

# ELLA D. ROSE, PE, MBA

## Project Manager, Renewable Energy



Ella is a Project Manager at Burns & McDonnell in the Renewable Energy group. She has experience in utility-scale wind, solar, and battery storage development, evaluation, and support. Her experience includes owner's engineer support, decommissioning studies, due diligence assessments, contract negotiation support, siting studies, wind turbine warranty management, and balance-of-plant and turbine supply procurement, request for proposal services and bid evaluations.

Ella has an undergraduate degree in Mechanical Engineering with a focus on energy generation including renewables and nuclear; and a Master of Business Administration degree with an emphasis in Finance and International Business. She is a registered professional engineer in Montana and Missouri. Ella's personal experience includes work at airfields, a private pilot's license, extensive volunteer experience within the community and abroad, and a lifetime of experiences that drives her fervent ambition toward sustainable practices.

### EDUCATION

- ▶ BS, Mechanical Engineering
- ▶ MBA, Finance, International Bus.

### REGISTRATIONS

- ▶ Professional Engineer (MT, MO)

**7** YEARS WITH BURNS & MCDONNELL

**7** YEARS OF EXPERIENCE

### OWNER'S ENGINEER SUPPORT

#### Limestone Wind Project | ENGIE North America

Texas | 2021 - current

**Project Manager.** Owner's Engineer support for the 300MW wind energy project including. Lead project team to provide design review for every aspect of the project and technical support through the construction process.

#### Multiple Wind and Solar Energy Projects | Xcel Energy Inc.

Adrian, Minnesota | Dec 2020 - current

**Project Manager.** Owner's Engineer Support for several wind and solar energy projects under construction and four wind repower projects in development. Primary support for the wind repower projects including driving engineering decisions, managing third party design contracts with internal personnel, contract review support, RFP development for ADLS and evaluation, supporting county and state-level permitting processes, participate in routine project calls, develop full renewable (wind, solar PV, BESS) scope and specification for future projects, and support any additional technical support as required to drive the projects forward. Owner's Engineer Support for several wind and solar energy projects under construction and four wind repower projects in development. Primary support for the wind repower projects including driving engineering decisions, managing third party design contracts with internal personnel, contract review support, RFP development for ADLS and evaluation, supporting county and state-level permitting processes, participate in routine project calls, develop full renewable (wind, solar PV, BESS) scope and specification for future projects, and support any additional technical support as required to drive the projects forward.

#### Iron Star Wind Project | ENGIE North America

Kansas | Jun 2020 - 2021

**Project Manager.** Owner's Engineer support for the 300MW wind energy project. Provided design review for every aspect of the project and technical support through the construction process.



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## **Energía Sierra Juarez 2 Wind Project | IEnova**

Baja California, Mexico | 2019 - 2021

**Project Manager.** Owner's Engineer support for the 150MW wind energy expansion project including microsite analysis and site optimization. Supported the development of the EPC RFP and provided support during bidder selection and contract negotiation. Provided design review for every aspect of the project and technical support through the construction process.

## **Multiple Wind Projects | ENGIE North America**

Multiple US Locations | 2019 - 2020

**Project Manager.** Owner's Engineer support for four wind energy projects totaling around 1,100 MW. Provided design review for every aspect of the project and technical support through the construction process.

## **Multiple Wind Projects | Empire District Electric Company**

Missouri and Kansas | 2019 - 2021

**Project Manager / Lead Consultant.** Provided Owner's Engineer support for three wind projects totaling around 300 MW in Missouri and Kansas. Support included engineering design review of all aspects of the project, construction related support, and close-out activities including engineering certification of each project for state public utility commission requirements.

## **Diamond Spring Wind Project | ALLETE Clean Energy, Inc.**

Oklahoma | 2019 - 2020

**Project Manager.** Owner's Engineer support for the 300MW wind energy project including microsite analysis and site optimization. Supported the development of the EPC RFP, issued and managed the RFP process, and provided support during bidder selection and contract negotiation. Provided design review for every aspect of the project and technical support through the construction process.

## **South Peak Wind Project | ALLETE Clean Energy, Inc.**

Judith Gap, Montana | 2017 - 2018

**Project Manager / Lead Consultant.** Owner's Engineer support for the 80MW wind energy project including microsite analysis and site optimization. Supported the development of the EPC RFP, issued and managed the RFP process, and provided support during bidder selection and contract negotiation. Provided design review for every aspect of the project, technical support through the construction process, and on-site inspection of wind turbine foundation installation.

