

Invenergy
Transmission

Pre-Qualification for PJM Designated Entity Status

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1.0 Name and address of the entity including a point of contact

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2.0 About Invernergy and Technical and Engineering Qualifications

Introduction and Company Overview

Invernergy Transmission LLC is submitting this application for Pre-Qualification as a Designated Entity in PJM as described in the PJM Operating Agreement, Schedule 6, Section 1.5.8(a). Invernergy Transmission LLC is a subsidiary of Invernergy Renewables LLC and will benefit from the experienced team across the Invernergy affiliate companies described below.

Invernergy’s name is synonymous with innovation in an industry undergoing transformation. As the world’s largest privately held developer and operator of renewable power, Invernergy works with leading utilities, global brands and public sector partners to take energy infrastructure projects from drawing board to reality. Invernergy’s 1,700 employees are united by a vision to be innovators building a sustainable world. Headquartered in Chicago, Illinois, the Company has successfully developed over 30 gigawatts of power projects across the Americas, Europe and Asia. Invernergy projects enable a more sustainable, flexible, and resilient grid. Below shows the operating, under construction and contracted projects Invernergy has developed across four core technologies since its founding in 2001, as well as its global company presence today.

Totals

191 projects
30,255 MW



Wind

110 projects
17,600 MW



Solar

50 projects
6,205 MW



Natural Gas

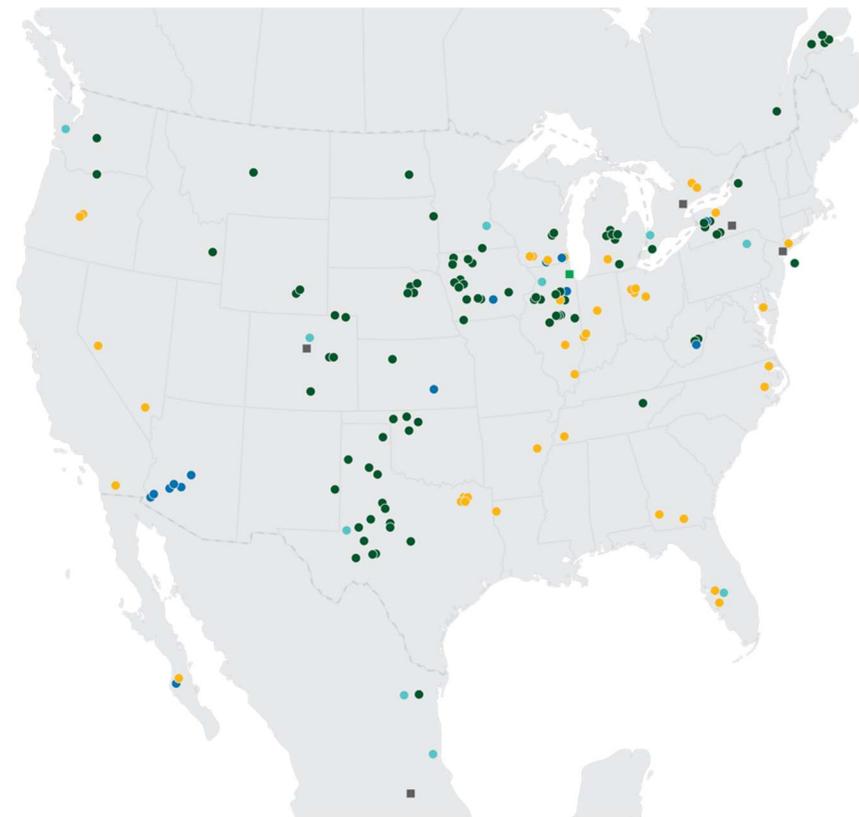
13 projects
5,964 MW



Storage

18 projects
1,611 MWh

North America



Latin America



Poland



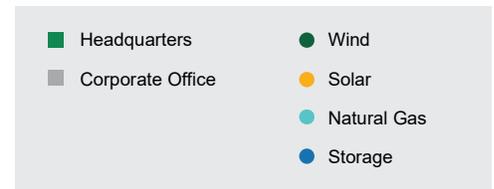
Scotland



Japan



Projects in operation, in construction & contracted



Sustainable Solutions Platform

Invenergy's diversified business serves broad market needs while taking on the world's biggest sustainability challenges.



