a specific injection point.[38] ERCOT's engineers use this study to predict if substantial system upgrades would be necessary, or if the addition of a new wind farm would create congestion on the existing transmission lines. This study typically takes between ten to ninety days.

Once the IE receives the results of the Security Screening Study, it must decide whether or not it wants to proceed with a more in-depth Full Interconnection Study. If so, the IE must submit a Full Interconnection Study Request within the next 180 days that includes more detailed information about the project and the proposed interconnection design, evidence that the IE has control over the land it seeks to

32. § 25.173(a)(2).

33. ERCOT, *Commercial Operations and Settlement Handbook Section 12: Renewable Energy Credits*, §12.1.2, 12.1.3, www.ercot.com/content/meetings/ccwg/keydocs/2011/0712/Handbook_Section_12_RECS_Draft_20110629.doc (last visited Feb. 19, 2014).

34. SMITH ET AL., *supra* note 21, § 7.01.

35. ERCOT, *Fee Schedule*, http://www.ercot.com/content/mktrules/nprotocols/current/ERCOT%20Fee%20Schedule%20-080112.doc (last visited Jan. 16, 2014) [hereinafter *Fee Schedule*].

36. *Generation Resource Interconnection*, *supra* note 14, at 3.

37. *Id.*

38. *Id.* at 8.

develop as a wind farm, and a non-refundable modeling fee of $15 per MW[39] of proposed electric generation.[40]

After receiving the request for a Full Interconnection Study, ERCOT will schedule a meeting with ERCOT representatives, the IE, and the TSP.[41] Soon after this meeting, the TSP will send the IE a Full Interconnection Study Agreement detailing the studies to be conducted, fees to be paid, and the estimated time frame to complete the studies.[42] The studies typically include a Steady-State and Transfer Study,[43] Short Circuit Study,[44] Stability Study,[45] and a Facilities Study.[46]

If the IE still wishes to proceed with the project after receiving the Full Interconnection Study Agreement, the IE must complete the Full Interconnection Study Agreement form and forward that form to the TSP with a deposit for the Full Interconnection Study costs.[47] The TSP has up to 300 days to complete the Full Interconnection Study upon receipt of the deposit and Full Interconnection Study Agreement, but TSPs commonly complete the study within the first 180 days.[48]

After receiving the results of the Full Interconnection Study, the IE can begin the last step of obtaining an interconnection agreement with the TSP—negotiating and executing a Standard Generation Interconnection Agreement ("SGIA").[49] The SGIA is a standard form agreement that contractually binds the TSP to interconnect the IE's wind farm with the TSP's transmission system, and must be executed within 180 days of receiving the results of the Full Interconnection Study.[50]

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39. *Fee Schedule*, *supra* note 35.

40. ERCOT, *Resource Interconnection Handbook,* http://ercot.com/content/services/rq/re/reg/INTERCONNECTION%20Handbook%20v1%202.doc, at 11 (last visited Jan. 17, 2014) [hereinafter *Resource Interconnection Handbook*].

41. *Id*. at 48.

42. *Id*. at 18.

43. *Id.* at 13 (A Steady-State and Transfer Study identifies any increased stress on the ERCOT grid as a result of the new wind farm.).

44. *Id*. (A Short Circuit Study specifies locations where available short-circuit fault duty will be identified, calculated, and documented.).

45. *Id*. at 14 (A Stability Study analyzes the transient stability of the proposed wind farm and any potential impacts on nearby transmission and generation facilities.).

46. *Id.* (A Facilities Study provides a description of any required infrastructure improvements, a cost estimate for those upgrades, and an estimated completion date for those facilities.); SMITH ET AL., *supra* note 21, § 7.01.

47. SMITH ET AL., *supra* note 21, § 7.01.

48. *Id.*

49. *Resource Interconnection Handbook*, *supra* note 40, at 15.

50. ERCOT, *New Generation Resources–Steps to Register*, http://www.ercot.com/services/rq/re/newgen-steps (last visited Jan. 16, 2014); 16 TEX. ADMIN. CODE § 25.195 (2001) (Tex. Pub. Util. Comm'n, Terms and Conditions for Transmission Service), *available at* http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=2&ch=25&rl=195 (last visited Jan. 16, 2014).

The IE and TSP are required to use the standard form provided by the PUCT, but the negotiation of the interconnection agreement is conducted directly between the IE and TSP without interference from the PUCT or ERCOT.[51] The SGIA is composed of several exhibits, most of which are not negotiable.[52] Of the negotiations that do take place, the key negotiations generally involve the time schedule in Exhibit B and the security arrangements in Exhibit E.[53]

While negotiating the SGIA is only one step of the multi-step ERCOT registration process, negotiating the time schedule for commercial operations and the security requirements for construction of new facilities are very important processes to ensure that the wind farm reaches commercial operations without any complications.

