



2019 Wind Energy RFP Bidders Technical Conference



An **AEP** Company

BOUNDLESS ENERGY™

December 10, 2018

Disclaimer

THIS PRESENTATION IS A SUMMARY OF THE KEY FEATURES OF THE DRAFT RFP AND NOT A COMPREHENSIVE REPRESENTATION OF THE RFP ISSUED ON 1/7/2019 OR ITS BIDDING REQUIREMENTS. THE RFP ISSUED ON 1/7/19 OR SUBSEQUENT REVISIONS CONTROLS IN THE EVENT OF ANY CONFLICT BETWEEN THE RFP AND THIS PRESENTATION OR ANY OTHER STATEMENTS MADE BY SWEPCO REPRESENTATIVES.

Agenda

- Purpose
- Introduction to AEP and SWEPCO
- Request for Proposals (RFP) Overview
- Evaluation Process
 - Eligibility & Threshold
 - Detailed Analysis
 - Final Project Selection
- Questions and Answers
 - Q&A Deadline: February 22, 2019
- Email Questions to: SWEPCOWindRFP2019@aep.com

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Purpose

- SWEPCO is seeking qualified Proposals from qualified Bidders for wind energy projects that are physically located in the Southwest Power Pool (SPP) areas of Arkansas, Louisiana, Texas or Oklahoma.
- SWEPCO's 2018 Integrated Resource Plan¹ calls for the addition of cost effective wind resources that qualify for Federal PTCs
 - Diversifies SWEPCO's energy supply portfolio
 - Low-cost known pricing (not subject to fuel price risk)
- Contemporaneous with this RFP, AEPSC is administering an RFP on behalf of SWEPCO affiliate Public Service Company of Oklahoma (PSO)
 - SWEPCO and PSO anticipate that one or more of the wind energy projects selected as a result of their RFPs would be jointly owned by them.
 - A Bidder that submits a Proposal in response to the SWEPCO RFP will also be required to submit an identical proposal in response to the PSO RFP

Note 1: SWEPCO's most recent IRP was filed in December 2018 with the Arkansas Public Service Commission in Case No. 07-011-U and its draft IRP filed with the Louisiana Public Service Commission in Case # I-34715.



Introduction to AEP and SWEPCO

AMERICAN ELECTRIC POWER THE PREMIER REGULATED ENERGY COMPANY



40,000
Miles of Transmission

5.4M
Customers in 11 States

26GW
Owned Generation

18,000+
Employees

\$38B
Rate Base

\$37B
Current Market Capitalization

\$68B
Total Assets

Note: Statistics as of September 30, 2018 except for market capitalization as of November 7, 2018 and rate base as of December 31, 2017

Delivering Clean Energy Resources

AEP's September 30, 2018 Renewable Portfolio, in MW

Hydro, Wind, Solar & Pumped Storage	Owned MW	PPA MW	Total MW
AEP Ohio		209	209
Appalachian Power Company	816	575	1,391
Indiana Michigan Power Company	36	450	486
Public Service Company of Oklahoma		1,137	1,137
Southwestern Electric Power Company		469	469
Competitive Wind, Solar & Hydro	473	175	648
Total	1,325	3,015	4,340



