PLAINS & EASTERN
CLEAN LINE

FREQUENTLY ASKED QUESTIONS

1. What is the Plains & Eastern Clean Line?
The Plains & Eastern Clean will be part of the nation's critical electrical infrastructure that will help power our homes, communities, and the clean energy economy. This project will consist of two 800-mile **high voltage direct current (HVDC)** transmission lines capable of delivering 7,000 **megawatts** of clean energy from western Oklahoma, southwest Kansas, and the Texas Panhandle to delivery points in Tennessee, Arkansas, and other markets in the Mid-South and Southeast. The project will be developed in two 3,500 megawatt phases, with the first phase currently under development.

2. Who is Clean Line Energy?
Clean Line develops high-voltage, long-haul transmission lines connecting the best renewable resources in North America to communities that need the power. Clean Line provides transmission solutions to generators and load-serving utilities in order to efficiently interconnect clean energy with consumers. Clean Line was founded by Michael Skelly, who led the development efforts at Horizon Wind Energy. The management team includes executives who have managed, built and financed ambitious projects in the renewable and traditional energy sectors around the world, as well as senior policy professionals who have shaped energy policy and advanced the **renewable energy** agenda at local, state and national levels. In aggregate, the Clean Line team has financed billions of dollars of projects and managed the development and construction of thousands of megawatts of power plants and transmission lines.

3. What will the project cost and how will the Plains & Eastern Clean Line be funded?
The Plains & Eastern Clean Line is estimated to require an investment of approximately $3.5 billion. Clean Line intends to fund the development costs of the project and will sell transmission **capacity** to renewable energy generators or to the buyers of the power from these wind energy projects. Almost every major wind energy company and many small wind developers are already active in the project's wind resource area.

4. Is Clean Line also developing the wind energy that will be on the line?
No, Clean Line is only developing transmission lines. Clean Line is independent from existing or planned wind energy **generation** and from **load** serving utilities. This independence allows for single-minded focus on meeting the needs of the project's many **stakeholders** through a transparent development effort.

5. What is Plains and Eastern Clean Line LLC?
Clean Line Energy Partners is developing several projects across the United States – each dedicated to connecting the country's best **renewable energy** resources to communities and cities with a demand for renewable power. To comply with the preference of local laws and southeastern regulatory bodies, Clean Line formed one subsidiary in Oklahoma (Plains and Eastern Clean Line Oklahoma LLC) and another in Arkansas (Plains and Eastern Clean Line LLC) to build, own, and operate the facilities.

6. What is the transmission capacity of the line?
The Plains & Eastern Clean Line will consist of dual overhead, **high-voltage direct current** transmission lines that will be capable of transmitting up to 7,000 **megawatts** of energy. The project will deliver enough clean, **renewable energy** to meet the needs more than 2 million American homes. The project will be developed in two 3,500 megawatt phases, with the first phase currently under development.

7. What is the timeline of the project?
The Plains & Eastern Clean Line is expected to take between five and seven years to complete. Outreach, permitting, regulatory work and **right-of-way** work will take three to four years and construction will require approximately two or three years. The wind farms that will connect with the transmission line can be built in less than two years.

8. When is construction scheduled to begin?
The Plains & Eastern Clean Line is now under development and is expected to take between five to seven years to complete. Construction is slated to begin around 2014.

9. What is the route of the transmission line?
Clean Line is developing the Plains & Eastern Clean Line in a methodical, transparent and collaborative manner and will work with landowners, tribes, environmental agencies and community officials in order to come up with the best route possible. Siting a new transmission line is a lengthy and complex process that requires the evaluation of many factors and interests. Clean Line is already working with local groups such as The Nature Conservancy to obtain their input on the best route from an environmental and land use perspective. Clean Line continues to consult with many federal, state and local governmental-elected officials, tribes, community leaders and environmental advocates, to obtain their input on the best route from an environmental and land use perspective. The Plains & Eastern Clean Line has retained experts for some of the most sensitive species to help guide the routing process. Clean Line will conduct an extensive public outreach process involving communities, landowners and other **stakeholders** to determine the best route for the transmission line. Clean Line believes that such a process, where input is sought from those affected by the project, is critical to the ultimate success of the Plains & Eastern Clean Line.

10. Who will manage the development of the Plains & Eastern Clean Line?
The project is managed by a team of Clean Line's employees who have developed, built and financed ambitious projects in the renewable and traditional energy sectors, as well as senior policy professionals who shaped energy policy and advanced **renewable energy** at the state and national levels.

