**STATE OF ILLINOIS**

**ILLINOIS COMMERCE COMMISSION**

| | | |
|---|---|---|
| **Grain Belt Express Clean Line LLC** | **)** | |
| | **)** | |
| **Application for an Order Granting Grain Belt Express Clean Line LLC a Certificate of Public Convenience and Necessity pursuant to Section 8-406.1 of the Public Utilities Act to Construct, Operate and Maintain a High Voltage Electric Service Transmission Line and to Conduct a Transmission Public Utility Business in Connection Therewith and Authorizing Grain Belt Express Clean Line Pursuant to Sections 8-503 and 8-406.1(i) of the Public Utilities Act to Construct the High Voltage Electric Transmission Line.** | **)** | **Docket No. 15-____** |

**DIRECT TESTIMONY OF**

**MICHAEL SKELLY**

**ON BEHALF OF**

**GRAIN BELT EXPRESS CLEAN LINE LLC**

**GRAIN BELT EXPRESS EXHIBIT 1.0**

**APRIL 10, 2015**

**TABLE OF CONTENTS**



.

## I. WITNESS INTRODUCTION

**Q. Please state your name, present position and business address.**

A. My name is Michael Skelly. I am the President and Chief Executive Officer of Clean Line Energy Partners LLC ("Clean Line"), and the President of Grain Belt Express Clean Line LLC ("Grain Belt Express" or "Company"), the Petitioner in this proceeding. Clean Line is the ultimate parent company of Grain Belt Express. My business address is 1001 McKinney Street, Suite 700, Houston, Texas 77002.

**Q. What is the business of Clean Line and Grain Belt Express?**

A. Clean Line is an independent transmission company solely focused on providing transmission solutions to connect renewable generation sources to cities and communities that have a need for low-cost renewable power. Clean Line's objective is to develop, build, and operate high voltage direct current ("HVDC") transmission lines to facilitate the development of renewable energy resources in the most cost-effective way possible.

**Q. Please describe your educational and professional background.**

A. I received a Bachelor of Arts in Economics from the University of Notre Dame and subsequently served in the United States Peace Corps in Central America. After my service in the Peace Corps, I obtained a Masters of Business Administration from Harvard Business School. I have been in the renewable energy business for twenty years. I developed thermal, hydroelectric, biomass and wind energy projects in Central America with Energia Global. Subsequently, I joined Horizon Wind Energy ("Horizon") and led the growth of that company from a two-person enterprise to one of the leading wind energy companies in the United States.

I have extensive experience in evaluating and developing wind energy resources. I have traveled to nearly every state in the country to evaluate the potential to build wind farms and have led the development of more than 2,000 megawatts ("MW") of wind energy projects that were ultimately constructed. During my tenure at Horizon, the company developed and saw the completion of more than a dozen wind energy projects and created a development portfolio of more than 10,000 MW in over a dozen states. Several members of our management team at Clean Line also came from Horizon, where we worked together to develop and construct various projects, including 598.5 MW of wind projects in Illinois; 400.95 MW of wind projects in Iowa; 925.45 MW of wind projects in the three-state region of Oklahoma, Texas and Kansas; 321.74 MW of wind projects in New York, which spearheaded a growing interest in wind energy through the northeastern U.S.; 300.15 MW in Oregon; 100.65 MW of wind projects in Minnesota; and 100.8 MW of wind projects in Washington state. We also developed 24 MW of wind projects in Costa Rica with the Tierras Morenas Wind Farm.

In the course of developing those projects, our management team worked with business leaders, legislators and other governmental officials in the various states and conducted extensive public outreach efforts with landowners and other stakeholders about wind farms. Our work in developing and building wind energy projects has given our management team and me invaluable experience that is directly relevant and transferable to the development of Clean Line's projects.

**Q. Have you previously testified before regulatory commissions?**

A. Yes, I have provided testimony in proceedings before the state regulatory commissions of several states, including Arkansas, Missouri, Kansas, New York, Illinois, Indiana,

Tennessee, and Wisconsin, concerning the development of wind farms or transmission projects. I have testified before the Kansas Corporation Commission ("KCC"), the Indiana Utility Regulatory Commission, and the Missouri Public Service Commission in certification proceedings before those commissions for Grain Belt Express and the Grain Belt Express transmission line project ("Grain Belt Express Project" or "Project"). I previously testified before the Illinois Commerce Commission in the certificate proceeding for the Rock Island Clean Line transmission project being developed by Rock Island Clean Line LLC ("Rock Island"), a sister company of Grain Belt Express.

**Q. In addition to your prepared direct testimony, which has been identified as Grain Belt Express Exhibit 1.0, are you presenting other exhibits?**

A. Yes, I am presenting exhibits which have been identified as Grain Belt Express Exhibits 1.1 through 1.4. Each of these exhibits was prepared or assembled by me or under my supervision and direction. In addition, to help show the basis for Clean Line's business plans and objectives and to facilitate discovery on the sources used in preparing my testimony, I have provided footnote references to a number of publicly available studies, reports and other documents that contain technical, statistical or policy-oriented information we have relied on in determining that there is a need for projects such as the Grain Belt Express Clean Line transmission project ("Grain Belt Express Project" or "Project"). These studies, reports and other documents were prepared or published by government entities such as the U.S. Department of Energy ("DOE"), the Energy Information Administration ("EIA") and the National Renewable Energy Laboratory ("NREL"), and industry organizations such as the North American Electric Reliability Corporation ("NERC") and the American Wind Energy Association ("AWEA").

## II. PURPOSE OF TESTIMONY AND OVERVIEW OF CASE

**Q. What is the purpose of your testimony in this proceeding?**

A. Grain Belt Express is requesting an order from the Commission granting a Certificate of Public Convenience and Necessity, pursuant to Section 8-406.1 of the Illinois Public Utilities Act ("PUA"), to construct, operate and maintain the Grain Belt Express Project and to conduct a transmission public utility business in connection with the Project, and authorizing Grain Belt Express to construct the Project pursuant to Sections 8-503 and 8-406.1(i) of the PUA. The Grain Belt Express Project will be an approximately 780-mile-long multi-terminal ±600 kilovolt ("kV") HVDC transmission line capable of delivering up to 500 MW of power to a delivery point on the Midcontinent Independent System Operator, Inc. ("MISO") grid in northeast Missouri and up to 3,500 MW of power to an interconnection with PJM Interconnection, L.L.C. ("PJM") in Sullivan County, Indiana, just across the border from Illinois. The primary objective of this Project is to bring electricity produced by wind generation facilities in wind-rich areas of western Kansas ("Resource Area") to electricity markets in Missouri, Illinois, Indiana and other states in the MISO and PJM regions.

I am testifying in support of Grain Belt Express' request for the order and certificate described above. I will provide an overview of Clean Line and its business objectives and projects. I will discuss the need for the development of long distance, multi-state transmission projects to spur the development of wind generation facilities in the most wind-rich regions of the country by providing a means to deliver the output of these facilities to load and population centers in states such as Illinois. I will provide an overview of the process Grain Belt Express has followed to determine the proposed route

of the Grain Belt Express Project in Illinois and the process Grain Belt Express intends to follow in negotiating with land owners to acquire right-of-way easements in Illinois for the construction and placement of the Project. Finally, I will provide information on Grain Belt Express' managerial, financial, and technical resources and capabilities, including its plans for managing and supervising the construction of the Project.

**Q. Why has Grain Belt Express filed its Application under Section 8-406.1 of the PUA?**

A. We are taking a state-by-state approach to our regulatory approval process with Illinois being the last state in which we file for regulatory approval. As of the date of filing Grain Belt Express' Application, we have received the necessary regulatory approvals from the state commissions in Kansas and Indiana, two of the four states in which the Project will be located, and are awaiting the certification decision from the state commission in Missouri. In addition, as Grain Belt Express witness Mr. Berry explains in his testimony, we have identified significant interest from potential customers in taking transmission service on the Project. In light of the regulatory approval and commercial status of the Project, it is important to Grain Belt Express that the Illinois regulatory approval process have a predictable schedule and end date. Therefore, we are using the Section 8-406.1 process, which several other companies (such as Ameren Transmission Company of Illinois and Commonwealth Edison Company) have used, to request the certificate of public convenience and necessity for the Grain Belt Express Project.

**Q. Please highlight why Clean Line and Grain Belt Express are proposing to build and operate the Grain Belt Express Project and why they believe that constructing and operating the Grain Belt Express Project will promote the public convenience and necessity**

A. These points will be discussed in detail in the remainder of my testimony and in the testimony of the other Grain Belt Express witnesses:

- There is a large demand for electricity supplied by renewable resources, and in particular by wind generation, in Missouri, Illinois and other states within the PJM and MISO regions, and that demand will continue to grow over the next ten years. The demand is and will be driven by state laws and policies requiring or encouraging the use of renewable resources; federal laws and policies limiting, or increasing the costs of, the production of electricity from fossil-fueled generating plants, resulting in retirements or reduced use of such plants; voluntary public demand for clean energy from renewable sources; and the potential for wind energy as a low-cost, competitive source of electricity.

- Due to improvements in technology, electricity from wind has become one of the lowest-cost sources of new generation. The cost of new wind generation is lower than the cost of new coal or nuclear generation and any other clean energy source. It is also competitive with new natural gas-fueled generation.

- Western Kansas, where the western terminus of the Grain Belt Express Project will be located, has some of the country's best wind resources. Wind generators in this region can produce electricity at lower costs than in regions, like Illinois, with less energetic wind resources. The Project will allow significant amounts of wind generation capacity from Western Kansas to access the Illinois electricity market.

- The hours of operation of wind generators in western Kansas are not strongly correlated with the hours of operation of wind generators in Illinois. As a result, integrating wind generation resources in western Kansas with Illinois wind generation facilities, which the Grain Belt Express Project will make possible, will reduce the overall variability of wind generation serving Illinois, increase the reliability of wind generation as a supply source to Illinois markets, and reduce the costs of wind integration into the Illinois supply portfolio.

- Prospects for construction of new wind generation facilities in western Kansas are limited because of the lack of adequate long-distance, inter-regional transmission infrastructure to bring the electricity generated from future facilities in western Kansas to load and population centers such as Illinois. For new, low-cost wind generation to be constructed in the western Kansas to meet the demand for renewable resources in Illinois and other states, additional long-distance transmission capacity between these areas must be built. The Project will provide this needed long-distance transmission capacity.

- Government and industry sources, such as NERC, have recognized that there is a strong need to expand and strengthen the overall transmission grid, particularly to support the movement of electricity generated by renewable resources to areas of market demand. The Project will add significant transmission capacity and

strengthen the transmission grid between Western Kansas and Illinois.

- Developers cannot construct new wind generation facilities in western Kansas without reasonable assurances and expectations that transmission infrastructure will be in place on a timely basis to bring the output of the wind generation facilities to markets like Illinois and PJM. The lead time for development and construction of wind generation plants is shorter than the lead time for certification, siting, development and construction of a long-distance transmission facility like the Grain Belt Express Project. Thus, the development of the Project is essential to, and must precede, the construction of new wind generation plants in western Kansas.