APPROXIMATELY
11,900 MW
OF RENEWABLE GENERATION
INTERCONNECTED ACROSS THE U.S. VIA
AEP'S TRANSMISSION SYSTEM TODAY



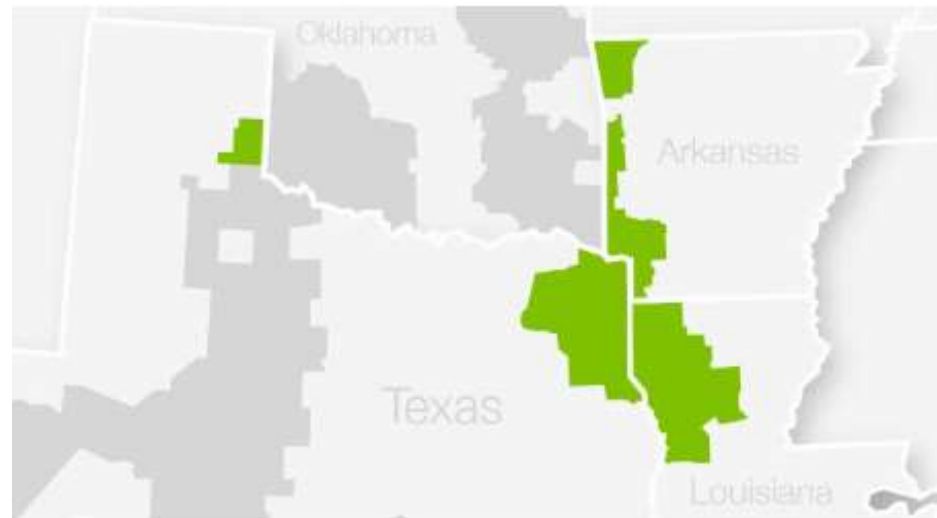
SWEPCO's Wind Portfolio

SWEPCO Wind Portfolio		
Facility Name	Name-Plate Rating	Location: State (County)
Majestic I	79.5 MW	TX (Carson)
High Majestic II	79.6 MW	TX (Carson & Potter)
Flat Ridge 2	31.0 MW	KS (Barber, Harper, Kingman and Sumner)
Flat Ridge 2	77.8 MW	KS (Barber, Harper, Kingman and Sumner)
Canadian Hills	100.5 MW	OK (Canadian)
Canadian Hills	52.8 MW	OK (Canadian)
Canadian Hills	48.0 MW	OK (Canadian)
	469.2 MW	

Further Information on SWEPCO can be viewed at: www.SWEPCO.com

Southwestern Electric Power Company

- Headquarters in Shreveport, LA
- SWEPCO serves approximately 535,000 customers in:
 - Northwestern Louisiana
 - Western Arkansas
 - East Texas
 - The “panhandle” of Texas
- 4,103 miles of transmission lines
- 25,197 miles of distribution lines
- 5,240 MW of generating capacity



Further Information on SWEPCO can be viewed at: www.SWEPCO.com

DRAFT Integrated Resource Plans (IRP)

- SWEPCO and PSO draft IRPs continue to indicate that customers benefit from additional low-cost wind energy resources
 - Customer benefits realized in part by the federal Production Tax Credit

Current DRAFT IRP Wind Nameplate Forecast	
Wind Procurement*	Years 2021 - 2023
SWEPCO	Up to 1,200 MW
PSO	Up to 1,000 MW
Total	Up to 2,200 MW

* Outcomes pending applicable state IRP processes.





RFP Overview

Overview

- SWEPCO is seeking Projects on a turnkey basis in which it individually, or together with PSO, will acquire all of the equity interests in the project company
 - Seller to design, develop, procure, build, construct, commission and start up complete project
 - Proposals that do not meet this criteria, including proposals for renewable energy power purchase agreements, will not be considered by SWEPCO.
- New or existing Projects (including expansions) will qualify to participate
- Project size must be at least 100 MW
- Projects must be located in Arkansas, Louisiana, Texas or Oklahoma.
- New Projects must be placed in service by December 15, 2021 and qualify for at least 80% of the Federal PTC
- Purchase & Sale Agreement (PSA)
 - Payment is at Closing (no progress payments)
- Projects must interconnect to the SPP and have a completed System Impact Study by the Proposal Due Date (March 1, 2019)

Co-Ownership / NTP

- SWEPCO and PSO anticipate evaluating and selecting the same Projects through their respective RFP processes and jointly acquiring the selected Projects if they obtain their respective state regulatory approvals
- SWEPCO's decisions regarding the results of the RFP will be subject to the receipt of regulatory approvals from:
 - Arkansas Public Service Commission
 - Louisiana Public Service Commission
 - Public Utility Commission of Texas
 - Oklahoma Corporation Commission (for joint PSO projects)
 - Federal Energy Regulatory Commission
- Upon obtaining all regulatory approvals, SWEPCO and PSO would issue a notice to proceed (NTP) to move forward with the Project
- SWEPCO reserves the right to proceed with any Project if SWEPCO receives some, but not all, of its regulatory approvals or PSO does not receive its regulatory approval