11. Who will build the Plains & Eastern Clean Line?
Plains and Eastern Clean Line LLC signed a memorandum of understanding (MOU) with Fluor Corporation designating Fluor to provide development support and engineering, procurement and construction services (**EPC**) for the first phase of the Plains & Eastern Clean Line transmission line project. As part of the MOU, Fluor—with Pike Electric Corporation as a subcontractor to Fluor—will provide initial permitting and EPC development support services for the Plains & Eastern Clean Line. The MOU contemplates that after the project has received all permits and regulatory and financial approvals, Fluor and Pike will provide the full EPC services for the first phase of the approximately 800-mile overhead **high voltage direct current (HVDC)** transmission line, which will allow for the delivery of 3,500 megawatts of power and interconnect approximately $7 billion of new clean energy

projects. Clean Line believes that new electric transmission and wind **generation** in such close proximity to Oklahoma, Arkansas and Tennessee manufacturers will increase business opportunities for companies in those states. Clean Line and Fluor are committed to using qualified local and regional contractors under the proposed EPC arrangement. Clean Line encourages local and regional contractors interested in working on the construction and maintenance of the transmission line project to submit their business information by clicking here.

12. Who will operate the Plains & Eastern Clean Line?
Plains and Eastern Clean Line LLC will be responsible for all maintenance of the line. Like many other transmission lines, the Plains & Eastern Clean Line will be under the functional control of one of the **regional transmission organizations (RTO)**. RTOS are responsible for planning and coordinating the transfer of energy over large interstate areas. An RTO controls and monitors an electricity transmission **grid** that is larger and uses much higher voltages than a typical single power company's transmission **distribution** grid.

13. Who will benefit from the Plains & Eastern Clean Line?
Individuals and communities across the project area will benefit from the Plains & Eastern Clean Line. Consumers in the Mid-south and Southeast— residential, commercial and industrial customers —will benefit from the lower prices resulting from the increased competition that the project will bring. Additionally, the project will create jobs in Oklahoma, Arkansas and Tennessee through the actual construction of the transmission line, through the manufacturing of the components for the transmission line, and through the construction and manufacturing of the wind turbines needed to supply the line. Furthermore, local governments across the project area will typically benefit from increased tax revenues from both the transmission line infrastructure and the supporting wind farms, and landowners at the western end of the project area will benefit from income associated with wind farms.

14. How many jobs will the Plains & Eastern Clean Line create?
The Plains & Eastern Clean Line will bring substantial economic benefits throughout the project region. It is estimated that the Plains & Eastern Clean Line will result in more than 10,000 construction jobs and more than 1,000 permanent jobs maintaining and operating the transmission line and the associated wind farms. Additionally, businesses, particularly those involved with services, materials and equipment to be used in construction of the project and the associated wind farms, as well as retail and hospitality industries, will likely see increased demand for their products and services as indicated in the Perryman Group study.

15. Where can I go to apply for a job to work on construction of the project?
Construction will not begin for several years. However, we are always seeking talented individuals who have a keen interest in fostering the growth of **renewable energy**. If you are interested in employment opportunities at Clean Line Energy Partners, please visit http://www.cleanlineenergy.com/contact/careers to view current job availability or to submit your business information, please click here.

16. Is Clean Line a regulated or unregulated entity?
Plains and Eastern Clean Line Oklahoma LLC is a regulated public utility in Oklahoma and Plains and Eastern Clean Line LLC anticipates being a regulated public utility in Arkansas. As such, Clean Line must be accountable to the regulatory commissions in those states, namely the **Oklahoma Corporation Commission** and the **Arkansas Public Service Commission**. The proceedings of

these regulatory commissions are open to the public. Click here to go to the Arkansas Public Service Commission's website. Click here to go to the Oklahoma Corporation Commission's website.

As a transmission owner and operator, Plains and Eastern Clean Line LLC and Plains and Eastern Clean Line Oklahoma LLC will be regulated by the **Federal Energy Regulatory Commission (FERC)**. In addition, the project will undergo review and approval by a variety of federal agencies, including the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers.

17. Will the Federal Energy Regulatory Commission (FERC) be involved in the approval of this project?

Federal Energy Regulatory Commission (FERC) will have oversight of the terms and conditions of service and the rates charged and will ensure that the project's transmission lines are operated on a non-discriminatory basis.