Determining the date to reach commercial operations for Exhibit B of the SGIA revolves around the size and complexity of the infrastructure improvements needed for interconnection. In the negotiation process, the IE needs to consider its financing options, construction schedule, turbine supply dates, power purchase agreements, and any upcoming deadlines to qualify for tax benefit schemes in order to make sure that it provides itself a sufficient amount of time to meet the deadline.[54] Meeting the deadline set out in Exhibit B is very important since failure to meet this deadline may forfeit the return of security that is negotiated in Exhibit E.[55]

Exhibit E, the security arrangements, is the other negotiable exhibit of the SGIA. Under section 8.3 of the SGIA, the TSP may require "a reasonable deposit or . . . another means of security, to cover costs of planning, licensing, procuring equipment and materials, and constructing the [TSP's interconnection facilities]."[56] While these financial security arrangements are permissive under the standard SGIA, in practice, most TSPs will require security from the RE.[57] The amount of security required from the IE is negotiable, but considering the amount of capital required from the TSP to plan, license, procure equipment and materials, and construct interconnection facilities, the amount of required security from the IE can be significant and burdensome. Fortunately for the IE, the security must be returned within five business days of reaching commercial operations.[58] However, if the wind farm has not achieved commercial operations within one

51. *Generation Resource Interconnection*, *supra* note 14, at 17.

52. SMITH ET AL., *supra* note 21, § 7.01.

53. *Id.*

54. ERCOT, *Standard Generation Interconnection Agreement § 8.3*, http://www.ercot.com/services/rq/re/newgen-steps [hereinafter *Standard Generation Interconnection Agreement*].

55. ERCOT, *Standard Generation Interconnection Agreement*, http://www.ercot.com/content/services/rq/re/SGIA.DOC, at 21 (last visited Jan. 16, 2014).

56. *Id.*

57. SMITH ET AL., *supra* note 21, § 7.01.

58. *Standard Generation Interconnection Agreement*, *supra* note 54, § 8.3.

year of the scheduled commercial operations date negotiated in Exhibit B, the TSP may retain as much of the deposit as is required to cover the costs it incurred in planning, licensing, procuring equipment and materials, and constructing the interconnection facilities.[59]

When completed, a copy of the executed Generation Interconnection Agreement ("GIA") must be filed at the PUCT within thirty days with a cover letter explaining any differences between the parties' GIA and ERCOT's SGIA.[60] Confidential information can be filed under seal.[61] If the schedule changes and Exhibit B or E is amended after filing, then the amended GIA should be filed as well.[62] A copy of the signed GIA must also be sent to ERCOT by the TSP within ten business days of the execution of the agreement.[63]

B. *Grid Interconnection in SPP*

The first step for a new Interconnection Customer ("IC")[64] to connect to the SPP grid is to file an Interconnection Request.[65] This request consists of submitting preliminary information about the installation,[66] a $10,000 refundable deposit, and the study queue the IC intends to enter.[67] There are three separate queues for the three introductory studies: (1) the Interconnection Feasibility Study ("Feasibility Study"); (2) the Preliminary Interconnection System Impact Study ("PISIS"); and (3) the Definitive Interconnection System Impact Study ("DISIS"). Of these three studies, only the DISIS is mandatory.[68]

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59. *Id.*

60. 16 TEX. ADMIN. CODE § 25.195 (2001) (Tex. Pub. Util. Comm'n, Terms and Conditions for Transmission Service), *available at* http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=2&ch=25&rl=195 (last visited Jan. 16, 2014).

61. *Standard Generation Interconnection Agreement*, *supra* note 54, § 3.1.

62. 16 TEX. ADMIN. CODE § 25.195 (2001) (Tex. Pub. Util. Comm'n, Terms and Conditions for Transmission Service), *available at* http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=2&ch=25&rl=195 (last visited Jan. 17, 2014).

63. *Generation Resource Interconnection*, *supra* note 14, at 17.

64. The SPP uses the term "Interconnection Customer," while ERCOT uses the term "Interconnecting Entity." Both of these terms refer to the new generating facility that is seeking to connect to the grid.

65. *Open Access Transmission Tariff, Attachment V-Generator Interconnection Procedures*, (6th ed. 2012), http://sppoasis.spp.org/documents/swpp/transmission/studies/GIP_Attachment_V_2_15_2013.pdf [hereinafter *Tariff*] (Note that there is also a fast track process available for installations that are smaller than 2 MW. The fast track process is different than the one outlined in this paper and is beyond the scope of this Article.).

66. Specifically, the type of service, size of the installation, method of interconnecting to the transmission system, projected in-service date, and interconnection point.

67. *Tariff*, *supra* note 65, § 3.3.

68. *2010 ISO/RTO Metrics Report–Southwest Power Pool*, FERC, http://www.ferc.gov/industries/electric/indus-act/rto/metrics/spp-rto-metrics.pdf.

The Feasibility Study, PISIS, and DISIS are done on a cluster basis. A cluster basis study means that multiple requests will be studied together based on location and proposed electrical interconnection point.[69] The costs of these studies are allocated between the ICs based 50% on the IC's pro-rata share of interconnection requests included in the study and 50% based on the IC's pro-rata share of requested MWs included in the study.[70] Each of these studies requires a deposit. The deposits are not fees, but are applied towards the costs of the study. The IC is still responsible for its portion of the actual costs of the study beyond those covered by its deposit.[71]

Within one month of the valid interconnection request being received by the SPP, a scoping meeting should occur between the IC, the Transmission Owner,[72] and the Transmission Provider.[73] The scoping meeting is used to discuss the IC's plans and interconnection points, as well as to allow the parties to share information about the project.[74]

If the IC decides to conduct a Feasibility Study, a study agreement must be completed within fifteen days of submitting a valid interconnection request.[75] If an agreement is not completed in that time, the interconnection request is deemed to have been withdrawn.[76] The Feasibility Study conducts a limited analysis of the practicality and costs of incorporating the new installation into the SPP transmission system.[77] The results of the study will include: (1) the results of a short-circuit and power-flow analysis; (2) a list of facilities that will likely be needed; and (3) the projected respective costs of the new facilities.[78] There are four three-month Feasibility Study cluster windows in a year, and at the end of each window the SPP will commence the studies.[79] The SPP tries to complete all Feasibility Studies within ninety days of the cluster window closing, but the study typically takes longer.[80] Within ten days of the final Feasibility Study report being provided, the IC and the Transmission Provider should meet to discuss

69. *Tariff*, *supra* note 65, § 4.2.