Invenergy

Through its core business, Invenergy develops, owns and operates large-scale sustainable energy generation and storage facilities in the Americas, Europe, and Asia.



Invenergy Services

Invenergy Services provides operations and asset management for Invenergy-developed and third party-owned energy assets. With 16,412 MW of assets under management, Invenergy Services' owner's mindset drives its award-winning approach.



Invenergy Transmission

Invenergy has developed over 4,100 miles of transmission and distribution infrastructure to bring clean energy to market. Invenergy Transmission is currently advancing several HVDC transmission line developments throughout the Americas.



Invenergy Clean Water

Invenergy is tackling the next sustainability challenge with an emerging water infrastructure and desalination business.



As a founding partner of Energize Ventures, Invenergy is investing in digital solutions that drive affordability, reliability and security for energy and industry.

Solutions Tailored to Customer Needs

Invenergy's unique combination of full-service solutions, end-to-end execution ability, and relationship-driven approach has won it a reputation for meeting customer's needs with high-value projects delivered on time and on budget. Traditionally, Invenergy's approach has been to develop, build, own and operate projects; but the Company provides a full range of services and flexible structures to serve utilities, corporate buyers, asset owners, and financial institutions.

Invenergy also has deep technical expertise at every step of the project lifecycle. This is rooted in an engineering culture that recognizes the critical importance of project aspects like system design, transmission, and interconnection, which others are often comfortable outsourcing. End-to-end, fully integrated capabilities allow Invenergy to serve as the single entity responsible for project development, construction, financing, and operations, with seamless execution from one phase to the next.

End-to-End, Fully Integrated Capabilities

- Project Development
- Permitting
- Engineering
- Transmission
- Interconnection
- Finance
- Project Construction
- Asset Management
- Operations & Maintenance

Invenergy's involvement in projects from early development through operations ultimately benefits customers through higher project efficiency and quality. Invenergy's operations group constantly reports on how the latest equipment and system configurations perform under real-life conditions in the field, which immediately shapes procurement and design considerations by Invenergy's development, engineering and construction groups working on pipeline projects. This keeps Invenergy at the forefront of project design and construction practices and methods.

In addition to the services and capabilities it offers, Invenergy embraces a relationship-driven approach to business, based on the belief that a project can only be considered successful if all parties are engaged and satisfied. Customers, EPC contractors, and financial institutions who have choices about the power sector companies they work with consider Invenergy a preferred partner. That is why Invenergy has successfully completed over \$48 billion in transactions over the past two decades and over fifty percent of its projects represent repeat business.

Transmission & Interconnection

While some others outsource transmission and interconnection to EPC contractors, Invenergy views electrical infrastructure as critical to project success and takes a hands-on, integrated approach to transmission design and engineering. Since 2001, Invenergy has built all required transmission and distribution lines, generator step-up transformers (“GSUs”) and substations for its facilities in CAISO, ERCOT, MISO, NYISO, PJM, WECC, SERC, SPP, and Canada. Invenergy developed, permitted and constructed this infrastructure across varying terrains, state and local jurisdictions, and environmental and regulatory conditions. Invenergy’s dedicated transmission business, Invenergy Transmission, is currently developing several HVDC transmission line projects throughout the Americas.

Transmission Development Experience

Transmission and Distribution Lines



4,199 miles

Substations



88 substations

Generator Step-Up Transformers



96 GSUs

Pad Mount Transformers



5,323 units

3.0 Development, Construction, Maintenance and Operation of Transmission Facilities

Demonstrated experience of the entity or its affiliate, partner or parent company to develop, construct, maintain and operate transmission facilities, including a list or other evidence of transmission facilities previously developed regarding construction, maintenance or operation of transmission facilities both inside and outside the PJM region

The following ten transmission facilities have been developed, constructed, maintained, or operated by Invenergy. These are part of a larger list of transmission facilities that Invenergy has placed in service.