## **Thunder Spirit II Wind Project | ALLETE Clean Energy**

North Dakota | 2017 - 2018

**Analyst.** Owner's Engineer support for the 48MW wind energy project. Tasks include participation in routine project construction meetings and design review and support.

## **Auwahi Wind Farm Turbine Failure | Sempra US Gas & Power**

Hawaii | 2016-2017

**Analyst.** Provide root cause analysis Support for turbine failure to determine the failure mode for prevention of future failures across the project. Included manufacturing quality reviews, metallurgical analysis reviews, design reviews and other applicable support. Further support to evaluate mitigation plans and replacement of wind turbine, including analysis of bids for the logistics of the turbine transport to the island.



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## Wind Ordinance Support | Washington Township

Missouri | 2016

**Analyst.** Provided technical advisement pertaining to new wind project ordinances the Township was implementing.

## Condon Wind Farm | ALLETE Clean Energy

Oregon | 2015- 2016

**Analyst.** Provide end of warranty claim and power curve warranty claim against the project's wind turbine manufacturer and the service and maintenance provider. Roles included evaluation of monthly operating reports, information gathering and organizing for analysis, support for early warranty claim discussions, preparation of memos to both parties, review of project contracts, analysis of inspection reports, valuation of claim items, and negotiation support. Estimated value of this claim is around \$18M.

## Thunder Spirit Wind Farm | ALLETE Clean Energy

North Dakota | 2015

**Analyst.** Develop wind turbine foundation inspection criteria for the Project Manager to inspect foundations on-site for the 107.5MW wind energy project.

## Energia Sierra Juarez 1 | Sempra International

Baja California, Mexico | 2015

**Analyst.** Research into a construction flaw for the project in order to support a solution or mitigation to the flaw for the newly constructed 156MW wind energy project.

## Chinchayote and San Marcos II Wind Farms | Grupo Terra

Choluteca, Honduras | 2015

**Analyst.** Primary duties included review of three wind turbine technologies proposed by prospective bidders in response to a request for proposal for the proposed 45-megawatt Chinchayote wind farm and the 12MW expansion to the existing San Marcos wind farm. This review included assessment of each technology to capture the most energy in the area most efficiently, integration into the existing wind energy projects, assessment of the turbine components and their associated manufacturers, as well as a review of the turbine design certification and IEC classification.

## Various Wind Farms | ALLETE Clean Energy

United States | 2017-2018

**Analyst.** Decommissioning and cost obligation estimates for multiple operating wind energy facilities across the United States. Tasks include advising decommissioning team regarding the wind farm operational and physical characteristics for the estimating of the cost to decommission the facilities, as part of the county or state requirements for wind energy facilities.

## REQUEST FOR PROPOSALS DEVELOPMENT AND SUPPORT

### Luning Solar Expansion| Liberty Utilities (CalPeco Electric) LLC

Nevada | 2020 - 2021

**Lead Consultant.** Develop all aspects of an RFP for the 50MW Solar PV plus BESS Luning solar expansion project including documentation, issue and manage the RFP process, and provide evaluation of bidders as well as continued support through required state processes.



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## **Energía Sierra Juarez 2 Wind Project | IEnova**

Baja California, Mexico | 2018

**Analyst.** Turbine supply RFP support including review of contracts and proposals; assistance with evaluating each bidder's commercial and technical offerings; assistance with the negotiating process and final issuance of a turbine supply contract to the successful bidder.

## **Wind Build-Transfer RFP Support | Empire District Electric Company**

Midwest | 2017-2018

**Analyst.** Support for the RFP process for the procurement of up to 800 MW of wind energy projects under a build-transfer agreement. Preparation of the materials for the RFP process including development of scope and specifications, supporting attachments, instructions to bidders, and schedule of commercial terms. Issue and management of the RFP and assistance with evaluating each bidder's commercial and technical offerings. Support for the RFP process for the procurement of up to 800 MW of wind energy projects under a build-transfer agreement. Preparation of the materials for the RFP process including development of scope and specifications, supporting attachments, instructions to bidders, and schedule of commercial terms. Issue and management of the RFP and assistance with evaluating each bidder's commercial and technical offerings.

## **Thunder Spirit II and Clean Energy 1 Wind Projects | ALLETE Clean Energy**

North Dakota | 2017-2018

**Analyst.** Balance of plant EPC RFP preparation, management and review of contracts and proposals; assistance with evaluating each bidder's commercial offerings; and assistance with the negotiating process and final issuance of a balance of plant contract to the successful bidder.