70. *Id.* § 4.2.5.

71. *Id.* §§ 6.1, 7.1, 8.1.

72. The Transmission Owner is the entity that possesses an interest in the transmission system at the point of interconnection. *Tariff*, *supra* note 65, § 3.3.4.

73. *Id.*; The Transmission Provider is the public utility or the public utility's agent that is responsible for the transmission or distribution facilities and providing transmission services. *Id.* § 1.

74. *Tariff*, *supra* note 65, § 3.3.4.

75. *Id.* § 6.1.

76. *Id.*

77. *Id.* § 6.2.

78. *Id.*

79. *Id.* § 6.3.

80. *Id.* § 6.3; SMITH ET AL., *supra* note 21, § 7.01.

the results of the study and the implications of those results on the planned project.[81]

After completion of a Feasibility Study or submission of a valid interconnection request, the IC should sign a Preliminary Interconnection System Impact Study agreement within thirty days or before the close of the next PISIS window if the next window closes in less than thirty days;[82] if the agreement is not signed within that time, the interconnection request is deemed to be withdrawn.[83] Along with the PISIS study agreement, the IC must provide proof of site control,[84] a deposit of $10,000–$90,000 (depending on the size of the requested installation), and any technical data requested.[85] There are two six-month cluster windows for the PISIS each year.[86] The SPP will try to complete a PISIS study within 150 days of the window closing,[87] but the study often takes longer to complete.[88] The PISIS consists of an alternating current ("AC") power flow analysis, a transient stability study analysis, and a power factor analysis.[89] The results of this study will provide the requirements and potential impediments to connecting to the grid, along with the predicted costs and time required to remedy any impediments.[90] Additionally, the study will provide a list of facilities that need to be built for interconnection, along with a preliminary estimate of the time to build those facilities and the costs that will be allocated to the IC.[91] Within ten days of the final PISIS report being provided, the IC and TSP should meet to discuss the results of the study and the implications of those results on the planned project.[92]

After completion of the previous study or submission of a valid interconnection request, the IC must sign a DISIS agreement within thirty days or before the close of the next DISIS window if the next window closes in less than thirty days;[93] if an agreement is not signed within that time, the interconnection request is deemed to be with-

81. *Tariff*, *supra* note 65, § 6.3.1.

82. *Id.* § 7.2. The PISIS is not required and if the IC chooses it can move from the Feasibility Study or submission of the interconnection request directly to the DISIS without issue. *Id.* § 6.3; SMITH ET AL., *supra* note 21, § 7.01.

83. *Tariff*, *supra* note 65, § 7.2.

84. *Id.* § 7.2 (Proof of Site Control includes documentation demonstrating: (1) ownership or leasehold interest in a site of sufficient size, (2) an option to purchase or acquire a leasehold interest in a site of sufficient size, or (3) a business relationship between the IC and the entity having the right to sell. *Id.* § 1.).

85. *Id.* § 7.2.

86. *Id.* § 7.4.

87. *Id.*

88. SMITH ET AL., *supra* note 21, § 7.01.

89. *Tariff, supra* note 65, § 7.3.

90. *Id.*

91. *Id.*

92. *Id.* § 7.5.

93. *Id.* § 8.2.

drawn.[94] Along with the DISIS study agreement, the IC must submit demonstration of site control,[95] a $15,000–$150,000 deposit (depending on the size of the requested installation),[96] the definitive interconnection point, the definitive size of the installation in megawatts, requested technical information, and substantial evidence that the IC is committed to the project[97] or security of $2,000 per MW.[98] A DISIS will include the same studies as a PISIS, and will take into account any IC requests that were withdrawn after the completion of the PISIS. There are two six-month cluster windows for the DISIS, and the SPP tries to complete the study within 120 days of the window closing;[99] similar to the other studies, this does not usually happen.[100] Within ten days of the final DISIS report being delivered, the Transmission Provider, IC, and Transmission Owner must meet to discuss the results of the study and how to proceed with operations.[101]

At the time the DISIS report is delivered, a draft Interconnection Facilities Study ("Facilities Study") Agreement should also be delivered.[102] The Facilities Study Agreement must be returned within thirty days of receipt or the interconnection request will be deemed withdrawn.[103] The Facilities Study is a mandatory study that must be completed after the DISIS.[104] Unlike the previous studies, the Facilities Study is not done on a cluster basis. Along with the Facilities Study Agreement, the IC must provide substantial evidence that it is committed to the project,[105] a letter of credit for the amount of network upgrades the IC will be responsible for, or a payment for the network upgrades.[106] The Facilities Study will estimate the costs and time of implementing the facilities recommended by the DISIS; additionally, it will estimate the costs and time of electrical switching configuration for the connection equipment. The costs estimated by this study are only accurate within a 20% margin.[107] The SPP attempts to