1. **Stony Creek 230kV substation:** Located in Wyoming County, New York and in NYSEG's service area (NYISO), this is a 230kV substation in a 3-breaker ring bus configuration that was developed by Invenergy to interconnect the Stony Creek Wind 94 MW Project in Upstate NY, via the option to build in the interconnection agreement. Ownership was transferred to NYSEG, which currently operates the facility. The in-service date was in 2014 and the facility is currently in operation.
2. **Prairie Breeze 230kV substation:** Located in Madison County, Nebraska and in the Nebraska Public Power District (NPPD) service area (SPP), this is a 230kV award winning substation in a breaker and a half configuration that was developed by Invenergy to interconnect the Prairie Breeze 312 MW Wind Project, via the option to build in the interconnection agreement. Ownership was transferred to NPPD, which currently operates the facility. The in-service date was in 2014 and the facility is currently in operation.
3. **Hardin 345kV substation:** Located in Hardin County, Ohio and in AEP's service area (PJM), this is a 345kV substation in a 3-breaker ring bus configuration that was developed by Invenergy to interconnect the Hardin Wind 300 MW wind Project in Ohio via the option to build in the interconnection service agreement. Ownership was transferred to AEP, which currently operates the facility. The in-service date was in 2018 and the facility is currently in operation.
4. **Shoreham 69kV substation:** Located in Suffolk County, New York and in LIPA's service area (NYISO), this is a 69kV substation in a 3-breaker single bus configuration that was developed by Invenergy to interconnect the Shoreham Solar 24.9 MW Project in Long Island, via the option to build in the interconnection agreement. Ownership was transferred to LIPA, which currently operates the facility. The in-service date was in 2018 and the facility is currently in operation.
5. **Prairie Breeze 230kV transmission line:** Located in Madison County, Nebraska, this is a 22-mile single circuit 230kV transmission line that was constructed by Invenergy to interconnect the Prairie Breeze 312 MW Wind Project to the NPPD system (SPP). The in-service date was in 2014 and the facility is currently operated by NPPD. The project was constructed by Invenergy and transferred to NPPD via a joint transfer and development agreement.
6. **Miami 345kV transmission line:** Located in Gray County, Texas, this is a 23.3-mile single circuit 345kV transmission line that was constructed by Invenergy to interconnect the Miami 300 MW Wind Project to the Cross Texas Transmission system (ERCOT). The in-service date was in 2015 and the facility is currently operated by Invenergy.
7. **Santa Rita 345kV transmission line:** Located in Crockett County, Texas, this is a 20.1-mile single circuit 345kV transmission line that was constructed by Invenergy to interconnect the Santa Rita 300 MW Wind Project to the Lower Colorado River Authority's system (ERCOT). The in-service date was in 2018 and the facility is currently operated by Invenergy.

8. Wake 345kV transmission line: Located in Dickens County, Texas, this is a 13.6-mile single circuit 345kV transmission line that was constructed by Invenergy to interconnect the Wake Wind 257 MW Wind Project to the Wind Energy Transmission Texas system (ERCOT). The in-service date was in 2015 and the facility is currently operated by Invenergy.

9. Traverse 345 kV transmission line: Located in Custer, Blaine, and Kingfisher Counties in Oklahoma, this is a 84 mile single circuit 345 kV transmission line that was constructed by Invenergy to the 999 MW Traverse Wind Energy Center to interconnect to the system. The in-service date was December 7, 2021, and the facility is currently operated by Invenergy.

10. Number Three Wind 115 kV substation: Located in Lewiston County, New York, this is a 115 kV substation constructed by Invenergy via the option to build interconnection agreement to interconnect the Number Three Wind Project to the NYISO system. The projected in-service date for the project is December 2022 and the facility will be operated by Invenergy.