Wind Resource / Production Estimates

- Each Proposal must have a robust wind resource analysis / study prepared by an independent third party consultant
- During the RFP evaluation process, significant attention will be made with regards to the required independent third party wind energy resource assessment
- Each project configuration must be described in such wind report and include a description of the on-site meteorological campaign (number and height of met towers, remote sensing, LIDAR and/or SODAR, etc.) and be adjusted for the warranted power curve
- Such wind report shall also include P50, P75, P90, P95 and P99 production estimates with 1, 5, 10, 20 and 30 year timeframes
- A Turbine Specific Site Suitability Report from the turbine manufacturer must also accompany each bid
 - GE: Mechanical Loads Analysis (MLA)
 - Siemens: Site Assessment Report (SAR)
 - Vestas: Wind Power Plant Assessment (WPPA)

Congestion and Deliverability

- SWEPCO is seeking Projects that:
 - are not currently experiencing, or anticipated by the Company to experience, significant congestion or deliverability constraints which are likely to result in adverse Project economics, and
 - which (i) Project cost and performance, (ii) current deliverability to the AEP West load zone in the Tulsa area and (iii) potential congestion and opportunity for a generation tie-line that may be constructed by the Company in the future to avoid or alleviate potential transmission congestion, if necessary

DELIVERABILITY IS KEY

Congestion and Deliverability

- Generation projects interconnected in areas with no, or very low, deliverability have significant curtailment and congestion risk
- Generation projects interconnected in areas with higher congestion are of lower value
- Congestion and deliverability assessments will be performed by the Company to contrast projects