18. What is the National Environmental Policy Act (NEPA)?

NEPA requires federal decision-makers to consider how federal actions may impact the environment including natural, cultural, and socioeconomic resources. Following identification of a preferred route and alternative routes, Clean Line plans to complete an Environmental Impact Statement (EIS) under NEPA. The EIS will discuss the purpose of and need for the project, alternatives, the affected environment, and the environmental consequences of the proposed project. NEPA also requires extensive public input and involvement. Stakeholders will be able to submit comments, questions, and inquiries to the designated lead federal agency throughout the NEPA process. These comments, questions, and inquiries will be taken into account and recorded. Early in the process, public scoping meetings allow the public the opportunity to provide input on what issues should be addressed in the Draft EIS. Later, public comment meetings allow the public to comment on the findings of the Draft EIS. To learn more about NEPA, please click here.

19. Who is considered to be a stakeholder of the Plains & Eastern Clean Line?

A **stakeholder** is defined as any person or organization interested in the Plains & Eastern Clean Line, including, but not limited to: individual landowners; federal, state and local government entities and agencies; elected officials; local businesses and business organizations; nongovernmental organizations; tribal organizations; environmental and advocacy groups; and civic and community organizations.

20. Can I get my electricity from the line?

The electricity transmitted by the Plains & Eastern Clean Line is a much higher voltage than the local transmission and **distribution grid** that provides electricity to homes and businesses. Therefore, end users cannot get their electricity directly from the project, but rather must rely on their utilities to supply power at appropriate **voltage** levels. The renewable power delivered by the Plains & Eastern Clean Line will be delivered to consumers through the existing transmission and **distribution** grid.

21. Can I hook solar panels or a wind turbine up to the line?

It is not feasible to tie in wind or solar energy along the route of the HVDC line because the intermediate collection points are very difficult to justify economically. The HVDC **converter stations** that connect the AC **grid** to the HVDC line cost approximately $250 million each. Think of HVDC lines as "express" lines, suitable for long-haul transmission of electricity but not for short distances. HVDC lines are typically the best choice for distances over several hundred miles. In the case of the Plains & Eastern Clean Line, the wind energy facilities will connect at the western end of the line in Oklahoma and the energy will be delivered directly to western Tennessee at the other end of the HVDC line.

22. What is HVDC?
HVDC stands for **high-voltage direct current**. The electric **grid** is made up almost exclusively of **alternating current (AC)** transmission and **distribution** lines. HVDC is widely considered the most efficient method to connect large amounts of energy to distant electricity areas that have a strong demand for the power. HVDC lines can transfer significantly more power with greater **efficiency** than comparable AC lines.

23. Is HVDC a new technology?
High-voltage direct-current (HVDC) transmission is a proven technology that has been around since the 1930s and the birth of the modern electric industry. HVDC is already in use in the United States and throughout the world. Currently, there are more than 20 HVDC transmission facilities in the United States and more than 35 across the North American grid.

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25. Why is Clean Line using HVDC technology for its projects?
High-voltage direct-current (HVDC) is the preferred technology for moving large amounts of power over long distances. The use of HVDC transmission line results in overall higher efficiency and **reliability** than an equivalently sized **alternating current** line to move the same amount of power, therefore offering significant electrical, economic and environmental advantages. These advantages include lower power losses on the line, better land use due to smaller tower **structures** and narrower rights-of-way, and the ability to control the power flow. HVDC lines are not a replacement for the AC grid or the additional AC transmission that is required. HVDC complements the existing AC transmission and can be an additional source for system stability and reliability.

26. What will the transmission line look like?
The transmission line will generally look similar to conventional **high-voltage alternating current (AC)** lines. There are many factors that must be considered when determining the **structures** including terrain requirements and land-use constraints (such as center pivot irrigation systems). Clean Line is currently analyzing a variety of **structures** ranging from steel monopole structures, steel lattice designs, guyed **structures** and hybrid steel-concrete structures. Ultimately, we value landowner input and will take the landowners' feedback and preference into consideration to select the structures. Preferred **structures** will not be known until final route determination. To learn more about the different transmission structures that may be used, please click here.