4.0 Construction, Maintenance and Operating Standards

Previous record of the entity or its affiliate, partner or parent company to adhere to construction, maintenance and operating standards

Because the core of Invenergy's business model is project development and long-term ownership and operations, the Company takes great care to ensure the longevity, reliability and cost-effectiveness of its assets, especially transmission and interconnection infrastructure for its projects. Since 2001, Invenergy has built all required transmission and distribution lines, generator step-up transformers ("GSUs") and substations for the projects listed in section 3 and all its facilities in CAISO, ERCOT, MISO, NYISO, PJM, WECC, SERC, SPP, Canada, and in the TVA territory. Invenergy developed, permitted, and constructed this infrastructure across various terrains, state, and local jurisdictions and in vastly differing environmental and regulatory conditions.

Invenergy has contracted for construction and engineering of transmission facilities in a variety of manners ranging from executing full EPC contracts to executing individual specialty contracts with engineering, construction, and supply firms. Each project is assessed on a basis of risk and economics with the chosen means of execution based upon the most favorable overall result for the project. These contracts are executed and managed by Invenergy project management and engineering teams based in Chicago and Invenergy site management teams based in the field. These Invenergy teams include both civil and electrical engineers with the technical expertise to oversee third party engineering consultants licensed in the appropriate state who are contracted as the Engineer of Record to design transmission facilities and issue drawings for construction.

5.0 Standardized Construction, Maintenance and Operating Practices

Capability of the entity or its affiliate, partner or parent company to adhere to standardized construction, maintenance and operating practices

As described for the projects listed in Section 3 and all Invenergy projects, Invenergy and all affiliates and partners adhere to standardized construction, maintenance, and operating practices. Invenergy maintains its own library of technical specifications to ensure transmission facilities are designed in accordance with robust, standardized quality requirements that ensure safe and reliable operation. These technical specifications cover applicable codes and standards, design requirements, engineering deliverables and quality assurance. Invenergy has extensive experience reviewing utility standards and hiring experienced engineering firms to design facilities to these specifications where required. Engineering submittals are prepared by the contracted engineering firm and submitted to Invenergy and other necessary parties in regular, pre-defined increments. Detailed quality management plans are adhered to including maintaining engineering records of the individuals responsible for drawing, designing, checking, and approving submittals. Invenergy's internal engineering staff reviews submittals to verify compliance with the applicable technical specifications.

Invenergy also maintains a library of construction specifications, equipment specifications and approved vendors that ensure transmission facilities are constructed in accordance with all necessary internal quality requirements as well as in compliance with all applicable safety and reliability codes. Requirements governing physical construction, quality assurance and contractor responsibilities are detailed in this library of specifications. When constructing facilities to be transferred to utilities or other third parties, third party specifications will be adhered to, or Invenergy will collaborate to modify its standard specifications to meet the requirements of all project stakeholders. Factory audits are conducted as needed to monitor material quality and full time Invenergy site management teams monitor and oversee the day-to-day construction at project sites. Internal engineers as well as the engineer of record will visit the project site to verify

conformance to design documents. Invenergy employs more than 16 full time electrical engineers and many more engineers and project managers in other disciplines including civil and mechanical engineering.

In addition to managing engineering and construction, Invenergy has teams responsible for managing the ongoing operation of transmission facilities that Invenergy is responsible for operating. These responsibilities include:

- Planning and implementing routine maintenance programs.
- Carrying out testing on facilities at the necessary intervals and maintaining detailed records to demonstrate compliance with all applicable NERC and regional TO requirements.
- Creating and overseeing vegetation management programs.
- Implementing safety procedures.
- Troubleshooting electrical faults and other issues.
- Updating and organizing electrical models and studies.
- Monitoring the real time health of transmission assets via a 24/7 staffed control center.