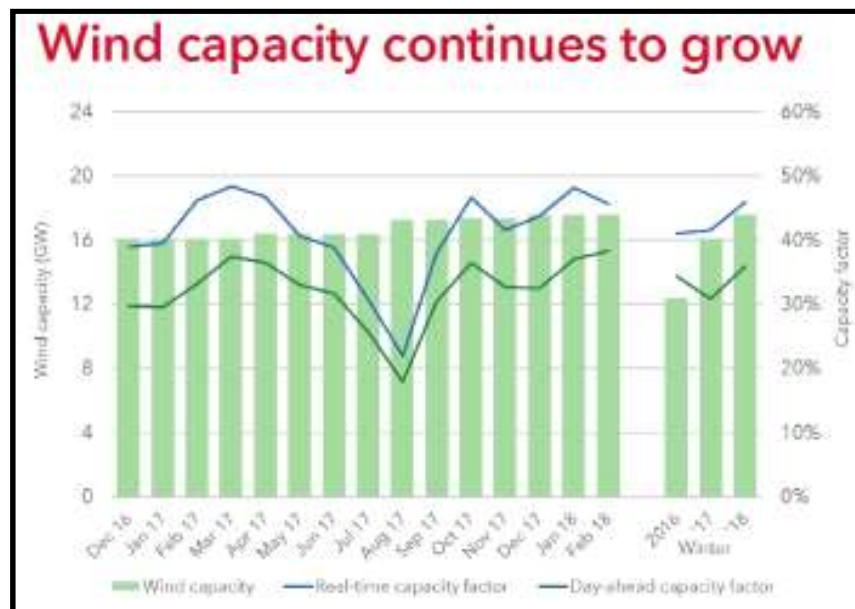
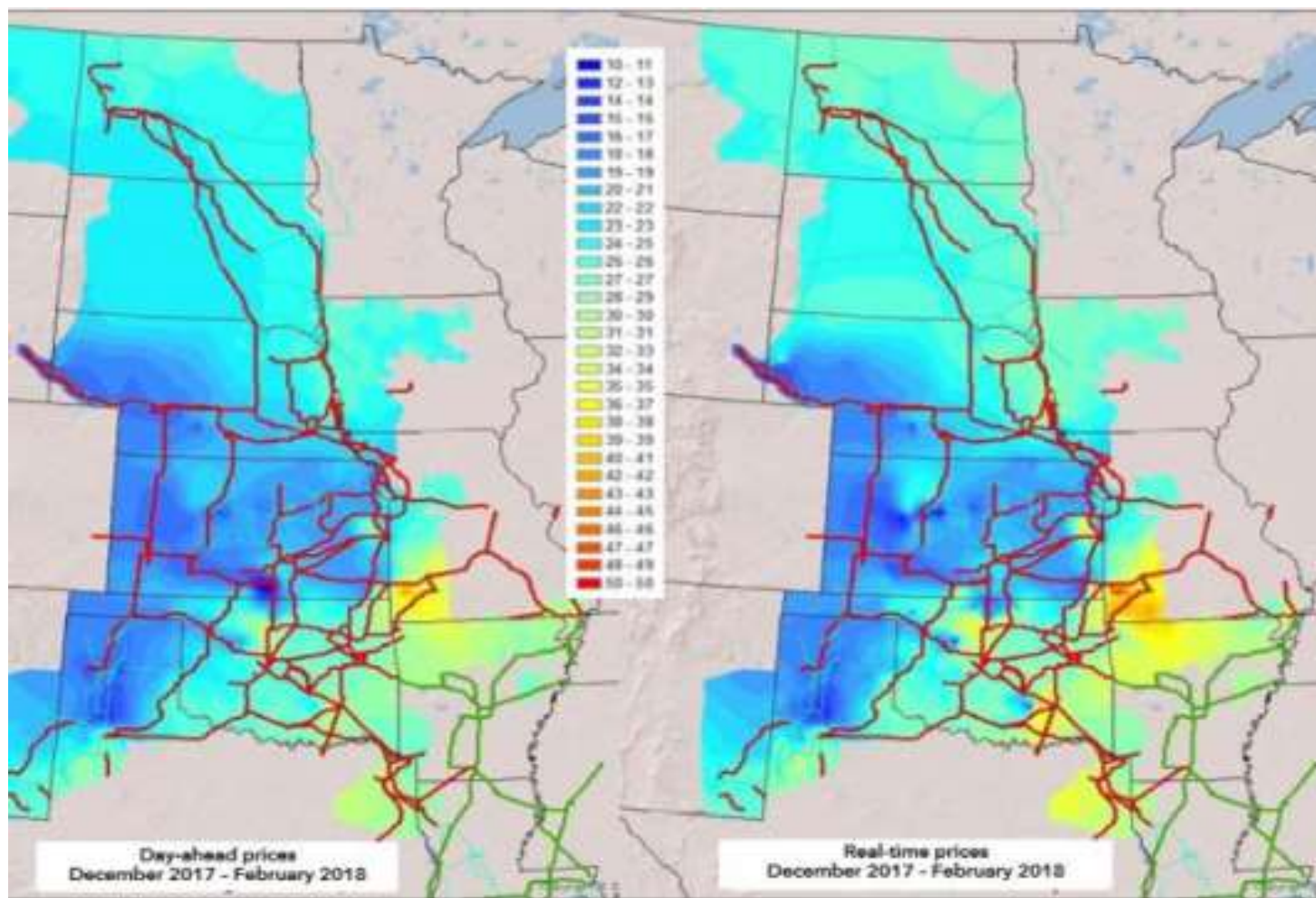


Chart Source: SPP Market Monitoring Unit Winter 2018 Quarterly Report

Congestion is Causing Price Differentials



Resources with higher deliverability and less congestion to the AEP West Load Zone will have higher value