94. *Id.*
95. *Id*. § 7.2.
96. *Tariff*, *supra* note 65, § 8.2 (For all installations over 75 MW the deposit will be $150,000.). This deposit is refundable in most situations, but if the IC drops out of the study then the deposit will not be refunded. *Id.* § 8.4.
97. Substantial evidence is limited to: (1) an executed contract for sale of energy; (2) a signed statement that the facility is included in a state resource plan; (3) evidence that the facility will be a Designated Resource; (4) a purchase order for equipment earmarked for the site; (5) an application for an air permit; or (6) a notice of proposed construction or alteration of with the FAA. *Tariff, supra* note 65, § 8.2.
98. *Id.;* SMITH ET AL., *supra* note 21, § 7.01.
99. *Tariff*, *supra* note 65, § 8.3.
100. SMITH ET AL., *supra* note 21, § 7.01.
101. *Tariff, supra* note 65, § 8.4.
102. *Id.* § 8.7.
103. *Id.*
104. *Id*.
105. *Tariff*, *supra* note 65, §§ 8.2, 8.7.
106. *Tariff, supra* note 65, § 8.7.
107. *Id.* § 8.9.

complete this study within ninety days of the agreement being executed,[108] but it commonly takes longer.[109] After a draft Facilities Study Report is provided, the IC has thirty days to provide written comments to be included in the final report.[110] The TSP, IC, and Transmission Owner must meet within ten days of the draft report being provided to discuss the results of the study.[111] If a different IC drops out of the study, chooses not to continue with the project after the study, or makes a change to its project's size, a re-study may be necessary.[112] If a re-study is required, the IC must again pay for the costs of the study.[113]

Along with the final Facilities Study Report, the Transmission Provider should provide a draft GIA.[114] The GIA must be completed within sixty days of being delivered to the IC,[115] but since the only portions of this agreement that are negotiable are the appendices,[116] this is usually completed without significant complications. If an agreement is not reached within sixty days, the IC must initiate dispute resolution procedures or enter into an agreement to keep negotiating with the Transmission Provider—otherwise the IC is treated as having withdrawn its interconnection request.[117] The GIA will require security from the IC in order to cover the expenses "for constructing, procuring, and installing the applicable portion of Interconnection Facilities, Network Upgrades, or Distribution Upgrades,"[118] as well as indirect costs the SPP believes must be allotted to the project.[119] However, unlike in ERCOT, this security is not returned to the IC after timely reaching commercial operations. Once the final agreement is signed, the IC must provide evidence of site control[120] or $250,000, and evidence that a major milestone in development has been achieved.[121]

108. *Id.*
109. SMITH ET AL., *supra* note 21, § 7.01.
110. *Tariff*, *supra* note 65, § 8.9.
111. *Id.* § 8.10.
112. *Id.* § 8.11; SMITH ET AL., *supra* note 21, § 7.01.
113. *Tariff*, *supra* note 65, § 8.11.
114. *Id.* § 11.1.
115. *Id.* § 11.2.
116. *Id.*
117. *Id.*
118. *Tariff*, *supra* note 65, at app. 6, art. 5.6.4, 11.5.
119. These costs may be as high as $11 million for an 80 MW project. SMITH ET AL., *supra* note 21, § 7.01.
120. *Tariff*, *supra* note 65, § 7.2.
121. A major milestone must be one of the following: (1) an executed contract for cooling water; (2) an executed contract for the sale of energy; (3) an executed contract for major equipment; (4) an executed contract for facility construction; (5) a signed statement that the generating facility is included in a state resource plan; (6) evidence that the facility will qualify as a Designated Resource; (7) an executed contract for fuel; or (8) an application for air, water, or land use permit. *Id.* § 11.3.

Prior to signing a GIA, an IC may request an Engineering and Procurement Agreement from the Transmission Owner.[122] This agreement allows the Transmission Owner to begin procuring or engineering items that have a long lead-time.[123] If the IC requests this agreement, the Transmission Owner is required to provide it unless the Transmission Owner has alleged that the IC did not meet a milestone or prerequisite included in the Transmission Provider's Generator Interconnection Procedures.[124] The IC is responsible for any costs associated with these items, and if the items are ultimately not needed, the IC is also responsible for any cancellation fees.[125] If cancellation is not a possibility, the Transmission Owner may take title to the equipment and refund any costs to the IC, or the equipment will be delivered to the IC and it will be responsible for the entire cost of the equipment.[126]

If a new generating facility has an expected in-service date that is before the expected completion of the interconnection studies, the IC may request interim interconnection services.[127] In order to obtain interim interconnection services the IC must sign an Interim Generator Interconnection Agreement ("Interim GIA").[128] The Transmission Provider determines if interim interconnection services are possible, and may terminate interconnection services after they have been granted if, at some point, the Transmission Provider determines the interconnection services can no longer be provided.[129] The eligibility requirements for an Interim GIA are the same as for a GIA, but the IC must also provide proof that it is eligible for a DISIS, and enter into an Interim Availability Interconnection System Impact Study.[130]

Throughout the interconnection process, information on the status of the request will be updated on the SPP's website.[131] The identity of the IC is not disclosed until a GIA is signed, but the final study reports as well as information about the location and the size of the project is available to the public.[132]

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122. *Id.* § 9.