- The Project will promote the development of an effectively competitive electricity market that operates efficiently, is equitable to all customers, and is the least cost means of satisfying those objectives. The Project will be able to connect over 4,000 MW of wind turbine capacity in western Kansas and to deliver up to 500 MW of this power to an interconnection point with MISO and up to 3,500 MW of this power to an interconnection point with PJM. This power will help to meet the demand for electricity from renewable resources in Illinois and other states. The Project will be able to deliver more than 20 million megawatt-hours ("MWh") of electricity per year from western Kansas to MISO and PJM.

- By delivering low-cost electricity generated by wind facilities to MISO and PJM, the Project will increase competition in the wholesale power markets that serve Illinois and will decrease wholesale prices. Lower wholesale prices will result in lower retail prices for retail customers.

- The Project is also expected to put downward pressure on the price of renewable energy credits ("RECs") in Illinois and nearby states, which will decrease the cost of compliance with renewable portfolio standards ("RPS") and facilitate meeting RPS targets without hitting price caps.

- Construction of the Grain Belt Express Project and the generation resources that will connect to it will reduce loss of load expectation, increase effective load carrying capability, and thereby increase the reliability of electric service in Illinois.

- The Project will be built and operated using HVDC technology. HVDC technology is a more efficient and lower-cost option than alternating current ("AC") facilities for transporting large amounts of electricity over long distances, such as from western Kansas to Illinois.

- The clean, wind-generated electricity that the Project will bring to Illinois will displace substantial amounts of other generation and therefore result in substantial environmental benefits for Illinois and the broader region. These environmental benefits will include significant reductions in emissions of carbon dioxide, nitrogen oxide, sulfur dioxide and mercury, and a substantial reduction in the quantities of water that would have been required by the displaced generation.

- The Proposed Route for the Grain Belt Express Project through Illinois is the optimal routing option of numerous route alternatives that were evaluated. The determination of the Proposed Route took into account important route selection criteria such as avoidance of and maximizing distances from homes, schools, businesses and other structures; minimization of impacts to agricultural, mining, aviation and other commercial activities; avoidance of protected activities and sites such as agricultural areas, wetlands, areas with threatened and endangered species, and historically or archeologically significant sites; length of the line; and cost of construction.

**Q: In addition to the direct benefits from the Grain Belt Express Project that you have identified, are there ancillary economic benefits expected from the construction and operation of the Grain Belt Express Project?**

A. Yes. The Grain Belt Express Project is a substantial transmission infrastructure project, with a projected cost of approximately $2.2 billion. This cost includes the DC-to-AC converter station located at the eastern end of the transmission line, in Illinois, which is anticipated to be an approximately $300 million capital investment.[1] Construction of the Project will employ a significant number of Illinois workers in the construction trades. As a result of the Grain Belt Express Project, Illinois businesses will see an increased demand for their producs and services, particularly those businesses involved in producing materials and equipment to be used in the transmission project or for constructing the new wind turbines that the Project will foster, as well as service and hospitality businesses. Grain Belt Express witnesses Dr. David G. Loomis and Mr. Mark Lawlor provide more detailed information concerning the ancillary economic benefits that will result from the construction and operation of the Grain Belt Express Project.

[1] In addition, network upgrade costs resulting from Regional Transmission Organization ("RTO") interconnection processes are currently estimated to be $550 million.

**Q. Please identify the other witnesses who are submitting direct testimony on behalf of Grain Belt Express.**

A. The Company's other witnesses and the primary topics addressed in their testimony are as follows:

| Witness | Principal Testimony Topics |
|---|---|
| **Wayne Galli**<br>Clean Line Executive Vice President – Transmission and Technical Services | • Physical and operating characteristics of the Grain Belt Express Project<br>• Cost and other benefits of using HVDC technology<br>• RTO interconnection processes<br>• Engineering and construction contractors |
| **Robert Cleveland**<br>Managing Director, Leidos Engineering, LLC | • Economic and environmental impacts of the Project |
| **Karl McDermott**<br>Ameren Distinguished Professor of Business and Government and Director of the Center for Business and Regulation in the College of Business and Management at the University of Illinois, Springfield, and Special Consultant to Natioal Econmic Research Associates | • The Grain Belt Express Project will promote the development of an effectively competitive electricity market |
| **David G. Loomis**<br>Principal, Strategic Economic Research, LLC and Professor of Economics, Illinois State University | • Economic, employment and fiscal impacts of the Project on the Illinois economy |
| **Robert M. Zavadil**<br>Executive Vice President, EnerNex, LLC | • Reliability benefits of the Project |
| **Mark O. Lawlor**<br>Director of Development for Grain Belt Express | • Project description<br>• Public outreach efforts and notice to landowners<br>• Approach to negotiations and right-of-way acquisition with landowners<br>• Measures to prevent, mitigate and remediate impacts to agricultural properties |
| **Timothy B. Gaul**<br>Vice President of Power and Energy, Louis Berger Group, Inc. | • Proposed and Alternate Routes of the Project<br>• Route determination process<br>• Basis for selecting the Proposed Route |

| | |
|---|---|
| **Lee Jones**<br>Director of Program Management, Quanta Services, Inc. | • Quanta's experience and capabilities in constructing transmission projects<br>• Anticipated construction process for the Project<br>• Constructability of the transmission line<br>• Construction cost estimates for the Proposed and Alternate Routes of the Project in Illinois |
| **Stanley Blazewicz**<br>Vice President, US Business Development, National Grid USA, and member of the Clean Line Board of Directors | • National Grid's investment in Clean Line<br>• Financial, construction, and project management support provided by National Grid<br>• Clean Line's ability to finance the Project |
| **David A. Berry**<br>Clean Line Executive Vice President – Strategy and Finance | • Need for the Grain Belt Express Project<br>• Economic and other benefits of the Project<br>• Customers of the Project and how transmission service will be offered and provided<br>• Economic feasibility of the Project<br>• Financing plan for the Project |

## III. ORGANIZATION, OWNERSHIP AND BUSINESS OBJECTIVES

**Q. Please describe the ownership and organization structure of Clean Line and Grain Belt Express and their related companies.**

A. Grain Belt Express, the Petitioner in this proceeding, is a limited liability company organized under the laws of the State of Indiana. Grain Belt Express is a wholly owned subsidiary of Grain Belt Express Holding LLC, a Delaware limited liability company and the sole member of Grain Belt Express. Grain Belt Express Holding LLC is a wholly owned subsidiary of Clean Line, which is the sole member of Grain Belt Express Holding LLC. Clean Line is also a Delaware limited liability company. Clean Line also owns additional subsidiaries that are developing HVDC transmission projects in other parts of the country. Grain Belt Express Exhibit 1.1 is an organization structure chart showing Clean Line and all of its subsidiaries.

Clean Line's owners are GridAmerica Holdings Inc., a subsidiary of National

Grid USA ("National Grid"); Clean Line Investor, LLC, an investment vehicle for ZAM Ventures, L.P. ("ZAM Ventures"); Michael Zilkha; and Clean Line Investment LLC. At this time, GridAmerica Holdings Inc. owns approximately 40% of the equity interest in Clean Line. In the United States, National Grid's regulated subsidiaries deliver electricity to approximately 3.4 million customers in New York, Massachusetts and Rhode Island. Through these subsidiaries, National Grid jointly owns and operates over 8,600 miles of high voltage transmission, 100 miles of underground cable and 521 substations. National Grid is also the largest distributor of natural gas in the northeastern United States, serving approximately 3.6 million customers in New England and upstate New York. Other operating subsidiaries are involved in LNG storage. National Grid also invests and participates in the development of natural gas pipelines and other energy related projects.

National Grid is a wholly owned U.S. subsidiary of National Grid plc, a major multinational company whose principal activities are owning and operating regulated networks for the transmission and distribution of electricity and natural gas. National Grid plc is based in the United Kingdom and is one of the largest investor-owned utility companies in the world with $87 billion in assets and over $24 billion in annual revenues. In the United Kingdom, a subsidiary of National Grid plc, National Grid Electricity Transmission plc, owns and operates the high voltage electric transmission system in England and Wales, comprising approximately 4,500 miles of overhead transmission lines among other assets, and operates the high voltage electricity transmission system in Scotland. National Grid Electricity Transmission plc is also the operator and part owner of a 2,000 MW HVDC link to France, a 1,000 MW HVDC link to the Netherlands, and a

planned HVDC facility to link Scotland with England and Wales. Another subsidiary of National Grid plc, National Grid Gas plc, owns and operates the gas transportation system, comprising approximately 4,700 miles of high pressure pipe, and a majority of the gas distribution system, in Great Britain, serving over 11 million homes and businesses.

ZAM Ventures is an investment vehicle that focuses primarily on long-term investments in the energy sector, including several private conventional and unconventional oil and gas investments in the United States and Canada, as well as certain investments in alternative energy companies. At this time, ZAM Ventures owns approximately 53 percent of the equity interest in Clean Line.

Michael Zilkha has a proven track record of making successful and productive investments in the energy industry, including being the primary investor in Horizon during its early growth. At this time, Mr. Zilkha owns approximately 2 percent of the equity interest in Clean Line.

Finally, Clean Line Investment LLC is comprised of service providers and employees of Clean Line and at this time owns approximately 5 percent of the equity interest in Clean Line.

**Q. Please describe the current and planned business operations of Clean Line and Grain Belt Express and the other subsidiaries of Clean Line.**

A. Grain Belt Express is developing the Grain Belt Express Project, which, as I described earlier, will be an approximately ±600 kV HVDC transmission line with a capacity of 4,000 MW. Clean Line and its subsidiaries are presently developing three other HVDC transmission projects and one AC transmission project that will connect wind generation

resources in wind-rich areas of the U.S. to load and population centers where a demand exists for electricity from renewable resources. These subsidiaries and projects include:

- Rock Island, a subsidiary of Clean Line, is developing the Rock Island Clean Line transmission project, a 500-mile transmission line that will deliver up to 3,500 MW of electricity generated by renewable resources in northwest Iowa and surrounding regions to Illinois and other PJM states.
- Plains and Eastern Clean Line LLC and Plains and Eastern Clean Line Oklahoma LLC, subsidiaries of Clean Line, are developing the Plains & Eastern Clean Line project, a 700-mile HVDC transmission project that will deliver over 3,500 MW of wind generated power from resources in western Oklahoma, western Kansas, and the northern panhandle of Texas to areas with demand for renewable energy in the Tennessee Valley Authority, Arkansas, and the southeastern U.S.
- Centennial West Clean Line LLC, another subsidiary of Clean Line, is developing the Centennial West Clean Line transmission project, a 900-mile HVDC transmission project that will deliver up to 3,500 MW of electric power from New Mexico and Arizona to communities in California and other areas in the West that have a strong demand for clean, reliable energy.
- Western Spirit Clean Line LLC, another subsidiary of Clean Line, is developing the Western Spirit Clean Line, an approximately 200-mile transmission line that will deliver up to 1,500 MW of wind power from east-central New Mexico to the Albuquerque, New Mexico, area and to load centers farther west.