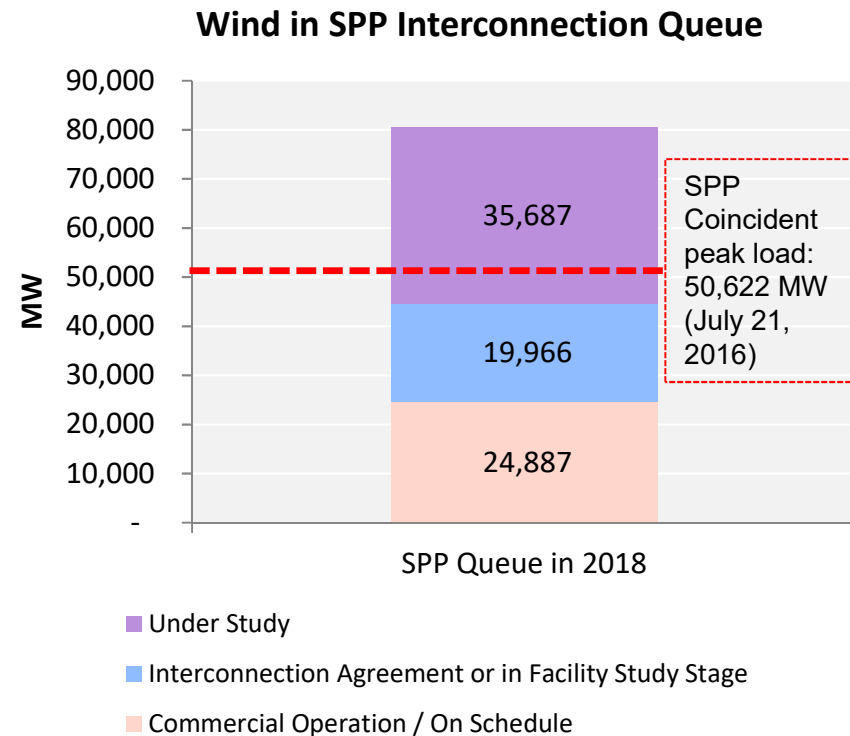
Source: SPP Market Monitoring Unit Winter 2018 Quarterly Report

LMP is Impacted by Congestion

- Locational Marginal Price (LMP)
 - LMP is the market-clearing price for energy at a given Price Node equivalent to the marginal cost of serving demand at the Price Node, while meeting SPP Operating Reserve requirements
 - LMP is calculated using a Security Constrained Economic Dispatch and is the price to provide the least-cost incremental unit of energy at a specific location, while also considering congestion and losses
- Congestion
 - Situation where the desired amount of electricity is unable to flow due to physical limitations (line, bus, storm damages) or regulated limitations, such as Contingency Reserves
 - Congestion impairs the ability to use least-cost electricity to meet demand, and results in a price difference between source and sink

Future Congestion Risk

- Current SPP interconnection queue includes ~80 GW of wind energy resources
- The increased levels of wind integration could result in additional congestion costs
- Other factors influencing congestion may include commodity fuel prices, load growth, future LMPs, transmission system improvements, generation retirements, etc.



Future congestion levels will ultimately be dependent on the specific location and amount of wind interconnected to the SPP Transmission System

RFP Website Structure

- General RFP information posted at Website: www.SWEPCO.com/rfp

The screenshot displays the SWEPCO website interface. At the top, the SWEPCO logo is on the left, and 'Log in', 'Register', a search bar, and the phone number '1-888-216-3523' are on the right. Below this is a blue navigation bar with links: Home, My Account, Safety, Save Energy, News & Info, and Contact Us. A secondary navigation bar includes 'Business To Business With SWEPCO' and 'Energy Provider RFPs', with social media icons (Twitter, Facebook, YouTube, LinkedIn) on the right. The main content area features the heading 'Energy Provider RFPs' and a sub-heading '2019 SWEPCO Wind Energy RFP'. The text below states: 'Southwestern Electric Power Company (SWEPCO), an American Electric Power company, has made an informational filing with the Louisiana Public Service Commission (LPSC) associated with its plans to issue a Request for Proposals (RFP) for wind projects.' The footer contains a dark navigation bar with links: Home, My Account, Safety, Save Money & Energy, Environment, Outages & Problems, News & Information, Builders & Contractors, Business To Business (highlighted), and Contact Us. Below this is a 'CONNECT' section with social media icons and the phone number '1-888-216-3523'. The bottom footer includes the SWEPCO logo, a link to 'Visit AEP.com', and a copyright notice: 'Use of this site constitutes acceptance of the AEP Terms and Conditions. View our Privacy Policy. © 1998-2015 American Electric Power. All Rights Reserved.'