123. *Id.*

124. *Id.* (The Generator Interconnection Procedures are included in a Transmission Provider's Tariff.); *Id.* § 1 (A Tariff is a document that a Transmission Provider must file with the FERC that lays out procedural and governance rules that a Regional Transmission Organization agrees to follow.).

125. *Tariff*, *supra* note 65, § 9.

126. *Id.*

127. *Id.* § 11A.1.

128. *Id.*

129. *Id.*

130. *Id.* § 11A.2.

131. *Id.* § 3.4; Called OASIS, this website is available for registered users at http://www.oasis.oati.com/spp_default.html.

132. *Tariff*, *supra* note 65, § 3.4.

V. TRANSMISSION

Licensing, registration, and interconnection are important steps in wind farm development, but these steps alone will fall short of reaching commercial operations without appropriate transportation for the newly generated electricity. The transportation of electricity from the wind farm to the point of interconnection at the TSP's facilities is generally facilitated through transmission lines. The choice of constructing transmission lines privately or by a TSP is a decision that each individual developer must make. Both options have their own strengths and weaknesses, and depending on the location of the wind farm, could result in significantly different capital expenditures and construction time frames.

A. *Privately-Constructed Lines*

Since TSPs pay for the initial capital costs of construction of new transmission lines that they build, fewer developers choose to privately construct their own transmission lines—but it is still an option. A primary benefit to privately constructing new transmission lines is the time-saving component. A developer or private company does not need to obtain a Certificate of Convenience and Necessity ("CCN") to construct transmission lines itself, and therefore saves the approximately one-year long CCN approval process. However, when privately constructing transmission lines, the developer must pay for the costs of construction and does not have the right of eminent domain. Therefore, the decision to privately build new transmission lines may be made when certain specific situations occur: (1) when the developer already has rights to use the land between the wind farm and the point of interconnection; or (2) when the developer does not have rights to the land, but there is only a short distance between the wind farm and the point of interconnection such that land acquisition is not expected to be an obstruction.

While the two scenarios above are emblematic of situations in which developers might choose to privately construct transmission lines, there are other scenarios in which a developer could find private construction to its advantage. The Horse Hollow Generation Tie provides one example of such a scenario. The Horse Hollow Wind Energy Center, developed by NextEra, is the world's largest wind farm.[133] Horse Hollow's production was curtailed when its production capacity exceeded the local transmission capacity.[134] As a result of this curtailment, NextEra was not able to utilize all of its available federal production tax credits or potential revenue from the sale of

133. Lorie Woodward Cantu, *Texas High Wires: A Balancing Act for Private Landowners*, TEXAS WILDLIFE, July 2009, http://clearviewalliance.org/docs/Texas%20High%20Wires%20article,%20electronic%20copy,%206-12-09.pdf.

134. *Id.*

state renewable energy credits.[135] In order to increase its production and take advantage of these policy incentives, NextEra decided that it would privately build its own transmission lines.[136] By privately constructing 200 miles of transmission lines, NextEra cut the traditional three-year time span for building a transmission line down to eighteen months—taking advantage of the available policy incentives in half the time.[137] Although it could not exercise eminent domain authority to obtain easement rights, NextEra was able to expedite the process by offering generous easement agreements to avoid conflict along the route, believing that the additional tax credits would help the company recoup its investment in the long term.[138]

While this method of privately constructing transmission lines has its advantages to companies with access to large pools of capital, the disadvantage of not having the right of eminent domain could spell disaster for smaller companies that risk being held hostage to the demands of uncompromising landowners unwilling to sell their property rights. For developers with less access to large sums of money, or who do not face curtailment problems and have the opportunity to seek advantageous credits if they rush their project, TSP-constructed lines discussed below may be a more desirable option.

B. *TSP-Constructed Lines*

Contrary to the example of Horse Hollow above, a common method of constructing transmission lines to connect to generation is by allowing the TSP to build them. There are two primary advantages to building transmission lines through this process: (1) the TSP has the power to acquire easements between the wind farm and the point of interconnection by exercising its right of eminent domain, preventing any holdout landowner from blocking the project;[139] and (2) the TSP will pay for much of the costs associated with the construction of the transmission lines.[140] The major disadvantage to this process is the time needed for the TSP to get approval of a CCN amendment.

A CCN is a certificate from the PUCT that allows an electric utility to provide utility service to the public when "the public convenience and necessity requires or will require the installation, operation, or extension of the service."[141] Therefore, a TSP must usually go through the CCN amendment process to obtain approval of a new

135. *Id.*
136. *Id.*
137. *Id*.
138. *Id.*
139. TEX. UTIL. CODE ANN. § 181.004 (West 2013).
140. 16 TEX. ADMIN. CODE § 25.195(c) (1999) (Pub. Util. Comm'n, Terms and Conditions for Transmission Service), *available at* http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=2&ch=25&rl=195.
141. TEX. UTIL. CODE ANN. § 37.051(a) (West 2013).

transmission line route.[142] The CCN process typically takes one year for approval.[143]

1. If a CCN is Required

The CCN process begins with a hearing in front of the PUCT after giving notice of the proposed transmission line route to the public.[144] One of the purposes of giving notice to the public is to obtain public feedback and to allow any landowners who are directly affected by the potential routes of the proposed transmission line to contest the application for a CCN.