## **Flat Ridge 3/4 Wind Projects | Sempra Renewables**

Oklahoma | 2017

**Analyst.** Balance of plant EPC RFP preparation, management and review of contracts and proposals; assistance with evaluating each bidder's commercial offerings; and assistance with the negotiating process and final issuance of a balance of plant contract to the successful bidder.

## **Black Oak-Getty Wind Farm | Sempra Renewables**

Minnesota | 2015

Balance of plant EPC RFP preparation, management and review of contracts and proposals; assistance with evaluating each bidder's commercial offerings; and assistance with the negotiating process and final issuance of a balance of plant contract to the successful bidder.

## **DUE DILIGENCE REVIEWS**

### **Portfolio Due Diligence | Confidential Client**

Columbus, Ohio | 2018 - 2019

**Lead analyst.** Due diligence of a portfolio of seven operating and four proposed wind energy projects for potential acquisition. Support included on-site engineering design and operational history review and risk analysis for each project in the portfolio.



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## South Peak Wind | ALLETE Clean Energy

Montana | 2017

**Analyst.** Due diligence support for the prospective wind site in central Montana. Primary duties included a fatal flaw analysis on the site's environmental and permitting, wind resource, turbine layout, state and local regulation, and interconnection status.

## Three Winds Portfolio | ALLETE Clean Energy

California & Wyoming | 2016

**Analyst.** Due diligence support of a three-project wind energy portfolio that included approximately 150MWs. This review was targeted to assist the client and the client's financier to assess the risk, useful life, and projected generation for a possible ownership acquisition of the project.

## Armenia Mountain Wind Farm | ALLETE Clean Energy

Pennsylvania | 2015

**Analyst.** Due diligence support for the existing 100.5-megawatt wind farm in Pennsylvania. This review was targeted to assist the client and the client's financier to assess the risk, useful life, and projected generation in order to refinance the project's primary debt.

## Lordstown Energy Center | Perennial Power Holdings

Ohio | 2015

**Analyst.** for the due diligence review for prospected purchase of an 800-megawatt combined cycle gas plant. Roles included management of other team members, research and collection of relative information regarding transmission access and public need, environmental compliance, and state permitting.

## Luverne Northfield Extension Wind Farm | TradeWind Energy

North Dakota | 2015

**Analyst.** Due diligence support for the Luverne Northfield Extension Wind Farm, a second phase for the existing Luverne Northfield Wind Farm. This review focused on interconnection possibilities, environmental siting issues, as well as project viability for a financial partner via a power purchase agreement or a Build Transfer proposal.

## Rough Rider Wind Farm | TradeWind Energy

North Dakota | 2015

**Analyst.** Due diligence support for the prospective wind site near Stanley, North Dakota. Primary duties included a fatal flaw analysis on the site's environmental and permitting, wind resource, state and local regulation, interconnection, and financial standing.

## Iron Road Wind Farm | TradeWind Energy

Oklahoma | 2015

**Analyst.** Due diligence support for the prospective 100MW wind energy site in Latimer County, North Dakota. Primary duties included a fatal flaw analysis on the site's environmental and permitting, wind resource, state and local regulation, interconnection, and financial standing.



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## DEVELOPMENT SUPPORT

### Annual Energy Production Analysis | MidAmerican Energy

Iowa | 2017-current

**Lead Analyst.** Performed analysis for net capacity factor for multiple sites and multiple turbine models. Data was obtained from collection, cleaned, and analyzed and annual energy production estimated based on MCP analysis. Losses were estimated and net capacity factor computed for each wind turbine model at each site.

### Manufacturing Facility Site Selection Study | Confidential Commercial Client

Midwest, US | 2017

**Analyst.** Site selection support of a new manufacturing and distribution facility to be located in the Midwest. The scope of services included an infrastructure and utility screening evaluation, geographic information system (GIS) analyses and identification and evaluation of dozens of preliminary sites. A master list of development criteria was developed with each criterion assigned a weight for its relevant importance to the project. A scoring matrix was developed and a quantitative ranking process was deployed to screen and rank the sites into a short list of sites for the client to consider carrying forward for advanced development activities.

### Telecommunications Strategy Development | Duke Energy

Duke Service Territory | 2016-2017

**Analyst.** Development of a communications strategy roadmap for various wireline and wireless carriers that operate within or near Duke's service territory. Research and collected carrier data through a request for information process to analyze timelines for when legacy TDM and copper-based networks would be migrated to fiber and IP-based networks. Researched the availability of services on a carrier-by-carrier basis, technologies utilized by each carrier, generational services and timelines for transitions to 4G and 5G services, service levels offered and industry trends and opportunities for partnership.