RFP Website Structure

2019 SWEPCO Wind Energy RFP

2019 SWEPCO Wind Energy RFP

Southwestern Electric Power Company (SWEPCO), an American Electric Power company, has made an informational filing with the Louisiana Public Service Commission (LPSC) associated with its plans to issue a Request for Proposals (RFP) for wind projects.

Proposals will be evaluated based on criteria outlined in the final RFP, which is expected to be issued January 7, 2019. To qualify for consideration, projects must be:

- A minimum of 100 MW
- Located within and interconnected to SPP areas of AR, LA, OK and TX
- Qualify for at least 80% of the PTC and be operational by December 15, 2021

Proposals are due March 1, 2019. All proposal responses should be directed to the RFP manager outlined in the RFP documents.

Schedule

Draft RFP Filed with LPSC: October 30, 2018

Bidder's Technical Conference: December 5, 2018*

RFP Issued: January 7, 2019*

Notice of Intent: January 30, 2019

Proposal Due Date: March 1, 2019

Short-List and Negotiation: March – July, 2019

Execute Final Contract(s): July 30, 2019

File for Regulatory Approvals: August 1, 2019

Required Regulatory Approvals: No later than August 1, 2020


Notice to Proceed: No later than August 15, 2020

Commercial Operation Date: No later than December 15, 2021

* The above schedule is subject to review and approval by the LPSC Staff.

Documents

 [Draft 2019 SWEPCO Wind Energy RFP](#)

 Bidder's Technical Conference - The Bidder's Technical Conference presentation is expected to be posted in this location on or before November 15, 2018.

Bidder's Technical Conference

Date: December 5, 2019

Time: TBD

Place: TBD

Additional details to follow

All correspondence via email at: SWEPCOWindRFP2019@aep.com

RFP Timeline (§ 6.1)

RFP Timeline	
Draft RFP Filed with LPSC	October 30, 2018
Bidder's Technical Conference	December 10, 2018
RFP Issued	January 7, 2019*
Notice of Intent	January 30, 2019
Q&A Deadline	February 22, 2019
Proposal Due Date	March 1, 2019
Final Project Selection and Negotiation	March – July, 2019
Execute Final Contract(s)	July 30, 2019
File for Regulatory Approvals	August 1, 2019
Required Regulatory Approvals	No later than August 1, 2020
Notice to Proceed	No later than August 15, 2020
Commercial Operation Date	No later than December 15, 2021

* Subject to review/input from state regulatory commissions

Bid Pricing Structure (§ 4.1 - 4.3)

- Proposal is for a turnkey Project (30-yr minimum life) with closing after Project completion
- Includes a two-year comprehensive warranty from a credit-worthy entity for all Balance of Plant equipment
- The turbines for the Project must be manufactured by GE, Vestas or Siemens-Gamesa
- Each Project must satisfy the AEP Wind Generation Facility Standards (Appendix E)
- Includes post-commercial operation power curve testing and costs, including installation and removal of any temporary test met towers
- Proposal Size:
 - Maximum nameplate rating
 - If possible, in 50-100 MW increments above the 100 MW minimum and up to maximum nameplate rating
- Overall RFP Size:
 - The overall RFP size has not been determined and will be dependent upon market response and value
 - Providing more incremental Proposal options for large projects may allow for the Proposal to be selected in more purchase scenarios

Interconnection (§ 5.1 – 5.3)

- Bidder's project must be connected to SPP Transmission System. All completed studies must be submitted with the Bidder's Proposal
- Project must have obtained a completed SPP Generation Definitive Interconnection System Impact Study by the Proposal Due Date (March 1, 2019) and be in good standing with all SPP Generator Interconnection Procedure requirements
- Project must have the demonstrated ability to achieve commercial operation of any interconnection for the full output of the Project by the Commercial Operation Deadline (December 15, 2021)