An affected party can contest the CCN application by becoming an Intervenor or a Protestor.[145] An Intervenor files a statement with the PUCT and participates in discovery and/or provides testimony at the hearing;[146] alternatively, a Protestor simply gives a written or oral statement against, or in support for, the proposed project.[147] A contested CCN application is typically sent to the State Office of Administrative Hearings ("SOAH") where one or more administrative law judges provide recommendations, but the commissioners have the ultimate authority on granting the CCN regardless of what the administrative law judge may recommend.[148]

The PUCT typically considers four factors in the CCN process: (1) the adequacy of existing service; (2) the need for additional service; (3) the effect of granting the certificate on the recipient of the certificate and on any public utility of the same kind already servicing the proximate area; (4) other factors such as community values, recreational and park areas, historical and aesthetic values, environmental integrity, probable improvement of service or lowering of cost to consumers if the certificate is granted, and the effect of granting the certificate on the ability of Texas to meet the renewable energy goal established by PURA.[149]

Due to the broad variety of factors that the PUCT considers in granting a CCN application, and due to obligations to provide geographically diverse routing options, TSPs generally include multiple route options in their application for the PUCT to consider. For ex-

142. *Id.* § 37.051.

143. P.U.C. SUBST. R. 25.101(b).

144. TEX. UTIL. CODE ANN. § 37.054 (West 2013), *available at* http://www.statutes.legis.state.tx.us/Docs/SDocs/UTILITIESCODE.pdf; Sam Hous. Elec. Coop. v. Pub. Util. Com., 733 S.W.2d 905 (Tex. App.—Austin 1987, writ denied).

145. TEXAS OFFICE OF PUBLIC UTILITY COUNCIL: TRANSMISSION LINES, http://www.opuc.texas.gov/transmission_lines.html (last visited Oct. 19, 2013).

146. *Id.*

147. *Id.*

148. *Id.*

149. TEX. UTIL. CODE ANN. § 37.056(c) (West 2013).

ample, in recent CCN applications, the utility has provided approximately twenty discrete route options.[150]

2. If a CCN is Not Required

A CCN is not always required when building transmission lines. There are some exceptions to the requirement of obtaining a CCN such as when a TSP is building a new extension in a territory or to a territory the utility is authorized to serve under a pre-existing certificate.[151] This exception is limited to: (1) interconnecting existing facilities, or (2) transmission from an existing facility to a customer of retail electric utility service. However, neither of these CCN exceptions apply to new facilities.[152] Additionally, extending or modifying an existing transmission line to provide service will not require a CCN if the extension does not exceed one mile and all landowners provide written consent.[153] However, over longer distances, a CCN will often be required for the construction of new transmission lines to a new wind farm.

3. Eminent Domain

One of the primary advantages to a TSP-built transmission line is the ability to exercise the right of eminent domain. This ability is especially advantageous in certain locations, such as the Texas Hill Country, where land prices may be higher than in other parts of the state. In situations where landowners do not wish to negotiate with a TSP, TSPs have the right to exercise eminent domain to acquire easements.[154] This means that holdout landowners cannot defeat a TSP-built line. In contrast, private lines do not have condemnation authority and thus cannot be constructed unless negotiated easements are obtained over all necessary parcels.

In order to exercise the right of eminent domain, a TSP must initiate a formal eminent domain proceeding by filing a petition in district

150. *See, e.g.*, PUCT, *Application of Sharyland Utilities L.P. to Amend its Certificate of Convenience and Necessity for the Proposed Antelope-Elk Energy Center to White River 345 KV Transmission Line in Hale and Floyd Counties, Texas*, at 3 (Dec. 13, 2013) (providing twenty-one alternative routes); PUCT, *Application of American Electric Power Texas Central Company to Amend its Certificate of Convenience and Necessity for the Proposed Kenedy SS to Tuleta 138-KV Double Circuit Transmission Line in Bee, Goliad, and Karnes Counties, Texas*, at 6 (Oct. 1, 2013) (providing nineteen alternative routes).

151. TEX. UTIL. CODE ANN. § 37.052 (West 2013).

152. *Id*.

153. 16 TEX. ADMIN. CODE § 25.101(c)(5)(A) (2003) (Certification Criteria, Projects or activities not requiring a certificate); *see id.* § 25.101(c)(5) (2003) (discussing such "routine activities" as extending transmission less than a mile with landowner consent does not require a CCN but does still require reporting to the Commission in accordance with Subst. R. 25.83).

154. TEX. UTIL. CODE ANN. § 181.004 (West 2013).

or county court.[155] The TSP's petition must describe the property to be condemned, identify its owner or owners, set out the proposed use of the land, and state that the parties were unable to agree on the amount to be paid for the easement.[156] If the TSP can show that it made an offer to the landowner in good faith, i.e., that it was "based on a reasonably thorough investigation and honest assessment of the amount of just compensation due the landowner as a result of the taking,"[157] and that the TSP and the landowner were unable to agree on a price for the land, the proceeding may continue.