**Q. What services will Grain Belt Express provide?**

A. Grain Belt Express will offer transmission service on the Grain Belt Express Project

through an open access transmission tariff ("OATT"), which will be filed with and subject to the jurisdiction of the Federal Energy Regulaory Commission ("FERC") under the Federal Power Act and FERC's regulations. Grain Belt Express expects that its customers will consist principally of (1) wind energy producers located in the wind-rich Resource Area at the western end of the Grain Belt Express Project, and (2) buyers of electricity – particularly buyers seeking to purchase electricity generated from renewable resources – located in areas at, or connected to, the eastern two delivery points of the Project. Buyers of electricity are expected to be principally wholesale buyers, such as utilities, competitive retail electricity suppliers, including certified alternative retail electricity suppliers in Illinois, and brokers and marketers. However, potential buyers could also include retail purchasers of renewable resources seeking to buy unbundled transmission service. As Mr. Berry explains in his testimony, customers will be able to obtain transmission service on the Grain Belt Express Project through several avenues, including an open solicitation process conducted in accordance with Grain Belt Express' grant of negotiated rate authority from the FERC[2] and the FERC's Policy Statement on Allocation of Capacity on New Merchant Transmission Projects and New Cost-Based, Participant-Funded Transmission Projects.[3]

**Q. Does Clean Line intend to request cost recovery for the Grain Belt Express Clean Line through regional cost allocation processes?**

A. Clean Line and Grain Belt Express do not plan to request cost recovery for the Project through RTO or other regional cost allocation processes. The costs associated with the

[2] *Grain Belt Express Clean Line LLC*, 147 FERC ¶ 61,098 (2014).

[3] 142 FERC ¶ 61,038 (2013).

construction and operation of the Grain Belt Express Project will be recovered through charges to the transmission capacity customers of the line, *i.e.*, from the suppliers and buyers who contract to use the Project to transmit their output to Illinois or to transmit the electricity they have purchased from producers in the Resource Area. This means that the customers of the transmission line will pay for the costs of developing, constructing and operating the Project.

Grain Belt Express proposes that the Commision impose the same requirement regarding regional cost allocation for the Grain Belt Express Project that the Commission imposed in its certificate Order for Rock Island in Docket No. 12-0560. That requirement (as revised to be applicable to Grain Belt Express) is as follows:

> Prior to recovering any Project costs from Illinois retail ratepayers through PJM or MISO regional cost allocation, Grain Belt Express will obtain the permission of the Illinois Commerce Commission in a new proceeding initiated by Grain Belt Express. For the purposes of the prior sentence, any system upgrades set forth in an interconnection agreement with PJM or MISO and the costs of which are allocated to Grain Belt Express will be considered "Project costs." For the avoidance of doubt, the phrase "recovering any Project costs from Illinois retail ratepayers through PJM or MISO regional cost allocation" includes the recovery of costs through PJM and MISO transmission service charges that are paid by retail electric suppliers in respect of their electric load served in Illinois.

Under this requirement, should Grain Belt Express decide to seek cost recovery through MISO and/or PJM, Grain Belt Express would have to return to the Commision in a future proceeding and prove that the Project's benefits outweigh the costs to ratepayers. Staff and other interested parties would be able to participate in the proceding and the Commission would have complete discretion to determine the basis on which it would grant or deny such a request, in the unlikely event that one were ever made.

**Q. In connection with Clean Line's other transmission projects that you referred to earlier, has Clean Line or any of its subsidiaries been granted authority by any other state public utility commissions to operate as a public utility and to construct transmission projects in their states?**

A. Yes. Subsidiaries of Clean Line have received regulatory approval from five different state regulatory bodies. Grain Belt Express has received regulatory approvals from both the Kansas Corporation Commission and the Indiana Utility Regulatory Commission, and has an application pending before the Missouri Public Service Commission. On December 7, 2011, the Kansas Corporation Commission granted the application of Grain Belt Express Clean Line LLC to operate as a public utility in the State of Kansas (Docket No. 11-GBEE-624-COC). On May 22, 2013, the Indiana Utility Regulatory Commission granted Grain Belt Express the authority to operate as a transmission-only public utility in the State of Indiana (Cause No. 44264). Grain Belt Express Clean Line LLC's application before the Missouri Public Service Commission was submitted on March 26, 2014 in Case No. EA-2014-0207.

Other Clean Line subsidiaries have also received state regulatory approvals to operate as a public utility and/or to construct transmission projects. On November 25, 2014, this Commission granted Rock Island a certificate of public convenience and necessity to construct its transmission project in Illinois and to operate as a transmission public utility in Illinois (Docket No. 12-0560). On October 28, 2011, the Oklahoma Corporation Commission granted the application of Plains and Eastern Clean Line Oklahoma LLC for authority to operate as an electric transmission public utility in Oklahoma (Cause No. PUD 201000075). On January 12, 2015, the Tennessee

Regulatory Authority granted Plains and Eastern Clean Line LLC the authority to operate as a public utility in the State of Tennessee (Docket No. 14-00036). These orders show that Clean Line and its subsidiaries are moving forward to achieve the regulatory milestones needed to bring clean electricity produced by wind generating facilities in some of the nation's best wind resource regions in the central U.S. to load and population centers in more eastern and southeastern regions of the U.S.

## IV. DEVELOPMENT OF TRANSMISSION INFRASTRUCTURE TO SUPPORT DELIVERY OF WIND ENERGY RESOURCES TO ILLINOIS

**Q. How has the wind generation industry developed in the United States?**

A. While the ability to harness wind for energy production has existed for hundreds of years, only since the late 1990s have companies in the U.S. used wind power to produce electricity for commercial consumption on an economic scale. Over the past 15 years, recognition that a clean energy economy could create thousands of new jobs, combined with rising concerns over energy independence, climate change and other environmental concerns relating to the use of fossil fuels to generate electricity, and associated federal and state policies favoring or mandating the production and use of electricity from renewable resources, have intensified the efforts of energy companies to produce more substantial amounts of wind power. In 1998, the United States had 1,574 MW of cumulative wind power capacity; by the end of the fourth quarter of 2014, this number, as reported by AWEA, had risen to 65,897 MW.[4]

[4] American Wind Energy Association, *AWEA U.S. Wind Industry Fourth Quarter 2014 Market Report*, at 3;
available at:
http://awea.files.cms-plus.com/4Q2014%20AWEA%20Market%20Report%20Public%20Version.pdf.

The efficiency of wind turbines has improved dramatically over time, primarily due to longer blade lengths, more effective controls, and higher hub heights. A single, land-based wind turbine can now produce more than three MW of power. Further, ten years ago a typical wind farm project consisted of 50 to 100 MW of capacity, but wind developers are now erecting projects of 400 MW or larger.

**Q. Is there a need for increased construction of inter-regional transmission facilities in the United States, particularly in connection with the increasing demand for and use of electricity produced from renewable resources?**

A. Yes. The construction of new, long-distance transmission infrastructure has generally lagged behind what policymakers and industry experts view as necessary in light of the vertical disintegration and decentralization of the electric generation sector, the development of open access transmission requirements, and the increased focus on reliability of supply. Competitive wholesale power markets, and ultimately retail power markets, only work effectively if the transmission system needed to deliver the power is open, access to the system is fair, and, importantly, the transmission system itself is robust enough to handle regional and inter-regional transactions. Federal mandates for open access, nondiscriminatory transmission systems and implementation of and membership in the RTO model may have ensured open and fair access to the transmission system, but these mandates do nothing to ensure that the transmission system is robust enough to facilitate this access and ensure vibrant, competitive wholesale markets.

Further, the development of and demand for renewable power generation facilities, including wind generation facilities, has intensified the need for new

transmission infrastructure, particularly interstate, inter-regional transmission facilities. In 2008, the U.S. DOE published a report on the costs, challenges, impacts and benefits that would result from wind generation providing 20% of the electrical energy consumed in the United States by 2030.[5] That report highlighted the importance of expanding and strengthening the U.S. transmission infrastructure in order to accommodate greater reliance on wind generation as a source of supply, identifying, as one of four major challenges, the need for "[i]nvestment in the nation's transmission system, so that the power generated is delivered to urban centers that need the increased supply."[6] The DOE in March of 2015 released its Wind Vision report, which updates and expands on its report from 2008, by analyzing what is needed for 35% of U.S. electricity requirements to be supplied by wind generation by 2050. The DOE again concluded that additional transmission expansion is needed to accommodate the development of new cost-effective wind generation resources, requiring around 11,000 and 33,000 circuit miles, respectively to reach the 2030 and 2050 goals.[7]

With respect to wind generation facilities in particular, the windiest sites in the U.S. are often not located near load centers, and currently there are insufficient transmission lines to connect many of the best regions for development of wind generation facilities to load centers where electricity from renewable resources is demanded. Development of additional transmission infrastructure is critical to the

[5] U.S. Department of Energy, *20% Wind Energy by 2030: Increasing Wind Energy's Contribution to U.S. Electricity Supply* (2008); available at: http://www.nrel.gov/docs/fy08osti/41869.pdf.

[6] *Id*., Executive Summary at 14.

[7] U.S. Department of Energy, *Wind Vision: A New Era for Wind Power in the United States* (2015) p.180; available at: http://www.energy.gov/sites/prod/files/WindVision_Report_final.pdf.

nation's ability to fully exploit its wind resources for the production of low-cost, environmentally responsible electricity. The limitations of the electric transmission grid are already stifling the growth of wind power development in many areas, due to the lack of sufficient transmission infrastructure to deliver the electricity that would be produced by new wind energy facilities in these areas to load and population centers.

**Q. In addition to the U.S. DOE, have industry groups and governmental authorities articulated a need to construct additional transmission to support the demand for and development of renewable energy resources?**

A. Yes. The following organizations, for example, have recognized this need:

- NERC's *2014 Long Term Reliabilty Assessment* states: "…given the significant changes occurring in the resource mix, it is likely that additional new transmission…will be needed in some areas, particularly those with existing and planned resource additions that include higher penetration of renewable generation. Additionally, as replacement generation is constructed, new transmission will be needed to interconnect this capacity. The designing, engineering, and contracting requirements for these new lines, as well as siting, permitting, and various federal, state, provincial, and municipal approvals often require more than five years to complete. Thus, industry should consider the long lead times required for new transmission."[8]

- NERC's *2011 Long-Term Reliability Assessment* stated, "[t]ransmission system expansion is vital to unlock the capacity available from variable generation…. Transmission expansion, including greater connectivity between balancing areas, and

[8] North American Electric Reliability Corporation, *2014 Long-Term Reliability Assessment*, November 2014, at 93
available at:
http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/2014LTRA_ERATTA.pdf.
NERC has been certified by the FERC as the "electric reliability organization" ("ERO") under Section 215(c) of the Federal Power Act, 16 U.S.C. §824o(c) (as added by the Energy Policy Act of 2005) and Section 39.3 of FERC's regulations, 18 C.F.R. §39.3. Federal Energy Regulatory Commission, *Order Certifying North American Electric Reliability Corporation as the Electric Reliability Corporation and Ordering Compliance Filing*, 116 FERC ¶ 61,062 (2006). As the ERO, NERC has the statutory responsibility to, among other things, "conduct periodic assessments of the reliability and adequacy of the bulk-power system in North America." 16 U.S.C. §824o(g).