Form PSA Term Sheet

- Closing to occur immediately after Project achieves commercial operation
- Buyer: SWEPCO by itself or together with its utility affiliate, PSO
- Buyer to purchase 100% of project company exclusively holding all Project assets
- NTP subject to receipt of all Regulatory Approvals
- PTC qualification for at least 80% PTC
- No progress payments
- Seller to provide full 2-year warranty for all non-turbine scope / BOP
- Seller to provide credit support for all obligations under PSA
- Customary Seller Covenants, Representations and Warranties

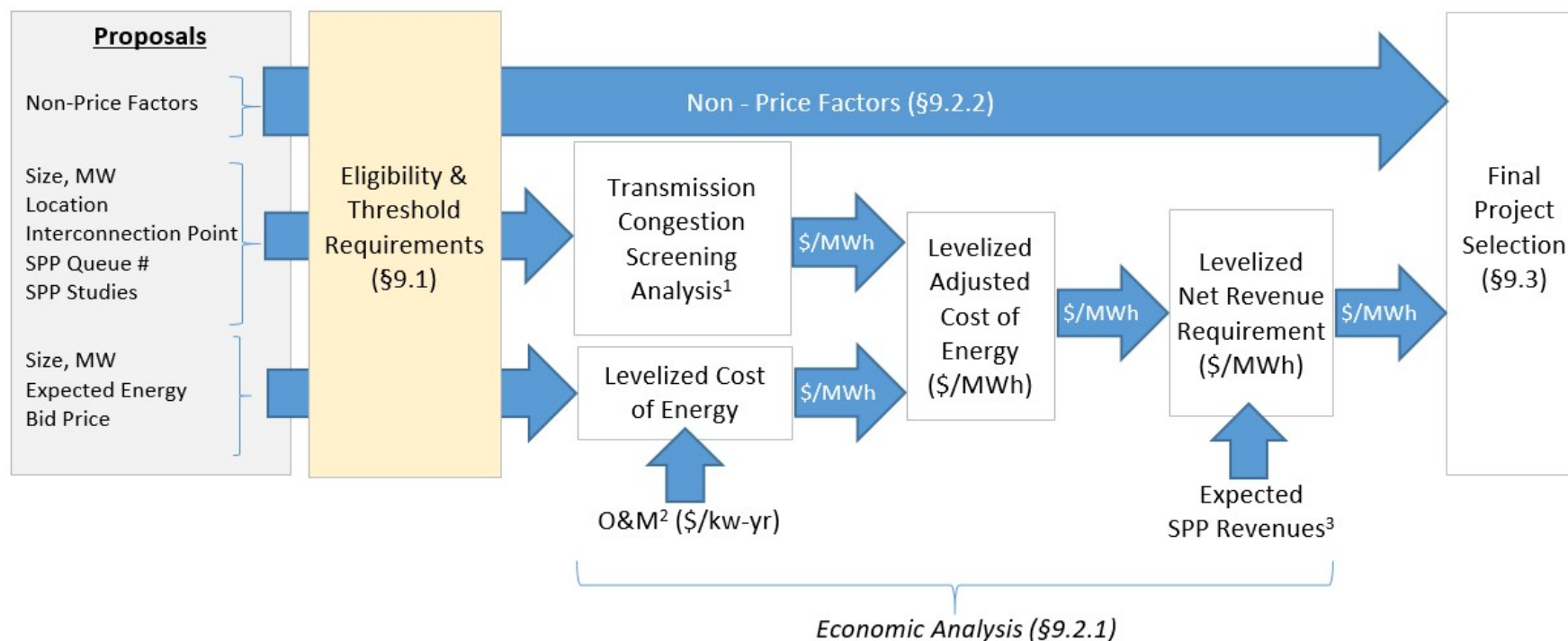
Proposal Content Requirement

- All Proposals must provide concise and complete information as provided in the RFP
- The Bidder is encouraged to provide as much information as possible to aid in the evaluation of the offer
- Appendix G – Proposal Content Check List Sheet
 - Appendix A – Wind Project Summary
 - Appendix B – Bidder's Credit-Related Information
 - Appendix C – Bidder Profile
 - Appendix D – Term Sheet
 - Appendix E – AEP Wind Generation Standard
 - Appendix F – O&M Services Scope of Work
- Existing Projects (additional information: §8.2.1 – 8.2.8)