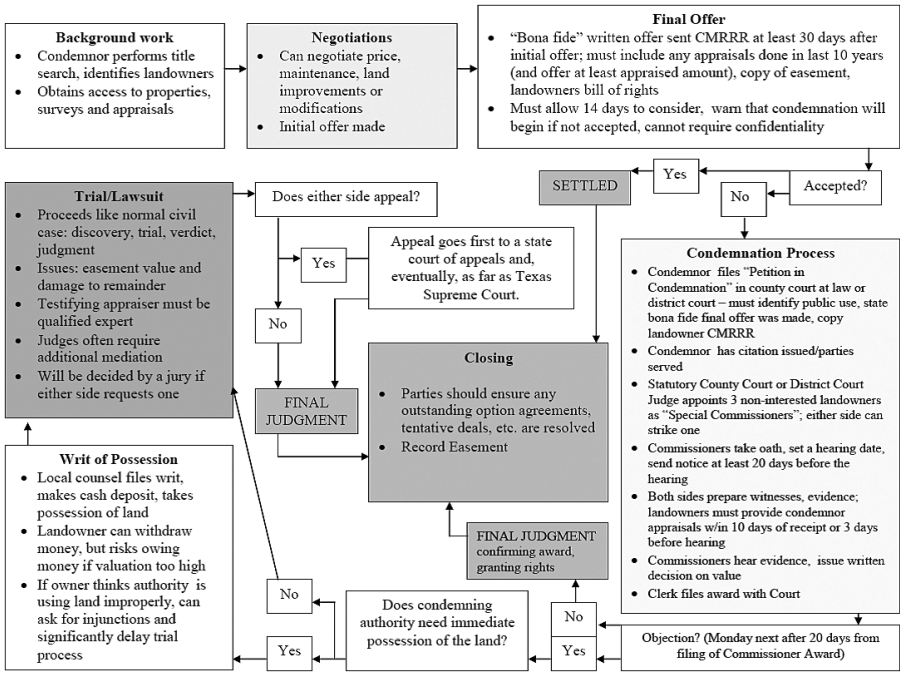
The court then appoints three disinterested landowners of the county in which the contested land is located as commissioners of the hearing.[158] Both parties to the hearing can present evidence and experts to these "special commissioners," after which, the special commissioners determine the value of the easement based on the evidence presented.[159] If both parties agree with the Commissioners' finding, the judge adopts the findings and the landowner receives the award.[160]

Either party to the eminent domain proceeding has the option to contest the finding of the Commissioners.[161] One reason to contest the finding, besides being unhappy with the value of the easement, relates to the assignment of costs of the proceeding.[162] If the award exceeds the price offered to the landowner by the utility, the utility can be held responsible for the costs of the proceeding. Alternatively, if the award is lower than the price offered by the utility, costs can be assessed against the landowner.[163] If either party objects to the amount of the award, the award is vacated, and proceedings convert into a civil trial case.[164]

If the proceeding converts into a civil trial case, then litigation and appeals have the potential to drag on for months or years. However, if the utility deposits the condemnation award into the registry of the court after the special Commissioners' award, then it will immediately obtain access to the condemned land, allowing construction to begin even if the parties continue to litigate easement value.[165]

Below the Authors have provided a flow chart, which summarizes a typical condemnation process:

155. TEX. PROP. CODE ANN. § 21.012(a) (West 2011).
156. *Id.* § 21.012(b).
157. Hubenak v. San Jacinto Gas Transmission Co., 65 S.W.3d 791, 798 (Tex. App.—Houston [1st Dist.] 2001), *rev'd on other grounds*, 141 S.W.3d 172 (Tex. 2004).
158. TEX. PROP. CODE ANN. § 21.014 (West 2011).
159. *Id.* § 21.042.
160. *Id.* § 21.061.
161. *Id.* § 21.018.
162. *Id.* § 21.047.
163. *Id.*
164. *Id.*
165. *Id.* § 21.021(a)(1).



166

4. Funding

Another benefit to having the TSP build the transmission lines is that the TSP pays the costs of construction for the transmission line project.[167] TSPs are willing to pay the costs of construction because they are permitted to recover a reasonable return on their prudent investment through the rates charged to their customers.[168] The TSP will require a security deposit from the developer to ensure that the developer does not back out of the project, as discussed above in the interconnection Sections, but that deposit must be returned within five days of the wind farm reaching commercial operations.[169] Once the deposit is returned, the financial investment by the wind developer in TSP-funded transmission lines is negligible relative to privately-built lines.

166. The Authors revised the enclosed chart after the passage of Senate Bill ("SB") 18 during the 82nd Legislative Session. SB 18 was effective Sept. 1, 2011 and somewhat impacted the timeline associated with condemnation proceedings.

167. 16 TEX. ADMIN. CODE § 25.192 (1999) (Pub. Util. Comm'n, Transmission Serv. Rates), *available at* http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=2&ch=25&rl=192; *see also id.* § 25.198, *available at* http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=2&ch=25&rl=198.

168. *Id.* § 25.192.

169. *Standard Generation Interconnection Agreement*, *supra* note 54, § 8.3.