### Net Buildable Area Studies | Calpine Corporation

Various Locations, US | 2016-2018

**Analyst.** Provide buildable area analysis of multiple prospective wind energy sites. Included a review of the applicable state and county ordinances, typical wind setbacks, and site-specific characteristics. Included mapping and GIS support coordination to produce usable files for siting efforts.

### Solar Siting | Kruger Energy

Southeast, US | 2016

**Analyst.** Siting support for a solar energy project. This study included assessment of the transmission capacity in the area based on transfer capability analyses and queued projects in the vicinity. Analysis included identifying site qualities and combining those qualities into a quantifiable scoring matrix to identify the most preferential sites to target for further study.

### Ojocaliente Wind Siting | Agua de Mexico

Zacatecas, Mexico | 2015

**Analyst.** Support for an initial wind energy assessment in Zacatecas, Mexico. This study included assessment of the wind energy in the area based on publicly available data. Analysis gives a preliminary look at seasonal and average wind speed, direction, and wind speed distribution.



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## Michigan Thumb Wind Siting | Calpine Corporation

Michigan | 2015

**Analyst.** Support for an initial wind energy assessment for several select sites in the Michigan “thumb” area. This study included assessment of the wind energy in the area based on existing meteorological equipment and publicly available data. Study also included fatal flaw analysis for each prospective site especially for environmental, state and local permitting, public opinion, interconnection availability, and other siting restrictions in the area.

## Montgomery and Shenandoah Wind Farms | Calpine Corporation

Indiana | 2015

**Analyst.** Siting support for two proposed wind energy sites in central Indiana. Primary duties included GIS support for preliminary site layout design including consideration of setback requirements, proximity to substations, and interference with existing structures.

## SAFE HARBOR COMPONENT INSPECTIONS

### Safe Harbor Wind Turbine Inspections | Tenaska

Colorado | 2017

**Project Manager.** Provide on-site inspections for Client's inventory of safe harbor wind turbine components located at laydown yards in Colorado. Confirm component serial numbers, location, storage condition, and routine maintenance condition and review of maintenance manuals, contractual maintenance agreements, and physical inspection and documentation of the conditions of the equipment stored on site to support the confirmation of components to qualify for federal tax credits.

### Safe Harbor Wind Turbine Inspections | Leeward Renewable Energy

Kansas | 2017-2018

**Lead Consultant.** Provide on-site inspections and audit of several safe harbor wind turbine components located at a laydown yard in Garden City, Kansas. Tasks include review of maintenance manuals, contractual rental and maintenance agreements, and physical inspection and documentation of the conditions of the equipment stored on site.

### Safe Harbor Wind Turbine Inspections (Ongoing Support) | ALLETE Clean Energy

Kansas & Minnesota | 2016 - current

**Lead Consultant.** Provide continuous on-site inspections for Client's inventory of safe harbor wind turbine components located at laydown yards in Garden City, Kansas and Duluth, Minnesota. Confirm component serial numbers, location, storage condition, and provide a review of maintenance manuals, contractual rental and maintenance agreements, and physical inspection and documentation of the conditions of the equipment stored on site.. Perform routine audits of components at site and of maintenance documentation.

### Safe Harbor Wind Turbine Inspections | Tenaska

Texas & Colorado | 2017

**Lead Consultant.** Provide on-site inspections for Client's inventory of safe harbor wind turbine components located at laydown yards in Texas and Colorado. Confirm component serial numbers, location, storage condition, and routine maintenance condition and review of maintenance manuals, contractual maintenance agreements, and physical inspection and



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documentation of the conditions of the equipment stored on site to support the confirmation of components to qualify for federal tax credits.

## OPERATIONAL SUPPORT

### Armenia Mountain Wind Project, Going Concern Letter | ALLETE Clean Energy, Inc.

Pennsylvania | 2019 - 2019

**Project Manager.** Provide analysis of the existing wind project and provide professional opinion on the ability for the project to continue to operate into the future term in question. Review included project engineering design, operating data, maintenance logs, downtime, and operational budgets.

### Operational Energy Assessment | TYR Energy, Inc.

Round Lake, Minnesota | Jul 2019 - Sep 2019

**Project Manager.** Provide operational energy assessment for existing wind energy project. Projections estimated based on past wind data from the project since operation to adjust expected energy production value estimates for the project.

## PRELIMINARY DESIGN

### Azure Sky Wind Project, Preliminary Collection Design | TradeWind Energy, Inc.

Texas | Feb 2020 - May 2020

**Lead Consultant.** Develop 30% collection design for a proposed wind project including electrical analyses, cable selection, and wind turbine layout and routing considerations.