RFP Proposal Evaluation (Section 9)

Evaluation Process



Note 1: The Transmission Congestion Screening Analysis will evaluate (a) value of transmission congestion into the 345 kV system in the AEP West load zone (Tulsa area) using PROMOD and (b) the risk-adjusted cost effectiveness of various Project groupings including the cost of mitigating or eliminating potential future congestion of the various Projects

Note 2: O&M assumptions will be determined using a combination of 1) industry average costs (e.g. EPRI, Bloomberg), in addition to adjustments for project specific costs (e.g. land lease, royalties, property tax)

Note 3: The Expected SPP Revenues is calculated using Expected Energy and AEPSC's Fundamentals SPP LMP Forecast

Eligibility & Threshold Requirements (§ 9.1)

1. The Project must be physically located in, and interconnected to the SPP, in Arkansas, Louisiana, Texas or Oklahoma;	8. The Bidder has demonstrated substantial Project site control;
2. Bidder must have submitted an identical proposal in the PSO RFP;	9. The Project must be capable of achieving commercial operation by the Commercial Operation Deadline;
3. The new Project will qualify for at least 80% of the PTC;	10. The Bidder must include an independent wind report
4. The Project must be interconnected to SPP and have a completed System Impact Study which remains active in the SPP queue process with the demonstrated ability to achieve commercial operation of any interconnection for the full output of the Project by the Commercial Operation Deadline;	11. The Project must not be located in an area in which deliverability is determined by the Company to be either severely limited or non-deliverable to the AEP West load zone (Tulsa area).
5. The turbines for the Project must be manufactured by GE, Vestas or Siemens-Gamesa;	12. The Project, and a potential generation-tie line that may be constructed by the Company in the future to avoid or alleviate potential transmission congestion, if necessary, must be constructible e.g. no impediments due to wildlife or sovereign tribal issues.
6. The Bidder must have completed the development, construction, financing, and commissioning of a similar-sized wind project in the United States or Canada and/or otherwise have demonstrated appropriate experience;	13. The Bidder's exceptions to the Term Sheet, considered individually or in the aggregate, are minimally acceptable to the Company as a basis for further discussions
7. The Project's minimum name-plate rating is 100 MW;	

ONLY projects that meet the Eligibility & Threshold Requirements will move to the "Detailed Analysis" phase of the RFP (see next page)

Detailed Analysis

Economic Analysis (90%)

- LCOE (levelized cost of energy)
- Transmission Congestion (the value of Transmission Congestion as determined by the Company's Transmission Congestion Screening Analysis)
- LACOE (LCOE plus Transmission Congestion)
- LNRR (Levelized Net Revenue Requirement) = Net SPP Revenues - LACOE

Non-Price Factors (10%)

- impact on wildlife, the environment and identified cultural resources;
- location on or proximity to tribal or government lands;
- exceptions to the AEP Wind Generation Facility Standards (Appendix E);
- the Bidder's exceptions to the PSA Term Sheet (Appendix D);
- the scope and terms of the O&M services proposal (if applicable);
- the development status of the Project
- operating history of other similar wind generation facilities
- credentials of independent consultant (Wind Resource Analysis/Study)

Final Selection

Final Project Selection.

- Based upon the results of the Economic Analysis (90%) and the Non-Price Factor Analysis (10%) described previously, the Company will determine which Projects will be included in the Final Project Selection
- The Company will notify Bidders whose Proposals are included in the Final Project Selection and commence the negotiation of definitive agreements



Questions and Answers

All questions during the RFP should be submitted to:
SWEPCOWindRFP2019@aep.com



The End