The following preventative and predictive maintenance practices are used to ensure the integrity of the transmission line, accessories, and structures. We perform line patrolling which includes inspections of the foundations, grounding, and pole integrity. It also includes inspections for damaged or frayed conductors, dirty or cracked insulators, indications of partial discharge, and integrity of suspension clamps and accessories. During the line patrols technicians also visually inspect animal diverters, OPGW, and guy wires if installed. Supplementary to the visual inspections, infrared or thermal imaging can be used to help find potential issues and work orders can be put in place to address those issues on a scheduled basis depending on severity. Our vegetation management program follows specifications put together from NERC FAC-003-4 utilizing minimum vegetation clearing distances. If encroachments of vegetation are identified, we work with our environmental team and third-party contractors on removal and mitigation plans.

We also contract with respected construction and maintenance companies for testing, troubleshooting, repairs, or other specialized tasks. These jobs include ground resistance measurements, infrared scanning, corona inspection, replacing or repairing wood, concrete or steel poles, helicopter inspections, installation of ice galloping mitigation products, disconnect switch repair, conductor ice removal, fiber optic testing and repair, re-tensioning, insulator and jumper replacement.

6.0 Financial Statements

Financial statements of the entity or its affiliate, partner or parent company for the most recent fiscal quarter, as well as the most recent three fiscal years, or the period of the entity's existence, if shorter, or such other evidence demonstrating an entity's or its affiliates, partner's or parent company's current and expected financial capability acceptable to PJM

Invenergy Transmission LLC through its parent Invenergy Investment Company "IIC" has raised over \$47BN of financings to support the development, construction and operation of 30,000 MW of power and transmission projects. IIC will continue to develop transmission as an integral part of the infrastructure in its power plant development. IIC will also rely on its experience building transmission infrastructure and its capital raising track record to procure stand-alone transmission opportunities.

Invenergy has attached three years of audited financial statements as Attachment 1.

7.0 Consolidated Transmission Owners Agreement

Commitment by the entity to execute the Consolidated Transmission Owners Agreement, if the entity becomes a Designated Entity.

Invenergy Transmission commits to execute the Consolidated Transmission Owners Agreement when it becomes a Designated Entity.

8.0 Response and Repair

Evidence demonstrating the ability of the entity or its affiliate, partner or parent company to address and timely remedy failure of facilities

Invenergy Transmission and affiliates monitor for and are prepared to address emergencies and equipment failures on the transmission system leveraging our in house 24-hour Control Center, field staff and contracted resources to identify and correct issues and equipment failures in a timely manner.

Invenergy has experience promptly responding to and repairing damaged transmission lines. The typical process involves multiple parties simultaneously working to identify and resolve the issue. When the Control Center gets notification of a transmission outage they will notify relevant support staff, including operations engineers and the local site team of a potential issue. Engineering teams will review relay records while site technicians get dispatched. Once the fault location is found, an evaluation is made to determine if there is an imminent public safety hazard, like a wire down or structure failure. If immediate make-safe repairs are required, an electrical contractor will be engaged to assist until the scene is safe.

In-house and 3rd party engineering resources will be engaged to design a temporary repair, and the electrical contractor would implement. If any long-term repairs are required, designs would be issued, and materials procured for replacement at a later date.

Each outage is analyzed for a cause and any engineering lessons learned are communicated to the development team to incorporate in future design specifications, ensuring continual improvement in Invenergy Transmission's facilities.

9.0 Acquiring Rights of Way

Demonstrated Experience in Acquiring Rights of Way

Invenergy employs dedicated development staff responsible for the purchase/leasing of land and transmission corridor right of ways. Optimal routes are identified based on the topography and the complexity of land in between each terminal of a new transmission line. Invenergy utilizes internal environmental teams as well as external consultants to ensure that all facilities are sited in compliance with local, state and federal requirements as well as in accordance with prudent industry practices. Routes and switchyard sites are finalized following discussions with involved landowners and communities. Right of way widths, pole heights, and setbacks are calculated and engineered in accordance with the National Electric Safety Code. Where required, Invenergy contracts with specialized engineering consultants to conduct EMF studies to ensure there are no determinantal effects or interference with nearby infrastructure.

10.0 Attachments

Attachment 1 – Invenergy Renewables LLC and Subsidiaries Financial Statements [Redacted]