coordination on a broader regional basis, is a tool which can aggregate variable generators leading to the reduction of overall variability."[9]

- NERC's 2009 report *Accommodating High Levels of Variable Generation* noted that many new variable generation plants interconnecting to the bulk power system will be located in areas remote from demand centers and existing transmission infrastructure due to fuel availability; that additional transmission infrastructure is vital to reliably accommodate large amounts of wind resources, including to interconnect variable energy resources planned in remote regions and to smooth variable generation output across a broad geographical region and resource portfolio; and that transmission system expansion is vital to unlock the capacity available from variable generation.[10]

- NERC's *2009 Long-Term Reliability Assessment* observed that "[i]n many of the regions in North America that are well suited to wind generation, the resources are remote from existing transmission systems." As a result, NERC concluded that "[a]dditional transmission infrastructure is vital to accommodate large amounts of wind resources."[11] NERC also stated that "[s]ignificant transmission will be required to 'unlock' projected renewable resources. Without this transmission, the integration of renewable resources could be limited."[12]

- The revised 2011 *Eastern Wind Integration and Transmission Study*, prepared for NREL, a national laboratory of DOE, noted that "Transmission helps reduce the impacts of the variability of the wind, which reduces wind integration costs, increases reliability of the electrical grid, and helps make more efficient use of the available generation resources . . . Long-distance transmission . . . contributes substantially to integrating large amounts of wind that local systems would have difficulty managing."[13]

- The BlueGreen Alliance, a national partnership of labor unions and leading environmental organizations, which has recommended adoption of a national RPS of 25% of electricity from renewable resources by 2025,[14] has also recognized that

[9] North American Electric Reliability Corporation, *2011 Long-Term Reliability Assessment*, November 2011, at 93 available at http://www.nerc.com/files/2011LTRA_Final.pdf.

[10] North American Electric Reliability Corporation, *Accommodating High Levels of Variable Generation*, April 2009, at 34, 35, 43; available at http://www.nerc.com/files/IVGTF_Report_041609.pdf .

[11] North American Electric Reliability Corporation, *2009 Long-Term Reliability Assessment: 2009-2018*, October 2009, at 71-72; available at: http://www.nerc.com/files/2009_LTRA.pdf

[12] *Id*. at 30.

[13] Enernex Corporation for NREL, *Eastern Wind Integration and Transmission Study*, February 2011, at 27, 29; available at http://www.nrel.gov/docs/fy11osti/47078.pdf.

[14] Although a national RPS has not been adopted, a requirement that electric utilities obtain 25% of electricity supply from renewable resources by 2025 is specified in the Illinois RPS statute and in the RPS requirements of a number of other states.

significant new investment in the nation's transmission infrastructure is necessary to achieve this RPS objective as well as to improve electric reliability, make the grid more efficient, and provide consumers with access to lower cost power.[15]

**Q. How is the development of new transmission infrastructure, such as the Grain Belt Express Project, important to the continued development of wind generation resources?**

A. Over the next few decades, it is the construction of new transmission that will drive wind generation development. As indicated in some of the sources I referred to earlier, many of the best regions of the U.S. for locating new wind generation facilities – the areas that are richest in wind resources and have the most energetic wind – are located far from load and population centers where the demand for electricity from renewable resources exists. (By areas with the most energetic wind, I mean areas with the highest average annual wind speeds at the heights above ground at which a wind energy turbine would be positioned, typically at 80 meters.) Such wind-rich regions include the region covering western Texas, eastern New Mexico, and Oklahoma north through western Kansas, western Iowa, Nebraska and the Dakotas. However, transmission facilities dedicated to transporting electricity produced in these regions hundreds of miles to load and population centers, such as those located east of the Mississippi River, are limited or non-existent. The transmission infrastructure in the U.S. generally has been developed to

[15] AWEA, BlueGreen Alliance and United Steelworkers of America, *Winds of Change: A Manufacturing Blueprint for the Wind Industry* (June 2010) at 32-33; available at: http://www.awea.org/learnabout/publications/upload/BGA_Report_062510_FINAL.pdf. The BlueGreen Alliance is comprised of the United Steelworkers of America, the Communications Workers of America, the Service Employees International Union, the Laborers' International Union of North America, the Utility Workers Union of America, the American Federation of Teachers, the Amalgamated Transit Union, the Sheet Metal Workers' International Association, the Natural Resources Defense Council and the Sierra Club. Information on the BlueGreen Alliance is available at http://www.bluegreenalliance.org

move power from generation resources to load centers within electric utility service territories or within planning regions. The development of inter-regional transmission facilities specifically intended to bring large amounts of electricity from areas such as the Resource Area to load and population centers such as Illinois has been extremely limited.

To facilitate a cleaner energy mix, substantial investments in transmission infrastructure are necessary, especially investment in facilities that will provide the ability to move renewable energy over long distances. As a former developer of wind projects, I can say with confidence that developers of wind generation projects will not invest capital in the construction of additional wind generation facilities, in areas such as the Resource Area that have the nation's best wind resources, without reasonable assurances of adequate transmission capacity and infrastructure to deliver the output to load and population centers. Indeed, to date, much of the development of wind generation facilities in the U.S. has been in areas with access to existing transmission lines to bring the output of the wind plants to areas of high demand. These areas, in which wind generation facilities have been installed, are not necessarily the country's best wind resource areas. If wind generation facilities are to be developed in the nation's best wind resource areas in order to cost-effectively meet the growing demand for electricity in general and for electricity from renewable sources in particular, we will first have to construct (or begin the process of constructing) inter-regional transmission facilities that can deliver the output of these generating facilities to load and population centers.

Clean Line's and Grain Belt Express' objective is to participate in this process by building transmission projects, such as the Grain Belt Express Project, to provide customers in load and population centers in states such as Illinois with access to

electricity from wind generation resources located in the nation's best wind resource areas.

Grain Belt Express witness Mr. Berry provides additional information on the demand for electricity from renewable resources in Illinois and eastern markets, and on the benefits of enhancing and strengthening the U.S. transmission infrastructure, particularly the addition of long distance, inter-regional transmission facilities such as the Grain Belt Express Project between wind-rich areas such as western Kansas to areas east of the Mississippi River, in order to meet this demand.

**Q. What is the specific economic benefit to consumers of developing wind generation facilities in western Kansas and long-distance inter-regional transmission facilities to bring the output of wind generation facilities located in Western Kansas to Illinois electricity markets?**

A. Fostering the development of wind generation resources in western Kansas and enabling those resources to access the Illinois electricity markets will help to meet the long-term demand for electricity generally and for electricity from renewable resources in particular in Illinois and other PJM and MISO states. With respect to cost and pricing, the specific benefit is that the wind-rich Resource Area has higher average annual wind speeds than Illinois at an 80 meter hub height, which means that wind generation facilities in the Resource Area can operate at higher capacity factors and generate electricity at a lower cost per MWh. Grain Belt Express witness Mr. Berry discusses this point in greater detail.

Further, the accessibility of the additional wind energy capacity with lower per-MWh bus bar costs from western Kansas to the Illinois market and other markets in PJM

and MISO, which the Grain Belt Express Project will make possible, will increase competition among suppliers of wind energy, among suppliers of electricity from renewable resources generally, and among all suppliers of electricity to these markets. The Grain Belt Express Project will deliver energy from generating sources that have a lower marginal cost (specifically, wind generation facilities that have a zero marginal cost) than many existing generation sources. This will decrease locational marginal prices and demand costs in Illinois and variable production costs in the eastern U.S., which will exert downward pressure on electricity prices in wholesale and, ultimately, retail markets in Illinois and will therefore be beneficial to Illinois electricity consumers. Mr. Berry, Mr. Cleveland and Dr. McDermott provide further discussion on this point, including estimates of the Project's economic benefits.

Adequate transmission infrastructure will also assure that the demand for electricity from renewable resources can be met at the lowest cost. The wind facilities in the Resource Area that will connect to the Grain Belt Express Project will be able to supply energy to meet the RPS requirements of Illinois and other PJM states. As Mr. Berry discusses in his testimony, there is a substantial shortfall between the amount of electricity that must be generated from renewable resources to meet the RPSs of the states in the PJM footprint over the next 10 years and the amount of electricity that can be obtained from renewable generation facilities currently in operation and able to supply these requirements. Without new transmission lines to access the most affordable renewable resources, REC prices will tend to increase, moving towards the rate impact cap or alternative compliance payment limits established by state RPSs, resulting in higher costs for retail customers. By enabling over 20 million MWh of electricity from

renewable resources in the Resource Area to access the Illinois and regional markets on an annual basis, the Grain Belt Express Project will lead to greater competition to serve the demand for electricity and RECs from renewable resources, in Illinois and other states.

**Q. Are there benefits in terms of the diversity and reliability of renewable resources of developing wind generation resources in western Kansas and constructing transmission to deliver the output to Illinois?**

A. Yes. As Mr. Berry describes, the times of wind power production in Illinois are weakly correlated with the times of wind power production in western Kansas, meaning that the two wind regimes are largely independent. Therefore, installation of new transmission capacity to bring electricity to Illinois from wind resources in western Kansas will provide greater diversity of renewable resource supply to the Illinois market. Diverse wind resources tend to ramp up and down in power output at different times, reducing the variability in wind generation. Integrating diverse wind energy resources from different geographical areas - inside and outside of Illinois - will allow Illinois and other eastern electricity markets to accommodate more renewable energy in a more reliable fashion and provide a more stable supply of power.

**Q. Are there advantages to the use of HVDC technology for transmission facilities to transmit electricity hundreds of miles from western Kansas to Illinois, as Grain Belt Express plans to do in constructing and operating the Grain Belt Express Project?**

A. Yes. Grain Belt Express witness Dr. Wayne Galli discusses Grain Belt Express' proposed use of HVDC technology and the benefits of that technology for this application in greater detail. In summary, for the transmission of electricity over long

distances, direct current lines result in a lower cost of transmission than traditional AC lines. A major issue in considering the transmission of electricity over long distances is whether the cost of line losses may offset the cost advantage of producing the electricity in remote locations with higher average annual wind speeds and where the costs of construction and operation may be lower. However, HVDC technology can transfer significantly more power with lower line losses over long distances than comparable AC lines. A long distance transmission line using HVDC technology, such as the Grain Belt Express Project, increases the competitiveness of wind generation facilities located in wind-rich areas far from Illinois and enhances the cost-effectiveness of producing electricity in these remote areas and delivering it to Illinois.

**Q. Are there benefits from the development of new, long-distance transmission infrastructure by independent transmission-only companies such as Grain Belt Express?**

A. Yes. Clean Line and its subsidiaries are not and do not plan to develop generation facilities. While many electric industry participants, including incumbent utilities, have important roles to play in the expansion and strengthening of the transmission infrastructure needed in this country, Clean Line and its subsidiaries are focused solely on transmission as their only line of business. Clean Line and its subsidiaries, such as Grain Belt Express, are dedicating their capital and their management attention solely to investment in transmission facilities. The sole focus of Clean Line and its operating companies on transmission enables them to help facilitate the interconnection of renewable resources specifically, and more generally, the development of competitive

wholesale and, ultimately retail, electricity markets by providing the Illinois market access to remotely-located wind facilities that generate low-cost wind power.