27. How much right-of-way is required?
Right-of-way refers to the actual land area acquired for a specific purpose, such as the location for a transmission line. Clean Line will be acquiring **easements** and the land underneath the wires will be able to be utilized by the landowner for certain activities such as farming, grazing cattle, and other activities that do not interfere with the operation of the line. When determining the width of the **right-of-way**, it is necessary to understand the amount of space needed for appropriate safety clearances to the ground and for the side-to-side movement of **conductors** due to wind. Clean Line estimates the **right-of-way** for its projects will generally be between150 and 250 feet; this is largely determined by how closely **structures** are placed to each other, terrain and clearance issues. The

closer the **structures** are to one another, the more narrow the right–of-way, but that also means more structures.

28. How will Plains & Eastern Clean Line acquire right-of-way for this project?
Right-of-way agreements will be negotiated individually with each landowner, including federal and state agencies, and will depend on many factors including, but not limited to:

- Existing uses of the land (e.g., crops vs. grazing vs. residential)
- Type and number of **structures** that will be placed on the land
- The requirement for future access rights to the land
- Environmental conditions

Our team of professionals and consultants is experienced in the industry, particularly in building relationships with landowners. It is our goal to work proactively with the communities and landowners who will be affected. We will be available to address stakeholders' concerns at every point throughout this process. Clean Line requires that all of its representatives follow a Code of Conduct, which provides that all representatives treat every landowner with consideration and respect. In addition, Clean Line strives to build and maintain long-lasting relationships with all landowners and stakeholders by working in a respectful and collaborative manner for the life of the project.

29. How big is a converter station?
The **converter station** for an HVDC **transmission** line looks similar to a typical electric substation; however there is also a building that hosts the converter valves in an enclosed environment. The **converter station** will take up between 40 and 60 fenced-in acres and is typically located near its point of **interconnection** to the AC grid.

30. Will you put the lines underground? If not, why not?
The cost and complexity of underground **transmission** systems are justified primarily at short distances in heavily populated downtown urban centers where **right-of-way** and space is severely limited for overhead lines. Underground transmission is untested for the power and voltage levels that Clean Line is proposing for its long haul HVDC lines. Clean Line is proposing overhead lines because of efficiency, **reliability** and cost. Underground **transmission** lines generally cost 10-15 times as much as overhead lines.

31. What is EMF?
EMF stands for **electric and magnetic field**. Electric fields are produced by **voltage** and **voltage** is the electrical pressure that drives an electric **current** through a circuit. Magnetic fields are produced by **current**, and **current** is the movement or flow of electricity. EMFs are naturally present in the environment and are present wherever electricity is used, for example a toaster, cell phone, wristwatch, a lamp, a computer, etc. The earth has both magnetic fields produced by currents in the molten core of the planet and an electric field produced by electrical activity in the atmosphere, such as thunderstorms. For more information about electric and magnetic fields, please click here.

32. Can my livestock graze under and around the transmission line?
Yes. Extensive studies indicate that exposure to **transmission** lines pose no harmful effect to farm animals.

33. Can I grow crops or build anything under the transmission line?

The land under the **transmission** line can typically be used for crop production and pasture/grazing lands. Clean Line must comply with the National Electric Safety Code to ensure the safety of the general public and North American Electric Reliability Corporation Standards to ensure the reliable operation of the **transmission** line. As a result, there are restrictions on the placement of **structures** and planting tall growing trees underneath the **transmission** line. Most crops less than 10 feet tall can be grown safely under power lines.

34. What efforts is Clean Line initiating to minimize environmental impact?

Clean Line is working extremely hard to be a good environmental steward. We are accountable to state and federal agencies regarding our environmental impacts.

Clean Line has entered into agreements with **The Nature Conservancy of Arkansas** and **The Nature Conservancy of Oklahoma** to provide information on how to minimize the environmental impacts of the project. We are also collaborating with other organizations to ensure the project is environmentally responsible and sustainable.

Clean Line will also complete an **Environmental Impact Statement (EIS)** under the **National Environmental Policy Act of 1969 (NEPA)**. The EIS will discuss the purpose of and need for the project, alternatives, the affected environment, and the environmental consequences of the proposed project. This process includes a thorough review and evaluation of potential project impacts on existing resources, including but not limited to, federal, state and local managed lands, land uses, recognized tribal lands, cultural resources, socioeconomic resources, water resources, vegetation, wildlife, aesthetics, federal and state protected species. In addition, engineering considerations such as corridor length and type of terrain to be traversed will also be evaluated.

NEPA also requires extensive public input and involvement to assist the federal government in the decision making process which includes the siting of the project.