C. *Access to Transmission in ERCOT*

For the reasons explained above, it is often preferable for a wind developer for the TSP to construct the transmission facilities needed to connect a new wind farm to the grid. If a CCN is required for the project, the TSP-built line may take longer to construct than a privately-built line would, given the public notices and PUC approval process required for a CCN amendment. However, the eminent domain authority the TSP has and the costs the developer would have to bear for a private line weigh in favor of asking a TSP to construct the facilities. At times, other issues—such as curtailment, tax credits, and the like—may make speed of construction important enough that a developer chooses to privately build a transmission line despite the disadvantages of high initial investment and lack of eminent domain authority, as illustrated by the Horse Hollow line built by NextEra.[170]

D. *Access to Transmission in SPP*

Constructing transmission lines in the SPP also may require a CCN, but the decision to privately construct the lines or allow the TSP to build them is much simpler. The construction of transmission lines in SPP regions does not benefit from the same RPS benefits as do ERCOT CREZ regions. The TSP in an SPP region is usually responsible for the construction of its interconnection facilities and network upgrades, but—as with ERCOT—the IC can opt to be responsible for the construction of the TSP's facilities—in addition to its own—if it so chooses.[171]

If the IC chooses to construct the transmission lines itself, it becomes liable for construction-related claims and any deficiencies discovered during or after construction.[172] Even if the IC chooses to take responsibility for the construction of the facilities, it is obligated to transfer title of the facilities to the TSP by the commercial operation date.[173]

If the IC chooses to have the TSP construct its facilities, the IC must provide the TSP with security for the portion of the costs which the IC is responsible for and has not yet paid.[174] Even though the IC pays for a portion of the TSP's new facilities and system upgrades, it will not own the new facilities and will not receive its investment in these facilities back at any time.[175]

The cost of new facilities allocated to the IC through this process varies greatly. In 2012, for installations over 50 MW, Facilities Studies

170. Cantu, *supra* note 133, at 31.
171. *Tariff*, *supra* note 65, at app. 6, art. 5.2.
172. *Id.*
173. *Id.*
174. *Id.* § 11.5 (Security includes but is not limited to a guarantee, surety bond, or letter of credit.).
175. SMITH ET AL., *supra* note 21, § 7.01.

estimated total project costs to the IC of $26,583 on the low end,[176] to over $76,000,000 on the high end.[177] The fact that the IC is responsible for these potentially substantial costs is one of the biggest differences between the ERCOT and the SPP interconnection processes, and creates a much larger disincentive to have TSPs construct transmission lines than what is typically experienced in ERCOT.

VI. Sale of Wind Energy

After transmission issues have been resolved and the wind farm has connected to the ERCOT or SPP grid, the developer must make arrangements to actually sell the newly produced energy. The sale of wind energy is implemented through a Power Purchase Agreement ("PPA"). The parties to the PPA will typically consist of one single entity that owns all of the wind farm assets acting as the seller, while the buyer is typically a trading unit subsidiary of the utility.[178] The trading unit subsidiary of the utility will usually agree to purchase all of the energy and RECs produced from the wind farm rather than a set amount of energy.[179]

The elements of a PPA are beyond the scope of this Article, but one important issue worth noting regarding the sale of electricity produced by a wind farm is the aspect of curtailment. Even if a wind farm is built, connected to the power grid, and a PPA has been signed, the wind farm cannot necessarily sell all of the electricity that it produces.[180] Due to transmission line congestion, wind intermittency issues, and curtailment orders from FERC or ERCOT, a wind farm may be limited in the amount of energy they are allowed to produce—even if this forces them to fall short of their contractual obligations under a PPA.[181] While curtailment issues have been improving in

176. *Facilities Studies for Generation Interconnection Request Gen-2012-023*, Southwest Power Pool (July 10, 2013), http://sppoasis.spp.org/documents/swpp/transmission/studies/files/2012_Generation_Studies/GEN-2012-023%20Facility%20Study.pdf.

177. *Facilities Studies for Generation Interconnection Request Gen-2012-037*, Southwest Power Pool (Aug. 20, 2013), http://sppoasis.spp.org/documents/swpp/transmission/studies/files/2012_Generation_Studies/GEN-2012-037%20Facility%20Study.pdf.

178. Smith et al., *supra* note 21, § 8.01.

179. *Id.*

180. *See, e.g.,* Ucilia Wang, *Texas Wind Farms Paying People to Take Power*, http://www.greentechmedia.com/articles/read/texas-wind-farms-paying-people-to-take-power-5347 (last visited Jan. 14, 2014) ("[W]ind farms in Texas are generating power they can't sell."); *see also* Felix Mormann, *Enhancing the Investor Appeal of Renewable Energy*, 42 Envtl. L. 681, 707-08 (2012); David J. Hurlbut, *Multistate Decision Making for Renewable Energy and Transmission: An Overview*, 81 U. Colo. L. Rev. 677, 692–93 (2010).

181. *See* TXU Portfolio Mgmt. Co., L.P. v. FPL Energy, LLC, 328 S.W. 3d 580 (Tex. App.—Dallas July 27, 2010, no pet.).

CREZ zones,[182] curtailment and transmission line congestion are certainly issues that a developer should be aware of when siting and building a new wind farm.

VII. Conclusion

The way that Texas has approached the wind energy market is a model for the rest of the country. Texas is leading the United States in wind energy production and has many unique state policies to thank for that statistic. Between Renewable Portfolio Standards, Competitive Renewable Energy Zones and Renewable Energy Credits, the state has built a system that welcomes new wind generation facilities. However, to take advantage of the wind-friendly policies and the strong wind resources that exist in many parts of Texas, developers must consider factors such as formation, siting, leasing, registration, and grid interconnection. Even with all of these considerations, the transmission component of interconnection is a fundamental concern which must be considered by developers; regardless of production capacity, without adequate transmission, wind turbines are of little value.

182. Michael Goggin, *Plummeting Curtailment, More Low Cost Wind: CREZ Transmission Policy Already Reaping Big Returns*, Am. Wind Energy Ass'n (Sept. 6, 2013), http://www.awea.org/Membership/Content.aspx?ItemNumber=5635.