**Q. Are there other independent transmission companies in operation?**

A. Yes. Two independent transmission companies that are in operation in Illinois, albeit with limited facilities within the state, are American Transmission Company ("ATC") and ITC Midwest LLC. In January 2003, in Docket No. 01-0142, ATC received a certificate of public convenience and necessity from the Commission as a public utility pursuant to Section 8-406(a) of the PUA.[16] In December 2007, ITC Midwest LLC, a subsidiary of ITC Holdings Corp., acquired the transmission facilities of Interstate Power & Light Company ("IPL"), located in Illinois, Iowa, Minnesota and Missouri. The Commission approved the sale of IPL's Illinois transmission facilities to ITC Midwest in Docket No. 07-0246.[17] Subsidiaries of ITC Holdings Corp. operate, or are developing operations, as independent transmission companies in several regions of the country, including Michigan, Kansas and Oklahoma.

There are other independent transmission companies that are in operation or are in the process of developing new transmission infrastructure in other parts of the country, including Hudson Transmission Partners, LLC in the PJM Interconnection, Electric Transmission Texas LLC in the Electric Reliability Council of Texas region, Neptune Regional Transmission System, LLC in the PJM Interconnection and New York Independent System Operator regions, Trans Bay Cable, LLC in California, and TransCanada in the western United States. These examples show that the independent

[16] *American Transmission Company L.L.C. and ATC Management Inc.*, Docket 01-0142 (Jan. 23, 2003).

[17] *Interstate Power and Light Company and ITC Midwest LLC*, Docket 07-0246 (Nov. 28, 2007).

transmission company business model is not novel but rather is established and has become recognized, including in Illinois.

**Q. What actions has Grain Belt Express taken to identify potential customers of the transmission line, such as wind generation developers in western Kansas?**

A. In January 2014, Grain Belt Express completed a Request for Information ("RFI") process for wind generators that could supply energy to the Project's converter station in western Kansas. The response to the RFI included 14 wind developers developing 26 wind farms, totaling more than 13,500 MW, in the region surrounding the planned location of the Project's western converter station in Ford County, Kansas. In February 2015, Grain Belt Express launched an open solicitation process for subscribers wishing to contract for transmission capacity and service on the Project. Fourteen wind generators submitted transmission service requests for 17,301 MW of service on the Grain Belt Express Project to the Project's PJM interconnection, or approximately 4.5 times the available Kansas to PJM capacity. Ten wind generators submitted transmission service requests to the Project's MISO interconnection, representing more than six times the available Kansas-to-Missouri capacity. The total capacity requested to both delivery points on the Project was 20,625 MW, or approximately 4.5 times the total available capacity of the Project.

Grain Belt Express will have specific customers and/or wind farms identified and contracted before it begins construction of the Project. However, because of its merchant model, Grain Belt Express needs certainty of cost, schedule and execution before it can enter into firm contracts with transmission customers. Consequently, Grain Belt Express needs to obtain the key permits and route approvals before it will be able to enter into

binding agreemetns for capacity on the Grain Belt Express Project to specific wind farm customers or load serving entities. Developers of and investors in wind generation facilities will not commit capital and resources to construct new wind generation facilities in the wind-rich, but remote, Resource Area unless and until they have reasonable assurances that there will be sufficient transmission in place to deliver the output of their facilities to load and population centers. It is necessary that the transmission facilities be in place, or at least substantially along in development (including the governmental approval processes), so that it is apparent that the necessary transmission capacity is likely to become a reality. Further, the time required to develop, site, obtain government approvals for, and construct a wind generating facility is much shorter than the time required to develop, site, obtain government approvals for, and construct a long distance, multi-state transmission line. This is another reason why development, licensing, and construction of the inter-regional transmission facilities, such as the Project, must precede the construction of the wind generation that will use it.

## V. ROUTE DETERMINATION PROCESS FOR THE GRAIN BELT EXPRESS PROJECT

**Q. Please provide an overview of Grain Belt Express' approach to developing the Proposed Route and Alternate Route for the Grain Belt Express Project in Illinois.**

A. The determination of the Proposed Route and the Alternate Route for the Grain Belt Express Project in Illinois has been based on a thorough and extensive process that required more than three years to complete. The process has had two fundamental components: (1) an extensive governmental and public outreach process to engage as many stakeholders as possible, provide them with information on the Project, and obtain their input regarding routing and related issues; and (2) the identification and detailed

investigation of potential routes in order to arrive at the Proposed Route and the Alternate Route. Grain Belt Express witnesses Mr. Lawlor and Mr. Gaul describe in detail these activities and the bases for determination of the Proposed Route and the Alternate Route.

In developing the Proposed Route and the Alternate Route, Grain Belt Express established and has followed an open and transparent public outreach process to obtain input from government officials, landowners, and other area residents, to disseminate information about the Project, and to gain local information pertinent to determining the route of the transmission line. Through this outreach process, including interaction with attendees at the Roundtable Meetings and Public Meetings described by Mr. Lawlor, Grain Belt Express obtained information on siting considerations that it might not have obtained through other means.

Grain Belt Express retained the engineering and consulting firm Louis Berger to assist in determining the Proposed Route and Alternate Route for the Project. Mr. Gaul, of Louis Berger, is presenting detailed information on Grain Belt Express' route determination process, the Routing Criteria that were established for determining the route, the investigation that was conducted, the factors that were considered in narrowing down possible routes for more detailed analysis, and the basis for selection of the Proposed Route and the Alternate Route. The determination of the Proposed Route and the Alternate Route was based on the Routing Criteria that had been established and consideration of extensive information that was gathered in the process.

**Q. How does Grain Belt Express plan to acquire the right-of-way easements that will be needed for the Project in Illinois?**

A. Grain Belt Express is committed to attempting to obtain the necessary rights-of-way through negotiations with landowners and voluntary transactions, to the maximum extent possible. As Mr. Lawlor describes, Grain Belt Express intends to pay consideration for easements based on fair market values of the land, as well as to pay per-structure compensation for the placement of structures on the landowner's property, and to pay for crop damage and other specific impacts to individual tracts. Grain Belt Express is not seeking eminent domain authority in this proceeding.

**Q. When would Grain Belt seek an order from the Commission pursuant to Section 8-509 of the PUA authorizing Grain Belt Express to use eminent domain to acquire land and land rights for the Grain Belt Express Project?**

A. Grain Belt Express would only seek to use eminent domain if it has been unsuccessful in obtaining property rights on a particular parcel after exhausting reasonable efforts to acquire the property rights through negotiations and voluntary transactions.

## VI. MANAGERIAL, TECHNICAL, FINANCIAL, AND CONSTRUCTION CAPABILITIES

**Q. Do Grain Belt Express and Clean Line have the managerial and technical capabilities to operate as a public utility in Illinois and to construct and operate the Grain Belt Express Project and provide transmission services as proposed?**

A. Yes. Clean Line has assembled an outstanding management team to manage the development, construction and operation of the Grain Belt Express Project and the other transmission projects under development by other Clean Line subsidiaries. The key is to find people with a combination of experience with a wide range of skill sets who can work well together as well as with the many stakeholders involved in a major infrastructure project. This includes people who understand the local environment and

who can work with the local authorities to obtain the necessary permits, as well as people who have the right technical talents and experience in developing, constructing and operating similar facilities efficiently and within the applicable reliability and safety guidelines. The qualifications and experience of key members of Clean Line's management team are provided in Grain Belt Express Exhibit 1.2.

**Q. Will Clean Line and Grain Belt Express be developing, designing, constructing and operating the Grain Belt Express Project exclusively using their own employees?**

A. No, Clean Line and Grain Belt Express will engage and rely on experienced, qualified companies to assist with these functions. For example, Grain Belt Express retained Louis Berger to assist in gathering data and information about the potential routes for the Project in Kansas, Missouri, Illinois and Indiana and to conduct studies and perform analyses in determining the proposed route for the transmission line. Other experienced firms that Grain Belt Express has engaged include Contract Land Staff, LLC, POWER Engineers, Inc. ("POWER"), Quanta Electric Power Services, LLC ("Quanta"), Siemens PTI, and TransGrid Solutions Inc. Grain Belt Express has also contracted with or entered into memoranda of understanding with major component suppliers including Southwire Company, General Cable Industries, Inc., Hubbell Power Systems, and ABB, Inc.

For operations, Grain Belt Express will contract with an experienced firm or firms to provide operations and maintenance services and also capital replacements and upgrades as necessary. However, Grain Belt Express will oversee, supervise, and control the activities of all of its outside contractors through its own experienced management team. Additionally, in connection with Grain Belt Express' request to FERC for negotiated rate authority, Grain Belt Express has committed to turn over operation and

functional control of the Grain Belt Express Project, including responsibilities for scheduling, to an RTO. As Dr. Galli testifies, Grain Belt Express plans to turn over operational and functional control of the transmission line to PJM.

**Q. Do Clean Line and Grain Belt Express have the capabilities to finance the construction of the Grain Belt Express Project?**

A. Yes. Clean Line's investors will continue to fund the development activities for the Grain Belt Express Project and the other transmission projects under development by Clean Line's subsidiaries. Clean Line also has credible plans for raising the additional capital needed to finance the major engineering and construction expenditures for these projects.

In the electric utility industry, the development of innovative and competitive projects requires experienced investors focused on long-term results who recognize that interstate transmission projects have extensive development periods. Clean Line's investors match these criteria. National Grid is one of the principal owners of Clean Line, and one of the largest owners and operators of electric transmission facilities in the world. Mr. Blazewicz describes the size and scope of the holdings and operations of National Grid plc and National Grid in Europe and the United States. Two representatives of National Grid, including Mr. Blazewicz, are members of Clean Line's board of directors. Although National Grid and GridAmerica Holdings Inc. will not be actively involved in the day-to-day operations of Clean Line and its subsidiaries, National Grid is very experienced in constructing and operating electric transmission facilities, particularly HVDC facilities. Clean Line and Grain Belt Express can draw on this

expertise when necessary in connection with the planning, construction and operation of the Project.

Two other owners, ZAM Ventures and Mr. Michael Zilkha, have deep experience in the energy field, including in electric power and renewable energy. ZAM Ventures is concerned with long-term results and the growth of the renewable energy industry and therefore is an ideal private equity investor for Clean Line. ZAM Ventures focuses primarily on, and has a successful history in, private equity investments in the energy and energy-related sector. Similarly, the Zilkha family has extensive experience making successful and productive investments in the energy industry, including being the primary investor in Horizon Wind Energy during its early growth. The Zilkhas have invested hundreds of millions of dollars in the energy sector. They understand that Clean Line and its subsidiaries may not see gains immediately and that the investment focus should be on the long-term results.

With the backing of these equity investors, as well as its management team, Clean Line has raised and continues to raise the capital to perform the work to obtain the necessary permits and approvals for its proposed projects, including the Grain Belt Express Project, acquire appropriate land options, conduct extensive public outreach, and otherwise aggressively conduct development activities for the Grain Belt Express Project and Clean Line's other transmission projects, up to the point that specific project financing agreements can be negotiated and executed. I believe that Clean Line's equity investors are excellent partners for the current stage in this process, and as our projects move forward, they will be joined by other investors who are well suited for this undertaking.

Further, experience shows that significant amounts of liquidity exist in the capital markets for transmission projects that have reached an appropriate stage of development. As Mr. Berry, Clean Line's Executive Vice President – Strategy and Finance, discusses in his direct testimony, the capital markets have a substantial history of supporting transmission projects, including merchant transmission projects, through debt and equity financings. Mr. Berry provides additional information on Clean Line's and Grain Belt Express' financing plans for construction of the Grain Belt Express Project. Finally, as Mr. Berry explains in greater detail, Grain Belt Express proposes that the Commission adopt the same requirement regarding financing that it adopted for Rock Island in the certificate Order in Docket No. 12-0560. That provision will require Grain Belt Express to secure debt and equity financing or financing commitments in an aggregate amount sufficient to cover the entire estimated cost of constructing the Project, before it begins to construct transmission facilities on easement properties in Illinois.

**Q. Is Grain Belt Express capable of efficiently managing and supervising construction of the Project?**

A. Yes, for four principal reasons that I will discuss in this testimony. First, Clean Line and Grain Belt Express have a plan in place to establish an effective construction management organization and are implementing that plan. Second, Grain Belt Express will engage experienced contractors to carry out the tasks associated with constructing the Project and placing it into operation. Third, Grain Belt Express will enter into contracts with its contractors that will provide for effective project controls and oversight mechanisms from the project owner's perspective. Fourth, members of Clean Line's management team and one of Clean Line's principal investors, National Grid, have

experience in developing construction management organizations and overseeing the construction and completion of large projects in the electric utility industry.

**Q. Please describe the construction management organization that Grain Belt Express plans to implement.**

A. Grain Belt Express Exhibit 1.3 is a chart of Grain Belt Express's construction management organization. The three positions at the top of the organization chart – Executive Vice President ("EVP) of Transmission and Technical Services, EVP and General Counsel, and Director of Development - report to the President and Chief Executive Officer and have primary responsibility for the development, design, right-of-way acquisition and construction of the Grain Belt Express Project. The organization chart also shows the positions that are and will be included in each segment of the construction management organization and briefly describes the responsibilities of each position. We believe that this organization will be sufficient to oversee and supervise the engineering and construction of the Grain Belt Express Project.

**Q. What do the asterisks placed by certain positions on the organization chart signify?**

A. The asterisks indicate positions in the construction management organization that have already been filled.

**Q. Who holds the top three positions?**

A. Wayne Galli is EVP of Transmission and Technical Services. Cary Kottler is EVP and General Counsel and Mark Lawlor is Director of Development. The background and experience of each person has been previously described in Grain Belt Express Exhibit 1.2.

**Q. Please describe the responsibilities of the department led by the EVP of Transmission and Technical Services and the positions and related functions that will report to the EVP.**

A. The EVP of Transmission and Technical Services and his department will have the following responsibilities: (1) oversee and supervise the Engineering-Procurement-Construction ("EPC") contractors and the Owner's Engineer ("OE"), (2) review overall design parameters and engineering, (3) monitor and enforce on-site safety, (4) manage the Project costs and schedule, (5) coordinate and manage the various construction-related contracts, (6) provide document control, and (7) ensure compliance with all applicable environmental laws and regulations during construction.

The Managers of Electrical Engineering will be responsible for overseeing electrical engineering activities including installation of all electrical systems, reviewing and approving protection and control drawings, and coordinating interconnection activities. The Managers of Electrical Engineering will coordinate all electrical activities across functional teams, vendors, and interconnecting utilities and wind farms.

The Vice President of Construction will be responsible for overseeing all construction activities and the activities of the EPC contractors and the OE. Reporting to the Vice President of Construction will be the Project Controls Manager, Quality Assurance/Quality Controls ("QA/QC") Manager, Safety Manager, Construction/Civil Engineer, three Line Construction Managers, and two Converter Station Managers.

The Project Controls Manager will oversee and manage the construction budget, the schedule, and the relationship between the OE and the EPC contractors, and will coordinate the project controls activities across all contractors. Reporting to the Project

Controls Manager will be: (1) two to three document control personnel, who will keep all project documents orderly, complete and categorized, review each document for conformity and accuracy, process change orders, and ensure timely delivery and receipt of documents from general contractors, subcontractors and suppliers; and (2) two other staff members who will assist the Project Controls Manager in other administrative tasks as assigned.

The QA/QC Manager will inspect and confirm that the Project is being built according to specifications and per the quality management plan. The QA/QC Manager will enforce code compliance and will work in conjunction with the Construction/Civil Engineer to ensure good design practices.

The Safety Manager will monitor the construction site and enforce compliance with Clean Line safety policies, government regulations, and any other standards. The Safety Manager will review design plans, onsite materials, and construction practices to ensure that the Project is built at the highest levels of safety standards. The Safety Manager will report and keep track of any safety violations that are incurred by Clean Line employees, EPC contractors, and subcontractors working on the construction of the Project.

The Construction/Civil Engineer will be responsible for access road construction, verification of soil analysis, and review of all foundation and transmission structure design drawings. He or she will coordinate civil design activities across functional teams for successful and timely project completion.

The three Line Construction Managers will oversee the day-to-day construction activities of the transmission line, while the two Converter Station Managers will oversee

the construction and installation activities of the HVDC converters. The Line Construction Managers and the Converter Station Managers will direct the EPC contractors and coordinate among the various construction teams working on the Project.

The Environmental/Permitting Vice President, who will report to the EVP of Transmission and Technical Services, will manage all permitting and environmental permitting processes. The Environmental Associate, reporting to the Environmental/Permitting Vice President, will prepare, coordinate and supervise all permits necessary for the construction and operation of the Grain Belt Express Project. These activities will include support of field surveys, agency consultations, construction monitoring and compliance, completion of post-construction permits or regulatory requirements, and implementation of appropriate measures to ensure environmental compliance. During construction and restoration activities, the Environmental Associate will coordinate and report on environmental permitting matters.

The Geographic Information Systems Specialist, reporting to the Environmental/Permitting Vice President, will manage and analyze geospatial information to support engineering, routing, permitting, resource analysis, and technical objectives. Additionally, the Development team (reporting to the Director of Development) will provide support for permitting activities, as will the EPC contractor, as required. The Director of Asset Management, who will report to the EVP of Transmission and Techinical Services, and the two Asset Managers reporting to this position will focus on the operations and maintenance activities for the transmission line after it is placed into service, including managing contractors that are retained to provide operations and maintenance services. During the construction phase, the Director of

Asset Management will be expected to be involved in planning activities for ongoing operations.

**Q. Moving to the EVP and General Counsel section of the organization chart, what will be the duties and responsibilities of the personnel in this section of the construction management organization?**

A. The EVP and General Counsel is responsible for overseeing all legal and regulatory activities relating to the Project.

The Vice President, Land will coordinate, manage and provide strategic direction for all right-of-way acquisition efforts, and will oversee the work, on and off the field, of the right-of-way acquisition contractor and its employees (the right-of-way agents) to acquire the necessary easements for the Project. He/she will maintain the internal records of the easements, exhibits, easement payments, property records and all correspondence related to the acquisition efforts. In addition, he/she will work closely with the construction managers so that right-of-way acquisition efforts are consistent with construction management policies and practices. Lastly, he/she will keep regional stakeholders informed of any land related matters.

Staff reporting to the Vice President, Land will ensure that the contracted right-of-way agents work with landowners in accordance with the Grain Belt Express Code of Conduct (the Code of Conduct is provided as an Exhibit to Mr. Lawlor's direct testimony) and the terms of the Agricultural Impact Mitigation Agreement ("AIMA") with the Illinois Department of Agriculture (the AIMA is also provided as an exhibit to Mr. Lawlor's testimony). The team will train each of the right-of-way agents to maintain proper landowner relations and communicate effectively with every landowner. They will

support agents in the field as necessary. The status of landowner interaction and right-of-way acquisition will be monitored through daily status reports from the field and monthly budget histories and forecasts.

**Q. What will be the duties and responsibilities of the personnel in the Development section of the construction management organization?**

A. The Director of Development will oversee all development efforts on the Project. He or she will be assisted by four Project Managers. This team will manage relationships and communicate with stakeholders across the Project area, such as landowners and local officials. The Development team will also work hand-in-hand with Grain Belt Express' routing consultant, Louis Berger, to finalize all routing work and permitting work, including obtaining the appropriate permits from the U.S. Army Corps of Engineers, Federal Aviation Administration, U.S. Fish and Wildlife Service, and state and local government departments and agencies.

**Q. Does Grain Belt Express have a plan for filling the positions in the construction management organization that have not yet been filled?**

A. Grain Belt Express's plan is to have the majority of the positions in the construction management organization filled by no later than three months prior to date of commencement of major construction activities. Clean Line is currently engaged in a search for the Vice President of Construction. Grain Belt Express has not reached the appropriate milestones in its project development to warrant filling the positions reporting to the Vice President of Construction at this time. Detailed engineering and construction planning, which is work these employees will initially perform, cannot begin until a definitive route for the Project is determined through the receipt of the final

regulatory approval for Illinois. Additionally, the Vice President of Construction will be actively involved in recruiting, interviewing, and hiring the remaining personnel reporting to him or her in the Construction organization.

**Q. Are you confident that the remaining positions in the construction management organization can be filled with qualified individuals in a timely manner?**

A. Yes, for several reasons. The Clean Line management team has a very extensive network in the electric and power industry; we have strong relationships with industry professionals and search agencies that can assist with finding the most qualified personnel to fill these positions. On a regular basis, we receive resumes from persons with strong construction backgrounds who have an interest in working for our company . On an ongoing basis, we have discussions with professionals who are extremely experienced in constructing transmission lines. For the reasons stated above, we are waiting to make additional hires until the Grain Belt Express Project draws closer to commencement of detailed construction planning activities and to construction itself. However, our experience to date indicates that there will be qualified persons available and interested in working on the Project when it becomes timely to fill the remaining positions.

Additionally, our investor, National Grid, is an experienced developer, construction manager, owner and operator of transmission lines, including HVDC facilities, and has extensive contacts in the utility construction industry. National Grid has been and will continue to make its resources available to assist Clean Line in identifying additional candidates to fill positions in the construction management organization.

**Q. Earlier you made reference to an Owners' Engineer. Please explain the duties and responsibilities of the OE in overseeing and managing the construction of the Grain Belt Express Project.**

A. An OE is a third-party entity, experienced in the engineering and construction of large-scale infrastructure projects. The owner retains the OE to assist the owner in project management activities and overseeing the activities of the other project contractors, including the EPC contractors, thereby supplementing the experience and expertise of the owner's internal team. POWER has been selected as the OE for the Grain Belt Express Project in Illinois. During the development phase of the Grain Belt Express Project, POWER is assisting in performing engineering and design work for the Project. POWER's qualifications are discussed in Dr. Galli's direct testimony. To date, POWER has developed preliminary design criteria and structure designs and has provided engineering support for the route development process.

**Q. Turning to the second of the four reasons you cited for believing that Grain Belt Express and Clean Line will have the capability to efficiently manage and supervise the construction of the Grain Belt Express Project, what contractors will be hired for the Project?**

A. In addition to the OE, whose role and responsibility I have already described, Grain Belt Express plans to retain two EPC contractors and a right-of-way acquisition and land services contractor. One EPC contractor will be engaged for the construction of the transmission line and one EPC contractor will be engaged for the construction and installation of the three converter stations. Also, Louis Berger has been retained to assist and provide expertise in the route development processes for the Project. Louis Berger's

qualifications are described in the direct testimony of Tim Gaul of Louis Berger. Louis Berger will also provide support for the permitting processes for the Project and for more specific siting determinations within the scope of the route that is ultimately approved.

**Q. Please describe the role of the EPC contractor for the transmission line.**

A. For the development phase of the Project, Grain Belt Express has engaged a leading EPC contractor, Quanta, to provide construction management services relating to the transmission line portion of the Project. Grain Belt Express selected Quanta after conducting an extensive interview and selection process. During this process, Grain Belt Express reviewed proposals from and/or interviewed several of the leading power construction companies in the United States. Quanta is providing or will provide the following services during the development phase of the Project:

- Establish processes for identifying and tracking potential suppliers and build a supplier database.
- Review current design, routing, and permitting status of the Project and provide advice on critical permitting issues; participate in field reviews.
- Identify non-environmental permitting requirements, such as road agreements and utility crossing agreements.
- Review the Project route and structure design and placement for potential changes that minimize costs and maximize construction efficiency.
- Develop support strategies for river crossings.
- Develop initial construction strategy for access to construction locations, material and equipment logistics, along with lay-down, warehousing and fabrication strategies.

- Conduct engineering review of existing work, including review of POWER's design of the HVDC pole series, HVDC hardware, suspension, running angle and strain designs, and at a high level, POWER's line design; conductor selections; and ground selections.
- Execute outreach strategy with labor and assist with obtaining requisite labor agreements.
- Develop a Project construction schedule.
- In conjunction with the owner, prepare and/or review cost estimates for the Project.

Grain Belt Express's HVDC Transmission Line Development Agreement with Quanta contemplates that Grain Belt Express and Quanta will negotiate and enter into an agreement for Quanta to serve as the transmission line EPC constructor for the construction phase of the Project. The HVDC Transmission Line Development Agreement specifies material terms to be included in the EPC agreement. As the EPC contractor, Quanta's responsibilities will include (in addition to those already listed above as they may continue to be applicable during the construction phase):

- Solicit and evaluate bids for procurement of equipment and material.
- Solicit subcontractor bids, evaluate subcontractor bids, and manage all subcontractors for the Project.
- Supervise development of access to construction locations.
- Installation of foundations for structures.
- Tower assembly and erection.
- Wire stringing.
- Test and commission equipment.
- Monitor compliance with Project permits and easement grants.

**Q. What are key provisions of the HVDC Transmission Development Agreement that provide Grain Belt Express with oversight and control of Quanta during the development phase of the Project?**

A. The HVDC Transmission Development Agreement provides that Quanta cannot perform any services until the execution by Grain Belt Express of a work order release that specifies (a) a designation of the specific services to be performed; (b) a schedule and budget for such services; (c) identification of deliverables to be provided by Quanta; and (d) any other terms and conditions pertaining to the performance of the services agreed to by the parties. Quanta must obtain Grain Belt Express's approval before hiring any subcontractors. Quanta is liable for all services performed by the subcontractors to the same extent as if Quanta had performed their services. Quanta must use commercially reasonable efforts to obtain all customary and reasonable warranties from the subcontractors with respect to the design, materials, workmanship, equipment performance, tools and supplies furnished by the subcontractors, and must require that all subcontractor warranties be assignable to Grain Belt Express. Further, Quanta is required to carry specified insurance coverage with adequate limits, including workman's compensation insurance, commercial general liability, and comprehensive automotive liability insurance.

Quanta must employ key personnel (as defined in the agreement) who have been approved by Grain Belt Express to work on the Project and support Quanta's performance of the EPC services; Quanta cannot reassign any of the key personnel without Grain Belt Express's approval, and Grain Belt Express retains the right to

approve any replacement of key personnel. Finally, Grain Belt Express has the right to audit Quanta's books with respect to matters related to the agreement.

Q. **What are the key provisions that the HVDC Transmission Line Development Agreement specifies are to be included in the EPC contract for the construction of the transmission line?**

A. Quanta will provide a fixed, lump-sum contract price for the full transmission line EPC services for the Project. Quanta will guarantee the completion date for the Project. If Quanta fails to achieve substantial completion of the line by the specified date or if the line does not complete testing and commissioning to the satisfaction of Grain Belt Express and according to good utility practices, Quanta will pay Grain Belt Express liquidated damages to compensate Clean Line for its costs. Additionally, Quanta will commit to keep key personnel (as defined in the agreement) assigned to the Project. Finally, Quanta is required to provide reasonable credit support to cover all of its obligations under the EPC contract. Clean Line expects that several other terms from the HVDC Development Agreement will also be applied in a similar fashion in the EPC contract, such as the terms related to approval of subcontractors, warranties, and insurance coverage.

**Q. Does Grain Belt Express anticipate that the EPC agreement will include additional reporting and controls provisions that will enable Grain Belt Express to monitor cost and schedule progress for the transmission line construction?**

A. Yes. The EPC contractor will be required to provide reports to Grain Belt Express on a regular basis during construction detailing progress to date, any safety violations, schedule and cost impacts, any environmental, landowner or permitting concerns, and

other information needed for Grain Belt Express to effectively monitor the EPC contractor's performance. Additionally, the EPC contractor will be paid for its services based on the completion of construction milestones. Before the EPC contractor receives milestone payments, it will have to demonstrate in a transparent fashion that the milestone was completed to the satisfaction of Grain Belt Express, its OE, its lenders, and its lenders' independent engineers.

**Q. Before you proceed to describe the EPC contractor for the converter stations, please explain the reference in your earlier answer to the lenders' independent engineers.**

A. It is customary, in connection with project financings, for the lenders and/or investors to engage an independent engineer or engineers to monitor cost and schedule progress on the project on behalf of the lenders. The terms of the independent engineer's monitoring role and involvement in the Project, the approvals and certifications the independent engineer must provide, the independent engineer's access to information and the reports and other information the owner is required to provide, and other terms and conditions relating to the independent engineer's monitoring, will be specified in detail in the financing documents.

**Q. Please describe the role of the EPC contractor for the converter stations.**

A. The EPC contractor for the converter stations will engineer, procure, build, install, and commission the HVDC converters and related equipment. Additionally, the EPC contractor for the converter stations will be required to provide detailed price estimates, technical specifications, schedules, interconnection design and system studies support, architectural drawings and visual representations, site plan preparations necessary for permit applications, and construction and operations traffic analysis for the installation of

each VDC converter. The EPC contractor will also provide Grain Belt Express with market price information, including comparable data and benchmarking reports, to support the proposed pricing of the equipment and services to be provided by the contractor and its subcontractors.

**Q. Please describe the qualifications and experience that the company retained as the EPC contractor for the converter stations will be expected to possess.**

A. The EPC contractor for the HVDC converter stations will be one of three global leaders of HVDC equipment manufacturing, each of which has decades of experience successfully designing, manufacturing, and commissioning large-scale HVDC projects. The EPC contractor will partner with a construction management organization to create a partnership or consortium to perform site preparation, building erection, and equipment installation for the converter stations. The experience of this subcontractor will include significant, successful experience installing high-voltage substation equipment in North America with all requisite knowledge of installing equipment in accordance with the requirements of the National Electrical Safety Code, NERC, and good utility practice.

**Q. What terms does Grain Belt Express expect to include in the contract with the EPC contractor for the converter stations in order to provide Grain Belt Express with controls and oversight of the EPC contractor's activities?**

A. Grain Belt Express will negotiate key terms in the EPC contract for the converter stations giving Grain Belt Express the ability to monitor the progress of the contractor in performing the converter station work. In addition, Grain Belt Express will require the contractor to provide a fixed, lump-sum contract price for the engineering, procurement,

construction, installation, and commissioning of both converters. The contractor will be required to guarantee the commissioning date. If the contractor fails to achieve substantial completion by the specified date and to the satisfaction of Grain Belt Express, the contractor will be required to pay liquidated damages to compensate Grain Belt Express for its costs. Lastly, the contractor will be required to provide reasonable credit support to cover all its obligations under the EPC contract.

**Q. Please describe the role of the right-of-way acquisition and land service contractor.**

A. Grain Belt Express has engaged Contract Land Staff ("CLS") to assist Grain Belt Express with activities related to land and right-of-way acquisition, including but not limited to collecting and managing parcel data, preparing for and attending public meetings, coordinating market appraisals, contacting and negotiating with landowners, and acquiring all easements necessary for the construction of the Project. CLS has significant experience in right-of-way acquisition. CLS has been involved in planning, managing, and executing hundreds of right-of-way acquisition and land management projects covering over 25,000 miles across the country. CLS is managed and staffed to support all phases of right-of-way activities including set up, implementation of project procedures, project management, records management, title examination, civil and environmental safety support, right-of-way acquisition inclusive of agent training, and ministerial support.

**Q. You have described the roles of the principal contractors during the construction phase of the Project and described contract provisions with the EPC contractors that will enable Grain Belt Express to oversee and control the contractors' activities, including cost and schedule performance and the personnel assigned to the Project.**

**Would you now please discuss your fourth reason, specifically that members of Clean Line's management team have experience in developing construction management organizations and overseeing the construction and completion of significant construction projects in the electric industry?**

A. Yes. Jayshree Desai, Clean Line's Chief Operating Officer, and I were responsible for the development and construction of over 2,000 megawatts ("MW") of wind farms, and over 180 miles of transmission lines at Horizon Wind Energy. While with NextEra Energy Resources, Wayne Galli, Clean Line's Executive Vice President of Transmission and Technical Services, was instrumental in developing transmission projects under the Competitive Renewable Energy Zone initiative in Texas, focusing primarily on engineering/design and permitting. Mario Hurtado, Clean Line's Executive Vice President – Development, headed all development and operations in Central America and the Caribbean at Globeleq, managing a portfolio of 600 MW of traditional and renewable electric generating plants. As an executive at Reliant Energy and Duke Energy, Mr. Hurtado led corporate transactions and managed the commercial issues involving large utilities and generating plants throughout Latin America and North America. Additionally, Jason Thomas, Clean Line's Vice President for Environmental/Permitting, has extensive prior experience in permitting complex projects, including high voltage transmission lines. Further information on my background and experience and that of Dr. Galli, Ms. Desai, Mr. Hurtado and Mr. Thomas is provided in Grain Belt Express Exhibit 1.4. Grain Belt Express Exhibit 1.4 lists the projects in which each of us has been involved, the owner, the location, the type, the size of the project (e.g., MW capacity or transmission line-miles), and the date the project was placed into service.

Additionally, Ms. Desai and I have experience in building organizations that are able to execute on large and complex projects – that is, in taking a small project development company and successfully building it into a much larger organization with the full suite of project design, project engineering, construction, and operations capabilities. This experience is directly relevant and transferable to the development of the Grain Belt Express construction management organization. Ms. Desai and I were involved in building Horizon Wind Energy (now EDP Renewables North America LLC) from a small development company into the third largest wind power company in the United States with over 300 people responsible for the development, construction and operation of wind farms with thousands of megawatts of capacity. In growing Horizon Wind Energy, my management team and I recruited and hired personnel to build and grow the company's construction, procurement, operations, and asset management departments. At the peak of Horizon Wind Energy's construction activities, we managed capital expenditures of over $3 million per day; we managed over $2 billion worth of contracts with turbine suppliers, other equipment manufacturers, and balance of plant contractors; and we coordinated the supply chain and construction process to ensure the safe and efficient construction of over 2,000 MW of wind generating capacity. The process through which we expanded Horizon Wind Energy's organization and our experience in doing so is directly relevant to the development of Clean Line and Grain Belt Express into an organization that will successfully develop and manage large transmission construction projects.

**Q. In addition to the experience of the Clean Line management team and the use of experienced, qualified contractors and suppliers for the Project, will National Grid provide support in the management of construction of the Project?**

A. Yes. As I stated, National Grid USA is one of the largest and most experienced owners and operators of electric transmission in the country, and National Grid plc is one of the largest owners and operartors of electric transmission in Europe. National Grid USA is very experienced in constructing and operating electric transmission facilities, particularly HVDC facilities. Clean Line and Grain Belt Express have been drawing, and will be able to continue drawing, on this experience and expertise as needed in connection with the planning and construction of the Grain Belt Express Project.

**Q. Have other commissions and other organizations found that Clean Line and its project subsidiaries, including Grain Belt Express, are capable of managing the construction of a transmission line?**

A. Yes. First, on July 25, 2013, PJM concluded that Clean Line and its subsidiary operating companies, including Rock Island, satisfy the pre-qualification requirements for Designated Entity status under the PJM Amended and Restated Operating Agreement. PJM evaluates companies for pre-qualification based on their ability to engineer, develop, construct, operate and maintain a generic transmission facility within PJM. Other companies that PJM has reviewed and pre-qualified for Designated Entity status include American Electric Power Company, Dayton Power and Light Company, Duke Energy, Exelon Corporation, First Energy Corporation, LS Power Group, Pepco Holdings, Inc., PPL Electric Utilities Corporation, Public Service Electric and Gas Company, and Virginia Electric and Power Company.

Second, the Oklahoma Corporation Commission, in its order dated October 28, 2011 in Cause No. PUD 201000075 granting Plains and Eastern Clean Line LLC electric transmission-only public utility status in the State of Oklahoma, affirmed the Administrative Law Judge's recommendation that "Clean Line possesses the financial, managerial and technical experience to build, own and operate transmission in Oklahoma."[18]

Third, the Kansas Corporation Commission, in its order dated December 7, 2011 in Docket No: 11-GBEE-624-COC, granting Grain Belt Express Clean Line LLC a Limited Certificate of Public Convenience to Transact the Business of a Public Utility in the State of Kansas, found that "...there is sufficient competent evidence demonstrating that Clean Line has the managerial, financial, and technical experience to construct, operate and maintain the line."[19]

Fourth, the Indiana Utility Regulatory Commission, in its order dated May 22, 2013 in Cause No. 44264, granting Grain Belt Express Clean Line LLC the authority to operate as a transmission-only public utility in the State of Indiana, found that "Petitioner submitted extensive evidence of its technical, managerial, and financial capability to construct, own, and operate the Project. Specifically, Mr. Skelly and Dr. Galli testified in detail about the Petitioner team's background, experience, and expertise in the energy sector, project development, electricity transmission, and financing. Mr. Berry also testified about Petitioner's and its parent company's financial expertise, backing and

[18] Order No. 590530, Cause No. PUD 201000075, *In the Matter of the Application of Plains and Eastern Clean Line LLC, to Conduct Business as an Electric Utility in the State of Oklahoma*, Exhibit A, p. 2.

[19] Order Approving Stipulation & Agreement And Granting Certificate, Docket No: 11-GBEE-624-COC, *In the Matter of the Application of Grain Belt Express Clean Line LLC for a Limited Certificate of Public Convenience to Transact the Business of a Public Utility in the State of Kansas*, p. 25.

investors. Accordingly, we find that Petitioner has the necessary technical, managerial, and financial capability to construct, own, and operate the Project."[20]

Fifth, in its November 25, 2014 Order in Docket 12-0560 granting a certificate of public convenience and necessity to Rock Island to construct the Rock Island Project in Illinois, this Commission found that Rock Island is capable of efficiently managing and supervising the construction process and has taken sufficient action to ensure adequate and efficient construction and supervision of construction.[21]

**Q. Do Grain Belt Express and Clean Line have incentives to ensure that construction of the Grain Belt Express Project is carried out efficiently and effectively?**

A. Yes. Grain Belt Express and Clean Line have strong market incentives to ensure that the construction of the Project is carried out efficiently and effectively. Clean Line anticipates raising capital from lenders to finance the construction of the Project. Lenders will not be willing to provide capital for the contruction of the Project unless they determine that Clean Line and Grain Belt Express have a capable construction management organization in place, have selected qualified contractors and suppliers, and have entered into contracts that provide adequate assurances of cost and schedule control.

---

[20] Order of the Commission, Cause No. 444264, *Petition of Grain Belt Express Clean Line LLC for: (1) a Determination of its Status as a "Public Utility" under Indiana Law; (2) a Determination that it has the Technical, Managerial, and Financial Capability to Operate as a Public Utility in Indiana; (3) Authority to Operate as a Public Utility in Indiana, including Authority to Exercise all Rights and Privileges of a Public Utility Accorded by Indiana Law; (4) Authority to Transfer Functional Control of Operation of its Transmission Facilities to be Constructed in Indiana to a Fully Functioning Regional Transmission Organization; (5) a Determination that the Commission* should *Decline to Exercise Certain Aspects of its Jurisdiction over Petitioner Clean Line LLC; (6) Authority to Locate its Books and Records Outside the State of Indiana; (7) Consent by the Commission to Boards of County Commissioners for Petitioner Clean Line LLC to Occupy Public Rights of Way, to the Extent it may be Necessary; and (8) all other Appropriate Relief*, pp. 18-19.

[21] *Rock Island Clean Line LLC*, Docket 12-0560, Order issued Nov. 25, 2014, at 132-133 and 225.

Further, the financing agreements for the Project will specify that before the lenders are required to disburse funds for milestone payments to the EPC contractors, the independent engineer(s) that the lenders will retain must verify that certain conditions have been met by the EPC contractors.

Additionally, Grain Belt Express must establish rates and charges for transmission capacity and service on the Project that enable its customers to deliver or receive power at the delivery points at prices that are competitive with other sources. Grain Belt Express will be entering into long-term transmission capacity and service contracts with customers prior to commencing construction of the Project, with the rates and charges established in those contracts based on the construction cost estimate for the Project. Since Grain Belt Express will not have captive customers to whom it can pass along cost overruns, it is strongly in Grain Belt Express' interest to ensure that the construction is as efficient and economical as possible. Delays in the Project schedule and cost overruns could potentially jeopardize Grain Belt Express' ability to recover its costs and earn a return on investment based on the prices in the long-term transmission contracts it will have entered into.

## VII. SECTION 8-503 REQUEST

**Q: Is Grain Belt Express also seeking a Commission order in this docket pursuant to Section 8-503 of the PUA authorizing it to construct the Project?**

A. Yes. As we understand it, Section 8-406.1(i) provides that a Commission decision granting a certificate to construct a high voltage electric transmission line pursuant to Section 8-406.1 shall also include an order pursuant to Section 8-503 authorizing or directing the construction of the high voltage electric transmission line and related

facilities, in the manner and within the time specified in the Commission's order.

**Q. Putting aside this requirement of Section 8-406.1(i), what do you understand to be the provisions of Section 8-503 concerning issuance of authority to construct a Project pursuant to that section?**

A. Section 8-503 states that when the Commission finds that a new structure or structures is necessary or should be erected by a public utility, in order to promote the security and convenience of the public or to promote the development of an effectively competitive electricity market, or in any other way to secure adequate service and facilities, the Commission shall issue an order authorizing that the structure or structures be erected at the location, in the manner, and within the time specified by the Commission. The evidence being presented by the Company's witnesses in this docket, including Mr. Berry, Dr. Galli, Mr. Cleveland, Dr. McDermott and Mr. Zavadil, demonstrates that construction and operation of the Grain Belt Express Project will promote the development of an effectively competitive electricity market, will promote the security and convenience of the public, and will help to secure adequate services and facilities, particularly by enabling 4,000 MW of new generating capacity to be available to Illinois electricity markets and by enabling electricity generated by the cost effective wind resources in western Kansas to access and be delivered to electricity markets in Illinois. Therefore, the Commission should find that the Project should be erected and should authorize Grain Belt Express to construct the Project pursuant to Section 8-503.

**Q. Does Grain Belt Express understand that requirements or conditions imposed by the Commission on the issuance of the certificate will also apply to the grant of authority pursuant to Section 8-503?**

A. Yes, that is our understanding of the provisions of Section 8-406.1(i) and 8-503 that I referred to above.

**Q. Section 8-406.1(i) states that the Commission should issue an order pursuant to Section 8-503 "authorizing or directing the construction of the high voltage electric service line and related facilities as approved by the Commission, in the manner and within the time specified in said order." Does Grain Belt have a proposal as to the "time within" that should be specified in the Commission's order?**

A. Yes. As I have mentioned, the Commission's issuance of a certificate to construct the Project is expected to be the final certificate authority required for the Grain Belt Express Project from the state commissions in the four states in which the Project will be located. Prior to commencing construction, the Project will need to complete the interconnection process with PJM, MISO and SPP, and finish the environmental permitting process that follows the receipt of an approved route. While Grain Belt Express' objective is to commence construction within approximately two years, in light of the need to complete these activities, Grain Belt Express recommends that the Commission's order should specify that Grain Belt Express should begin construction of the Project within two and one half years following the date of the order in this case.

## VIII. OTHER APPROVALS

**Q. Is Grain Belt Express requesting other approvals from the Commission in this proceeding?**

A. Yes. First, Grain Belt Express is requesting approval to maintain its books and records at the principal office of Clean Line and Grain Belt Express in Houston, Texas. Mr. Berry provides further information on this request. Second, Grain Belt Express is requesting

confirmation that it is not subject to the requirements of the Commission's Uniform System of Accounts for Electric Utilities (83 Ill. Admin. Code Part 415), or that compliance with that regulation is waived, and that, in any event, maintenance of Grain Belt Express' books and records of account in accordance with FERC's Uniform System of Accounts Prescribed for Public Utilities and Licensees subject to the provisions of the Federal Power Act (18 C.F.R. Part 101) will be acceptable to the Commission. Mr. Berry also provides further information on this topic.

**Q. Does this conclude your prepared direct testimony in this proceeding?**

A. Yes, it does.